



Final Report and Recommendations

September 7th, 2011

Download Section 4 of 7

Parts II.3.14 to II.3.35 (inshore rMCZ site reports, south coast): pages 363 -785 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.3.14 Poole Rocks rMCZ

Basic site information

Site centre location (datum used: ETRS89):

Decimal Degrees		Degrees Minutes Seconds	
Lat	Long	Lat	Long
50.6865	-1.8860	50° 41' 11" N	1° 53' 9" W

Site surface area: 3.7 km² (calculated in ETRS89-LAEA)

Biogeographic region:

JNCC regional sea: Eastern Channel

OSPAR region: Region II: Greater North Sea

Site boundary: The shape of the site is a simple square. The site boundaries were drawn using N-S and E-W lines and a minimum number of nodes, in line with ENG guidelines. The site was situated on top of the Poole Rocks feature shown on Admiralty Charts.

Sites to which the site is related: Poole Rocks rMCZ does not directly overlap or adjoin any other existing protected area. It lies approximately 3km to the east of the Poole Harbour SPA, Poole Harbour SSSI, and Studland and Godlingston Heaths SSSI. It also lies approximately 4km north-east of the Studland to Portland draft SAC.

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 Poole Rocks rMCZ

Table II.3.14a Draft conservation objectives for Poole Rocks 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 mixed sediments		M
	Subtidal sand		M
	Moderate energy circalittoral rock ¹		M
Species FOCI	<i>Gobius couchi</i> ²	Couch's goby	M
	<i>Ostrea edulis</i>	Native oyster	M

¹ We have no data in our combined EUNIS level 3 GIS dataset for any rocky seafloor in this site, so there is no information about the spatial extent of this feature included in the quantitative tables below. However, the feature is included on the draft conservation objectives list on the basis of local knowledge that the rocky feature exists, including a statement from the IFCA who visited the site recently, dropped a camera, and found rocky habitat. The rock feature is also marked on nautical charts, and several references in the detailed site description refer to a rocky outcrop located within this site.

² There is only a single record of this species in our combined FOCI GIS dataset, and the species is difficult to identify. However, local knowledge indicates that the species is known to occur in Poole Bay, and that the habitat in this site is appropriate for it. Therefore, the single record is not regarded as spurious, and the species has been included on the draft conservation objective list.

There was a comment from Dorset Wildlife Trust which pointed out that there were several charted features on the site map which are shallower than 10m. Although this is a more turbid area than the rest of Dorset, the comment was that this shallow depth is still well within the depth range of infralittoral rock, so that it might be appropriate to add a conservation objective for infralittoral rock broad-scale habitat, in addition to the moderate energy circalittoral rock currently on the list.

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.3.14b 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	2.73	<0.1%	1
Subtidal mixed sediments	1.01	<0.1%	1

Table II.3.14c 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	0.27			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.3.14d 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 Trehwella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Gobius couchi</i>	1		5
<i>Ostrea edulis</i>	6		1, 4, 5
<i>Lithothamnion corallioides</i> ¹	1		4

¹ 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.

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

Poole Rocks is an area of rocky outcrops within the sediment-dominated Poole Bay (Collins, 2005a, Royal Haskoning, 2008). The depth of the site is between 6 and 11 metres. The site is located approximately 2 – 2 ½ km to the east of the beachfront at Sandbanks. The site is included in the recommendations to contribute to the wider network design criteria outlined in the ENG, including the protection of the listed FOCI.

Detailed site description

Whilst being mainly sedimentary (silty sand and gravel), Poole Bay has a number of patch reefs supporting the local lobster fishery and sport angling (Collins, 2005a). Poole Rocks is mentioned as an area of hard seabed in Royal Haskoning (2008). Collins (2005a) describes Poole Rocks as clumps of fossilised trees, which are popular with divers and fishermen. Moderate energy circalittoral rock has been reported in the Poole Rocks area by Dorset Seasearch between 1995 and 2002. Sheltered muddy gravels have also been reported during 1995-2002 Dorset Seasearches and 2000 Seasearch Survey of Dorset (sourced from MB102).

Poole Rocks rMCZ is located within Poole Bay, an area within which several environmental studies have been carried out, looking at the seafloor habitats present, and assessing impacts of dredging in Poole Harbour. Some of this work is summarised in the following paragraphs. Whilst most of it relates to Poole Bay in general, rather than the specific location of the Poole Rocks rMCZ, it highlights relevant contextual information.

Poole Bay is within an area notified as a Sensitive Marine Area in recognition of its important subtidal habitats. Poole Bay and Swanage Bay consist of a gently sloping area of mixed sediment, with coarse shell gravel (*Crepidula fornicata* shells) occurring over large areas. There are also some areas of hard seabed, such as the Poole Rocks (Royal Haskoning, 2008).

Extensive dive surveys of Poole Bay have been carried out by Dr Ken Collins on behalf of Dorset Wildlife Trust, English Nature and others between 1999 and 2003. These surveys have mapped the distribution of key habitats within the Bay, including *Sabellaria spinulosa*, brittle star beds, maërl and seagrasses (Royal Haskoning, 2008).

Collins (2007; 2008) described the post-dredging studies undertaken in Poole Bay and Poole Harbour in 2006. Comparisons were made with previous, pre-dredging data: Sedimentation rate studies, *Eunicella verrucosa*, algal densities, and reef species. The author has undertaken numerous studies in Poole Bay over the past 2 decades. In 2005, to supplement this data, a number of pre-dredging studies (Collins, 2005b) were undertaken to provide a baseline for comparison post-dredging.

There have also been many studies on the artificial reef within Poole Bay that was constructed in 1989. Initial colonisation was rapid, with 80 species identified within two months (see Jensen *et al.* 1994). Mallinson *et al.* (1999) documented the colonisation of the Poole Bay artificial reef since its deployment in 1989, alongside the biota of natural patch reefs in Poole Bay. A study of 71 species found that they were still present on the Poole Bay artificial reef and natural reefs post-dredging of the Poole Harbour Approach Channel, indicating no detectable impact, including *Ostrea edulis*. *Ostrea edulis* has been recorded at Poole rocks by the Conchological society and Dorset Seasearches (1995-2002, 2008) (sourced from MB102). *Gobius couchii* was recorded from the Outer Poole patch in the 2009 Dorset Seasearch.

In 2004, two specimens of the pink seafan *Eunicella verrucosa* were discovered; one in central Poole Bay and a second on Southbourne Rough, both in the vicinity of previous finds of two more single robust specimens of the same species (Collins, 2005a, Wood, 2003).

Poole Harbour and Bay are considered by The Seahorse Trust to be very important areas for seahorses. There are four recent confirmed records of *Hippocampus hippocampus* (Garrick-Maidment, *pers. comm.*) from the Harbour and Bay, including one specimen washed ashore on Studland Bay (Royal Haskoning, 2008). Fishermen have reported catching seahorses within the South Deep of the Harbour and off Studland Bay (Royal Haskoning, 2008).

The distribution of sublittoral Mollusca in Poole Bay and off Purbeck was mapped following Conchological Society dredging trips in 1993 and 1994 (Light, 1994). Several other studies of benthos have been commissioned by British Petroleum and undertaken by Southampton University in Poole Harbour and Poole Bay (e.g. Jensen et al. 1990; Jensen et al. 1991).

A generic piece of feedback from members from the Dorset Local Group commented on the presence of maërl beds and *Sabellaria* within 3nm of the Dorset coastline, but neither the precise locations nor species (of *Sabellaria*) were cited (our GIS records indicate maërl beds and records of *Sabellaria spinulosa* in the area off Swanage, within the Studland to Portland draft SAC, but not within any rMCZ boundaries). Several local stakeholders also commented on the ecological importance of Poole Harbour (see Poole Bay site description in progress report 3). This was not added to the set of rMCZs, largely for socio-economic reasons.

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.3.14e shows working assumptions and implications recorded for this site throughout the planning process. Poole Rocks rMCZ was a relatively late addition to the network. There was a larger site in previous versions of the developing network configuration, covering the whole of Poole Bay. Because of socio-economic concerns raised in feedback from the Local Group, the larger site was replaced with two smaller sites - Poole Rocks rMCZ and Studland Bay rMCZ (refer to the report from the 4th Joint Working Group meeting, and the Poole Bay site write up in the third progress report for more background). 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.3.14e is based on what had previously been recorded for the precursor site (the one that covered the whole of Poole Bay). The working assumptions for the whole Poole Bay site included assumptions about shoreline activities; these have not been included here as Poole Rocks rMCZ is located away from the shoreline. Many of the assumptions and implications highlighted for this site are generic, and will apply to other rMCZs in the network as well.

Following that, table II.3.14f 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.3.14e Specific assumptions and implications relating to Poole Rocks 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
<p>Bottom towed fishing gear will not be allowed</p> <p style="color: green;">Activity deemed not to be taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Loss of ground for bottom-towed gear fishermen o Financial loss to beamers and trawlers o Displacement of bottom-towed gear o SWFPO and SWIFA members disadvantaged and displaced 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 Poole Bay is dredged for oyster seed, and there is a concern about loss of adult oysters to seed o Impacts on Poole Bay oyster aquaculture (currently harvested as licence condition) o Influx of predatory species (Brittlestars etc) o A concern was raised that 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.) It has also been countered by a fishing representative stating that the amount of static gear is in relation to fishing opportunities, quota etc and would not become excessive. o Potential environmental implications derived from concentrating effort in alternative grounds or due to new fishing ground searching activity. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Some Local Group members are concerned about impacts on sand eel trawling and mussel spat collection, and would like these activities to continue to be permitted.

<p>Aggregate extraction will not be allowed</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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 The Crown Estate and BMAPA provided feedback highlighting possible impacts on a nearby aggregate application area (Area 409). Potential for significant loss of capital asset equivalent to between £5.95M per km² of licence/option area restricted (resource valuation figures provided by The Crown Estate). Requirement for replacement resources elsewhere with significant development cost impacts and also potential production delays and operational costs if replacement is further from market. The Crown Estate suggested a buffer zone between the aggregate area and any rMCZ to avoid plume and smothering impacts (this is now effectively in place for this site, as the comment had been made based on a previous shape for a rMCZ covering the whole of Poole Bay, which was under discussion earlier in the process, but then got replaced by the much smaller Poole Rocks and Studland Bay rMCZs).
<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem within the boundaries of this site, although the VA did discuss the disposal site near Swanage. The VA stated that 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.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is a closed disposal site in Poole Bay. This overlapped with the pre-cursor to this site, which was a large rMCZ covering the whole of Poole Bay, and which was subsequently replaced by the smaller Poole Rocks and Studland Bay rMCZs. When the larger site was under discussion, it was recorded that reopening of the Poole Bay disposal site would not be compatible with the assumptions as stated. o There is an open disposal site in Swanage Bay. This is over 5km from Poole Rocks rMCZ. When the larger rMCZ for the whole of Poole Bay was under discussion, concern

	<p>was voiced that if disposal operations are restricted in areas adjacent to an MCZ, then this will have significant impact on these activities.</p> <ul style="list-style-type: none"> o A conservation representative voiced concern over the possible impacts of plumes from disposal sites impacting on the site. 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. o Despite the statement coming out of the VA, there remains concern that, based on stakeholders' previous experiences, the licensing process will always require that the licensee will have to prove no significant adverse effect. This may well result in additional mitigation requirements. o If large quantities of material are placed on the Swanage disposal ground in a short period, there may be a temporary effect on the area of the Poole Rocks rMCZ. This is dealt with in the impact assessment that Poole Harbour Commissioners carried out prior to capital dredging in 2005/6 (Document supplied to FS). Therefore, depending on the detailed management measures required for this site, a constraint could be placed on certain aspects of PHC's statutory duties.
<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Possible effects on ports and harbours (this is a general concern, not just relating to the anchoring of large vessels). <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The location of this site is unlikely to cause problems to commercial vessels using Poole Harbour. Anchorage would not normally take place so far inshore. However the location could inhibit the operation of vessels engaged in routine beach nourishment on Poole and Bournemouth beach frontages. The boundaries may need to be reviewed to avoid unnecessary obstruction. o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	Implications
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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.

<p>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</p>	<p>Several stakeholder representatives have since stated that the comment is unrealistic.)</p> <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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
<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p><i>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.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: <ul style="list-style-type: none"> - 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. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.
<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>Activity not taking place / not taking place at high enough levels to cause</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o

a problem in this site, so this was not considered during the VA meetings	
Aquaculture of fin fish and shell fish will be permitted with mitigation / management	Direct implications: o
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	

Activities assumed to be allowed to continue / occur within the site	
Assumptions	Implications
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>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</p>	<p>Direct implications: o</p> <p>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</p> <p>Benefits: o Potential for increased and enhanced leisure and recreational activity</p>
<p>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.</p> <p>This site is bisected by a possible cable route from the planned Eneco windfarm to the west of the Isle of Wight, the VA discussions considered this, no new management (beyond existing licensing) suggested, and the expectation was that the cable would be permitted.</p>	<p>Direct implications: o</p> <p>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 Round 3 Eneco Navitas possible cable route – a possible cable route from the Eneco Wind Park – runs through the middle of this rMCZ. It is expected that the cable would be permitted with no additional mitigation likely to be required as a result of the rMCZ. 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).</p> <p>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</p>

	<p>a cost of £600,000 - £1.3 million/km depending on cable type, size and seabed geology.</p> <ul style="list-style-type: none"> 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.
<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o (currently, no heritage wrecks are present in the site)
<p>Anchoring of small vessels will be permitted.</p> <p><i>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The area is used for recreational boating. There is concern around this activity being impacted. 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.
<p>Passage of ships will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Table II.3.14f 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
Tourism & Leisure	<p>Management:</p> <ul style="list-style-type: none"> - Best practice methods for anchoring recreational fishing boats should be promoted to recreational angling users of the rMCZ area via a Code of Conduct. <p>Measure:</p> <ul style="list-style-type: none"> - Voluntary Code of Conduct
Renewable Energy	<p>Management:</p> <ul style="list-style-type: none"> - Impacts on the rMCZ conservation objectives would need to be considered in any licence application to install a cable from the proposed Eneco wind park. It is expected that the cable would be permitted with no additional mitigation likely to be required as a result of the rMCZ. <p>Measure:</p> <ul style="list-style-type: none"> - Marine Licence
Disposal at Sea	<p>Management:</p> <ul style="list-style-type: none"> - Impacts on the rMCZ conservation objectives would need to be considered in any licence application for disposal of material at the Swanage Bay disposal site. 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 <p>Measure :</p> <ul style="list-style-type: none"> - Marine Licence

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:

- At the time the larger Poole Bay area was under discussion, uncertainties over the EUNIS Level 3 habitat data had been raised by local fishermen. The EUNIS level 3 broad-scale habitat maps underwent several significant updates off this area of Dorset, over the course of the project. Local stakeholders described the area as predominantly sediment, which tallies with the descriptions in the scientific literature (see detailed site description above). An intermediate version of the broad-scale habitat map (the December 2010 version of the JNCC's combined EUNIS level 3 habitat layer) had mapped much of the area as rock, which was down to a geological classification used by the Southern REC survey that considered areas to be 'rock' even when there was a layer of sediment on top of the rock. The final version of the map reclassified the areas where sediment 'veneers' are present, and the final map now shows most of the area as sediment - to the point that it has missed out genuine rocky outcrops such as the one in 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, and others were more generic comments which the project team consider to be relevant to this site. Progress report 3 lists a lot of stakeholder comments that related to the larger Poole Bay site that had previously been under discussion. Many of those comments encapsulate the reasons why the larger Poole Bay site got removed, to be replaced by Poole Rocks rMCZ and Studland Bay rMCZ. Some of these comments are included here, but most are no longer directly relevant to the final rMCZ, so they have not been repeated.

- *Beach replenishment*
 - Sediment plumes created by beach replenishment schemes need to be considered as a possible pressure upon the site. The Environment Agency previously highlighted concerns over the impacts of the larger Poole Bay site on beach replenishment schemes in the area, and they would still have concern if the current site impacted on those activities.
- *Mobile bottom-towed fishing gear*
 - Due to the crude resolution of fisheries activities mapping it is possible that the vulnerability of this site to bottom gears has been underestimated. This should be considered in the design of management measures for this site.
 - Seasonal closures are an inappropriate measure for benthic conservation.
 - There are ongoing conflicts between static gear and mobile gear fishermen in Dorset, with many static gear fishermen supportive of measures that exclude mobile gear vessels. Some fishermen would like to see mobile gears excluded entirely within 3nm. The larger Poole Bay site previously under discussion in this area had been particularly controversial, with strong opinions on both sides within the Local Group.
- *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.
 - *Surf reef*
 - There is an artificial surf reef located to the east of Boscombe Pier (about 2.5 kilometres from Bournemouth Pier) and the submerged reef takes up approximately one hectare (the size of a football pitch) which is 225 metres from the shoreline. The reef mimics the effects of a natural reef and is built from large geo-textile bags pumped hard with sand.
 - *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.3.14.f (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. For this specific rMCZ, levels of support are relatively high (meaning that stakeholder representatives either support it or can live with it), bearing in mind that the site is one of two small areas that replaced a much larger and much more contentious proposal for the whole of Poole Bay. The boundary alterations were carried out in response to feedback from the Local Group, in order to accommodate socio-economic concerns.

There had been a lot of conflict about the preceding site, mostly a reflection of conflicts between static and mobile fishing gear within Poole Bay. Broadly speaking, static gear representatives on the Local Group were in favour of the larger area, whereas mobile gear representatives were not. The Environment Agency and The Crown Estate had raised concerns over coastal activities in the larger area, including recreational activities, wastewater management, coastal defence and port activities,

and these are described in progress report 3. BMAPA had stated that they could live with the previous larger site, if the nearby aggregate extraction area was not affected.

The much smaller Poole Rocks rMCZ, put forward by the Local Group, has relatively less conflict. There are some possible remaining issues around whether or not recreational anglers will be allowed to anchor on the site or not (Poole Rocks is a popular angling spot). A potential cable corridor from the nearby planned Eneco wind park runs through the centre of the site, and any need to alter cable routes as a result of MCZ designation would be controversial with renewables developers – however, the latest feedback was that the cable route through this rMCZ was probably less likely to go forward than alternative cable routes in any case.

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, SeaSearch 2009, and information provided by Dorset Environmental Records Centre. Refer to appendix 8 for details, and to the tables above for data sources for specific features in this site.

Draft conservation objectives take local knowledge into consideration (as indicated in the table footnotes).

Further evidence underpinning the site can be found in the publications and datasets referred to in the detailed site description. There may be additional relevant information about Poole Bay (possibly including Poole Rocks) in Collins, 2004; Collins, 2005b; Collins, 2005c; Collins *et al.*, 2000; Holme, 1967; Jones & Pinn, 2006; Langston *et al.* 2003; and Marine Committee of the Dorset Trust for Nature Conservation, 1990. A full reference list is in appendix 9. Further information on the Natura 2000 sites to which this site is related may be found on the JNCC's [website](#)²³.

Site map series

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

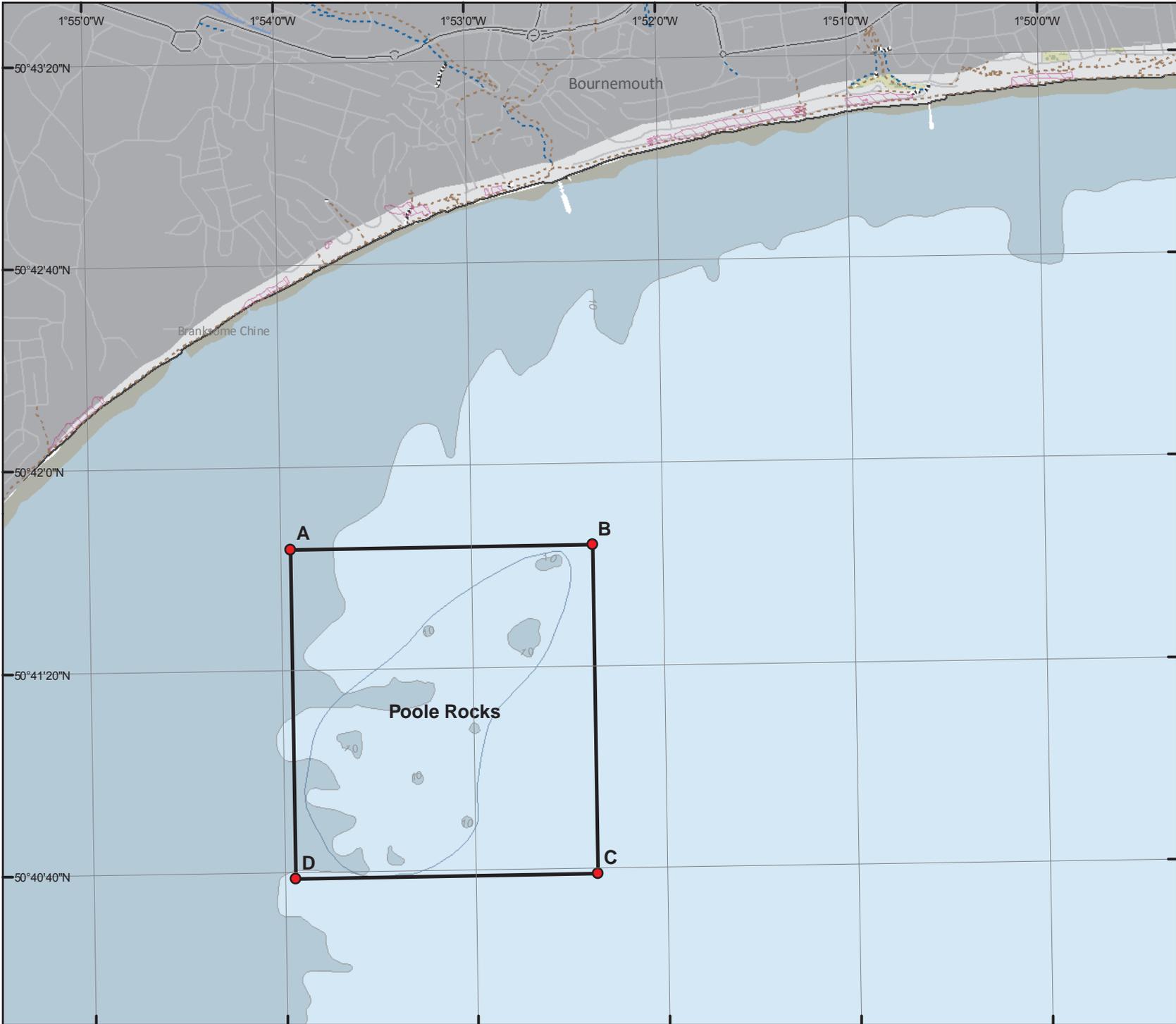
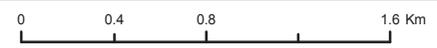
- The first map (FR_022a) is the main site map showing the rMCZ boundary and includes points with coordinates (in WGS84 UTM30N). The map also shows charted depth (UKHO vector data), and existing MPAs (the sites listed in the gap analysis are all included). The charted Poole Rocks feature is also shown. 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_022b) 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.3.14b and II.3.14d, data sources are indicated in the tables. As described above, the broad-scale habitats data on the map does not include any rocky seabed area within the site boundary, although there is evidence that rocky seabed is present.

²³ <http://jncc.defra.gov.uk/page-4>

- The third map (FR_022c) shows socio-economic datasets for this site and Studland Bay rMCZ. 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.

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.

Maritime basemap © British Crown and SeaZone Solutions Limited, 2010. All Rights Reserved. Data Licence No. 062006.004. Land basemap part © OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation. Contains OS data © Crown copyright 2011.



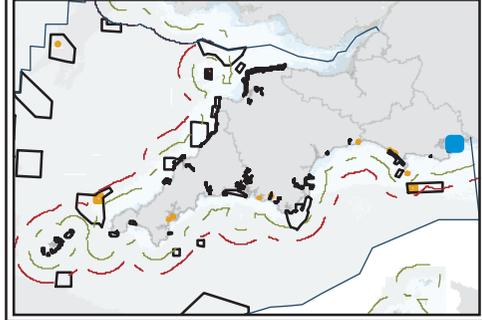
Lat/Long Co-ordinates (WGS84)

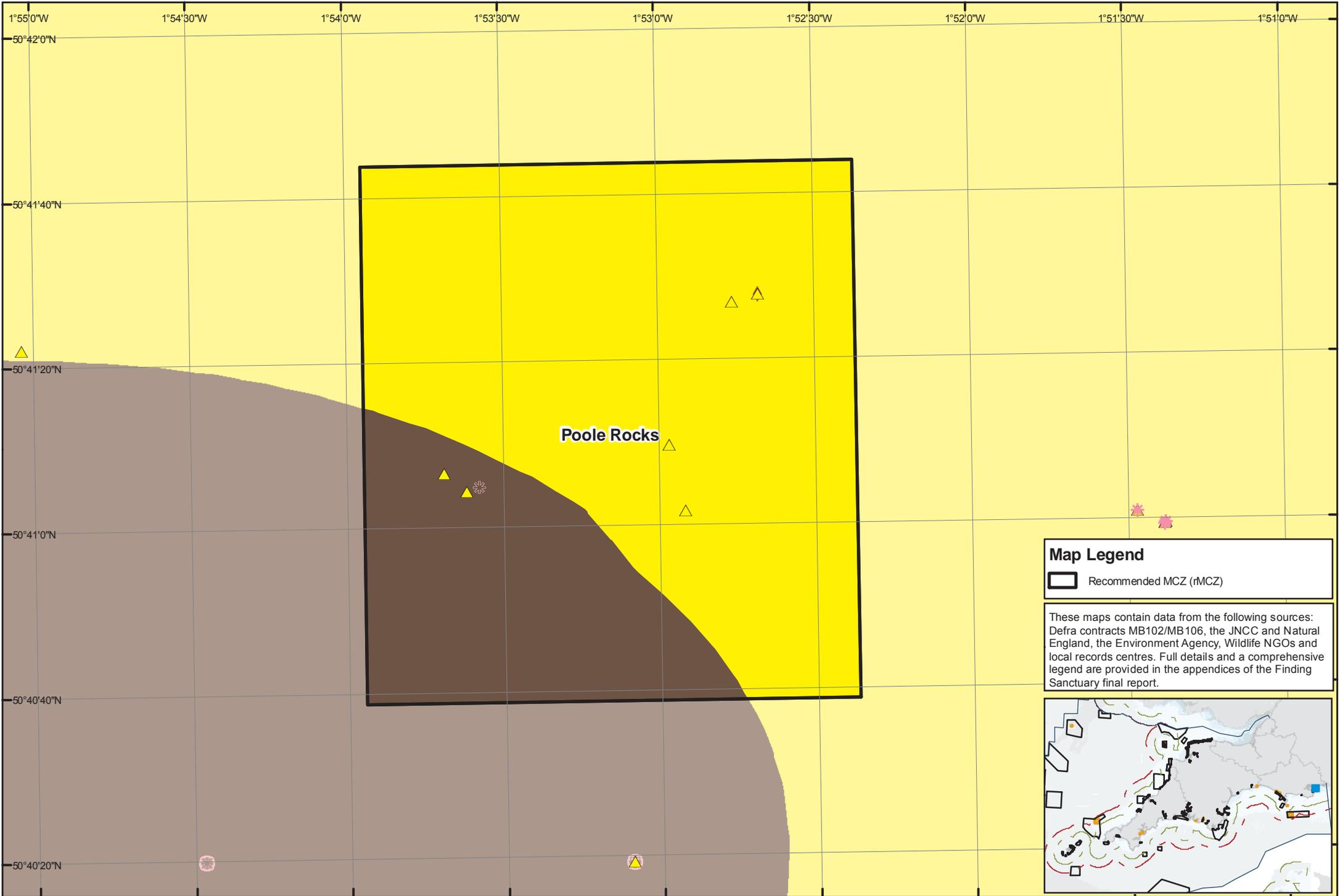
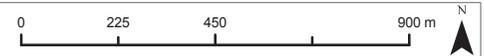
	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.6955	-1.8992	50° 41' 43" N	1° 53' 56" W
B	50.6955	-1.8729	50° 41' 43" N	1° 52' 22" W
C	50.6774	-1.8728	50° 40' 38" N	1° 52' 22" W
D	50.6774	-1.8991	50° 40' 38" N	1° 53' 56" W

Map Legend

- Recommended MCZ (rMCZ)
- Named Sea Area (Poole Rocks)
- Existing MPAs**
- SSSI (not part of MPA network)

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



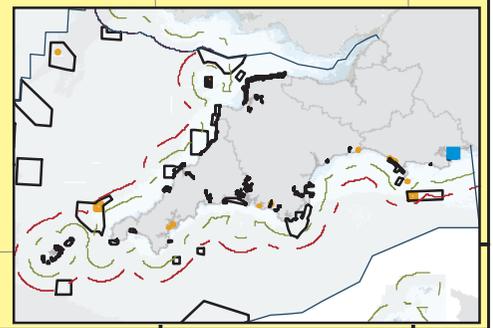


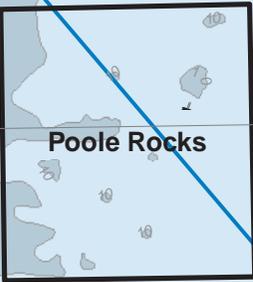
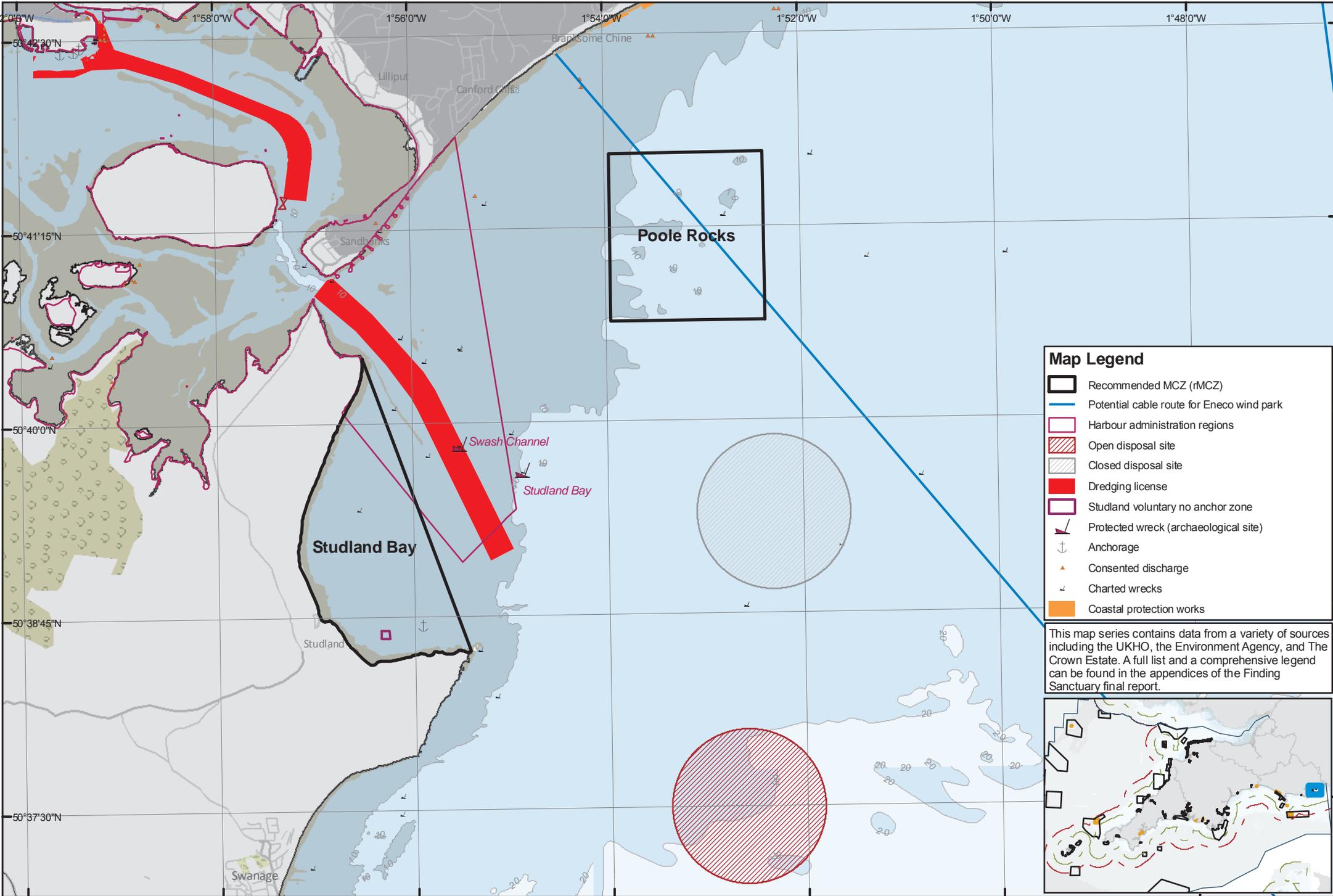
Poole Rocks

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.

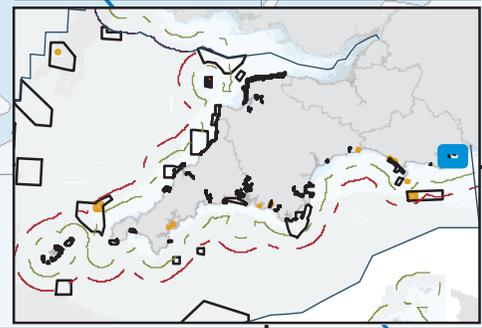




Map Legend

- Recommended MCZ (rMCZ)
- Potential cable route for Eneco wind park
- Harbour administration regions
- Open disposal site
- Closed disposal site
- Dredging license
- Studland voluntary no anchor zone
- Protected wreck (archaeological site)
- Anchorage
- Consented discharge
- Charted wrecks
- 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.3.15 Studland Bay rMCZ

Basic site information

Site centre location (datum used: ETRS89):

Decimal Degrees		Degrees Minutes Seconds	
Lat	Long	Lat	Long
50.6535	-1.9401	50° 39' 12" N	1° 56' 24" W

Site surface area: 3.9 km² (calculated in ETRS89-LAEA)

Biogeographic region:

JNCC regional sea: Eastern Channel

OSPAR region: Region II: Greater North Sea

Site boundary: The site boundary follows the coastline up to the OS Boundary Line mean high water line, from Old Harry Rocks to the northern tip of Studland Bay (approximately 500m southeast of the ferry landing at South Haven Point). A straight line has been drawn between these two points to form the seaward boundary of the site.

Sites to which the site is related: Two SSSIs lie immediately landward of the site: Studland & Godlingston Heaths SSSI, and Studland Cliffs SSSO. The Isle of Portland to Studland Cliffs SAC lies landward of the site at the southern end of the bay, and the Studland to Portland draft marine SAC lies just to the south of the site. There is a voluntary no-anchor zone located at the southern end of the bay.

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

Features proposed for designation within Studland Bay rMCZ

Table II.3.15a Draft conservation objectives for Studland 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 mixed sediments		M
	Subtidal sand		M
	Intertidal mud		M
	Intertidal sand and muddy sand		M
Habitat FOCI	Seagrass beds		R
Species FOCI	<i>Hippocampus hippocampus</i>	Short snouted seahorse	R
	<i>Ostrea edulis</i>	Native oyster	M
	<i>Raja undulata</i> ¹	Undulate ray	R

¹No 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 (see appendix 8). However, the species has been included in the draft conservation objectives on the basis of local knowledge discussed during the working group meetings, confirmed by the Shark Trust survey referred to in the detailed site description below.

These draft conservation objectives were developed during the vulnerability assessment meetings (see part I). During those meetings, the data that was reviewed for the site (mainly GIS data from national contract MB102, see appendix 8) did not include any records for the long snouted seahorse *Hippocampus guttulatus*, and this is reflected in the tables below. Therefore, only one species of seahorse (*H. hippocampus*, the short snouted seahorse) was included on the draft conservation objective list. However, there are several published references stating that *H. guttulatus* is present in Studland Bay, and that the population present is an important breeding population (see detailed site description below).

Several conservation stakeholders have made strong statements to say that *H. guttulatus* should be added to the list of conservation objectives for the site. The addition of the second seahorse species would not go against the wider stakeholder discussions for Studland Bay, given that the protection of seagrass beds and associated fauna (especially seahorses) were the two main considerations that led the stakeholder group to include the site in the network, despite a history of local conflict over recreational boat anchoring and seagrass bed protection in the bay.

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.3.15b 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	0.05	<0.1%	1
Subtidal mixed sediments	3.74	0.1%	1

Table II.3.15c 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)
Intertidal sand and muddy sand	0.03	0.3%	4
Intertidal mud	0.11	<0.1%	3

Table II.3.15d 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)
Seagrass beds	0.91	6		1
Subtidal sands and gravels ¹	1.41			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.3.15e **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 Trehwella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Hippocampus hippocampus</i>	1		1
<i>Ostrea edulis</i>	4		1, 4

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 3.69 km² 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

Studland Bay is sandy, shallow (dropping to 5 m depth 2 km from the shore), and sheltered from the prevailing south-west winds, making it an ideal habitat for a dense seagrass bed of *Zostera marina*, which covers some 50ha as mapped by Collins *et al.* (2010). Finding Sanctuary's amalgamated GIS data indicates the seagrass beds to be even more extensive (91 ha – see table II.3.15d). The main reason for including this site in the network was to protect the seagrass bed FOCI, including the associated fauna (the site is recognised as important for seahorses), and its additional ecological importance as a juvenile habitat, including for the mobile FOCI species undulate ray (*Raja undulata*). Studland Bay is located off the southern edge of the Wytch Farm oil field, and drilling (by BP) takes place onshore.

Detailed site description

Roberts *et al.* (1986) describe Studland Bay as containing a bare sandy beach, thinning out for 50 metres, with soft muddy sand at the southern end of the bay. The underlying seabed is made of chalk, with a fairly settled sandy/muddy substrate where species such as the lugworm (*Arenicola marina*) and sand mason worm (*Lanice conchilega*) are abundant. An underwater survey of the Dorset marine coastline in 1977-1978 recognised three associations within Studland Bay: *Fucus serratus*-*Laminaria digitata*, *Pagurus berhardus*-*Nassarius reticulatus*, and loose lying algae (Dixon *et al.*, 1978). Collins (2003) further describe marine biodiversity habitats in Dorset based on surveys from 2001-2003. A detailed description of the geology of Studland Bay has been written by Ian West from the Geology Department at Southampton University, which is available [here](http://www.soton.ac.uk/~imw/Studland.htm)²⁴.

Studland Bay contains dense *Z. marina* seagrass beds, which have been mapped in detail by Dr Ken Collins (Southampton University). Detailed quantitative studies of the seagrass were undertaken by divers in Studland Bay, as well as adjacent to the Poole Harbour entrance Training Bank, and at one bed within Poole Harbour (Collins, 2007). A number of environmental surveys have been carried out in Studland Bay, many of them focussing on seagrass beds. Several studies of the benthos have been commissioned by British Petroleum and undertaken by Southampton University in Poole Harbour

²⁴ <http://www.soton.ac.uk/~imw/Studland.htm>

and Poole Bay, including diver surveys of the epifauna, and infaunal sampling in Studland Bay (e.g. Jensen *et al.*, 1990; Jensen *et al.*, 1991)). Additionally, Haskoning (2005) was commissioned to map *Zostera marina* in Studland and Poole Bays. Hughes *et al.* (1991) looked at hydroids on seagrass in Studland Bay. Seasearch (1995-2002, sourced from MB102) have also recorded seagrass and the Futurecoast project (2004, sourced from MB102) has records of sediment types.

Steve Trewhella provided the following description of Studland Bay, based on his personal knowledge: A fringe of shorter seagrass occurs all along the edge of Studland Bay, containing a mixture of seagrass and mobile algae (including *Ulva sp.* and various red algae). The seagrass beds occur up to a metre high when you swim out into the bay (very dense), containing lots of cryptic animals. Amongst the seagrass, there are abundant snakelocks anemones (*Anemonia viridis*) that live in the sunlit canopy growing on top of the eelgrass. Additionally all six species of British pipefish breed and live in Studland Bay. *Ostrea edulis* have been found on hard substrate (and within seagrass beds), on rocky areas and old moorings within Studland Bay. Steve Trewhella has photographic records from recent dives. Individuals have also been recorded during 1995-2002 Dorset Seasearches (Steve Trewhella, *pers. comm.*).

Local knowledge and several published papers indicate that the seagrass beds in Studland Bay are an important habitat for two species of seahorse, *Hippocampus hippocampus* and *Hippocampus guttulatus*. Feedback from Dorset Wildlife Trust highlighted that there have been numerous media reports on seahorses at Studland, including several broadcast examples of moving and still images of *H. guttulatus*. Garrick-Maidment *et al.* (2010) report some 40 seahorse sightings during searches in 2008, mainly *H. guttulatus* but also *H. hippocampus*, and describe the location as the only known breeding location for both indigenous seahorse species in the UK.

The site is considered to be of international importance for the long-snouted or spiny seahorse, *H. guttulatus*, with the largest breeding population of the species in the UK (Neil Garrick-Maidment of The Seahorse Trust, and Steve Trewhella, *pers. comm.*). There have been numerous sightings of this species in Studland Bay for several years (photographs, films, sightings), and ongoing surveys have recorded approximately 300 hours of dives with this species in Studland (Steve Trewhella, *pers. comm.*). Garrick-Maidment *et al.* (2010) describe the occurrence of *H. guttulatus* in Studland Bay, including five individuals that were tagged and all re-sighted several times within the seagrass bed. Home ranges of 30–400m² were found. The three tagged males were all observed to be pregnant throughout the summer months suggesting up to five broods per year. On one occasion the courtship display was recorded.

Four individuals of *Hippocampus hippocampus* have been observed by divers on site altogether in 2007/2008. One was pregnant; one very small juvenile; undoubtedly breeding, but more elusive. They have not been seen since (Steve Trewhella, *pers. comm.*).

In 2009 The Seahorse Trust devised a project to tag seahorses *in situ* to increase our understanding of individual seahorse behaviour, fidelity of breeding pairs, pregnancy, habitat and seasonal movements. A total of five *H. guttulatus* have been tagged and re-sighted a total of 29 times during a seven month period (Garrick-Maidment *et al.* 2010).

The Shark Trust produced a report on eggcase findings of undulate ray (*Raja undulata*), part of the findings of the Great Eggcase Hunt (GEH) Project (Richardson, 2011). To date, 953 Undulate Ray eggcases have been recorded as part of the GEH project. Two areas have provided most of these records: 44.6% of eggcases were reported from Shoreham Beach (West Sussex) and 20.2% from the Studland Bay/Swanage shorelines, indicating the importance of Studland Bay as a nursery area for

this mobile FOCI. The Shark Trust has also recorded juvenile *Raja undulata* from dive sightings. They received records from anglers and divers off Old Harry and Ballard (Richardson, 2011). In 2008, Steve Trehwella found two juvenile undulates in Studland Bay, and they have been seen regularly on dives (with photographic records and diver records available, Steve Trehwella, *pers. comm.*).

The shelter and proximity to the port of Poole make it a popular anchorage (Collins *et al.* 2010). The negative impact of anchors and moorings on the sediment cohesion and infauna within Studland Bay is discussed by Collins *et al.* (in press). Concerns arise from increasing use by boats in Studland Bay causing unsustainable damage to the seagrass, leading to its eventual decline. There is concern about decline of the seagrass habitat along with its associated species (Garrick-Maidment *et al.* 2010). Mac Craith (2006) provides more extensive analyses of these seagrass studies. Bare patches in the seagrass habitat associated with boat anchoring and mooring are described by Collins *et al.* (2010). Steve Trehwella reported that shear vane stress of the seabed was measured *in situ* by SCUBA divers. When comparing the undisturbed seagrass sediment with the bare, impacted areas, the latter sediments were found to be less cohesive, contain less organic material and have a lower silt fraction, lower infaunal organism number and taxa (Steve Trehwella, *pers. comm.*).

A generic piece of feedback from members from the Dorset Local Group commented on the presence of maërl beds and *Sabellaria* within 3nm of the Dorset coastline, but neither the precise locations nor species (of *Sabellaria*) were cited (our GIS records indicate maërl beds and records of *Sabellaria spinulosa* in the area off Swanage, within the Studland to Portland draft SAC, but not within any rMCZ boundaries).

Stakeholder narrative: Assumptions and Implications

As explained in section 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.3.15f shows working assumptions and implications recorded for this site throughout the planning process. Studland Bay rMCZ was a relatively late addition to the network. There was a larger site in previous versions of the developing network configuration, covering the whole of Poole Bay. Because of socio-economic concerns raised in feedback from the Local Group, the larger site was replaced with two smaller sites - Poole Rocks rMCZ and Studland Bay rMCZ (refer to the report from the 4th Joint Working Group meeting, and the Poole Bay site write up in the third progress report for more background). 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.3.15f is based on what had previously been recorded for the precursor site (the one that covered the whole of Poole Bay). Many of the assumptions and implications highlighted for this site are generic, and will apply to other rMCZs in the network as well.

Following that, table II.3.15g 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.3.15f Specific assumptions and implications relating to Studland Bay 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 : None highlighted during VA meetings.	
Assumptions	Implications
<p>Bottom towed fishing gear will not be allowed</p> <p>Activity deemed not to be taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Loss of ground for bottom-towed gear fishermen o Financial loss to beamers and trawlers o Displacement of bottom-towed gear o SWFPO and SWIFA members disadvantaged and displaced 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 Poole Bay is dredged for oyster seed, and there is a concern about loss of adult oysters to seed (this probably does not apply to Studland Bay itself - see comment below) o Impacts on Poole Bay oyster aquaculture (currently harvested as licence condition) (this probably does not apply to Studland Bay itself - see comment below) o Influx of predatory species (Brittlestars etc) o A concern was raised that no tow zones will be inundated with pots and static gear and cause difficulties for sea angler. This comment was recorded during one of the early planning meetings. Several stakeholder representatives have since stated that the comment is unrealistic. This has also been countered by a fishing representative stating that the amount of static gear is in relation to fishing opportunities, quota etc and would not become excessive. 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. o Putting some of the above comments in perspective, several local stakeholders, including IFCA representatives, have stated that no mobile bottom gear is currently used in Studland Bay. <p>Given this assumption, there are still the following concerns:</p>

	<ul style="list-style-type: none"> o Some Local Group members were concerned about impacts on sand eel trawling and mussel spat collection, and would like these activities to continue to be permitted. However, this comment was recorded at the time when there was a single much larger area being discussed for the whole of Poole Bay, which has since been replaced with the much smaller sites in Studland Bay and Poole Rocks. Based on comments from the IFCA, there is no current bottom-towed gear activity at all in Studland Bay itself. o The seagrass beds are very sensitive to bottom towed gear; whilst this site has a low vulnerability to bottom towed gears, the seagrass beds are at a very high risk of damage from single incidents. This factor deserves further consideration when defining the management measures for this site. o Seasonal closures are an inappropriate measure for benthic conservation. o There are ongoing conflicts between static gear and mobile gear fishermen in Dorset, with many static gear fishermen supportive of measures that exclude mobile gear vessels. Some fishermen would like to see mobile gears excluded entirely within 3nm. The previous larger Poole Bay site was particularly controversial, with strong opinions on both sides within the Local Group.
<p>Aggregate extraction will not be allowed</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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 The Crown Estate and BMAPA provided feedback highlighting possible impacts on a nearby aggregate application area (Area 409). Potential for significant loss of capital asset equivalent to between £5.95M per km² of licence/option area restricted (resource valuation figures provided by The Crown Estate). Requirement for replacement resources elsewhere with significant development cost impacts and also potential production delays and operational costs if replacement is further from

	<p>market. The Crown Estate suggested a buffer zone between the aggregate area and any rMCZ to avoid plume and smothering impacts (the comment about the buffer zone was prompted by the previous site under discussion, which covered all of Poole Bay).</p>
<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There are two disposal sites in Poole Bay which were within the larger site that had previously been under consideration for Poole Bay. Stakeholder representatives had previously expressed concern over impacts on these disposal sites. Based on feedback from the Local Group, the large Poole Bay site was replaced by two smaller sites, Poole Rocks and Studland Bay, neither of which overlap the disposal areas. o Studland Bay rMCZ is remote from the Swanage Bay disposal site. Studies carried out by Poole Harbour Commissioners (EA for dredging 2005/6) do not indicate adverse effect to the proposed MCZ area. o General comment from SNCBs: a set distance is likely to be required from edge of MCZ area where this activity is likely to impact on the MCZ features.
<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Possible effects on ports and harbours (this is a general concern, not just relating to the anchoring of large vessels). o Water too shallow for anchoring of commercial vessels. Therefore no effect on port commercial operations from this restriction. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	Implications
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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.)

	<p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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
<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p><i>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.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: <ul style="list-style-type: none"> - 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. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.
<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Crab tiling / bait digging will be permitted with mitigation / management</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Beach replenishment will be permitted with mitigation / management</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Possible effects on coastal protection works (this is a general concern, relating to all shoreline rMCZs). o The following comment was made relating to the precursor of this site, which covered the whole of Poole Bay: Extensive beach re-charge current and planned approx every 2 years. Involves pumping material ashore from vessels approx 200-300m offshore through pipes. See Shoreline Management Plan This activity needs to be permitted to continue. [This comment may not relate specifically to Studland Bay itself, but to the beaches on the other side of Poole Bay.]
<p>Anchoring of small vessels on sensitive seagrass beds will need to be managed in order to prevent damage to the habitat and the associated fauna.</p> <p>The VA discussion considered several options for reducing impacts of anchoring of recreational vessels on Studland Bay's seagrass beds (see right column)</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Possible effects on ports and harbours o Conservation representatives have highlighted the impact due to anchoring in seagrass within Studland Bay, and consider that controls will be necessary to methods and numbers to protect habitat. This would result in a reduction in levels of anchoring plus movement of anchoring pressure to other sites. o Possible cost of anchoring/ moorings placement plus management. o Representatives of the recreation and boating sector have highlighted the importance of the Studland Bay area for boating, and that includes anchoring of vessels, including for safety reasons whilst waiting for suitable conditions to enter Poole Harbour. It has been pointed out that 6 – 12k vessels anchor during the season.

	<p>o Local Group sailing representatives have raised a concern about racing buoy markers and anchoring committee vessels.</p> <p>o Safety concerns have been raised if anchoring was not allowed in sheltered parts of the bay. In strong SW winds, there is no other safe anchorage nearby.</p> <p>Given this assumption, there are still the following concerns:</p> <p>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.</p> <p>o There are several comments relating to anchoring and potential eco-moorings recorded in the additional comments section for this site.</p> <p>o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.</p>
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Activities assumed to be allowed to continue / occur within the site	
Assumptions	Implications
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <p>o</p> <p>Given this assumption, there are still the following concerns:</p> <p>o Handliners might face possible additional costs for mitigation measures and costs due to monitoring needed</p> <p>Benefits:</p> <p>o Potential for increased and enhanced leisure and recreational activity</p>
<p>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.</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <p>o</p> <p>Given this assumption there are still the following concerns:</p> <p>o Cable installation cost increases and delay</p> <p>o Cable repair cost, delays and lost revenue could increase due to activity restrictions on cable repair.</p> <p>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).</p> <p>If the assumption turns out to be wrong:</p> <p>o For renewables/power cables, re-routing of cables around a feature or site might mean longer cable routes, at</p>

	<p>a cost of £600,000 - £1.3 million/km depending on cable type, size and seabed geology.</p> <ul style="list-style-type: none"> 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.
<p>Maintenance dredging in ports (to enable access to ports) will be permitted</p> <p>This was discussed during the VA meetings, and the assumption was that the activity could continue (this refers to nearby activities rather than activities in the site itself)</p>	<p>Direct implications</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Poole Harbour Commissioners has concerns that MCZ status will affect its management of the harbour, including dredging the channel and future development in the area. The Working Group took this feedback into account in re-drawing the boundary to remove the harbour authority area. [This comment related to the previous site which covered the whole of Poole Bay] o Possible effects on ports and harbours o Concerns have been raised around impacts on access to Poole Harbour, which relies on the Swash Channel being regularly dredged. [This comment related to the previous site which covered the whole of Poole Bay] o Despite the statement coming out of the VA, there remains concern that, based on stakeholders' previous experiences, the licensing process will always require that the licensee will have to prove no significant adverse effect. This may well result in additional mitigation requirements.
<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o (no heritage wrecks currently present in the site, although there are two – the Swash Channel and Studland Bay – approximately a kilometre to the east of the site boundary)
<p>Passage of ships will be permitted</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<ul style="list-style-type: none"> o

Seaweed harvesting will be permitted Activity not taking place / not taking place at high enough levels to cause a problem in this site.	Direct implications: o
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Table II.3.15g 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
Tourism & Leisure	Management (some or all of): <ul style="list-style-type: none"> - Option 1: provision of eco-moorings by visiting yachts; - Option 2: prioritisation of seagrass and seahorse monitoring research programme; - Option 3: awareness raising of seagrass areas and potential impacts of anchoring Measure: <ul style="list-style-type: none"> - Option 1: Voluntary - Option 2: Legislative - to be determined
Navigational Dredging	Management: <ul style="list-style-type: none"> - Impacts on the rMCZ conservation objectives 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: <ul style="list-style-type: none"> - 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:

- There are uncertainties regarding eco moorings, which were suggested during the VA discussions as a way of reducing anchor damage on seagrass beds in this site: Who would foot the cost of installation, management and maintenance of eco-moorings? What would they cost to use? Is it possible to get insurance cover? What type of eco-moorings would be used, would they be safe? Safety trials are currently in place, future insurance cover might be possible but currently, this is an uncertainty.

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, and others were more generic comments which the project team consider to be relevant to this site. Progress report 3 lists a lot of stakeholder comments that related to the larger Poole Bay site that had previously been under discussion. Many of those comments encapsulate the reasons why the larger Poole Bay site got removed, to be replaced by Poole Rocks rMCZ and Studland Bay rMCZ. Some of these comments are included here, but most are no longer directly relevant to the final rMCZ, so they have not been repeated.

- *Mobile FOCI*
 - Studland Bay is an undulate ray breeding area. There should be measures taken to ensure that anglers are aware both of the potential for catching undulate ray and of their legal responsibility to return these fish to the water. The following message was suggested: ‘This area is an undulate ray breeding area. In line with national legislation please ensure that these fish are returned’.
- *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 *Raja undulata* (undulate Ray), the uncertainty around netting applies.

- *Further comments on the management of anchoring on seagrass beds*
 - It was agreed that anchoring is incompatible with seagrass habitats. There is ongoing controversy regarding the seagrass beds within this site and as such, this issue requires further consideration when defining the management measures for this site.
 - RYA feedback indicates that the management options recorded by the project economist (following the VA process) seem appropriate, and tie in with local stakeholder discussions.
 - Implications of eco-moorings: cost of use (to recreational boat users), where anchoring is currently free. There may be opposition given that this cost would be new.
 - The assumption was made by the RYA rep that none of the management options would mean a blanket ban on anchoring within the whole Bay, and that the detail will be worked out under the MMO process involving local stakeholders (the MMO have been carrying out work with local stakeholders in Studland Bay, to test a process for stakeholder involvement in management discussions for MCZs).
 - Safety can always be used as a reason for anchoring. In strong SW winds, the only safe and sheltered area along that stretch of coast is Studland Bay, where the seagrass beds are. If people were completely prevented from ever anchoring there, that may lead to safety concerns. Any zoning approach would need to take account of the safe shelter areas.
 - There are old anchor chains etc on the seabed, which MMO would like to clear up as a first step.
 - Seahorse Trust and Wildlife Trusts are working on improved maps of seagrass beds, Ken Collins at SOC has worked with the Local Group and may have additional data.

- *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.3.15g (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.

Studland Bay is an area where there has been a history of conflict between different stakeholders for some time. Local conservationists have strong concerns about the high levels of recreational boat use and anchoring on sensitive seagrass beds, and the impacts that this might have on the habitat and its associated species (including breeding populations of seahorses). Conversely, there is strong concern amongst recreational users, the local parish council and local business interests over any potential restrictions on anchoring within Studland Bay, not only because the area is popular with recreational boaters, but also because the Bay is a safe, sheltered anchorage during strong south-westerly winds. This conflict existed before Finding Sanctuary, and the fundamental nature of the conflict has not changed, although the context of the discussion has changed with the area becoming an rMCZ.

The contentious nature of the area and the concerns by recreational users are one of the reasons why there is no recommended reference area in Studland Bay – the possibility of recommending a reference area there was discussed at length. (Another reason was that the Fal recommended reference area covers seagrass beds and seahorses as well as maërl beds, and was therefore deemed a more efficient alternative location in terms of its contribution to the ENG.)

Nevertheless, there was a clear recognition of the ecological importance of Studland Bay, with its seagrass beds, seahorse populations and nursery area function for undulate ray, and it was this recognition amongst a broad range of stakeholders that led to the inclusion of Studland Bay as an rMCZ in the final recommendations, despite the existing conflicts.

Permanent eco-moorings have been suggested as a way of mitigating the impacts whilst allowing the area to be used by boats, but there are some practical difficulties associated with that solution (e.g. needing someone to take on the responsibility for the installation and maintenance of the moorings and associated costs, difficulties in getting insurance cover for eco-moorings, and the possibility of opposition amongst boaters if use of the moorings was made compulsory and boaters incurred charges when anchoring has always been free).

Note that the Marine Management Organisation have been working together with local stakeholders to try and find a workable solution to the conflict around anchoring in Studland Bay. They are actively exploring options with stakeholder groups, to prepare for possible future designation and management.

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, Environment Agency intertidal habitat data, and information provided by Dorset Environmental Records Centre. 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 relevant information about Studland Bay in Garrick-Maidment (1998), Garrick-Maidment (2007), and on [The Seahorse Trust website](#)²⁵. A full reference list is in appendix 9. Further information on the Natura 2000 sites to which this site is related may be found on the JNCC's [website](#)²⁶.

Further relevant survey information may be available from a survey carried out in 1994 by ERT Ltd. This was a marine environmental survey off the Dorset coastline as part of the Oil and Gas environmental survey. 77 seabed samples in 74 sites were collated which included Studland Bay. Data is held in excel spreadsheet that is held by the Dorset Environmental Records Centre.

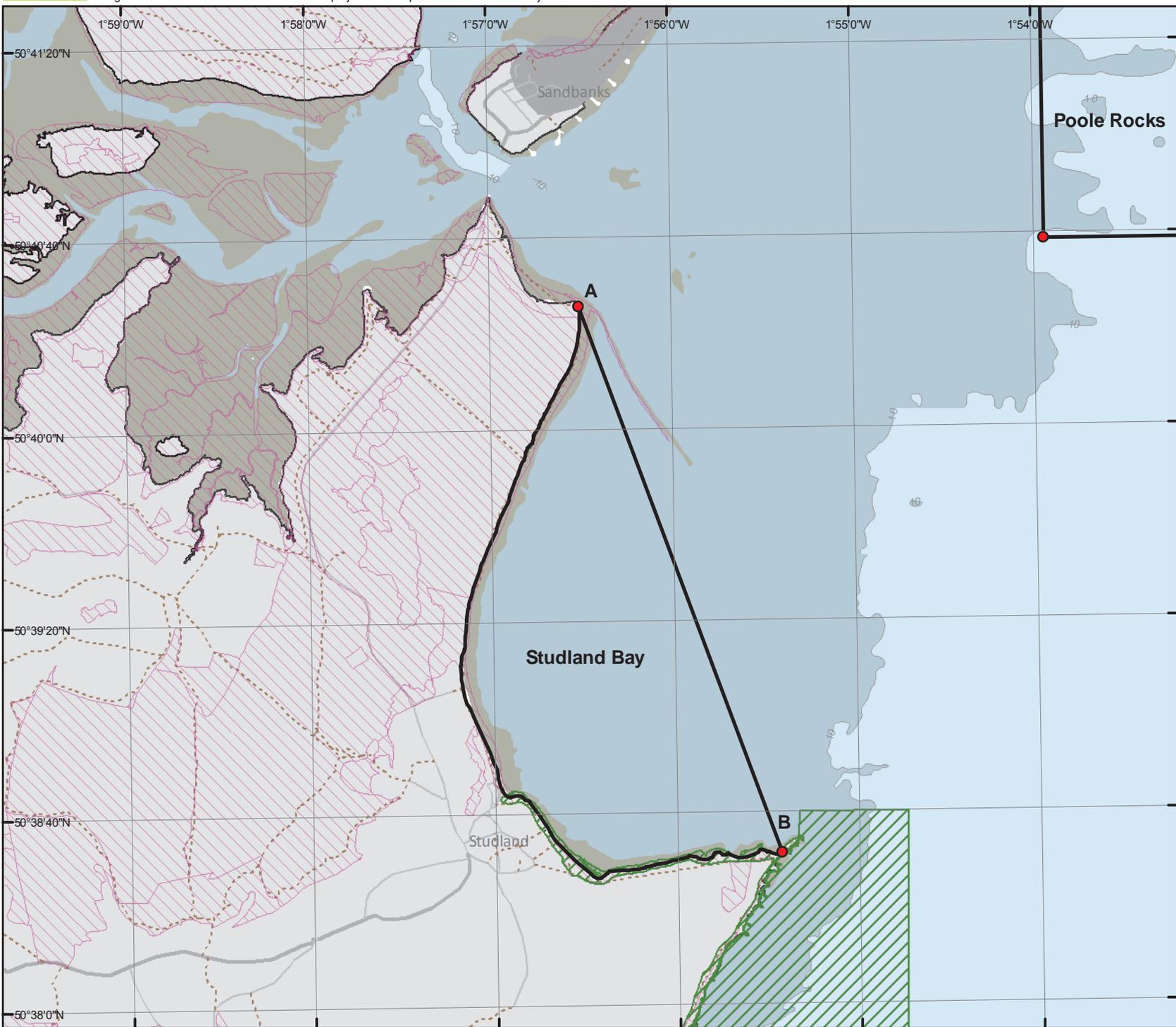
Site map series

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

- The first map (FR_024a) 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_024b) 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.3.15b to II.3.15e, data sources are indicated in the tables.
- Most rMCZ site reports contain a map showing socio-economic datasets. This one does not, as human activity for this site has been mapped in the PooleRocks rMCZ socio-economic data map (FR_022c).
- 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.

²⁵ <http://www.theseahorsetrust.org/>

²⁶ <http://jncc.defra.gov.uk/page-4>



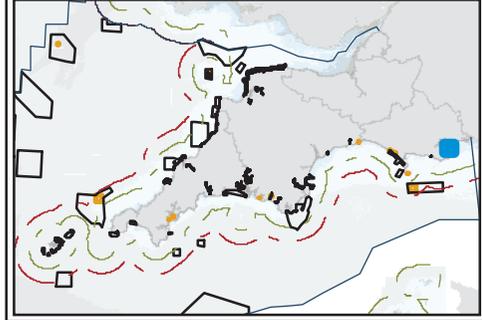
Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.6738	-1.9418	50° 40' 25" N	1° 56' 30" W
B	50.6421	-1.9238	50° 38' 31" N	1° 55' 25" W

Map Legend

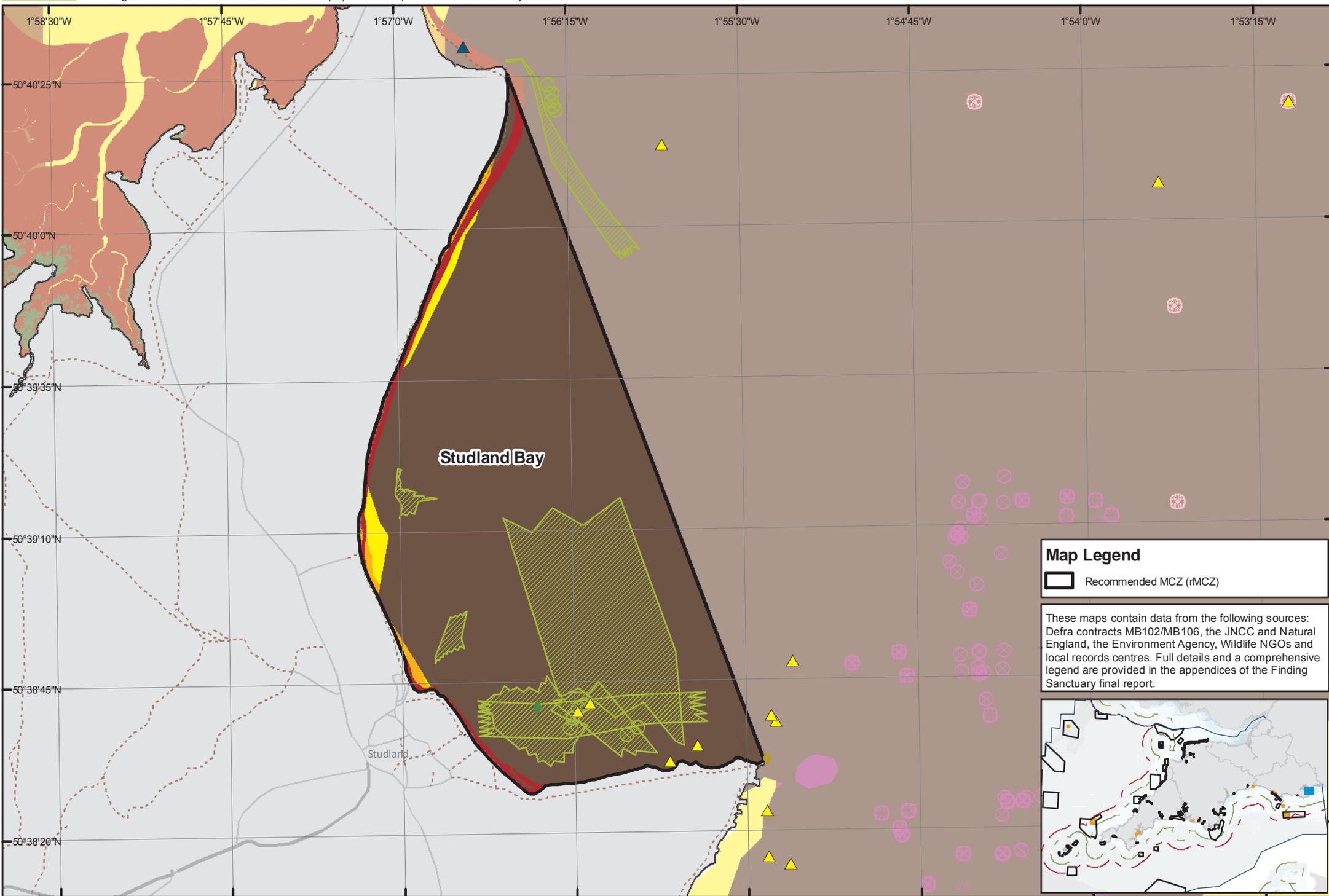
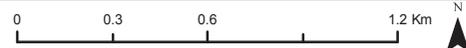
- Recommended MCZ (rMCZ)
- Existing MPAs**
- SAC
- SSSI (not part of MPA network)

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



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.

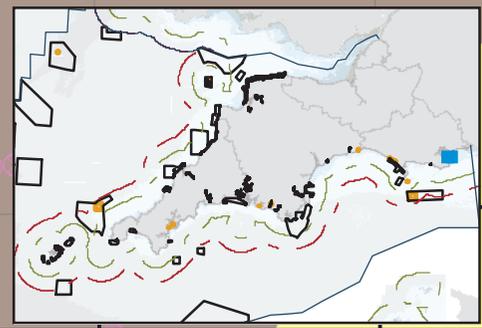
Maritime basemap © British Crown and SeaZone Solutions Limited, 2010.
All Rights Reserved. Data Licence No. 062006.004. Land basemap part
© OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation.
Contains OS data © Crown copyright 2011.



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.3.16 South Dorset rMCZ

Basic site information

Site centre location (datum used: ETRS89):

Decimal Degrees		Degrees Minutes Seconds	
Lat	Long	Lat	Long
50.3863	-2.2138	50° 23' 10" N	2° 12' 49" W

Site surface area: 192.7 km² (calculated in ETRS89-LAEA)

Biogeographic region:

JNCC regional sea: on the boundary between Eastern Channel, and Western Channel and Celtic Sea

OSPAR region: Region II: Greater North Sea

Site boundary: The site is the shape of a simple rectangle, with boundary line running N-S and E-W in line with ENG guidelines. The eastern part of the site overlaps with a round 3 wind farm licence area, but it does not overlap with the area where the Eneco wind park is currently planned. The site intersects the 12nm limit.

Sites to which the site is related: The site does not overlap with any existing protected areas. It lies approximately 4km to the west of Wight-Barfleur draft SAC, and 5km south of Studland to Portland draft SAC. The South Dorset recommended reference area lies wholly within the western portion of this 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 South Dorset rMCZ

Table II.3.16a Draft conservation objectives for South Dorset 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		R
	Moderate energy circalittoral rock		R
	Subtidal coarse sediment		M
	Subtidal mixed sediments		M
Habitat FOCI	Subtidal chalk		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.3.16b **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	30.62	2.4%	1
Moderate energy circalittoral rock	7.43	<0.1%	1
Subtidal coarse sediment	27.67	<0.1%	1
Subtidal mixed sediments	127.06	3.6%	1

Table II.3.16c **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 chalk		4		1
Subtidal sands and gravels ¹	27.95			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

This rMCZ is located approximately 17.5km south of St Alban's (St Aldhelm's) Head, to the south-east of Swanage. It straddles the 12nm limit. The rMCZ's seafloor extends from 36 to 52 metres below chart datum. It covers an area of high energy rocky and mixed sediment seafloor habitat, and includes several records of the FOCI habitat subtidal chalk. The reason for including the site in the network, despite the interest of the renewables sector in this area, was because of its contribution of the high energy rock and chalk FOCI to the network, as well as the mixed sediment broad-scale habitat. The area intersects with an area of higher than average benthic habitat diversity (as mapped by national data layers contract MB102), and the area was highlighted as an area of high conservation utility within a Marxan analysis carried out for the Inshore Working Group in the summer of 2010 (please refer to the working group meeting reports for details).

Detailed site description

A literature search was carried out on this site, but as for other for non-coastal sites in the network it has proved difficult to find information associated with this specific site.

The seabed in the region is characterised mainly by muddy, sandy gravel which may include bedrock reef (Poulton et al. 2002). Holme (1953, 1966) and Holme & Barrett (1977) surveyed the bottom fauna of the English Channel which would likely have included the area of the South Dorset site. Coggan & Diesing (2011) carried out a broad-scale mapping programme in the central Channel in order to provide information on the distribution, extent and character of potential Habitats Directive Annex I reef habitat to facilitate the selection of Special Areas of Conservation (SAC) in UK waters.

Benthic biodiversity and seabed sediments derived from cluster analysis of presence/absence data was carried out by Rees *et al.* (1999) in the general area around South Dorset rMCZ. It may be that this work overlapped the rMCZ, but further checks need to be made.

Although confirmed sightings have not been found in this area, there is anecdotal evidence to suggest this area is important as a wintering ground for seahorses (especially the Short Snouted Seahorse) which are known to go to great depths during the winter – The Sea Horse Trust have a record of 254 feet off Dartmouth, and it is not uncommon to find 60 to 70 feet records (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.3.16d shows working assumptions and implications recorded for this site throughout the planning process. South Dorset rMCZ was a relatively late addition to the network. It replaced several alternative site options that had previously been under discussion off south Dorset, within the context of two network variations based on assumptions of renewables ‘co-location’ and ‘no co-location’. The final site boundaries were drawn following feedback from the renewables sector (and, in particular, Eneco – the developers of the planned Eneco wind park to the west of the Isle of Wight), through the Joint Working Group representative for south west industry. The feedback stated a strong preference for the rMCZ to be located outside the area under immediate plans for development (the area of the Eneco wind park), but an acceptance of co-location with the portion of the round 3 wind farm licence area to the west (refer to the report from the fourth Joint Working Group meeting for more detail). The Joint Working Group tasked the project team with drawing a single, simple, rectangular shape that would encompass an area with chalk habitat records (previously in the developing network configuration as a site called ‘South of the Shambles’), and extend further east towards the round 3 licence area, capturing high energy rock and mixed sediment broad-scale habitats. This gave rise to the final site, replacing the previous complicated set of ‘co-location’ and ‘no co-location’ site options in the area (as included in progress report 3).

Because of the significant boundary alterations and site replacements in this area relatively late in the process, most of the detailed work on recording assumptions and implications for the sites within the developing network configuration had already taken place before this final version of the site was added. Therefore, some of the content of table II.3.16d is based on what had previously been recorded for the precursor sites, using the narrative within the ‘co-location’ variation of the network off South Dorset (see progress report 3).

Following that, table II.3.16e 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.3.16d Specific assumptions and implications relating to South Dorset 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
<p>Bottom-towed fishing gear will not be allowed</p> <p style="color: green;">This activity was discussed during the VA, which highlighted the option of a partial closure of the western part of the site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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 seabed habitats will remain unprotected if demersal towed gear allowed within MCZ - should be excluded (check conservation sector implication on towed gear added to all relevant sites at JWG 6)
<p>Aggregate extraction will not be allowed</p> <p style="color: green;">Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.

<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.

Assumptions	Implications
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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.) <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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
<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p>Specifically, co-location with the Eneco Wind Park windfarm development will be possible</p> <p>This was considered during the VA discussions, it was expected that the windfarm would be permitted with no additional mitigation likely to be required as a result of the MCZ.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Wind development potential on Eastern section of rMCZ (within zone 7). Eneco have agreed co-location in principle. Area outside Eneco preferred development area. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: <ul style="list-style-type: none"> - 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 restriction. o Attracting the funding (for development) may be harder

	<p>in the first place as sites with MPA designations within them will be less attractive to potential investors.</p> <ul style="list-style-type: none"> 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. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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 deep tidal stream potential.
<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Activities assumed to be allowed to continue / occur within the site	
Assumptions	Implications
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>Activity not taking place / not taking place at high enough levels to cause</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Handliners might face possible additional costs for mitigation measures and costs due to monitoring needed

<p>a problem in this site.</p>	<p>Benefits:</p> <ul style="list-style-type: none"> o Potential for increased and enhanced leisure and recreational activity
<p>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.</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption there are still the following concerns:</p> <ul style="list-style-type: none"> 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) <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.
<p>The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational)</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Tourism and recreational activities will be permitted.</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

<p>Maintenance dredging in ports (to enable access to ports) will be permitted</p> <p><i>The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.</i></p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o (there are no heritage wrecks currently present in the site)
<p>Anchoring of small vessels will be permitted</p> <p><i>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</i></p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.
<p>Passage of ships will be permitted</p> <p>Activity not taking place / not taking place at high enough levels to cause a problem in this site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Table II.3.16e 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	<p>Management:</p> <ul style="list-style-type: none"> - Prohibition of fishing over specific BSH/FOCIs in the rMCZ. These are: high energy circalittoral rock, moderate energy circalittoral rock, subtidal chalk <p>Measure:</p> <ul style="list-style-type: none"> - Option 1 – byelaw. - Option 2 – voluntary: this would be contingent on use of VMS by vessels.
Renewable Energy	<p>Management:</p> <ul style="list-style-type: none"> - Impacts on the rMCZ conservation objectives would need to be considered in any licence application for the Eneco wind park. It is expected that renewable energy installation & operation would be permitted with no additional mitigation likely to be required as a result of the rMCZ. <p>Measure:</p> <ul style="list-style-type: none"> - Marine Licence

Site 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.
 - A Steering Group member provided feedback asking whether pelagic fishing targeting mackerel would be assumed permitted in this site; on the basis of the working assumptions above, it would.

- *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.3.16e (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 representative for regional development and economy stated that co-location with renewable development areas was agreed to in order 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 wind farm developers.
- 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 had been considerable concern around the pre-cursor sites to this rMCZ, because of the round 3 windfarm licence area and renewables interest. The final rMCZ has been situated so that it does not overlap with the area of the planned Eneco wind park, which means that the site is now less controversial with renewables interests than some of the pre-cursor sites had been. The site has been put forward based on an assumption of compatibility with renewables developments, and this is important because even though it does not overlap with the Eneco wind park area, it does still overlap with the round 3 licence area, and there is some tidal resource in the area which may be exploitable in future with developing technologies.

There has been some negative feedback about this site from non-UK fishing interests (reflected in NCS comments), as the area is used by French fishermen.

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 relevant information about the site in Bastos *et al.* (2002, 2003), Donovan *et al.* (1961), Holme and Barrett (1977), Southward *et al.* (2004), and Spooner & Holme (1961). A full reference list is in appendix 9.

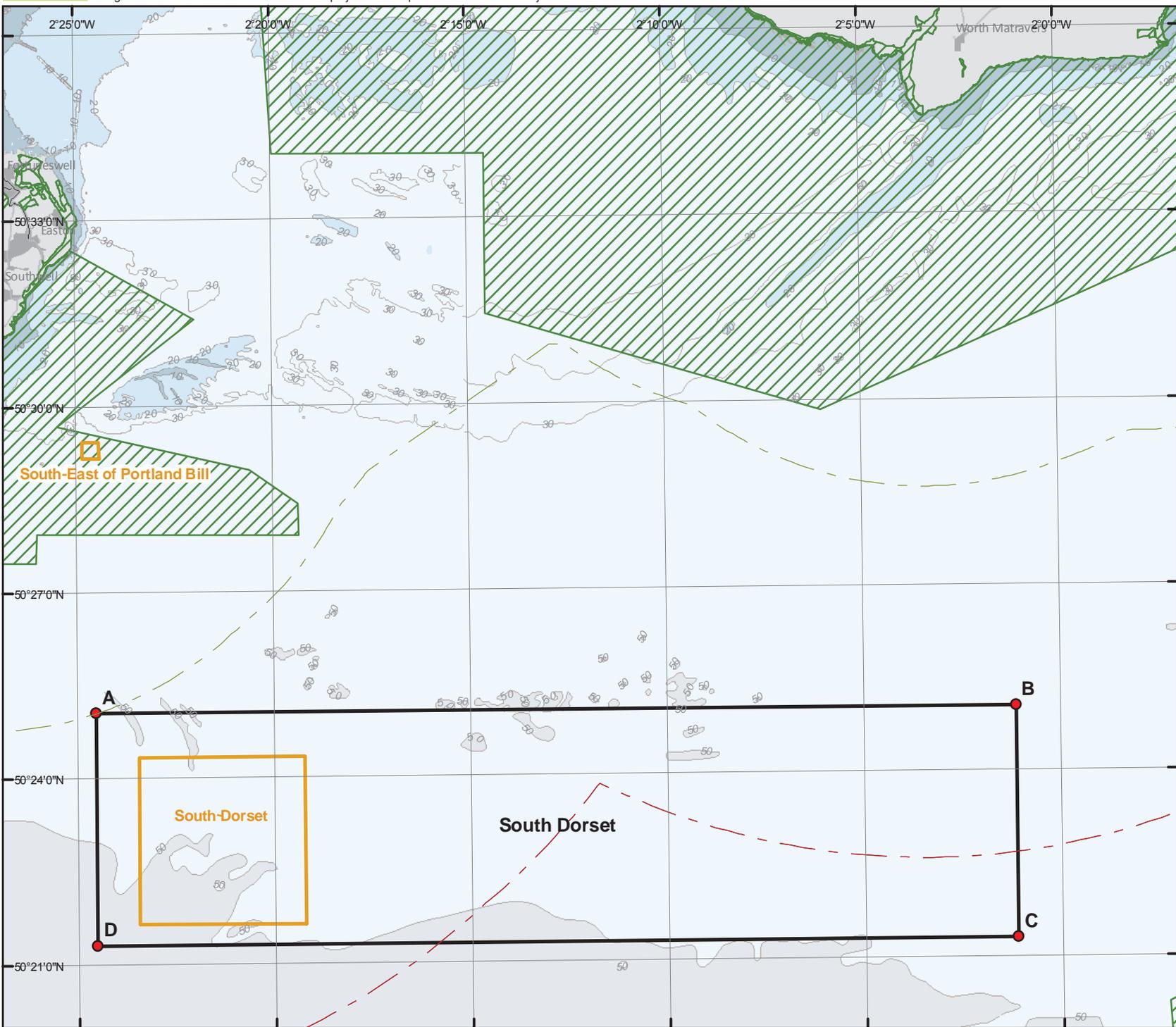
Site map series

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

- The first map (FR_027a) 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_027b) 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.3.16b and II.3.16c, data sources are indicated in the tables.
- The third map (FR_027c) 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.



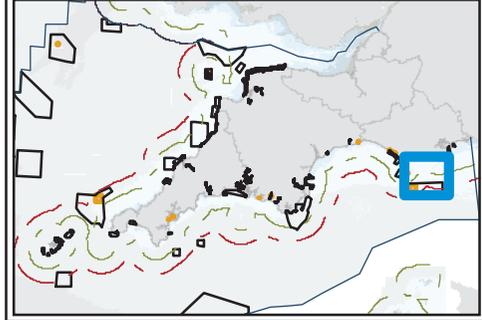
Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.4176	-2.4088	50° 25' 3" N	2° 24' 31" W
B	50.4175	-2.0188	50° 25' 2" N	2° 1' 7" W
C	50.3550	-2.0188	50° 21' 17" N	2° 1' 7" W
D	50.3551	-2.4087	50° 21' 18" N	2° 24' 31" W

Map Legend

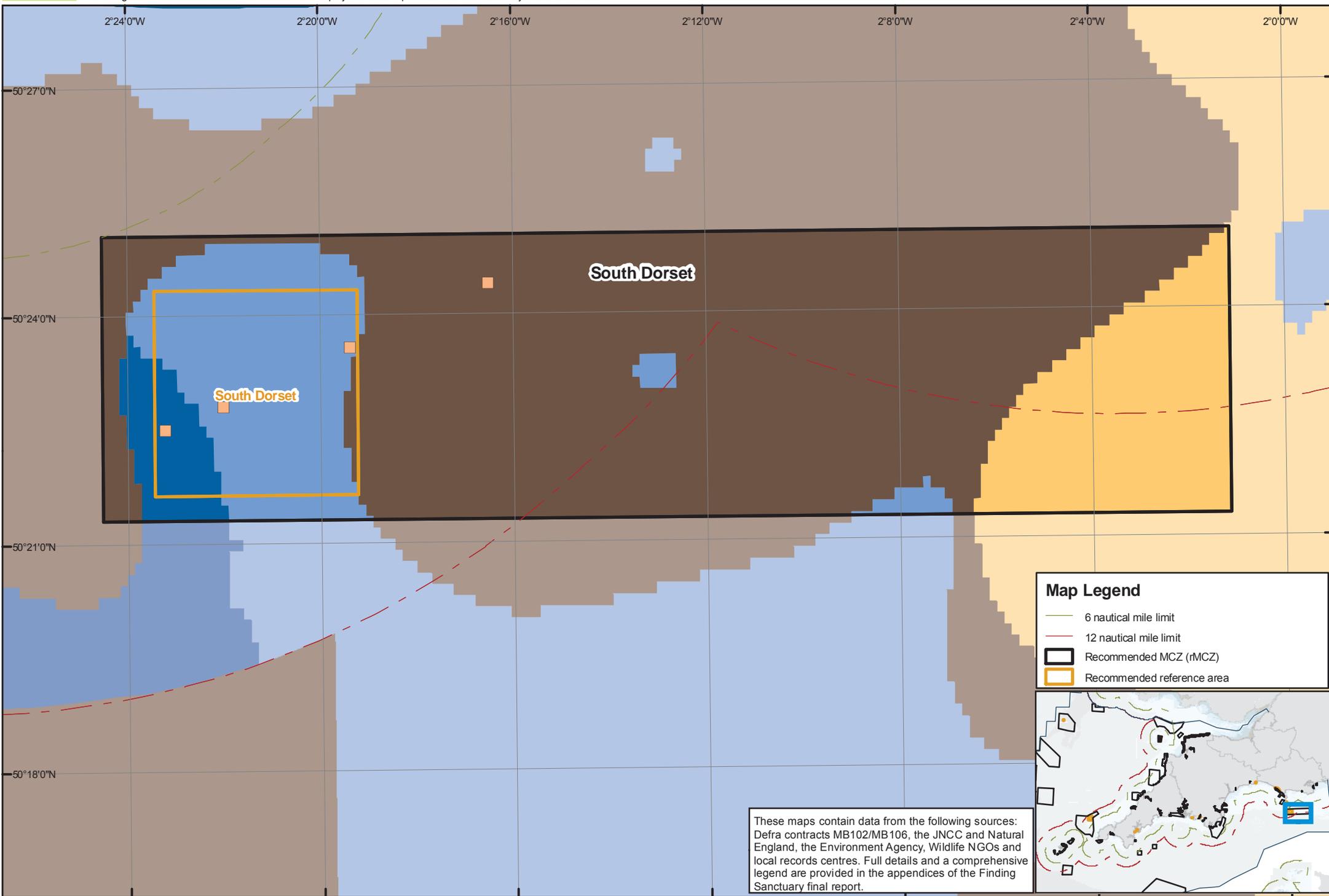
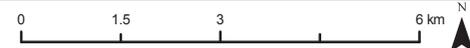
- 6 nautical mile limit
- 12 nautical mile limit
- Recommended MCZ (rMCZ)
- Recommended reference area
- Existing MPAs**
- SAC

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



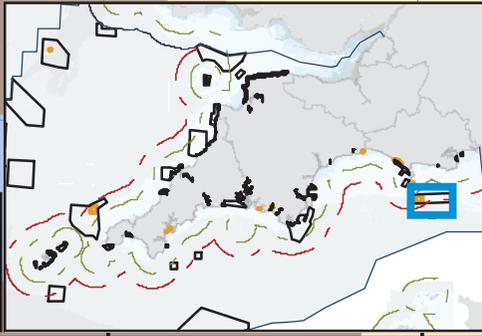
This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with biophysical information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

Maritime basemap © British Crown and SeaZone Solutions Limited, 2010.
All Rights Reserved. Data Licence No. 062006.004. Land basemap part
© OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation.
Contains OS data © Crown copyright 2011.

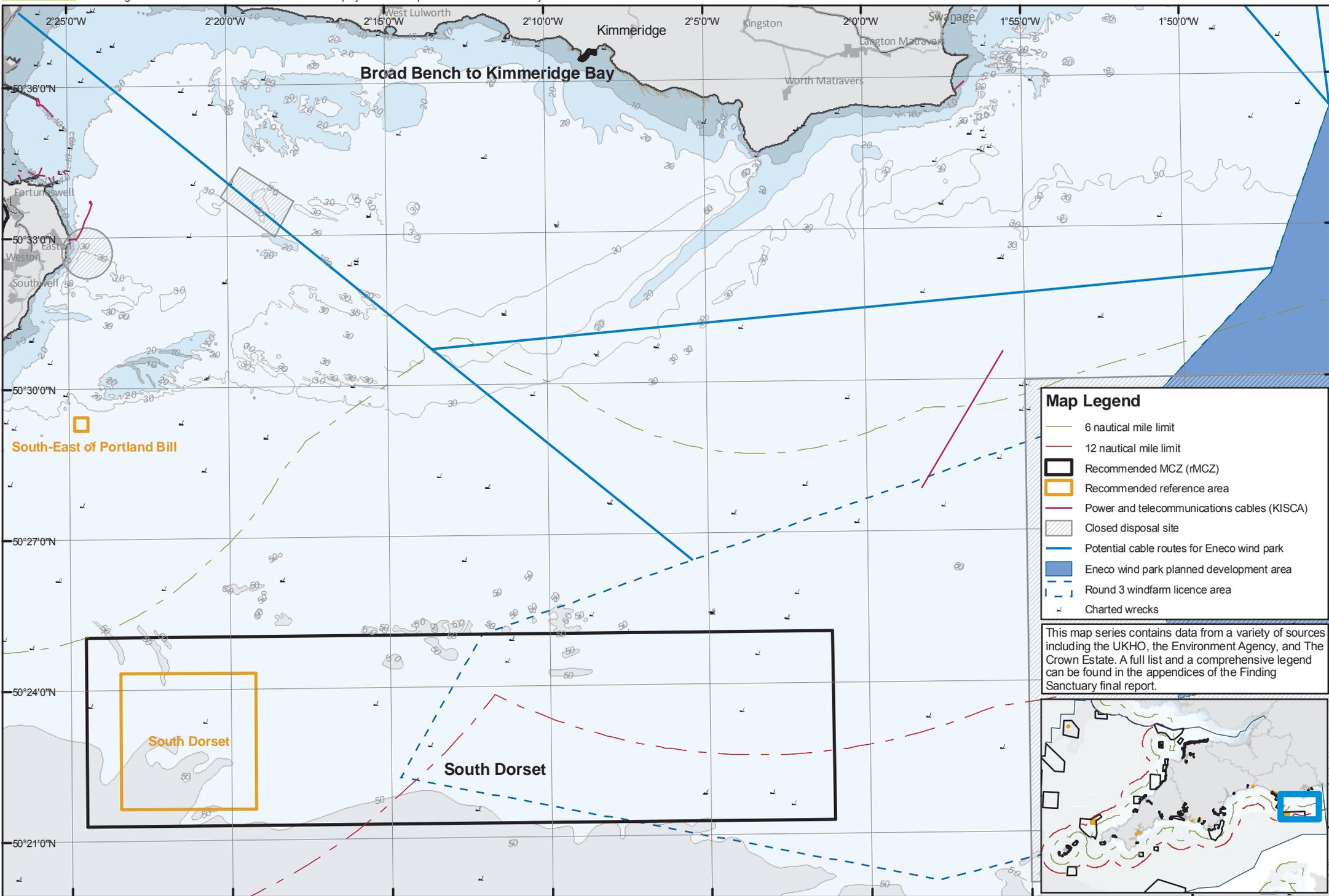


Map Legend

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



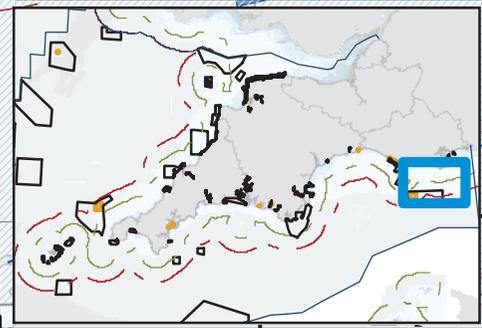
These maps contain data from the following sources: Defra contracts MB102/MB106, the JNCC and Natural England, the Environment Agency, Wildlife NGOs and local records centres. Full details and a comprehensive legend are provided in the appendices of the Finding Sanctuary final report.



Map Legend

- 6 nautical mile limit
- 12 nautical mile limit
- Recommended MCZ (rMCZ)
- Recommended reference area
- Power and telecommunications cables (KISCA)
- Closed disposal site
- Potential cable routes for Eneco wind park
- Eneco wind park planned development area
- Round 3 windfarm licence area
- 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.



II.3.17 Broad Bench to Kimmeridge Bay rMCZ

Basic site information

Site centre location (datum used: ETRS89):

Decimal Degrees		Degrees Minutes Seconds	
Lat	Long	Lat	Long
50.6093	-2.1435	50° 36' 33" N	2° 8' 36" W

Site surface area: 0.09 km² (calculated in ETRS89-LAEA)

Biogeographic region:

JNCC regional sea: Eastern Channel

OSPAR region: Region II: Greater North Sea

Site boundary: The site boundary follows the intertidal area from Broad Bench to the western end of Kimmeridge Bay. The upper limit is the high water mark (the line on our maps is Ordnance Survey Boundary Line mean high water). The lower limit is the low water mark. At the time the site polygon was drawn, we did not have a low water line within our base map datasets, so a buffer was drawn around the coastline on the maps that accompany this report. A low water line should be used in preference to mark the lower limit of the site.

Sites to which the site is related: The site lies adjacent to the Studland to Portland dSAC (above the high water mark). It also lies completely within the Purbeck Voluntary Marine Conservation Area. The site lies within the Portland to Studland Cliffs coastal SAC, and the South Dorset SSSI.

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 Broad Bench to Kimmeridge Bay rMCZ

Table II.3.17a Draft conservation objectives for Broad Bench to Kimmeridge 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	Intertidal coarse sediment		M
	Moderate energy intertidal rock		M
Species FOCI	<i>Padina pavonica</i>	Peacock's tail seaweed	M
	<i>Paludinella littorina</i>	Sea snail	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 area mapped on the site maps for this rMCZ includes some subtidal areas, as we did not have a GIS low water line available at the time we mapped the site boundaries. However, in the figures presented in the tables below, we have only included intertidal habitats.

Table II.3.17b **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)
Moderate energy intertidal rock	0.03	0.6%	4
Intertidal coarse sediments	<0.01	<0.1%	4, 3

Table II.3.17c **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 Trehwella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Padina pavonica</i>	1	1	1
<i>Paludinella littorina</i>	1		6
<i>Phymatolithon calcareum</i> ¹	1	1	2

¹ 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 0.02 km² 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 is intertidal, characterised by rocky ledges. The strata are all sedimentary in origin. The geology of the coastline is probably its most outstanding feature and the underlying reason for the diversity of habitats and features which are found here. This area represents the eastern limit along the Channel of a number of species which have a south-western (Lusitanian) distribution (Copley, 1997). The site is entirely intertidal, and is located along the western side of Kimmeridge Bay. There is a small oil field at Kimmeridge, with small-scale drilling (carried out by BP) taking place above the shoreline of this rMCZ.

Detailed site description

Kimmeridge is already a Site of Special Scientific Importance (SSSI) and a part of the Dorset Heritage Coast and Purbeck Voluntary Marine Wildlife Reserve (Collins & Mallinson, 1989; 1990; Brachi *et al.*, 1978a). The reserve attracts many visitors and an underwater nature trail illustrates the main habitats and communities present (Collins & Mallinson 1989). Dorset County Council sponsored a study of the nearshore sublittoral communities of the Purbeck Coast from Studland Bay to Ringstead (Dixon *et al.* 1978a; Dixon *et al.* 1978b). The results of these surveys were summarised by Roberts *et*

al. (1986) who describe ten associations, their composition largely determined by substratum and depth below chart datum.

The tidal range is small with a maximum spring tide range of only 2m. On springs at Kimmeridge, a 3 hour stand at low water occurs at mid-day – exposing the shore to high desiccation and light levels and extreme temperatures. This encourages algal diversity and presence of species with a normally southern or even Mediterranean range. Key species include the Black-faced blenny (*Trypterygion atlanticus*), Cranch's spider crab (*Achaeus cranchi*), *Aeolidiella alderi*, *Phallusia mammilata* (in deeper water), and the unusual alga *Cystoseira tamariscifolia* (which is on the edge of its range at Kimmeridge). Much of the shallow sublittoral rock has a kelp fringe with associated red alga and invertebrates down to about 12m. Where bedrock is subject to scour, this is replaced by sea oak (podweed). Below these kelp zones, is a zone dominated by red algae down to approximately 20m. Beyond this the seabed is dominated by sponges, bryozoans such as ross coral (here at its eastern limit), horn wrack and hydroids. Associated with these major divisions are smaller-scale habitat variations which increase the diversity of the open coast areas. Vertical bedrock faces have a rich encrusting layer of animals such as colourful sponges, dead-man's fingers, cup corals and anemones. Wrasse and gobies abound and the tompot blenny. Much of the softer bedrock is bored by piddocks, leaving the characteristically riddled appearance. Shallow water kelp forests harbour a number of rare seaweeds such as the red seaweed *Gracilaria bursa-pastoris* and the brown seaweeds *Zanardinia prototypus* and *Padina pavonica*. Amongst the seaweeds, are anemones such as the trumpet anemone *Aiptasia mutabilis* and sea slugs such as *Trapania maculata* and *T. pallida*. Several unusual fish are found at Kimmeridge such as Montagu's blenny, the Connemara clingfish, the Cornish sucker and the rarely recorded black faced blenny occurring on rocky ledges (Copley, 1997). Local Group feedback mentions bream nests in the area.

Pinn & Rodgers (2005) compared sites in terms of accessibility by visitors to intertidal biodiversity on rocky ledges within Kimmeridge Bay (Washing Ledge and Yellow Ledge). Spot dives and drift dives were undertaken between Broad Bench and Kimmeridge Bay between 1976 and 1977 during the first Dorset Underwater Survey. Brachi *et al.* (1978a) reported sand overlying bedrock with a shallow *Halidrys siliquosa* association. Dense beds of brittlestars (*Ophiothrix fragilis*) were discovered in 1975 in water depths of 10-20m off Broad Bench, Kimmeridge, Dorset, within the Purbeck Marine Wildlife Reserve. Collins (2004) conducted surveys of brittlestars by tracking drift dives in 2001-2003. The author mapped extensive brittlestar (*Ophiothrix fragilis*) beds on the rock platforms forming the seaward extension of Broad Bench, off Kimmeridge. Further surveys were made in 2004 plus an extensive hydrographic survey of the brittlestar bed region (Collins, 2004). The brittlestars were found to be associated with the upper slopes of reef ridges but absent from the summit and troughs (Collins & Baldock, 2007).

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.3.17d shows working assumptions and implications recorded for this site throughout the planning process. Broad Bench to Kimmeridge rMCZ was a relatively late addition to the network (it was put in place following feedback from Dorset Wildlife Trust, who suggested the intertidal area of much of Dorset’s coastline for protection). 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.3.17d is based on what had previously been recorded for other sites in the network. As almost all the other sites in the network cover subtidal areas, a lot of the generic statements relate to activities that do not take place in intertidal areas. These have largely not been included here, although some comments e.g. about renewables and cables have been left in - these activities could conceivably impact on intertidal areas. Some of the more generic implications are also based on what stakeholders previously highlighted for other sites.

Following that, table II.3.17e 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.3.17d Specific assumptions and implications relating to Broad Bench to Kimmeridge Bay 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
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.

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	Implications
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p> <p>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.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p><i>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.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: <ul style="list-style-type: none"> - 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. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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 Wind resource potential but landscape buffer requirements making deployment less likely.

<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Crab tiling / bait digging will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o (not likely to be an issue in this site, as the intertidal area is rocky) o Possible impacts of casual collection of seafood. Will need to review management and implications if access to Lulworth Ranges becomes more open
<p>Beach replenishment will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Activities assumed to be allowed to continue / occur within the site	
Assumptions	Implications
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed <p>Benefits:</p> <ul style="list-style-type: none"> o Potential for increased and enhanced leisure and recreational activity
<p>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.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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)
<p>The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Tourism and recreational activities will be permitted.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

<p>Anchoring of small vessels will be permitted</p> <p><i>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</i></p> <p>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</p>	<p>Direct implications:</p> <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.
<p>Passage of ships will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Seaweed harvesting will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Table II.3.17e 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 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

Site 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.

- *Site boundary*
 - The JWG proposed the rMCZ would follow the boundary of the VMCA, as the VMCA contains the FOZI *Padina pavonica*, covers intertidal habitats and minimised socio-economic impacts. Subsequent feedback from recreational stakeholders reduced the size of the site, due to concerns over access for recreational activities such as windsurfing off Kimmeridge.
 - A representative of Dorset Wildlife Trust commented that there are some inconsistencies here as to just where the proposed site covers. It doesn't include Kimmeridge Bay, which the title implies. Broad Bench should be classed as high energy intertidal rock (not moderate energy). A recent dedicated search between Chapmans Pool and Brandy Bay found *Padina pavonica* at Chapmans Pool, Yellow Ledge, Washing Ledge and two pools on the eastern edge of Charnel. One of these pools is just inside the boundary as drawn (40m from the eastern boundary). The other pool is just outside. There were no other examples found inside the boundary.
- *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.3.17e (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 rMCZ is very small in comparison to the original suggestion it derived from, which was a suggestion by Dorset Wildlife Trust (through the Local Group) to include the entire intertidal strip along the edge of the Studland to Portland draft SAC. This suggestion was based on the fact that the dSAC boundary does not include the intertidal area. There is support for the protection of the rMCZ from the conservation sector, and there is a VMCA present in Kimmeridge already. However, the support would be better if the site was larger, and some misgivings have been voiced over how small the site is. Some feedback from the Dorset Wildlife Trust has indicated that the best location for *Padina pavonica* lies to the west of the rMCZ boundary (although the GIS record we have for the species falls within the site).

Kimmeridge parish council wrote a letter of concern around the potential impacts of the site on coastal recreational and commercial activities – in part, this concern is likely to be a result of the uncertainties over management.

Supporting documentation

GIS data used for reporting the quantitative habitat and species figures in the tables above includes the following sources: MB102, Environment Agency intertidal habitat data, and information provided by Dorset Wildlife Trust (including Steve Trehwella dive log information from 2010). 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 relevant information about this site in Brachi *et al.* (1978b), Collins & Baldcock (2007), DERC (1997), Light & Killeen (1998, 2001), Sanderson (1996) and Southward *et al.* (1995).

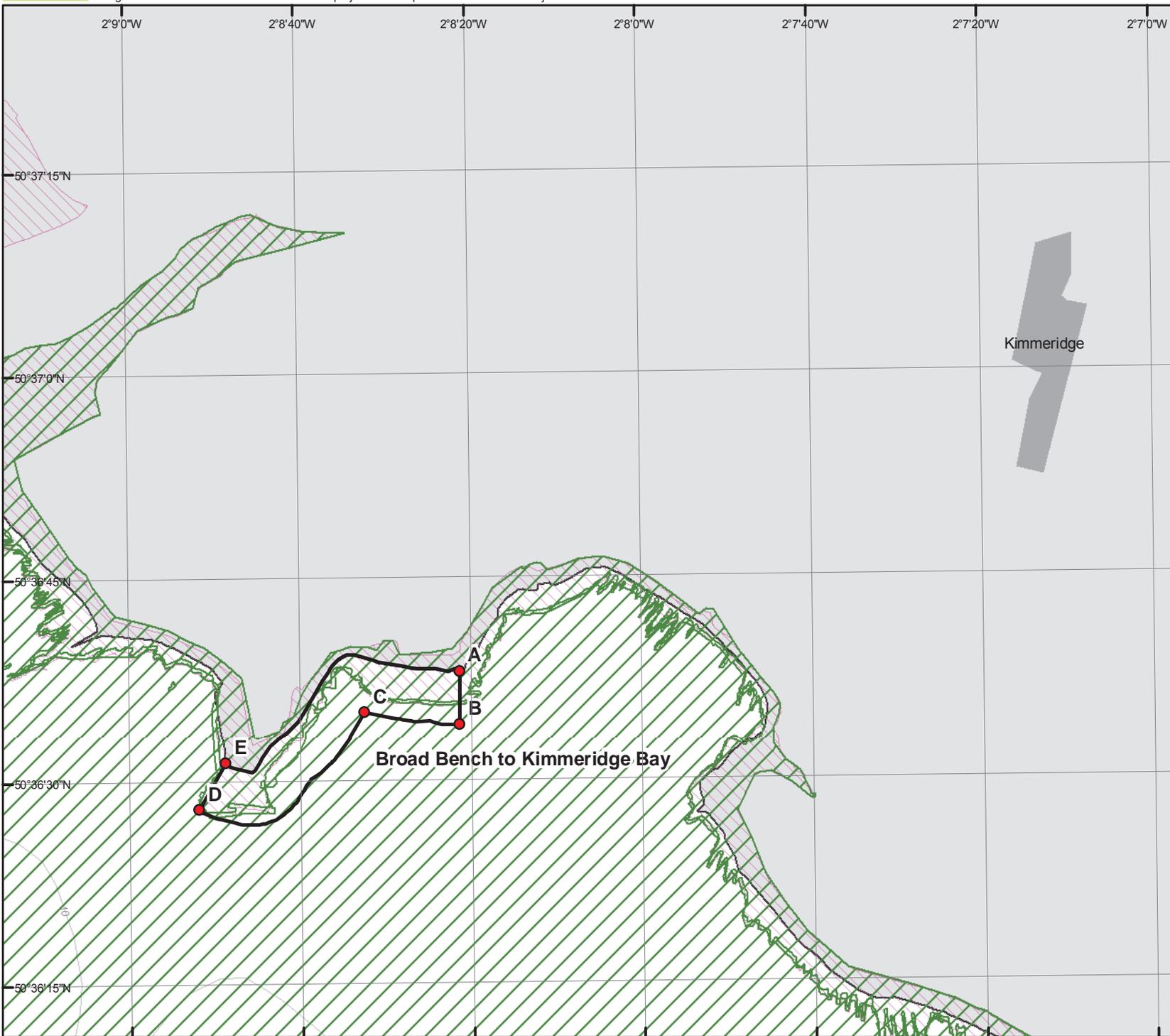
Dorset Wildlife Trust has a lot of local knowledge about the site, which lies within a voluntary marine conservation zone, including knowledge of some of the FOCI listed for the site (see comments above). Further information on the Natura 2000 sites to which this site is related may be found on the JNCC's [website](http://jncc.defra.gov.uk)²⁷.

²⁷ <http://jncc.defra.gov.uk/page-4>

Site map series

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

- The first map (FR_025a) 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_025b) 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.3.17b and II.3.17c, 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.



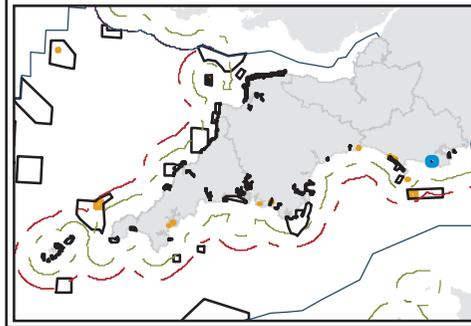
Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.6105	-2.1393	50° 36' 37" N	2° 8' 21" W
B	50.6095	-2.1393	50° 36' 34" N	2° 8' 21" W
C	50.6097	-2.1424	50° 36' 35" N	2° 8' 32" W
D	50.6078	-2.1478	50° 36' 27" N	2° 8' 52" W
E	50.6087	-2.1469	50° 36' 31" N	2° 8' 48" W

Map Legend

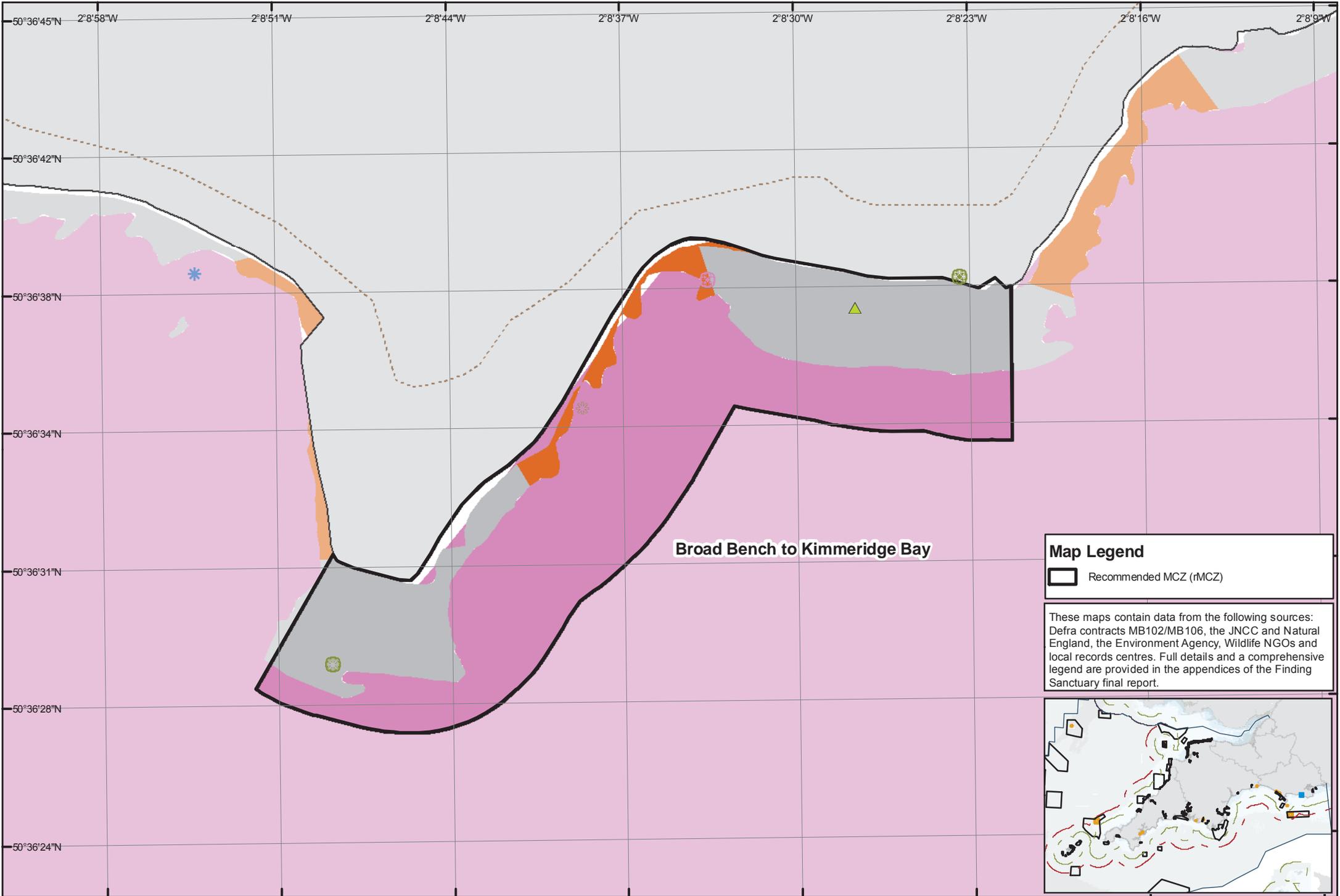
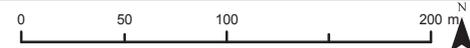
- Recommended MCZ (rMCZ)
- Existing MPAs**
- SAC
- SSSI (not part of MPA network)

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



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.

Maritime basemap © British Crown and SeaZone Solutions Limited, 2010.
All Rights Reserved. Data Licence No. 062006.004. Land basemap part
© OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation.
Contains OS data © Crown copyright 2011.

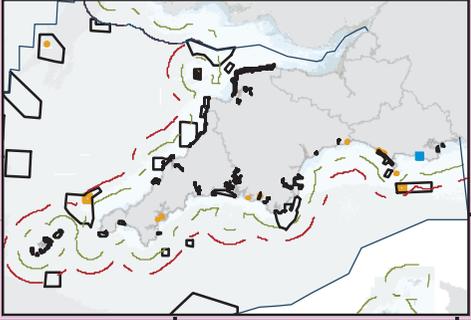


Broad Bench to Kimmeridge Bay

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.3.18 South of Portland rMCZ

Basic site information

Site centre location (datum used: ETRS89):

Decimal Degrees		Degrees Minutes Seconds	
Lat	Long	Lat	Long
50.4896	-2.4989	50° 29' 22" N	2° 29' 55" W

Site surface area: 17.5 km² (calculated in ETRS89-LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea

OSPAR region: Region II: Greater North Sea

Site boundary: The site is a simple parallelogram designed to capture broad scale habitats in the area of the Portland Deep.

Sites to which the site is related: The site partially overlaps with the Studland to Portland draft SAC.

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 South of Portland rMCZ

Table II.3.18a Draft conservation objectives for South Dorset 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
	Subtidal mixed sediments		M
	Subtidal sand		M
Geological / geomorphological feature of importance	Portland Deep		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).

Table II.3.18b **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	1.54	0.1%	1
Moderate energy circalittoral rock	7.63	<0.1%	1
Subtidal coarse sediment	2.50	<0.1%	1
Subtidal sand	0.85	<0.1%	1
Subtidal mixed sediments	3.00	<0.1%	1
High energy infralittoral rock ¹	0.09	<0.1%	1
High energy circalittoral rock ¹	1.30	0.1%	1
Moderate energy circalittoral rock ¹	0.58	<0.1%	1

¹ Features/areas that are protected in the Studland to Portland draft SAC.

Table II.3.18c **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)
Blue Mussel beds ¹	0.67			4
Subtidal sands and gravels ²	0.83			1

¹ Features / areas that are protected in the Studland to Portland draft SAC.

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.

This rMCZ intersects with an ENG-listed geological / geomorphological feature of importance, the Portland Deep. It covers 55% of the feature (8.72 km²), as mapped in the data layers from MB102.

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

This rMCZ is located just less than half a kilometre to the south-west of Portland Bill, extending out for about 6km, with a width of approximately 3km. The rMCZ is in the 30 to 60 metre depth range. The site encompasses most of the ENG-listed geological / geomorphological feature of importance, the Portland Deep. This is a depression in the seabed off the south-west of Portland Bill, and the area is characterised by strong tidal streams (the Portland Race). The north-western corner of the site includes an area of coarse and sandy sediment ripples on the seabed. The southern and western side of Portland has been mapped as an area of higher than average benthic species diversity (within national data layers from contract MB102). The site is included in the recommendations in order to protect the unique area of seabed within the Portland Deep, as well as to contribute to the ENG targets for the network as a whole.

Detailed site description

A literature search was carried out on this site, but as for other for non-coastal sites in the network it has proved difficult to find information associated with this specific site.

The morphology and internal structure of sand shoals and sandbanks around the coastal headland of Portland Bill are described on the basis of sidescan sonar and high-resolution seismic data sets by Bastos *et al.* (2003). Morphological and architectural evidence, combined with the spatial distribution and nature of the bedrock surface is described. Poulton *et al.* (2002, in Jones *et al.*, 2004) describe the seabed sediments south of Portland, however there is question over whether their surveys overlap with the site boundaries of this rMCZ. Coggan & Diesing (2011) carried out a broad-scale mapping programme in the central Channel in order to provide information on the distribution, extent and character of potential Habitats Directive Annex I reef habitat to facilitate the selection of Special Areas of Conservation (SAC) in UK waters. SEA 8 (2006) conducted a comprehensive acoustic and ecological survey of three sites in and around Portland. Data is held on CD-Rom and comprises an electronic report, survey photographs and GIS data files.

There have been several sightings of both the Spiny (*Hippocampus guttulatus*) and Short Snouted seahorses (*Hippocampus hippocampus*) in this region (including North Portland, Weymouth Bay and The Fleet). At one stage Weymouth Bay was fished for seahorse for the aquarium trade (Neil Garrick-Maidment of The Seahorse Trust, *pers. comm.*).

Local Group feedback indicates that this area is important for seabirds and cetaceans, but these are not currently part of the draft conservation objectives for this site. Local Group feedback also mentions bream nests in the area. A more generic piece of feedback from members from the Dorset Local Group commented on the presence of maërl beds and *Sabellaria* within 3nm of the Dorset coastline, but neither the precise locations nor species (of *Sabellaria*) were cited (our GIS records indicate maërl beds and records of *Sabellaria spinulosa* in the area off Swanage, within the Studland to Portland draft SAC, but not within any rMCZ boundaries).

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.3.18d shows more specific working assumptions and implications that were recorded for this site over the course of the planning process.

Following that, table II.3.18e 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.3.18d Specific assumptions and implications relating to South of Portland 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
<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
<p>Bottom-towed fishing gear will not be allowed</p> <p>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. It is uncertain whether the activity would be allowed in the site in the future, depending on the intensity it could cause impacts on seafloor features that would prevent the achievement of conservation objectives.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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.
<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	Implications
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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

<p>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</p>	<p>the comment is unrealistic.) Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Whilst some Local group feedback states that the area is important for static gear fishermen, including potters and netters, other Local Group feedback indicates that the Portland Race (strong tidal race off Portland Bill) naturally restricts a lot of fishing activity that can take place in the area. 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
<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p><i>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.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> - 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. o This rMCZ site contains a very specific sea floor habitat not found elsewhere in the Finding Sanctuary Area, and the Crown Estate is concerned that an MCZ will deter tidal development. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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 Potential tidal resource off Portland Bill.

<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Crab tiling / bait digging will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Beach replenishment will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Activities assumed to be allowed to continue / occur within the site	
Assumptions	Implications
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Local Group feedback indicates that this area is used by commercial rod and line bass fishermen, who use the area sustainably. o Local Group feedback indicates that the Portland Race

	<p>(strong tidal race off Portland Bill) naturally restricts a lot of fishing activity that can take place in the area.</p> <ul style="list-style-type: none"> o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed <p>Benefits:</p> <ul style="list-style-type: none"> o Potential for increased and enhanced leisure and recreational activity
<p>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.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption there are still the following concerns:</p> <ul style="list-style-type: none"> 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). <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.
<p>The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

<p>Tourism and recreational activities will be permitted.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Maintenance dredging in ports (to enable access to ports) will be permitted</p> <p><i>The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o (no heritage wrecks currently present in the site)
<p>Anchoring of small vessels will be permitted</p> <p><i>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.
<p>Passage of ships will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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
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Table II.3.18e 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).

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*
 - o Seasonal closures are an inappropriate measure for benthic conservation.
- *Generic implications for ports (applicable to all rMCZs where port jurisdictions and activities overlap with the site, or are adjacent to the site)*
 - o Harbour Revision Orders, General Directions, Pilotage Directions etc.
 - o Ports and harbours are limited to their jurisdiction.
 - o 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 of 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.3.18e (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 sites, there is limited contentiousness around this rMCZ. This is largely due to the tidal races present in the site, which mean that activities there can be hazardous, so there is limited fishing and recreational activity there. The exception is the renewables sector, who have voiced some concern over the site being an rMCZ precisely because of the strong tidal streams present so close to the shoreline, which makes the area of high interest to potential future tidal energy exploitation. The site was included in the recommendations on the assumption that future renewable energy installations would be permitted within the site.

Natural England (on the Local Group) stated that they were supportive of this site. The Crown Estate provided feedback to state that they would be supportive of the site based on the assumption that coastal protection works and waste water outfalls would not be affected. The building block that this site derived from was the preferred option in the area by commercial fishing representatives. There was a recognition amongst a wide range of stakeholders that this site is unique, because of the geomorphological interest feature present (the Portland Deep), and because the strong tidal streams are likely to result in unique seabed biota.

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 data from the DORIS survey. 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 site overlaps with the area which was surveyed as part of the DORIS survey, a collaborative effort between Dorset Wildlife Trust, the Maritime and Coastguard Agency (MCA), the Channel Coastal Observatory (CCO) and the National Oceanographic Centre, Southampton (NOCS), funded by Viridor Credits ([here is a weblink to further information](#)²⁸). The DORIS project provided us with detailed bathymetry data, shown on one of the site maps at the end of this report, as well as with FOCI records (see appendix 8).

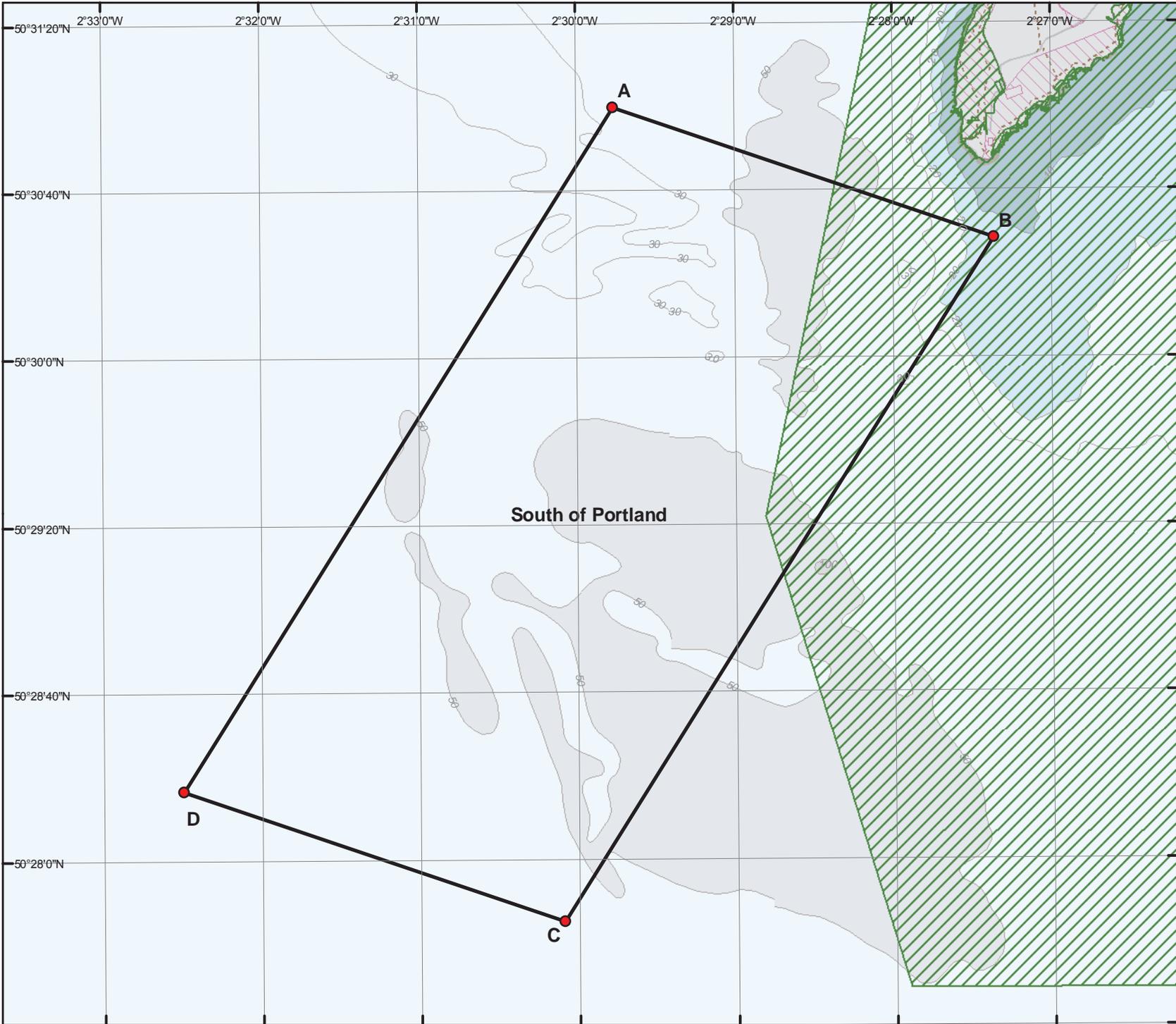
The site also overlaps with the revised boundary of the Studland to Portland draft SAC, and Natural England may have additional information of relevance to this site in the site selection assessment document for this draft SAC (the public consultation on this draft SAC was due to start around the time that this report was being finalised).

²⁸ <http://www.dorsetwildlifetrust.org.uk/page283.html>

Site map series

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

- The first map (FR_028a) 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_028b) 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.3.18b, data sources are indicated in the table.
- The third map (FR_028c) shows detailed bathymetry data from the DORIS survey.
- The fourth map (FR_028d) 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.



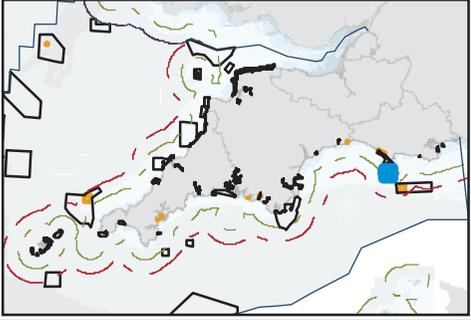
Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.5167	-2.4961	50° 31' 0" N	2° 29' 46" W
B	50.5079	-2.4561	50° 30' 28" N	2° 27' 22" W
C	50.4625	-2.5016	50° 27' 44" N	2° 30' 5" W
D	50.4712	-2.5416	50° 28' 16" N	2° 32' 29" W

Map Legend

- Recommended MCZ (rMCZ)
- Existing MPAs**
- SAC
- SSSI (not part of MPA network)

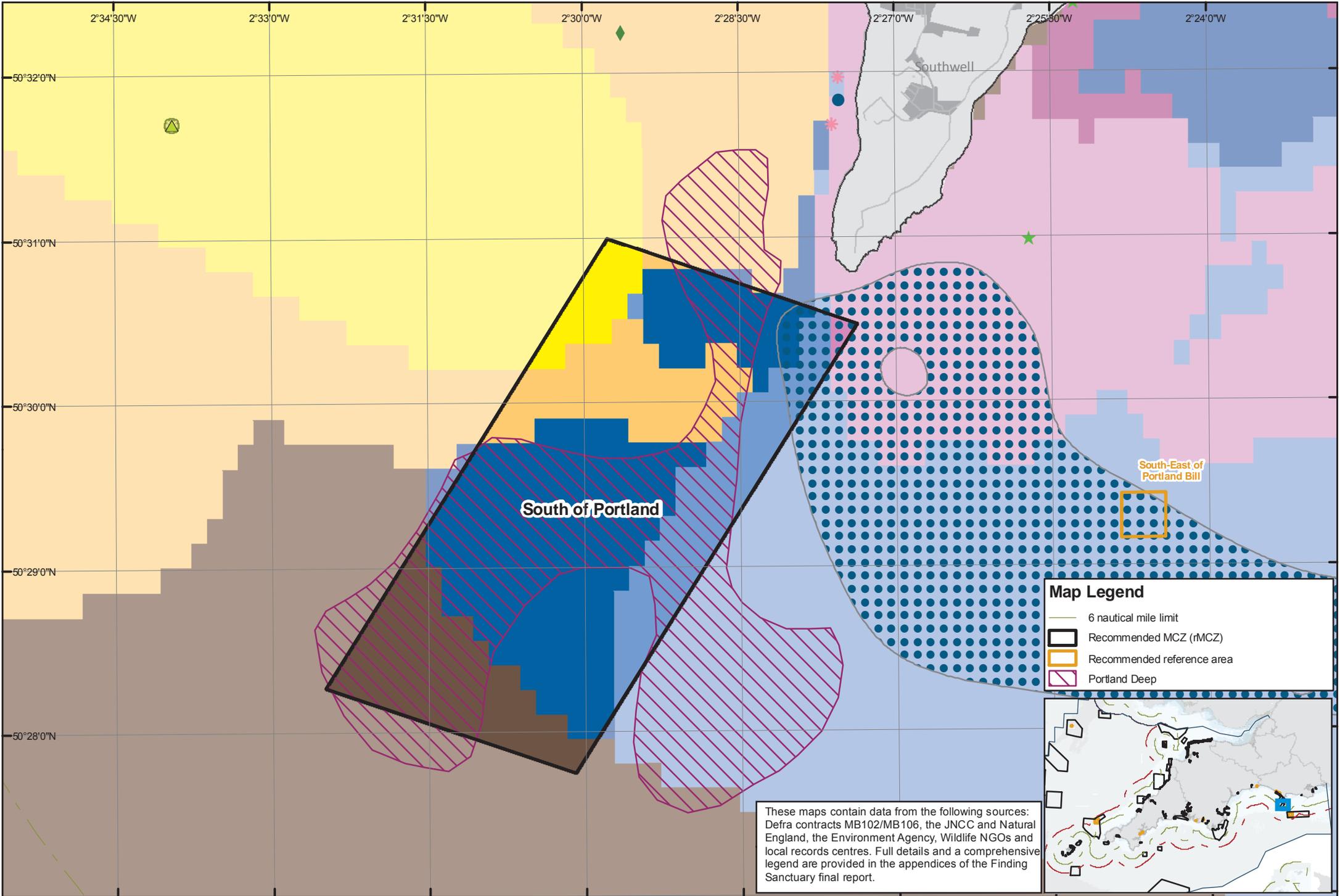
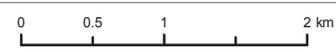
A comprehensive legend is provided in the appendices of the Finding Sanctuary final report.



South of Portland 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.

Maritime basemap © British Crown and SeaZone Solutions Limited, 2010.
All Rights Reserved. Data Licence No. 062006.004. Land basemap part
© OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation.
Contains OS data © Crown copyright 2011.



Map Legend

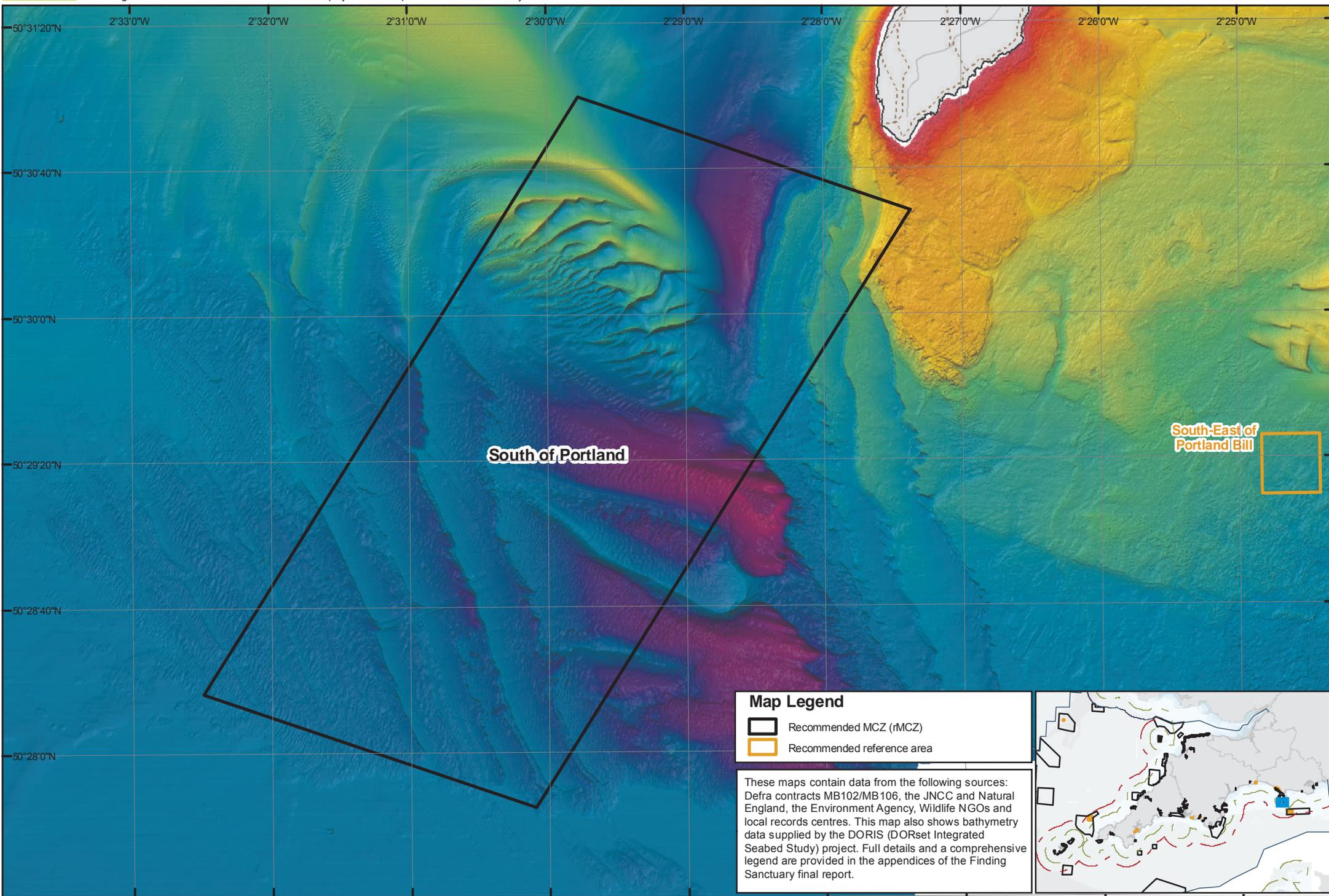
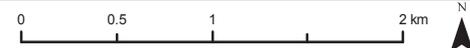
- 6 nautical mile limit
- Recommended MCZ (rMCZ)
- Recommended reference area
- Portland Deep

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.



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.

Maritime basemap © British Crown and SeaZone Solutions Limited, 2010. All Rights Reserved. Data Licence No. 062005.004. Land basemap part © OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation. Contains OS data © Crown copyright 2011.



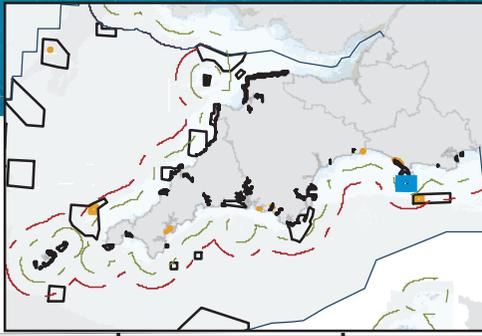
South of Portland

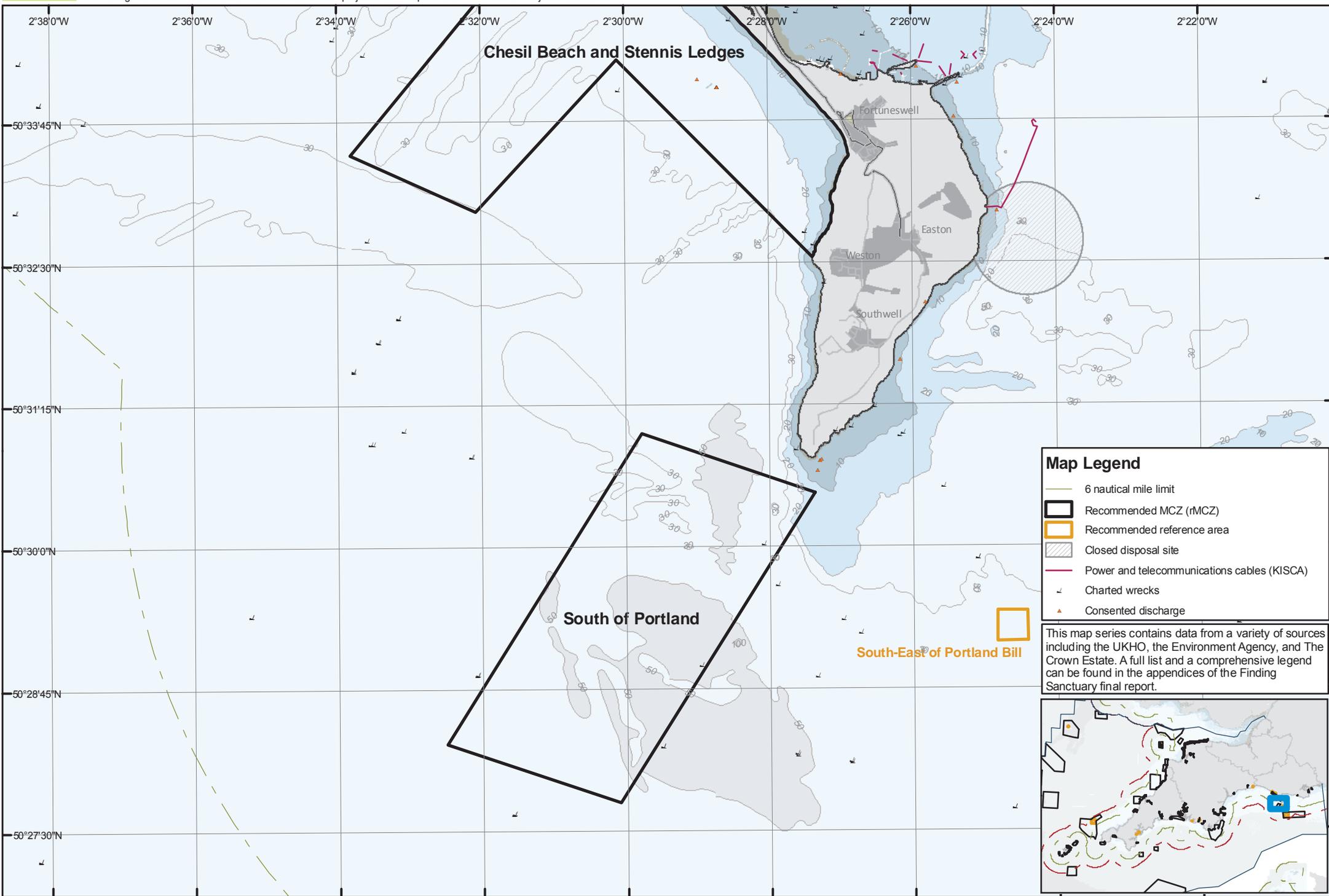
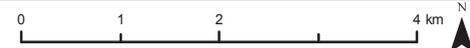
**South-East of
Portland Bill**

Map Legend

-  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. This map also shows bathymetry data supplied by the DORIS (DORset Integrated Seabed Study) project. Full details and a comprehensive legend are provided in the appendices of the Finding Sanctuary final report.

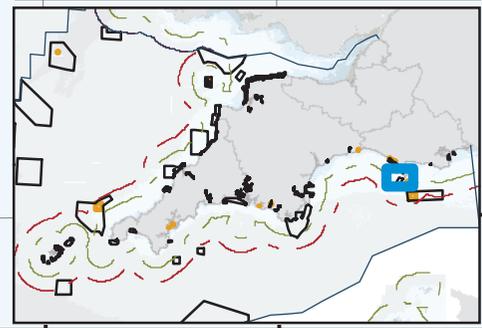




Map Legend

- 6 nautical mile limit
- Recommended MCZ (rMCZ)
- Recommended reference area
- Closed disposal site
- Power and telecommunications cables (KISCA)
- Charted wrecks
- Consented discharge

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.3.19 Chesil Beach and Stennis Ledges rMCZ

Basic site information

Site centre location (datum used: ETRS89):

Decimal Degrees		Degrees Minutes Seconds	
Lat	Long	Lat	Long
50.5919	-2.5316	50° 35' 31" N	2° 31' 53" W

Site surface area: 37.7 km² (calculated in ETRS89-LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea

OSPAR region: Region II: Greater North Sea

Site boundary: The site boundary follows the coastline up to mean high water from Abbotsbury in the west, to Weston on Portland in the east. The western edge follows the boundary of the Lyme Bay and Torbay candidate SAC. The southern edge has been drawn NE-SW to the Stennis Ledges, where the boundary then changes to incorporate the Stennis Ledges in full. DORIS seabed data was used to help draw a boundary around the ledges. From there it follows NE-SW again to join the coastline at Weston.

Sites to which the site is related: The site shares a boundary with Lyme Bay and Torbay candidate SAC in the north. In the south, it partially overlaps with Studland to Portland draft SAC. The Isle of Portland to Studland Cliffs SAC and Isle of Portland SSSI lie on the Isle of Portland itself, adjacent to the site. The rMCZ lies alongside Chesil Beach and the Fleet Lagoon, which are already designated as a SSSI, SAC and SPA. Of these three designations, the SAC boundary extends the furthest east (off Chesil Beach), and it overlaps with the coastal strip of 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 Chesil Beach and Stennis Ledges rMCZ

Table II.3.19a Draft conservation objectives for Chesil Beach and Stennis Ledges 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 infralittoral rock		R
	Subtidal coarse sediment		R
	Subtidal sand		R
	High energy intertidal rock		M
	Intertidal coarse sediment		M
Species FOCI	<i>Eunicella verrucosa</i>	Pink sea-fan	R
	<i>Ostrea edulis</i>	Native oyster	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.3.19b **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	<0.01	<0.1%	1
Subtidal coarse sediment	26.15	<0.1%	1
Subtidal sand	4.27	<0.1%	1
High energy infralittoral rock ¹	0.09	<0.1%	1
Subtidal coarse sediment ¹	6.84	<0.1%	1

¹ Features / areas already protected within an overlapping MPA. See the gap table (appendix 11) for details.

Table II.3.19c **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
Intertidal coarse sediments	<0.01	<0.1%	4, 3
High energy intertidal rock ¹	<0.01	<0.1%	4
Intertidal coarse sediments ¹	0.32	1.6%	3
Coastal saltmarshes and saline reedbeds ¹	<0.01	<0.1%	4

¹ Features / areas already protected within an overlapping MPA. See the gap table (appendix 11) for details.

Table II.3.19d **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	16.97			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.3.19e **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 Trehwella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Eunicella verrucosa</i>	2		1, 5
<i>Ostrea edulis</i>	2		1, 2
<i>Caecum armoricum</i> ¹	1		1
<i>Gammarus insensibilis</i> ¹	3	2	1
<i>Nematostella vectensis</i> ¹	2		1
<i>Paludinella littorina</i> ¹	1	1	1
<i>Padina pavonica</i> ²	1	1	1

¹ Features / areas already protected within an overlapping MPA. See the gap table (appendix 11) for details.

² This is considered a record with erroneous information about its geographical location, as it is an old record (> 30 years), located about 1km off the shoreline, in an area where the habitat is unlikely to be suitable for the species. Following the vulnerability assessment discussions, the species was 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 1.48 km² 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

This rMCZ runs along the length of Chesil Beach from the top of the Fleet lagoon at Abbotsbury to Portland in the south-east, extending from the high water mark out to about 1.8km, with an extension out to about 5km over the Stennis Ledges, an area of rocky ridges and rugose seabed. The deepest parts of the site are approximately 40m below sea level. The nearby southern and western side of Portland has been mapped as an area of higher than average benthic species diversity (from national data layers contract MB102). Local Group feedback indicated the possible geological interest of the site, with soft Lias reefs believed to be present.

Detailed site description

There is a lot of published information about Chesil Beach, which has been described as one of the most famous coastal landforms on the British coast (Bennett *et al.* 2009). The beach is a linear, pebble and cobble beach which links the Isle of Portland in the east to the mainland in the west and extends for over 18 km (May, 2003; Bennett *et al.*, 2009). The beach is separated from the mainland between Abbotsbury and Chesilton, a distance of 13 km, by a shallow tidal lagoon known as The Fleet. Along the length of the Fleet the beach is 150 to 200 m wide, but it narrows in the west to between 35 and 60 m close to Bridport, and in the east to between 40 and 54m close to Chesilton. The beach crest is intermittent at the western end, but becomes continuous from Abbotsbury with a maximum height of 7 m increasing to 14 m above sea level at Chesilton (May, 2003). Poulton *et al.* (2002) In Jones *et al.* (2004) describe the sediments along the coast in Lyme Bay.

The sediment along Chesil beach follows a grain size gradient, with fine gravel in the north-west (towards Bridport), and cobbles at the Portland end of the beach. There are marked variations in particle shape along the length of the beach and a variety of complex models have been proposed to explain the pattern of size and shape sorting with respect to cycling of material through the beach face under a range of different wave regimes (May, 2003). Scott *et al.* (2011) describe Chesil Beach as reflective and steeply sloping with inter-tidal slopes of 5° to 7°. Grain sizes range from medium sand to gravel (commonly 10–15% gravel content). Bennett *et al.* (2009) describe the internal structure of the beach revealed by GPR surveys. Carr & Seaward (1991) surveyed 11 sections across Chesil Bank to monitor the receding crestline (Davies, 1991).

The third Dorset Underwater Survey (Dixon *et al.*, 1979) recorded underwater areas between Portland Bill and Lyme Regis in August 1978. Thirty-five sublittoral and five littoral sites were surveyed during dives. Pebbles in littoral bedrock and boulders further south were recognised at Chesil Cove. Rocky outcrops and boulders separated by patches of sand mud and gravel were observed down to 14m. Extensive rock was observed to be 80-100% cover in the shallow water and 50% in deeper water. Associations found were *Laminaria hyperborea* on bedrock and boulders, *Pagurus bernhardus* – *Nassarius reticulatus* on sand and Hydrozoa – Ascidia – Porifera on all grades of rock debris (including Lithothamnion and *Ostrea edulis*). At the west end of Chesil beach, an inshore narrow zone of pebbles/shingle has been observed extending from the beach. Then a wider zone of pebbles/stones mixed with sand grading into a third zone of sand/mud. Associations found were *Pagurus bernhardus* – *Maja squinado* on pebbles on sand. The large boulders at Chesil cove have a low algal diversity but support a rich hydrozoa-ascidiacea-porifera community (Dixon *et al.*, 1979).

Eunicella verrucosa was been recorded during the 1994-95 DWT Exmouth to Chesil (Lyme Bay) survey. *Ostrea edulis* have been recorded in the Chesil Beach area during the 2007 and 2008 Seasearch Survey of Dorset.

Local Group feedback mentions bream nests in the area. Feedback from members from the Dorset Local Group also commented on the presence of maërl beds and *Sabellaria* within 3nm of the Dorset coastline, but neither the precise locations nor species (of *Sabellaria*) were cited (our GIS records indicate maërl beds and records of *Sabellaria spinulosa* in the area off Swanage, within the Studland to Portland draft SAC, but not within any rMCZ boundaries).

Dorset Wildlife Trust have stated that the FOCI habitat Fragile sponge and anthozoan communities should be listed as a feature of Stennis Ledges.

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.3.19f shows more specific working assumptions and implications that were recorded for this site over the course of the planning process.

Following that, table II.3.19g 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.3.19f Specific assumptions and implications relating to Chesil Beach and Stennis Ledges 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
<p>Bottom-towed fishing gear will not be allowed</p> <p style="color: red;">In view of discussions at the VA meeting, this assumption has changed to: Dredging and beam trawling will not be allowed in this rMCZ. An additional assumption is made that the existing seasonal closure will continue to apply to other mobile demersal gears, and will be extended to the whole site.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Loss of ground for bottom-towed gear fishermen o Scallop dredge fishermen would no longer have access to this area. The site follows the boundary of an existing byelaw which restricts scalloping seasonally, so scallopers are already restricted to some degree within 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Some Local Group members are concerned about impacts on sand eel trawling, and would like this activity to continue to be permitted. o There was concern that seasonal closures to bottom gears would be insufficient to protect Eunicella populations and that the continued presence of bottom gear would retard the recovery of this feature.

	<p>Benefits:</p> <ul style="list-style-type: none"> o Protection of attractive and interesting habitat may help survival of dive businesses from Weymouth and Portland o There may be peat deposits within MCZ which will also gain protection
<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Local Group feedback indicates that the area is important for shipping as a refuge and anchorage in north easterly winds o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	Implications
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p> <p>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.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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.) <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Some Local Group feedback indicated that there was a suggestion to restrict / exclude fixed netting for health and safety concerns, but the rationale is not clear. o Local Group feedback indicates that the area is important for static gear fishermen, including netters and potters. o Static gear fishermen might face possible additional costs for mitigation measures, should they be needed

	<ul style="list-style-type: none"> o There would be costs if monitoring is needed
<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p><i>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.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: <ul style="list-style-type: none"> - 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. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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 Wind resource potential but landscape buffer requirements making deployment less likely.
<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Possible effects on waste water outfalls

<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Crab tiling / bait digging will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Beach replenishment will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Possible effects on coastal protection works. o A Steering Group member raised a concern about current beach management plans being impacted by an MCZ designation. The Beach management plan is important and exists for flood risk management / coastal erosion purposes. o Beach Management Plan for flood risk management/coastal erosion purposes not to be restricted (Environment Agency).

Activities assumed to be allowed to continue / occur within the site	
Assumptions	Implications
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Local Group feedback indicates that the area is important for anglers. o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed <p>Benefits:</p> <ul style="list-style-type: none"> o Potential for increased and enhanced leisure and recreational activity

<p>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.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption there are still the following concerns:</p> <ul style="list-style-type: none"> 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) <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.
<p>The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Tourism and recreational activities will be permitted.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption there are still the following concerns:</p> <ul style="list-style-type: none"> o Added comment from a Steering Group member: ‘Sub aqua diving should continue, shottig wrecks should continue - anchoring is not often done by dive boats.’

<p>Maintenance dredging in ports (to enable access to ports) will be permitted</p> <p><i>The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o (no heritage wrecks currently present in the site)
<p>Anchoring of small vessels will be permitted</p> <p><i>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Local group feedback indicates that the area is important for shipping as a refuge and anchorage in north-easterly winds. 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. o (please also refer to the comments regarding dive boat anchoring above)
<p>Passage of ships will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Seaweed harvesting will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Table II.3.19g 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 – dredging & beam trawling	Management: <ul style="list-style-type: none"> - Dredging and beam trawling: prohibition of fishing within the rMCZ Measure: <ul style="list-style-type: none"> - Option 1: Byelaw - Option 2: Licence condition
Commercial fishing – all other mobile demersal gears	Management: <ul style="list-style-type: none"> - Other mobile demersal gears: seasonal closure of the rMCZ Measure: <ul style="list-style-type: none"> - Option 1: Byelaw - Option 2: Licence condition

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.
 - Commercial fishing still has a residual concern regarding the inclusion of the ledges.
- *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 of 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.3.19g (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 size of this site was reduced from MCZ building blocks that previously were located there, which extended further out to sea. Bringing the boundary line closer in to the shoreline was a way of reducing impacts on mobile bottom-towed gear fishermen (scallopers), who had voiced opposition to the preceding building blocks on the grounds that there is already a large 'no-tow' area in Lyme Bay, and they felt that they were going to be squeezed by too many restricted areas.

Subsequently, the site was partially extended out again, to include the Stennis Ledges – this was done following a proposal by Dorset Wildlife Trust. There was an acceptance amongst a range of stakeholders that this area of rugose seabed is of conservation interest, and that because of the relatively soft rock, the seabed is at risk of damage from scallop dredges. On these grounds, the inclusion of the Stennis Ledges was agreed, although mobile gear fishermen have concerns about it. Conservation representatives and Natural England (on the Local Group) have stated support for this site.

There is an anchorage near the south-east corner of the rMCZ, which has raised some concerns given that this anchorage is sheltered from easterlies, so impacts on its usage may have safety implications. The Crown Estate provided feedback to state that they would be supportive of the site based on the assumption that coastal protection works and waste water outfalls 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, MB102, SeaSearch 2009, Environment Agency intertidal habitat data, and information provided by Dorset Wildlife Trust. 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 relevant information about the site may be found in Ladle (1981), and Cleator (1995). Further information on the Natura 2000 sites to which this site is related may be found on the JNCC's [website](#)²⁹.

The area was surveyed as part of the DORIS survey, a collaborative effort between Dorset Wildlife Trust, the Maritime and Coastguard Agency (MCA), the Channel Coastal Observatory (CCO) and the National Oceanographic Centre, Southampton (NOCS), funded by Viridor Credits ([here is a weblink to further information](#)³⁰). The DORIS project provided us with detailed bathymetry data, shown on one of the site maps at the end of this report, as well as with FOCI records (see appendix 8).

Site map series

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

- The first map (FR_029a) 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_029b) 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.3.19b, II.3.19c and II.3.19e, data sources are indicated in the tables.
- The third map (FR_029c) shows detailed bathymetry data from the DORIS survey.
- The fourth map (FR_029d) 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.

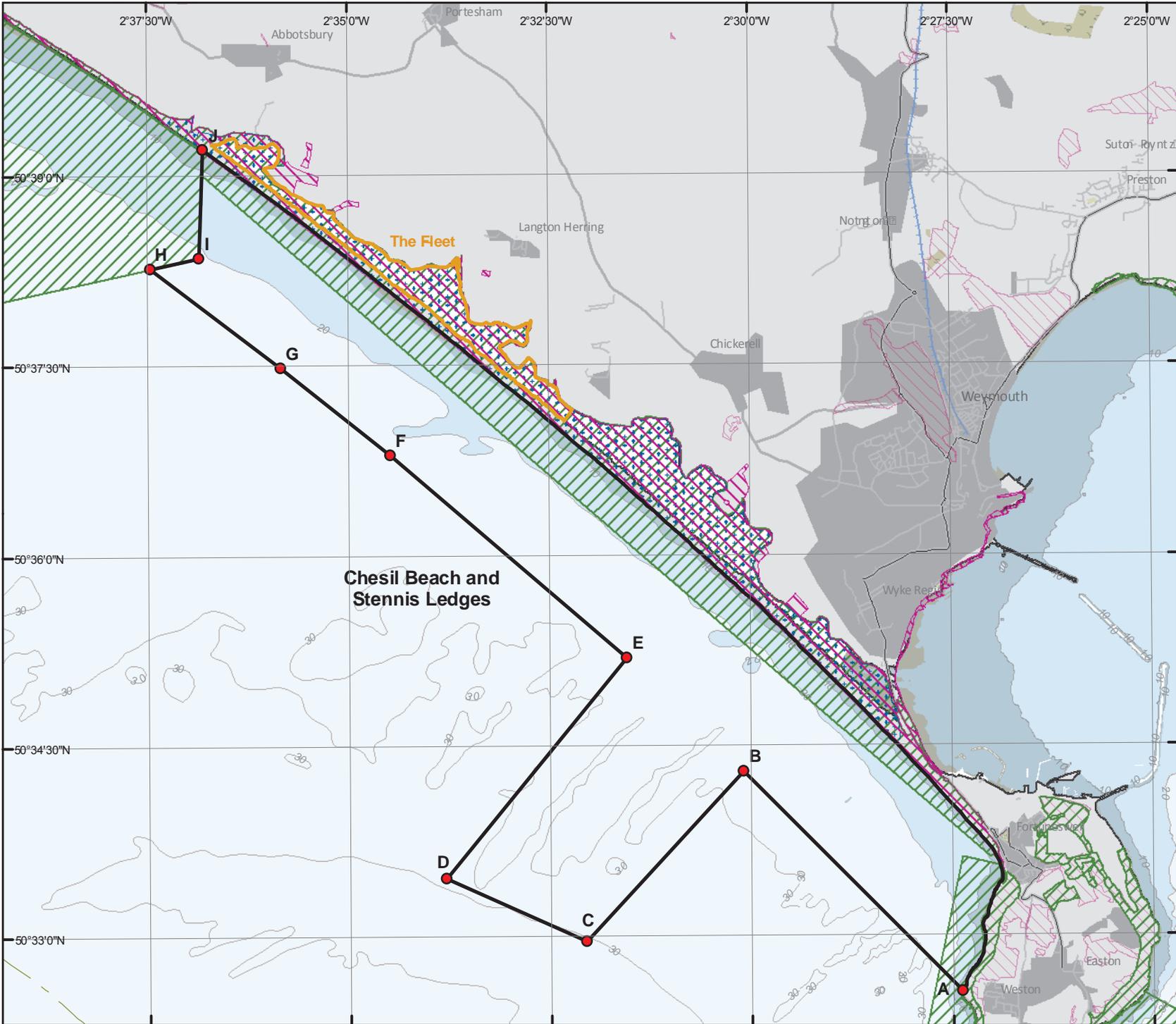
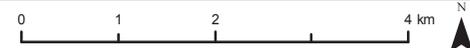
²⁹ <http://jncc.defra.gov.uk/page-4>

³⁰ <http://www.dorsetwildlifetrust.org.uk/page283.html>

Chesil Beach and Stennis Ledges 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.

Maritime basemap © British Crown and SeaZone Solutions Limited, 2010.
 All Rights Reserved. Data License No. 062005.004. Land basemap part
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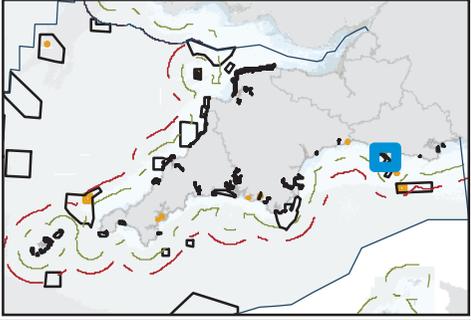
Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.5426	-2.4564	50° 32' 33" N	2° 27' 22" W
B	50.5716	-2.5016	50° 34' 17" N	2° 30' 5" W
C	50.5493	-2.5344	50° 32' 57" N	2° 32' 4" W
D	50.5577	-2.5635	50° 33' 27" N	2° 33' 48" W
E	50.5866	-2.5258	50° 35' 11" N	2° 31' 32" W
F	50.6133	-2.5747	50° 36' 47" N	2° 34' 29" W
G	50.6248	-2.5974	50° 37' 29" N	2° 35' 50" W
H	50.6378	-2.6245	50° 38' 16" N	2° 37' 28" W
I	50.6392	-2.6142	50° 38' 20" N	2° 36' 51" W
J	50.6534	-2.6133	50° 39' 12" N	2° 36' 47" W

Map Legend

- 6 nautical mile limit
- Recommended MCZ (rMCZ)
- Recommended reference area
- Existing MPAs**
- SAC
- SPA
- SSSI (part of MPA network)
- SSSI (not part of MPA network)

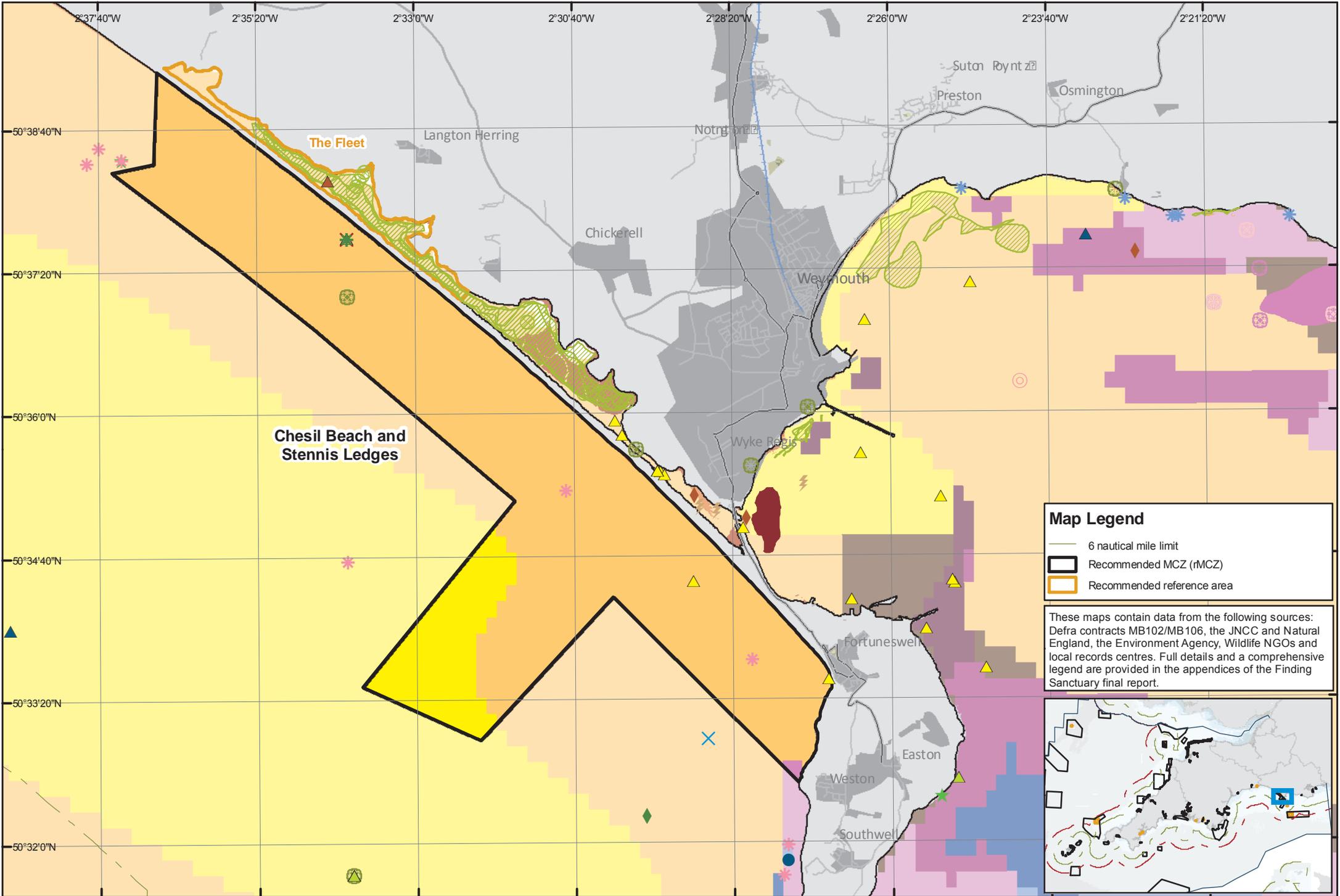
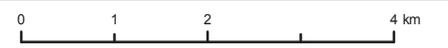
A comprehensive legend is provided in the appendices of the Finding Sanctuary final report.



Chesil Beach and Stennis Ledges 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.

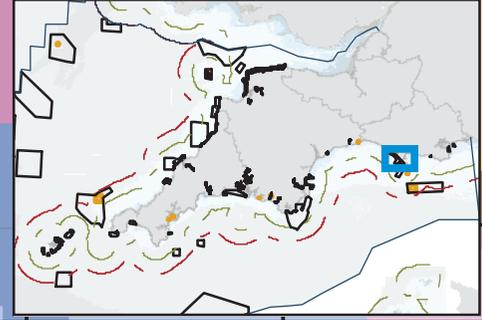
Maritime basemap © British Crown and SeaZone Solutions Limited, 2010.
All Rights Reserved. Data Licence No. 062006.004. Land basemap part © OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation.
Contains OS data © Crown copyright 2011.



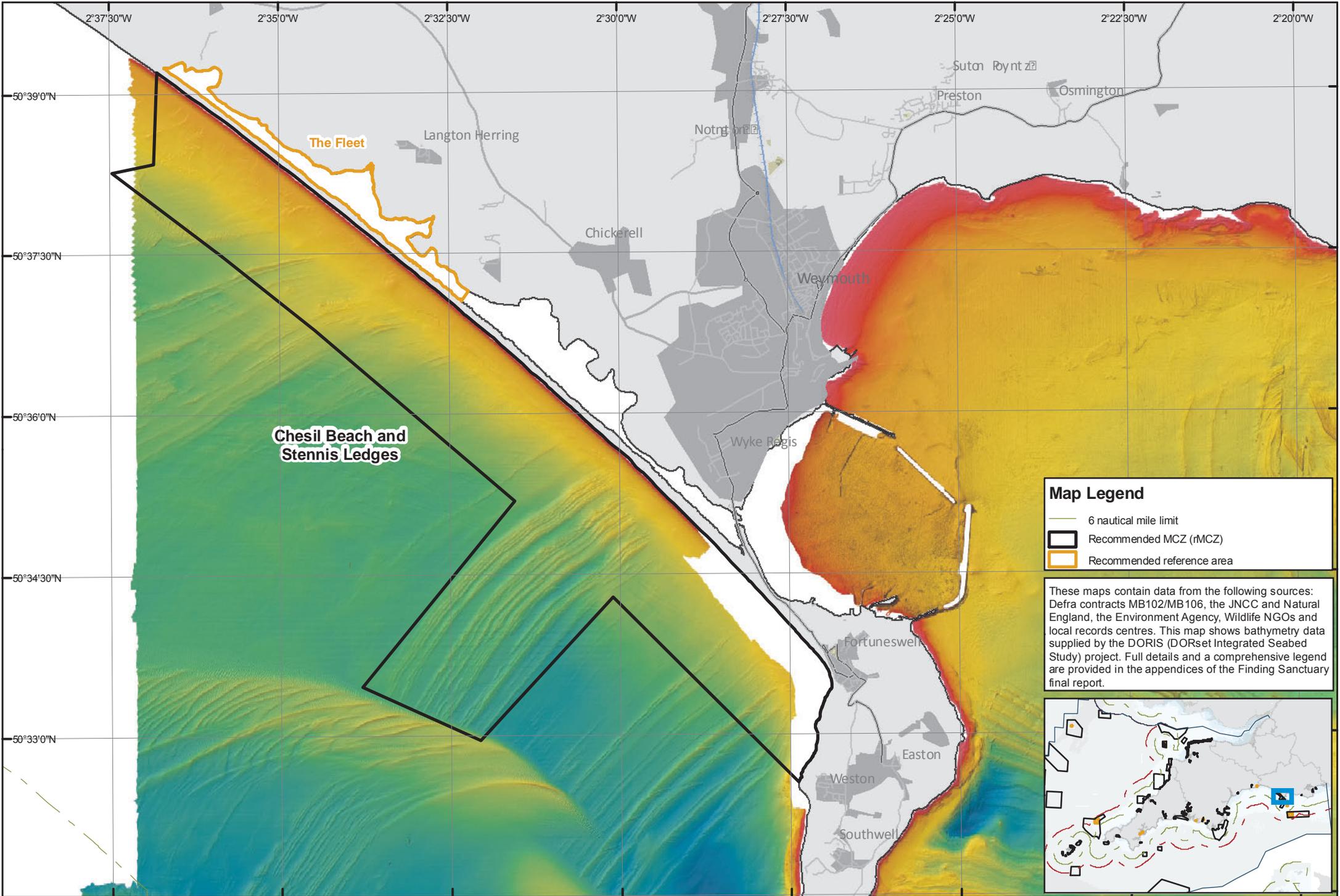
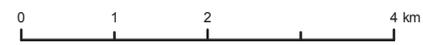
Map Legend

- 6 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.



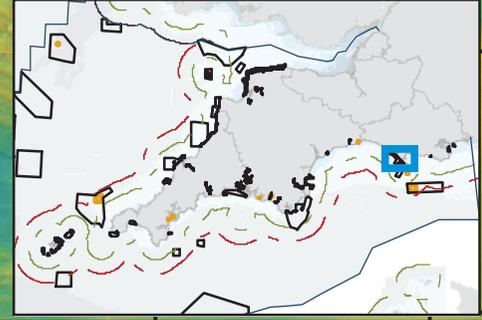
This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with biophysical information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

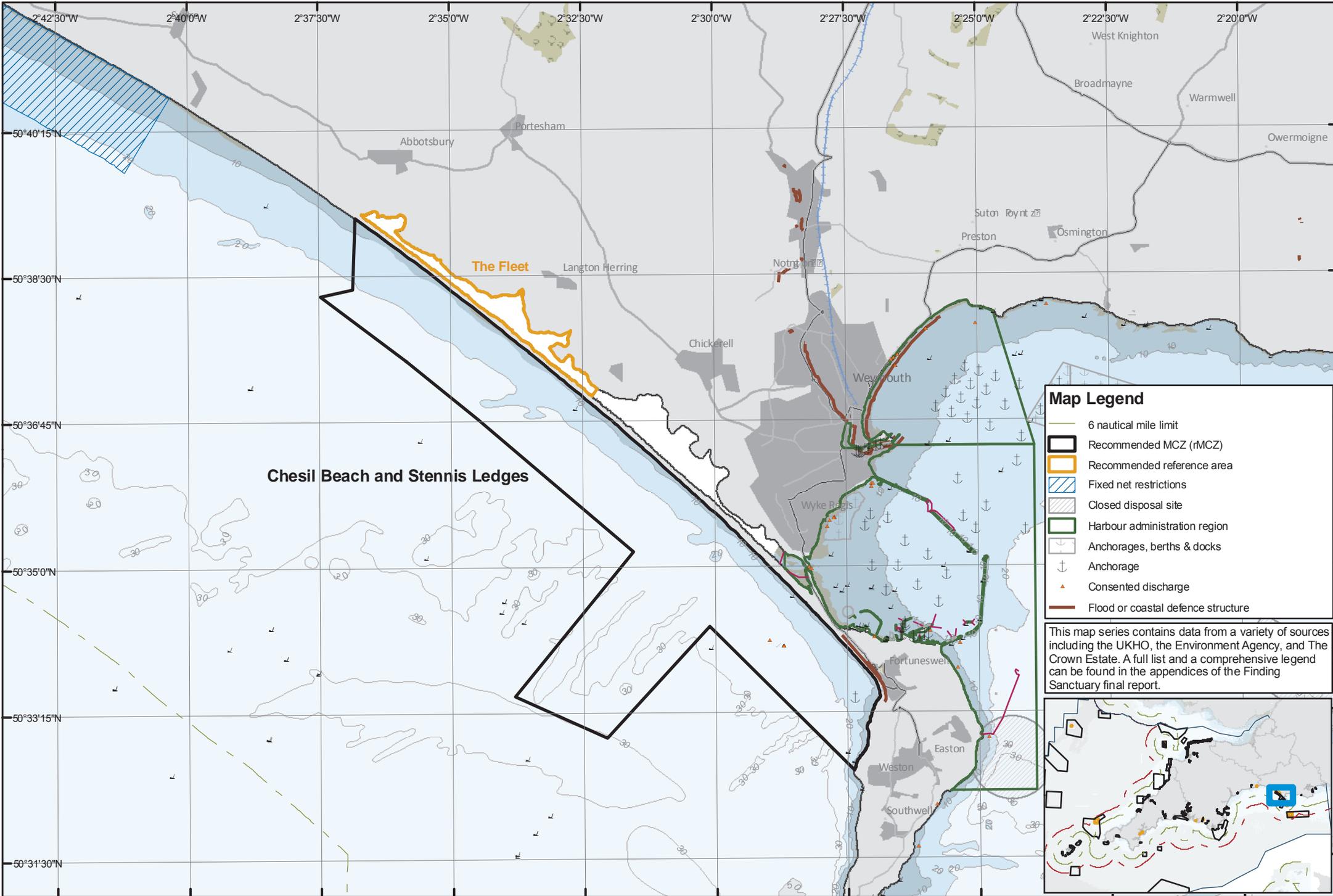


Map Legend

- 6 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. This map shows bathymetry data supplied by the DORIS (DORset Integrated Seabed Study) project. Full details and a comprehensive legend are provided in the appendices of the Finding Sanctuary final report.





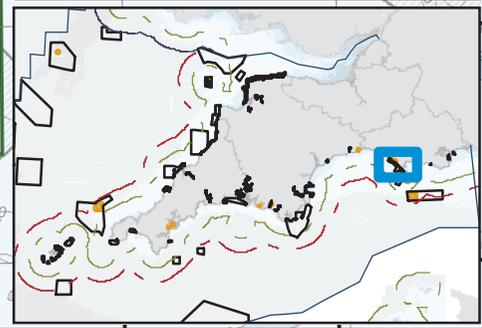
Chesil Beach and Stennis Ledges

The Fleet

Map Legend

- 6 nautical mile limit
- Recommended MCZ (rMCZ)
- Recommended reference area
- Fixed net restrictions
- Closed disposal site
- Harbour administration region
- Anchorages, berths & docks
- Anchorage
- Consented discharge
- 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.3.20 Axe Estuary rMCZ

Basic site information

Site centre location (datum used: ETRS89):

Decimal Degrees		Degrees Minutes Seconds	
Lat	Long	Lat	Long
50.7133	-3.0575	50° 42' 48" N	3° 3' 27" W

Site surface area: 0.33 km² (calculated in ETRS89-LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea

OSPAR region: Region II: Greater North Sea

Site boundary: The MCZ includes the Axe Estuary up to the OS Boundary Line mean high water mark, which extends as far as the mouth of the river Coly to the south east of Colyford. The seaward boundary of the site has been drawn across the estuary mouth, at the seaward edge of the shingle bar south of Axmouth and east of Seaton.

Sites to which the site is related: A small portion (tens of metres of width) of the site at the very mouth of the estuary overlaps with the Lyme Bay no-tow area. The Lyme Bay to Torbay candidate SAC lies just seaward of the site. The Axe River (inland) is designated as a SAC.

Features proposed for designation within Axe Estuary rMCZ

Table II.3.20a Draft conservation objectives for the Axe 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 mixed sediments		M
	Coastal saltmarshes and saline reedbeds		M
	Intertidal coarse sediment		M
	Intertidal mixed sediments		M
	Intertidal mud		M
Species FOCI	<i>Anguilla anguilla</i> ¹	European eel	? M / R (tbc) ¹

¹At 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 project team have advised that if dredging (for harbour access) continued within the site, the affected area of seafloor should not be counted towards ENG targets. However, there was no GIS polygon data available to map the area that might be affected by dredging, so the figures in these tables do not exclude any potentially dredged areas (the area affected is small - see additional comments).

Table II.3.20b 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 mixed sediments	0.04	<0.1%	1

Table II.3.20c 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)
Intertidal coarse sediments	<0.01	<0.1%	4, 3
Intertidal mud	0.21	0.1%	4, 3
Intertidal mixed sediments	<0.01	<0.1%	4
Coastal saltmarshes and saline reedbeds ¹	0.01	0.4%	3

¹ The area of coastal saltmarsh calculated in this GIS analysis is likely to be an underestimate of the saltmarsh area present along the estuary, as the rMCZ site boundary is at OS Boundary Line mean high water, and the habitat might extend above that.

This rMCZ intersects with the Axmouth to Lyme Regis Undercliffs Geological Conservation Review site (listed in the ENG).

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 rMCZ stretches along approximately 2.5km of the Axe estuary, surrounded mainly by marshes and farmland. The small village of Axmouth lies on the eastern shore of the estuary, and the town of Seaton to the west on the seafront. There is a small harbour at the mouth of the Estuary, sheltered by a shingle bar across the estuary mouth. The estuary is a nursery area for fish (including bass), with the supporting benthic habitats. 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 River Axe itself (inland of the rMCZ) is designated as a Special Area of Conservation (SAC), and there are several Sites of Special Scientific Interest (SSSI) on account of its importance as a river with distinctive communities of floating vegetation. Along the lower reaches of the river, the mixed

catchment geology of sandstones and limestones gives rise to calcareous waters where water crowfoot (*Ranunculus penicillatus* ssp. *Pseudofluitans*) dominates, giving way to *Ranunculus fluitans* further downstream. Short-leaved water-starwort *Callitriche truncata* is an unusual addition to the *Ranunculus* community and gives additional interest (JNCC, 2006).

The Axe estuary is of ecological importance as it contains mudflats and areas of salt marsh (Environment Agency, 2003; 2004; Burd, 1989). Luoma & Bryan (1978) conducted sediment and *Scrobicularia plana* measurements in the Axe Estuary in which the authors described the estuary as ‘relatively pristine’. Concentrations of copper, zinc, cadmium, lead and nickel in *Nereis diversicolor* and sediments from the Axe Estuary, South Devon were monitored from 1980-1982 by Havard (1991).

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.3.20d shows more specific working assumptions and implications that were recorded for this site over the course of the planning process.

Following that, table II.3.20e 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.3.20d Specific assumptions and implications relating to Axe 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

	<p>concerns:</p> <ul style="list-style-type: none"> 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.
<p>Bottom-towed fishing gear will not be allowed</p> <p>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. It is uncertain whether the activity would be allowed in the site in the future, depending on the intensity it could cause impacts on seafloor features that would prevent the achievement of conservation objectives.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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.
<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Netting and longlining will not be allowed</p> <p><i>This assumption was recorded early on in the process, in order to protect nursery habitats and juveniles in all</i></p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Loss of ground for netters o Displacement of netters o Increased competition for fishing grounds o Reduced diversity and flexibility of fishing

<p><i>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</i></p> <p>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</p>	<ul style="list-style-type: none"> o Cumulative impact on netters where protected areas are close together <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o SAFFA fixed net restrictions apply. o A stakeholder questioned why there was a recorded concern about netting, but not about potting.
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Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	Implications
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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.) <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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
<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p><i>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.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: <ul style="list-style-type: none"> - 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

	<p>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.</p> <ul style="list-style-type: none"> o Enforced co-location with MCZs would dramatically restrict deployment. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.
<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Crab tiling / bait digging will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Beach replenishment will be permitted with mitigation / management</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

<p>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</p>	<p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o A Steering Group member commented on the importance of taking into account shoreline management plan policies and planned activities.
<p>Activities assumed to be allowed to continue / occur within the site</p>	
<p>Assumptions</p>	<p>Implications</p>
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed <p>Benefits:</p> <ul style="list-style-type: none"> o Potential for increased and enhanced leisure and recreational activity
<p>Pelagic trawls will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>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.</p> <p>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</p>	<p>Direct implications:</p> <p>Given this assumption there are still the following concerns:</p> <ul style="list-style-type: none"> 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). <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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

	<p>requirements.</p> <ul style="list-style-type: none"> 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.
<p>The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Tourism and recreational activities will be permitted.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Benefits:</p> <ul style="list-style-type: none"> o A Steering Group member queried whether part of the rationale of this site had been that an MCZ could contribute to the economic regeneration of Seaton by acting as a 'selling point' for the area.
<p>Maintenance dredging in ports (to enable access to ports) will be permitted</p> <p>The VA meetings considered this activity for this site, and concluded that maintenance dredging would be permitted with no additional mitigation likely to be required as a result of the rMCZ.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Dredging is an important activity to keep access to the small port at Axmouth open (the entrance to the estuary silts up otherwise; material is dredged from the estuary entrance and deposited nearby).
<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o (no heritage wrecks currently present in the site)

<p>Anchoring of small vessels will be permitted</p> <p><i>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.
<p>Passage of ships will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Seaweed harvesting will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Table II.3.20e 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
<p>Navigational Dredging</p>	<p>Management:</p> <ul style="list-style-type: none"> - Impacts on the rMCZ conservation objectives 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. <p>Measure:</p> <ul style="list-style-type: none"> - 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.

- *Commercial fishing*
 - Commercial fishing raised concerns that estuaries are surplus to the requirement of the ENG.
- *Environment Agency*
 - Estuarine partnership management arrangements should be listed as management measures for the site
- *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 of 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.3.20e (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 Axe estuary has low levels of human activity, which is why the estuary was one of the three that were included in the developing recommendations at a relatively early stage (see progress report 3). This makes the site less controversial than many others. The key concern that has been highlighted with respect to this rMCZ has been around the small-scale port activities at Axmouth. The shingle bar at the entrance to the estuary occasionally needs dredging to keep access to the port open, and there are moorings located near the estuary mouth which require maintenance.

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 information on the Natura 2000 sites to which this site is related may be found on the JNCC's [website](#)³¹.

Further evidence underpinning the site can be found in the publications and datasets referred to in the detailed site description. There may be additional relevant information about the Axe Estuary in Buck (1997); Environment Agency (1996; 1998a; b; 2001); Moore *et al.* (1999); and Parkinson (1985).

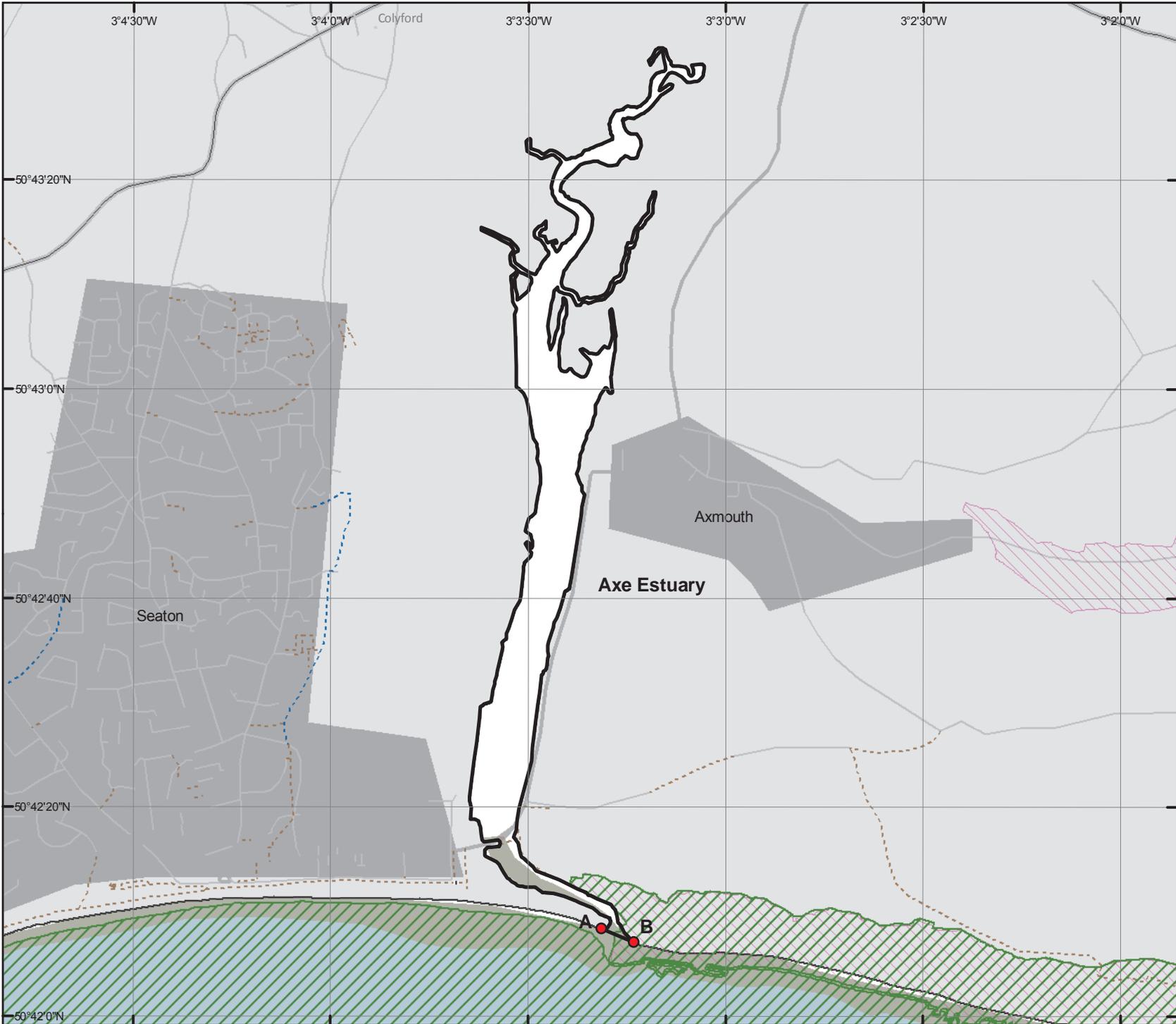
Site map series

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

- The first map (FR_030a) 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_030b) 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.3.20b and II.3.20c, data sources are indicated in the tables.
- The third map (FR_030c) 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).

³¹ <http://jncc.defra.gov.uk/page-4>

- 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.



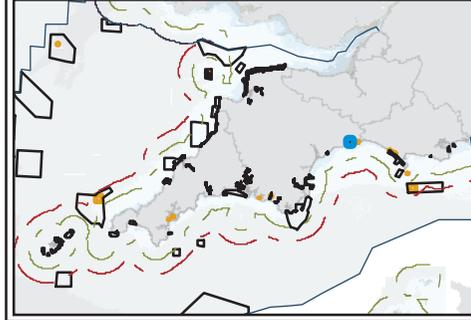
Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.7023	-3.0552	50° 42' 8" N	3° 3' 18" W
B	50.7020	-3.0538	50° 42' 7" N	3° 3' 13" W

Map Legend

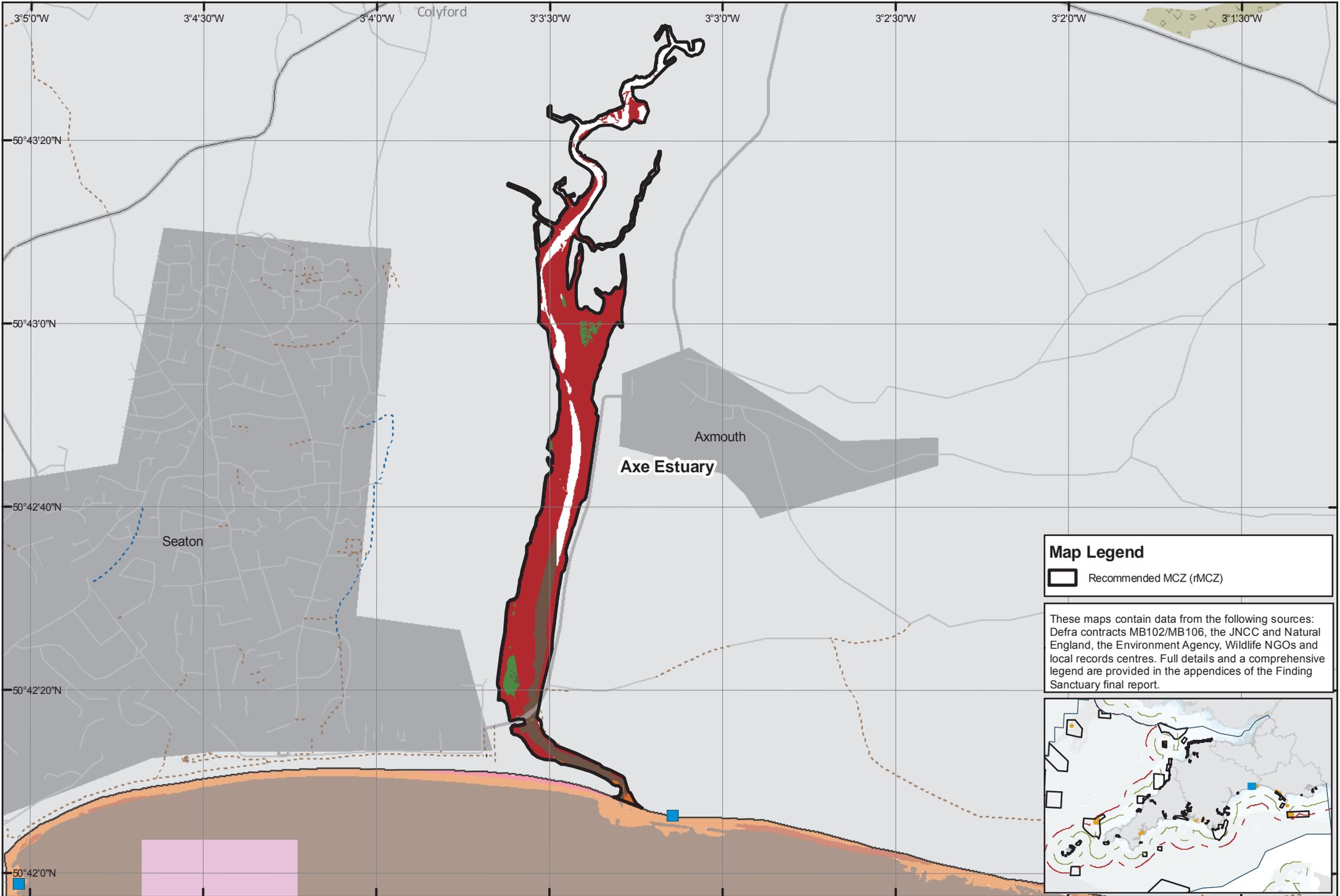
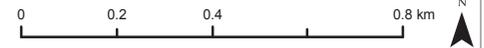
- Recommended MCZ (rMCZ)
- Existing MPAs**
- SAC
- SSSI (not part of MPA network)

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



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.

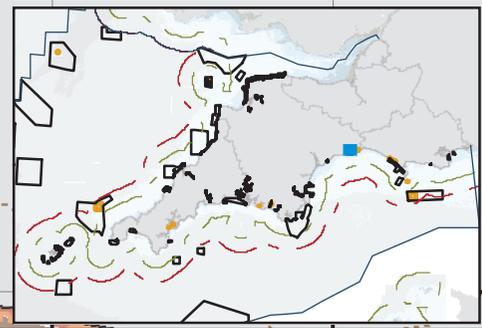
Maritime basemap © British Crown and SeaZone Solutions Limited, 2010. All Rights Reserved. Data Licence No. 062006.004. Land basemap part © OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation. Contains OS data © Crown copyright 2011.

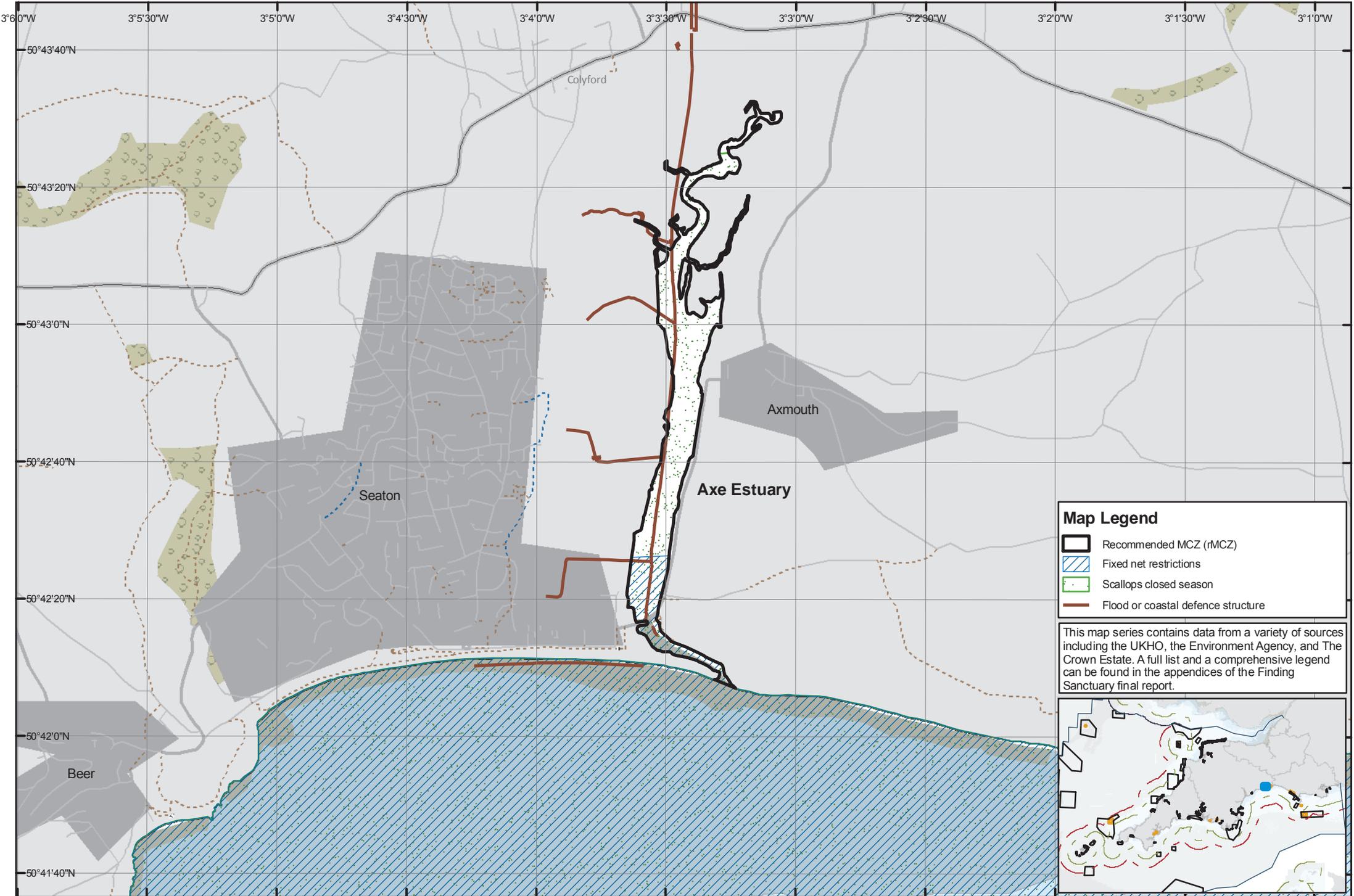


Map Legend

 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.

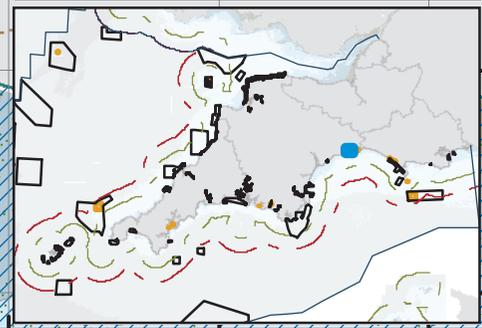




Map Legend

- Recommended MCZ (rMCZ)
- Fixed net restrictions
- Scallops closed season
- 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.3.21 Otter Estuary rMCZ

Basic site information

Site centre location (datum used: ETRS89):

Decimal Degrees		Degrees Minutes Seconds	
Lat	Long	Lat	Long
50.6345	-3.3088	50° 38' 4" N	3° 18' 31" W

Site surface area: 0.11 km² (calculated in ETRS89-LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea

OSPAR region: Region II: Greater North Sea

Site boundary: The seaward site boundary has been drawn across the mouth of the estuary, at the shingle bar at the eastern end of the beach at Budleigh Salterton. The site boundary extends along the OS Boundary Line mean high water mark, as far inland as the aqueduct near East Budleigh.

Sites to which the site is related: The site lies wholly within the Otter Estuary SSSI, which is wider than the rMCZ as it includes the estuarine marshland above the mean high water mark.

Features proposed for designation with the Otter Estuary rMCZ

Table II.3.21a Draft conservation objectives for the Otter 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 sand		M
	High energy infralittoral rock		M
	Coastal saltmarshes and saline reedbeds		M
	Intertidal coarse sediment		M
	Intertidal mud		M
Species FOCI	<i>Anguilla anguilla</i>	European eel	? M / R¹

¹At 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).

Table II.3.21b **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	0.02	<0.1%	1
Subtidal sand	<0.01	<0.1%	1

Table II.3.21c **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)
Intertidal coarse sediments	<0.01	<0.1%	3
Intertidal mud	0.05	<0.1%	4, 3
Coastal saltmarshes and saline reedbeds	<0.01	<0.1%	3
Intertidal mud ¹	<0.01	<0.1%	3
Coastal saltmarshes and saline reedbeds ²	0.02	0.7%	3

¹ Features / areas already protected within an overlapping MPA. See the gap table (appendix 11) for details.

² The area of coastal saltmarsh calculated in this GIS analysis is likely to be an underestimate of the saltmarsh area present along the estuary (see the reference to Allen, 2010 in the detailed site description below), as the rMCZ site boundary is at OS Boundary Line mean high water, and the habitat might extend above that. The habitat is already protected within an overlapping MPA. See the gap table (appendix 11) for details.

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 0.03 km² 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

Flowing due south, the lower 2km reach of the River Otter is bounded by sea embankment to the west and sandstone cliff (of up to 10m high) to the east. The estuary broadens to a maximum width of 500m. Here the deep, fine alluvium has enabled a well-developed pan and creek system to form (Allen, 2010). A shingle barrier running eastwards from the west shore virtually closes the estuary from the sea, with the river entering through a 5m gap. Behind the barrier the relatively extensive marsh constitutes a rich diversity of flora and fauna, and has a corresponding variety of bird species (Allen, 2010). The estuary is a nursery area for fish (including bass), with the supporting benthic habitats. 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

There are several distinct communities of mud-dwelling invertebrates in the estuary. Characteristic species include the bivalve Peppery Furrow-shell *Scrobicularia plana*, the ragworm *Nereis diversicolor* and the crustacean *Corophium volutator*. This variety, together with adjacent habitats, provides food for a corresponding variety of bird species, some of which can be present in large numbers, principally Curlew *Numenius arquata* and Lapwing *Vanellus vanellus*. The area is an important additional feeding station for birds from the nearby Exe Estuary, especially during severe weather (English Nature, 2001).

Burd (1989) described the Otter Estuary within the Saltmarsh survey of Great Britain. The site (a SSSI and Local Nature Reserve) has more saltmarsh vegetation than any other in Devon and, together with the tidal mudflats, provides an important feeding and resting area for over-wintering birds. The Otter has reaches which meander extensively, with varied associated in-stream habitats, including eroding bank faces and exposed riverine sediments. The exposed areas of sand and gravel deposited by river action are particularly valuable as habitats for invertebrates (Environment Agency, 2005). The salt marsh of the Otter Estuary at Budleigh Salterton consists of 33.3 ha (Allen, 2010). Fifty-six surface samples were collected by Allen (2010) from the Otter estuary salt marsh to determine the distribution of foraminifera.

Nie & Kennedy (1991) carried out surveys of parasites on the European eel (*Anguilla anguilla*) in two Devon estuaries. Sampling for *Anguilla anguilla* started in March 1987, and monthly samples were taken by electrofishing until July 1988 in the River Clyst, and until April 1988 in the River Otter (above and below the last bridge just before the estuary). Altogether, 233 eels were captured to analyse parasitic communities.

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.3.21d shows more specific working assumptions and implications that were recorded for this site over the course of the planning process.

Following that, table II.3.21e 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.3.21d Specific assumptions and implications relating to Otter 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
<p>Aggregate extraction will not be allowed</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.
<p>Bottom-towed fishing gear will not be allowed</p> <p>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. It is uncertain whether the activity would be allowed in the site in the future, depending on the intensity it could cause impacts on seafloor features that would prevent the achievement of conservation objectives.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Loss of ground for bottom-towed gear fishermen (<i>may not be relevant in this area.</i>) 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.

<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Netting and longlining will not be allowed</p> <p><i>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</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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 <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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.) <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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
<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p><i>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.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: <ul style="list-style-type: none"> - 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. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.

<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Crab tiling / bait digging will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Beach replenishment will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed <p>Benefits:</p> <ul style="list-style-type: none"> o Potential for increased and enhanced leisure and recreational activity
<p>Pelagic trawls will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>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.</p> <p>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</p>	<p>Direct implications:</p> <p>Given this assumption there are still the following concerns:</p> <ul style="list-style-type: none"> 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). <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.

<p>The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Tourism and recreational activities will be permitted.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Maintenance dredging in ports (to enable access to ports) will be permitted</p> <p><i>The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o (no heritage wrecks currently present in the site)
<p>Anchoring of small vessels will be permitted</p> <p><i>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.3.21e 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).

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*
 - Estuarine partnership management arrangements should be listed as management measures for the site
- *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.3.21e (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 Otter estuary is a relatively well-supported rMCZ with low levels of contention, as there are low levels of human activity within the estuary and there is no port. It is one of the three estuaries that were included in the developing recommendations relatively early on in the process (see progress report 3).

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.

Site map series

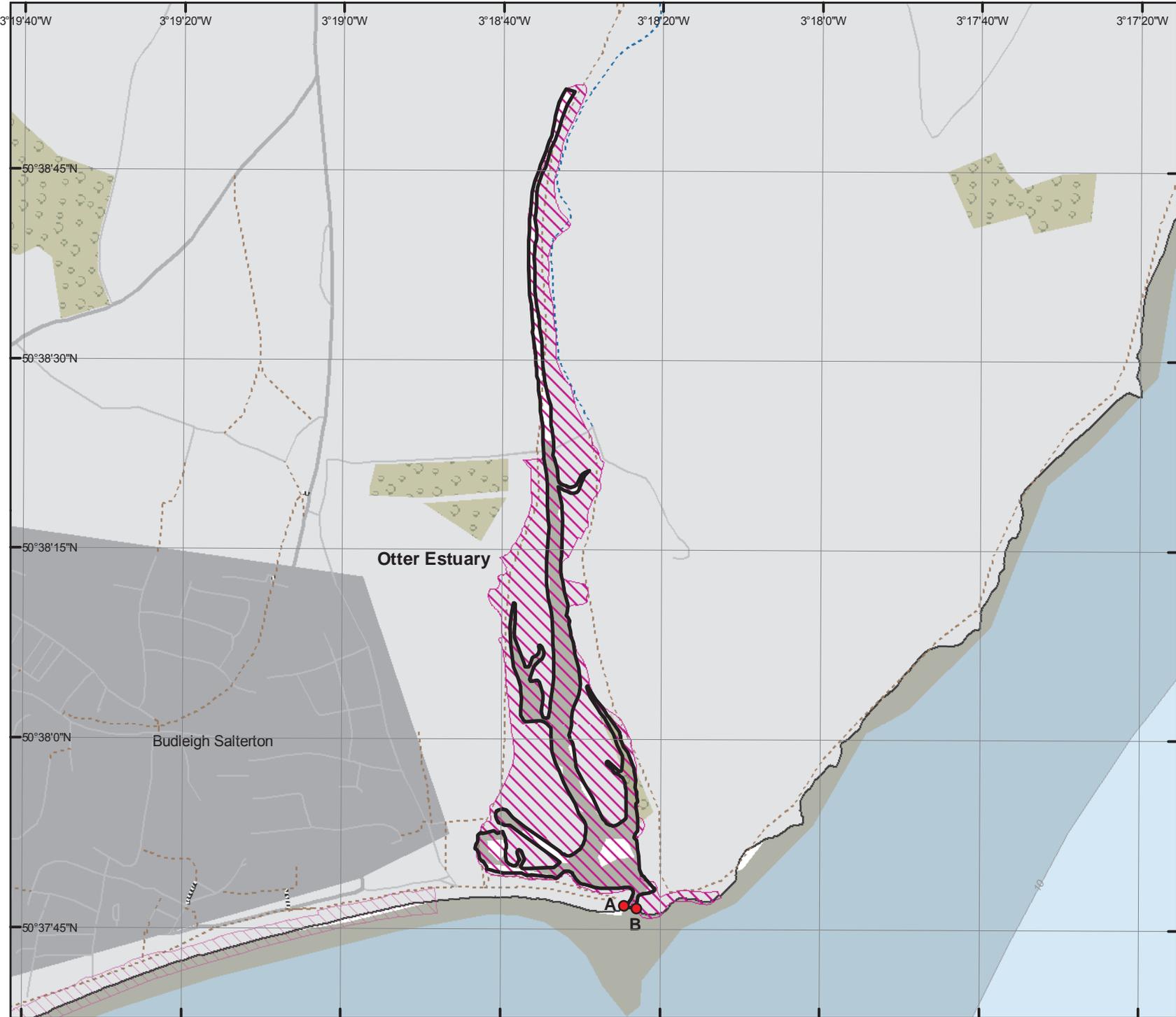
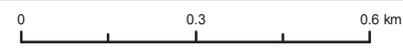
On the following pages there are two maps of this site.

- The first map (FR_032a) 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_032b) 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.3.21b and II.3.21c, data sources are indicated in the tables.
- The third map (FR_032c) 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).

- 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.

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.

Maritime basemap © British Crown and SeaZone Solutions Limited, 2010.
All Rights Reserved. Data Licence No. 062006.004. Land basemap part
© OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation.
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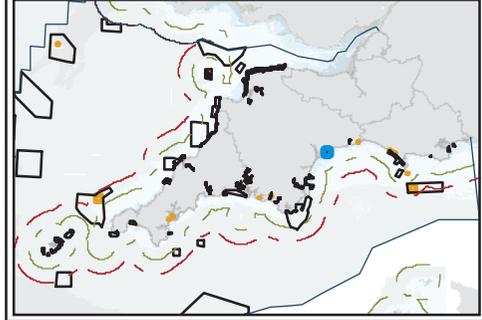
Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.6297	-3.3068	50° 37' 46" N	3° 18' 24" W
B	50.6296	-3.3064	50° 37' 46" N	3° 18' 22" W

Map Legend

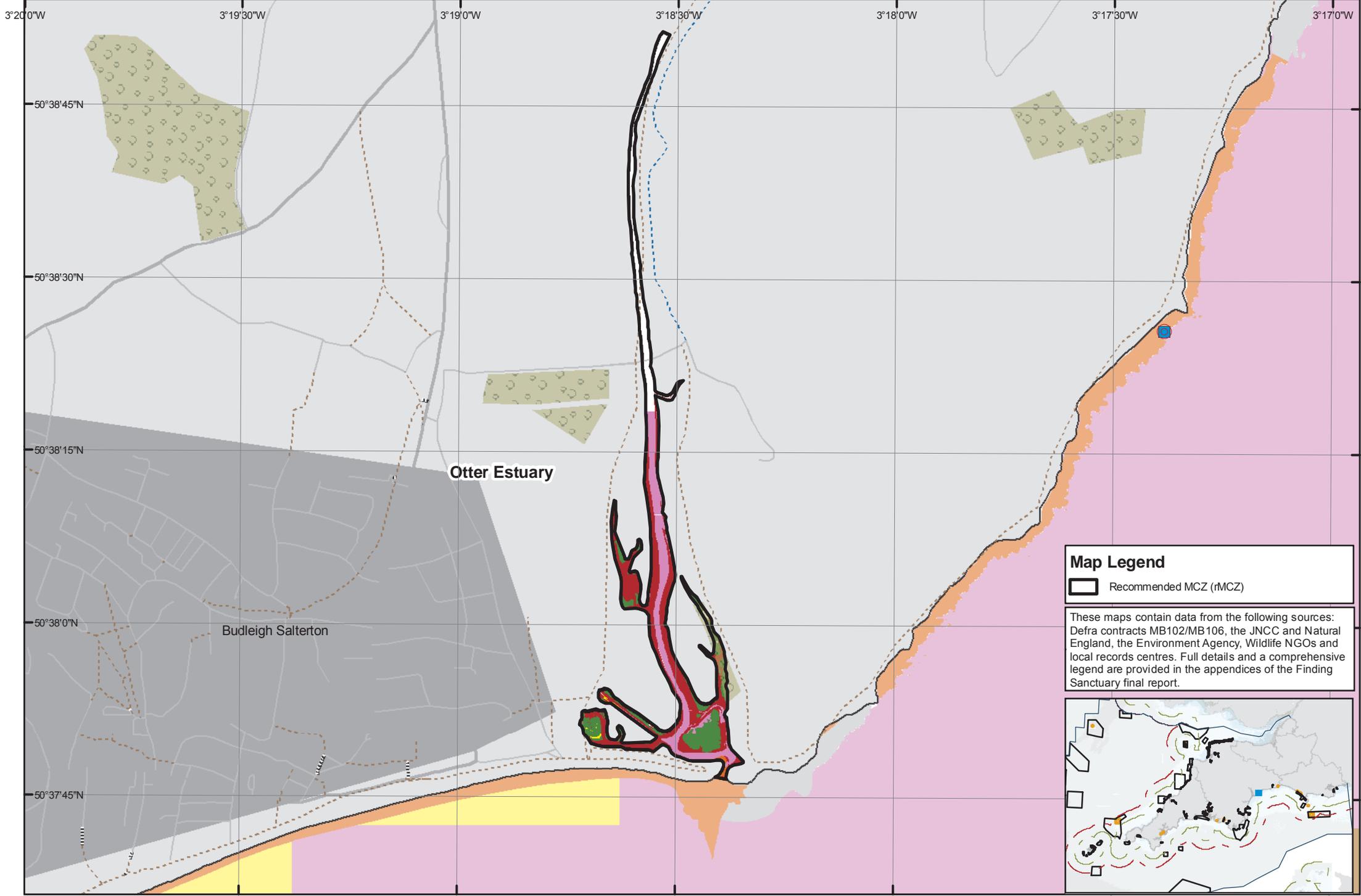
- Recommended MCZ (rMCZ)
- Existing MPAs**
- SSSI (part of MPA network)
- SSSI (not part of MPA network)

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



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.

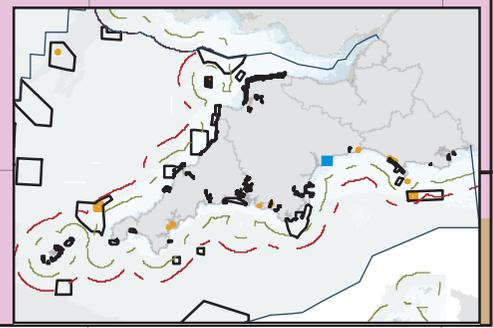
Maritime basemap © British Crown and SeaZone Solutions Limited, 2010.
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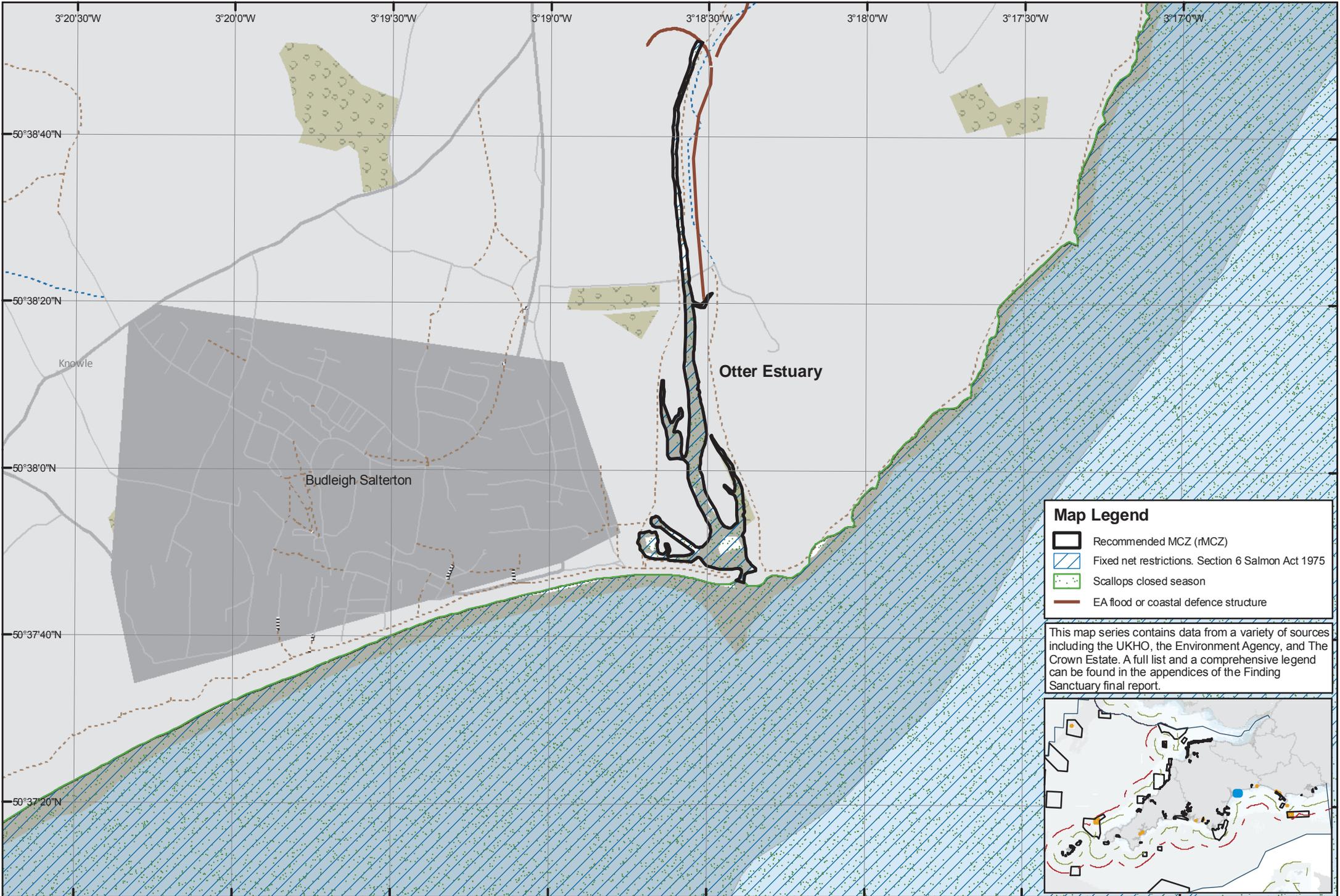


Map Legend

 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.





Map Legend

- Recommended MCZ (rMCZ)
- Fixed net restrictions. Section 6 Salmon Act 1975
- Scallops closed season
- EA 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.3.22 Torbay rMCZ

Basic site information

Site centre location (datum used: ETRS89):

Decimal Degrees		Degrees Minutes Seconds	
Lat	Long	Lat	Long
50.4335	-3.5117	50° 26' 0" N	3° 30' 41" W

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

Site surface area: 19.9 km² (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea

OSPAR region: Region II: Greater North Sea

Site boundary: The site boundary mainly follows the boundary of Lyme Bay and Torbay cSAC between Oddicombe Beach (along the shore to the north of Hope's Nose at Torquay), and Sharkham Point (just south of Berry Head, near Brixham). The site extends in the region of 1 - 2.5km out to sea, sometimes less. The areas within Brixham and Torquay harbours are not included. There is a seaward extension beyond the cSAC boundary around Berry Head, this Berry Head zone is recommended for the protection of seabirds and cetaceans (not seafloor features).

Sites to which the site is related: The site partially overlaps with Lyme Bay and Torbay candidate SAC. Several small Sites of Scientific Interest are located along the shoreline of this rMCZ, including Hope's Nose to Wall Hill, Meadfoot Sea Road, Daddyhole, Roundham Head, Saltern Cove, and Berry Head to Sharkham Point. The southern portion of the site (south of Berry Head) intersects with a no-trawling zone within the Start Point Inshore Potting Agreement (this agreement is described in more detail in the Skerries Bank and surrounds rMCZ site report).

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).

This rMCZ consists of two zones. The area within the Torbay cSAC is recommended for the protection of ENG seafloor species and habitats not protected by the SAC designation. The zone around Berry Head is recommended for the protection of seabirds and cetaceans, but not for seafloor features. The Berry Head zone is suggested after detailed discussion within the Joint Working Group, on the basis that there is a known problem with motorised leisure craft causing disturbance to seabirds and collisions with cetaceans around Berry Head.

Features proposed for designation within Torbay rMCZ

Table II.3.22a Draft conservation objectives for Torbay 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 Habitat FOCI	Subtidal mud ¹		R
	Intertidal coarse sediment		M
	Intertidal mixed sediments		M
	Intertidal mud ²		M
	Intertidal sand and muddy sand		M
	Low energy intertidal rock		M
	Moderate energy intertidal rock		M
	Intertidal under boulder communities		M
	<i>Sabellaria alveolata</i> reefs	Honeycomb worm reefs	M
	Seagrass beds		R
Species FOCI	<i>Hippocampus guttulatus</i>	Long snouted seahorse	M
	<i>Ostrea edulis</i>	Native oyster	M
	<i>Padina pavonica</i>	Peacock's tail seaweed	M
	<i>Paludinella littorina</i>	Sea snail	M
Mobile species not listed in ENG	<i>Gavia arctica</i> ³	Black throated diver	M
	<i>Gavia immer</i> ³	Great northern diver	M
	<i>Podiceps cristatus</i> ³	Great crested grebe	M
	<i>Podiceps nigricollis</i> ³	Black necked grebe	M
	<i>Podiceps grisegena</i> ³	Red necked grebe	M
	<i>Podiceps auritus</i> ³	Slavonian grebe	M
	<i>Uria aalge</i> ⁴	Guillemot	M
<i>Phocoena phocoena</i> ⁵	Harbour porpoise	M	

¹Local and scientific feedback states that the habitat indicated as mud on the broad-scale habitat map for this site is probably a mixture of sandy mud and muddy sand, not pure mud.

²This habitat is on the draft conservation objective list because this feature is mapped in our combined EUNIS level 3 GIS data, although the habitat within Torbay is likely to be predominantly sandy habitat. The reason the broad-scale habitat map records it as mud is because of the habitat translation between EA habitat data and the EUNIS level 3 classification, which leads to a misclassification of some intertidal sandy areas as mud, and a consequent overestimate of the extent of intertidal mud in some areas (see appendix 8).

³Only within the zone around Berry Head – this is one of a number of wintering divers and grebes.

⁴Only within the zone around Berry Head – breeding guillemots.

⁵Only within the zone around Berry Head.

Of the draft conservation objectives listed in the table above, those for broad-scale habitats, FOCI habitats, and FOCI species apply to the whole site except the Berry Head zone. The draft conservation objectives for the birds and harbour porpoise apply in the Berry Head zone only.

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.3.22b 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 mud	8.83	0.1%	1, 2
High energy infralittoral rock ¹	0.26	<0.1%	1
Moderate energy infralittoral rock ¹	5.84	1.9%	1
Low energy infralittoral rock ¹	2.21	28.3%	1
Moderate energy circalittoral rock ¹	0.10	<0.1%	1
Subtidal sand ¹	<0.01	<0.1%	1
Low energy infralittoral rock ²	0.39	5.0%	1

¹ Features / areas already protected within an overlapping MPA. See gap table (appendix 11) for details.

² This is a small area of low energy infralittoral rock that falls just outside the candidate SAC boundary, on the Torquay side of the bay where the cSAC and rMCZ boundaries do not align exactly (see the maps at the end of this site report). The 2.21km² of the same habitat three rows earlier is the area that lies within the cSAC boundary. At the vulnerability assessment meetings, no draft conservation objective for this feature was added to the rMCZ list, as the feature was listed as already protected within the existing cSAC - not realising that part of the habitat lay beyond the cSAC boundary. 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 section II.2.8.

Table II.3.22c 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)
Moderate energy intertidal rock	0.07	1.4%	4
Low energy intertidal rock	0.06	2.0%	4
Intertidal coarse sediments	0.11	0.6%	4, 3
Intertidal sand and muddy sand	0.02	0.2%	4
Intertidal mud	0.48	0.3%	4, 3
Intertidal mixed sediments	0.11	2.5%	4
Moderate energy intertidal rock ¹	<0.01	<0.1%	4
Low energy intertidal rock ¹	0.03	1.0%	4
Intertidal sand and muddy sand ¹	<0.01	<0.1%	4
Intertidal mixed sediments ¹	<0.01	<0.1%	4

¹ Features / areas already protected within an overlapping MPA. See gap table (appendix 11) for details.

Table II.3.22d **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)
Intertidal underboulder communities		6		1
Honeycomb worm (<i>Sabellaria alveolata</i>) reefs		1		1
Seagrass beds	0.90	3		1
Subtidal sands and gravels ¹	7.83			1
Mud habitats in deep water ²		2		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.

² At the vulnerability assessment meetings, these two records were considered erroneous, and the habitat was not added to the draft conservation objective list.

Table II.3.22e **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 Trehwella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Hippocampus guttulatus</i>	1		1
<i>Ostrea edulis</i>	4		1
<i>Padina pavonica</i> ¹	4	3	1
<i>Paludinella littorina</i>	1	1	1
<i>Eunicella verrucosa</i> ²	2		1, 5

¹ There is only one record of *Padina pavonica* in the amalgamated GIS FOCI datasets for this site, which is not older than 30 years. However, local and scientific feedback indicates that the habitat along the shore where the record is located is appropriate habitat for the species, so it has been kept on the draft conservation objective list.

² Features / areas already protected within an overlapping MPA. See gap table (appendix 11) for details.

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 6.26 km² 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

Torbay is located on the south coast of Devon in the south west UK. The east facing bay is 6.4 km wide and the largest town on the bay is Torquay (Hirst & Attrill, 2008). The Devon Wildlife Trust

(1995) describes Torbay as ‘the jewel in south Devon’s crown’ for marine wildlife. They point to the profusion of animal species in damp shaded locations on the shore, citing particularly the limestone wall of Princess Pier in Torbay, and noting that Torre Abbey Sands is the only littoral site in the Bay for seagrass *Zostera marina*. The site extends from the coastline to depths of approximately 30 metres.

The rMCZ intersects with an area of higher than average benthic species and habitat diversity (as mapped by national data layers contract MB102). Local Group feedback has highlighted the sea caves present in and around Torbay, though rocky reefs and sea caves will be protected by the SAC designation. Local Group and Working Group discussions have also recognised the importance of the area for birds, with an important wintering bird roost at Broadsands, and the second most important area for wintering diver and grebe concentrations in the south west. The area is also important for bird breeding colonies, and guillemot feeding areas. Finally, the area has also been highlighted in Local Group feedback as being an important breeding area and nursery for commercial fish species.

Detailed site description

The inshore areas of Torbay are described as predominantly soft muddy sands with communities characterised by the heart urchin *Echinocardium cordatum* and brittlestars *Amphiura* spp. and *Ophiura* spp., whereas cleaner sands close inshore hold dense populations of razor shells *Ensis* spp., heart urchins *Echinocardium cordatum* and seagrass *Zostera marina* (Devon Wildlife Trust, 1995).

Communities of polychaete worms were described by Elwes (1908). Piddocks *Pholas dactylus* occurred in rock, submerged peat and clay substrata in Torbay. Sublittoral limestone rock pinnacles were considered especially rich with sea squirts, sea anemones and sponges common. Where the seabed becomes muddy, burrowing species including the angular crab *Goneplax rhomboides* and the red band fish *Cepola rubescens* were reported (Devon Wildlife Trust, 1995). The offshore seabed fauna of Great West Bay was extensively studied by Holme (1966). The substratum was relatively uniform, the community present was characterised as a ‘Boreal offshore muddysand association’; a community which corresponds to Petersen’s (1918) ‘*Echinocardium-filiformis*’ community. These communities were dominated by bivalve molluscs, holothurians (sea cucumbers) and other echinoderms (Davies, 1998). Permian conglomerate reef occurs in the middle of bay (Proctor, 1999).

Berry Head has considerable nature conservation importance for nesting seabirds and its cliff vegetation and is designated a Local Nature Reserve. The limestone has been eroded leading to the formation of caves, an uncommon marine habitat. Marine communities within the caves were described by Proctor (1985). Littoral caves pepper the headlands and islets of Torbay, and at Berry Head many extend into the sublittoral or are entirely sublittoral (Davies, 1998). The communities were described as ‘a colourful patchwork of tubeworms, barnacles, sponges, anemones, hydroids and sea squirts with fish and crustaceans common’ by Devon Wildlife Trust (in prep.). However, the marine biology of the caves remains incompletely described (Davies, 1998). Littoral habitats and communities of Berry Head were described by McCarter & Thomas (1980) in a study of south Devon. Algae were sparse; the communities were characterised by limpets, mussels *Mytilus edulis* and barnacles. Well developed lichen communities were recorded from the splash zones. Warner (1971) studied dense beds of the brittlestar *Ophiothrix fragilis*, and Hughes (1977) studied the ecology of hydroids off Berry Head (Davies, 1998).

A lot of survey effort has focussed on seagrass (*Zostera marina*) beds in Torbay. The Torbay Seagrass project is managed by Torbay Coast and Countryside Trust with the support of Devon Sea Fisheries Committee, Natural England and Torbay Council. They are funded by SITA (Landfill Trust) and carry

out a number of surveys and mapping. Torbay seagrass beds are also a study site for the EU INTERREG IV collaborative project Cephalopod Recruitment from English-Channel Spawning Habitats (CRESH, 2011). As part of this project seagrass beds in Torbay were surveyed for cuttlefish egg masses in the summers of 2010 and 2011 (see <http://www.marlin.ac.uk/cresh/>).

Proctor (1999) states that *Zostera* beds have been identified at seven sites around Torbay, most of them concentrated into two groups centred around the sheltered North West and South West corners of the bay. Many of the beds proved to be limited extent, but two were very large (the beds at Elberry Cove and Torre Abbey Sands). Very rich faunas are associated with them, particularly of burrowing worms, anemones and echinoderms. Proctor (1999) provides the following more site-specific information on seagrass beds in Torbay:

- At Breakwater Beach, Brixham (SX 932 567), the beach is made of limestone shingle, sloping down to low tide mark to a flat sandy bottom at a depth of 4 metres. *Zostera* bed forms a strip running parallel to the coast some 25 to 100 metres off the beach, on a substrate of muddy sand with small cobbles and shells. The main area (bed of 150 by 40 metres) lies off the small headland at the east end of the beach. To the west, a narrow belt of *Zostera* extends towards the breakwater (approx 10 metres wide). The muddy sand bottom beyond the bed is faunally rich, with abundant spider crabs *Macropodia* sp. and a colony of the square crab *Goneplax rhomboides*.
- At Fishcombe Cove (Just west of Brixham harbour, SX 919 570) the beach comprises shingle cobbles grading down to limestone slabs at low water mark. *Zostera* beds grow on a substrate of muddy sand with shells and pebbles (area of 140 by 60 metres in the middle of the cove). Narrow beds extend from the main bed to the north and the east (the north peters out after 50 m).
- At the far southwest corner of Torbay at Elberry Cove (SX 903 571), the shingle beach slopes down to a flat shore of clean sand, exposed at low spring tides. A very extensive bed of *Zostera* grows on the clean sand substrate here, covering an area of at least 150 by 300 metres, extending right across the cove at depth 1-2 metres (Proctor, 1999). The bed comprises scattered dense patches (distance between patches approx 3 to 10 metres). A narrow belt to the south connects it with another bed on south of Elberry Cove. The main bed extends north to Churston Point. Reports from divers suggest that *Zostera* beds may occur along most of this coastal strip from Elberry Cove to Fishcombe Cove (a distance of 1.6 km).
- A *Zostera* bed was reported off Livermead Head (SX 903 624) by Richard Wood (pers. comm. to C. Proctor) on clean sand at 2 metres (south from the north end of the headland). Small clumps were found in 1998. The Devon Wildlife Trust (DWT) reported small clumps growing at Livermead Sands.
- The wide sandy beach of Torre Abbey (SX 912 634) is the location of the largest *Zostera* bed known in Torbay. It is a clean sand beach with a very gentle slope. The bed grows on flat sand (with few shells and pebbles), from just above low water mark to depth of at least 3 metres. At the east of Harbreck Rock there is a bed of 300 by 300 metres, of which 300 by 90 metres of this is exposed at the lowest spring tides (extends seawards, continuing out un-surveyed. This may join the bed at the West side of Harbreck Rock on the seaward side. A clean sand burrowing invertebrate community is present.
- At Milestones Bay (SX 920 630), a small bay on east side of Torquay Harbour, limestone cobble beaches slope down below low water mark to a clean sand bottom. *Zostera* grows at 2 to 4 metres. A clean sand community similar to Torre Abbey and Elberry Cove exists.
- A small *Zostera* bed is also reported by local divers (ephemeral in nature) at Anstey's cove (SX 936 647). So, in general, *Zostera* occurs on sheltered soft bottoms in the shallow sublittoral. Isolated plants are found growing elsewhere in the bay.

Recent video and SCUBA surveys by the Torbay Coast and Countryside Trust's (TCCT) Torbay Seagrass Project have shown that there are at least 80 ha of seagrass meadows in Torbay (Hirst & Attrill, 2008). At Torre Abbey Sands off Torquay (50°27.68'N, 003°31.95'W) there is a *Zostera marina* L. bed that is exposed at extreme low water. The coverage of the intertidal bed is sparse and is made up of small patches of seagrass ranging from a few shoots to patches up to 1.6 m across, surrounded by sand, with more contiguous coverage present further into the subtidal. Hirst & Attrill (2008) sampled investigated the relationship between patch size, diversity and infaunal assemblage composition with the intention of defining a minimum *Zostera* patch size where the infaunal seagrass assemblage becomes distinct from the bare sand assemblage. The authors found that even small patches of seagrass comprising a few plants support a higher abundance and diversity of infaunal invertebrates than bare sand, indicating that *Zostera* patches have conservation value whatever their size.

There are several reports of seahorses within the seagrass beds of Torbay, and the site is described by The Seahorse Trust as a 'hotspot' for both species of Seahorse (*Hippocampus hippocampus* and *Hippocampus guttulatus*). The Seahorse Trust hold a large number of records from this area. Over the years prior to inclusion on the Wildlife and Countryside Act, they were also given by live Seahorses of both species by local fishermen from Torbay (Neil Garrick-Maidment, pers. comm.). During a 2008 Seasearch survey Sally Sharrock reported a spiny seahorse *Hippocampus guttulatus* found amongst the seagrass at Beacon Cove. The bed at Fishcombe Cove, described by Proctor (1999), is described as a dense, patchy meadow (edges with large patches of clear muddy sand), with a very rich fauna which includes *Hippocampus guttulatus*. The muddy bottom supports a very diverse burrowing fauna. Seahorses were found here in 1997 and again in 1998 (Neil Garrick-Maidment of the Seahorse Trust, pers. comm. to C. Proctor).

Ostrea edulis, *Padina pavonica*, and *Sabellaria alveolata* reefs have been reported during the 1992-95 Devon Wildlife Trust Torbay littoral survey. *Paludinella littorina* has been found in Torbay and surrounding area. Live snails from Torbay in shell drift were recorded in 1913 (Marshall 1913). Live snails were found in caves within St. Mary's Bay near Brixham by Light (1998), and shells were found in crevices at Hope's Nose (north of Tor Bay) recently by Killeen & Light (unpublished).

The sheltered limestone and sandstone shores of Torbay are rich in animals, many of which are more typically found underwater but can be found here in profusion in damp, shaded locations. Sponges in particular are abundant, many of the rocky shores hold over a dozen species (Devon Wildlife Trust, 1995).

Bouldery areas are occasionally consolidated by the frequent reefs of the honeycomb worm *Sabellaria alveolata* and these areas have varied rich and varied underboulder fauna. Hollicomber holds probably the densest population of the green sea urchin *Psammechinus miliaris* on the south west coast of Britain as well as acting from time to time as a settlement area for the common starfish *Asterias rubens* (Devon Wildlife Trust, 1995). Rocky ledges and boulders on the lower shore are heavily bored by piddocks and frequently possess a rich algal turf containing several rare or scarce species such as *Padina pavonica* and *Gigartina teedii* (Davies, 1998; Devon Wildlife Trust, 1995).

Two rare sublittoral habitats, peat bog and fossil forest, are found in the western end of Torbay. The peat bog is heavily bored by the common piddock. A layer of peat is also present intertidally, though submerged beneath the sandy beach (Devon Wildlife Trust, 1995).

In 2005 Garfish Cave and Corbridge Cave at Berry Head (Torbay) were surveyed by Chris Proctor, (local diver/caver). A team of 13 volunteer Seasearch divers carried out surveys over two weekends in March and April 2006, and further surveys of Garfish Cave were conducted by Chris Proctor's team in April. In a cave near Rock Dove Cave (a limestone cliff South Berry Head), fissures, cracks and crevices and a rich covering of turf especially near the cave entrance, on overhangs and up to 10m into the cave entrance were surveyed. *Caryophyllia inornata* was recorded as common together with the larger *Caryophyllia smithii*, the Devonshire cup coral, 7 species of sponge, 10 species of mollusc and 12 species of algae. From the cave entrance large boulders led down to smaller boulders, cobbles and sand patches at 6m below sea level. The boulders had little kelp cover at this time of year but many holdfasts indicated a thick summer growth. A wide arched entrance in the cliff has overhanging rock faces with small tubes extending upwards. The overhangs are heavily shaded with little weed growth but a rich encrusting fauna. *Dercitus bucklandi*, *Dysidea fragilis*, goosebump sponge, and *Cliona celata*, boring sponge, were amongst the 7 species of sponge recorded. There was abundant *Corynactis viridis*, the jewel anemone. *Alcyonium digitatum* and *Caryophyllia smithii* were common with *Alcyonium hibernicum* and *Caryophyllia inornata* also recorded amongst the total of 7 cnidarians. Ascidians included *Morchellium argus* and *Sidnyum elegans*. The floor of this entrance area had boulders in the centre with a narrow silt floored fissure on the east side with bib and leopard spotted goby present.

A dense bed of the brittle-star *Ophiothrix fragilis* was studied by SUCBA diving by Warner (1971). Sixty-six dives were carried out during 1967-69; a total of 74 hours underwater. The substrate during the survey was described as muddy gravel with rocky outcrops and a continuous, fairly weak current heavily laden with seston flowed over the bed. The muddy gravel became progressively muddier farther out from the shore. At 400m out the substrate is described as pure soft mud. Individuals occurred on rocky outcrops amongst the sessile epifauna. The brittle-star beds were described as restricted to 'hard grounds' just inside the two headlands (Hope's Nose and Berry Head). Seventy-eight other species were found during the surveys, the commonest being the bivalve *Abra alba*. Benthic sampling was carried out during the dives. Vertical rock faces were found to be pitted by boring bivalves.

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.3.22f shows more specific working assumptions and implications that were recorded for this site over the course of the planning process.

Following that, table II.3.22g 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). These concerns were particularly significant for this site, as reflected under the additional comments below.

Table II.3.22f Specific assumptions and implications relating to Torbay 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
<p>Aggregate extraction will not be allowed</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.
<p>Bottom-towed fishing gear will not be allowed</p> <p>The VA meetings considered scallop dredging for the site, and discussed that it may have to be excluded from part but not all of the site. This was based on data showing that the activity hardly takes place in most of the site. Other types of demersal fishing activities were not considered in detail.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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 Change of method /reinvestment in other gear types may be needed 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There are outstanding concerns from the fishing industry over access for fisheries on mud habitats.

	<p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> o The subtidal mud habitat will degrade if bottom gears are permitted within the site o MCZ boundaries already changed to reduce impacts on mobile fishing gear
<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Possible effects on ports and harbours (this is a general concern, not just relating to the anchoring of large vessels). <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is a closed disposal site within this rMCZ.

<p>Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.</p>	
<p>Assumptions</p>	<p>Implications</p>
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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.) <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Local Group feedback has suggested excluding netting from the area, or restricting it so fixed nets are not allowed, in order to protect birds – these are currently not part of the conservation objectives (see ‘additional comments’). o Local Group feedback has suggested limiting potting. 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

<p>Tourism and recreational activities will be permitted.</p> <p>Following discussions at the VA meetings, several tourism and leisure activities have been identified that would require management: anchoring would need to be prevented on seagrass areas, collisions with cetaceans (of motorised leisure craft) would need to be avoided, and seabird disturbance (noise) would need to be avoided around Berry Head.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Zoning/information/increased advice costs (generic) o Refer to Sea Torbay and Harbour management plans o Local Group feedback has suggested restricting boating activity, but has also highlighted that all leisure activities should be allowed to continue. The area is of great importance to tourism, with harbour activities, leisure sailing and water sports, and some people on the Local Group felt that any restrictions on these activities would have negative socio-economic consequences. o Local Group feedback has recognised the conflicts around leisure activities and conservation interests in the area, and also possible health and safety problems related to leisure activities. Zonation has been suggested as a possible tool to help resolve conflicts. o Some Local Group feedback indicates that they feel recreational activities may not have a negative impact on the conservation interests of the site.
<p>Anchoring of small vessels will be permitted</p> <p><i>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</i></p> <p>Following VA meetings, a need for management of anchoring on seagrass beds has been identified - please refer to the row above on tourism and recreational activities.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Possible effects on ports and harbours (this is a general concern, not just relating to the anchoring of small vessels). o Concerns have been voiced over potential damage of anchors to seagrass beds within the rMCZ, and the possibility of restricting or limiting anchoring in sensitive areas has been raised. This would mean zoning harbour and recreational activities. o Some Local Group feedback has raised concern about any restrictions on anchorage of small vessels, moorings for vessels or navigation aids o Safety concerns for drifting diving/angling boats due to inability to 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.

<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>Following VA meetings, a potential need for managing aquaculture activities in this site has been identified.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is concern around potential increases in cost to these activities resulting from an MCZ designation, and a suggestion was made by a Steering Group member to model those costs.
<p>Coastal development and defence</p> <p>VA meetings highlighted that additional mitigation may be necessary, but this is not yet known.</p>	<p>Direct implications:</p> <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> o Coastal protection works within this site. o Possible restriction of construction works e.g. construction of breakwater; construction of third harbour
<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p><i>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.</i></p> <p>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</p>	<p>Direct implications:</p> <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: <ul style="list-style-type: none"> - 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. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.

<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The Crown Estate have highlighted that the rMCZ is located near an area of waste water outfalls to the north which need to be able to continue. o A comment has been made to check with South West Water on their level of treatment in the area
<p>Crab tiling / bait digging will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Zoning at the least (generic) / restriction of numbers
<p>Beach replenishment will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The Crown Estate have highlighted that the rMCZ is located in an area with coastal protection works which need to be able to continue. o The Environment Agency ask for coastal erosion and flood risk management activities to be taken into account.

Activities assumed to be allowed to continue / occur within the site	
Assumptions	Implications
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed <p>Benefits:</p> <ul style="list-style-type: none"> o Potential for increased and enhanced leisure and recreational activity

<p>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.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption there are still the following concerns:</p> <ul style="list-style-type: none"> 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) <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.
<p>The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational)</p> <p>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.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Maintenance dredging in ports (to enable access to ports) will be permitted</p> <p><i>The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Possible effects on ports and harbours (this is a general concern, not just relating to maintenance dredging in ports). o It is essential that this activity can continue in this site, this has been indicated within the regional Working Groups as well as the Local Group. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> o Possible inability to dredge

<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o (no heritage wrecks currently present in the site) <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Essential for compliance of shipping sector/economics o Impact on seagrass beds?
<p>Passage of ships will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Possible effects on ports and harbours (this is a general concern, not just relating to the passage of ships).
<p>Seaweed harvesting will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Removal of seaweed is in the control of the Harbour master

Table II.3.22g 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
<p>Commercial Fishing – Scallop dredging</p>	<p>Management:</p> <ul style="list-style-type: none"> - Effort management on subtidal mud habitats. Dredging permitted provided that such vessels use no more than 2 tow bars not exceeding 2.6m length with no more than 3 dredge attached to each tow bar. <p>Measure:</p> <ul style="list-style-type: none"> - Option 1: byelaw - Option 2: licence condition
<p>Commercial Fishing – Scallop dredging</p>	<p>Management:</p> <ul style="list-style-type: none"> - Prohibition of dredging over areas of seagrass. <p>Measure:</p> <ul style="list-style-type: none"> - Option 1: voluntary

	<ul style="list-style-type: none"> - Option 2: byelaw - Option 2: licence condition
Aquaculture	<p>Management</p> <ul style="list-style-type: none"> - Monitoring of sensitive rMCZ features as part of existing adaptive management plan <p>Measure</p> <ul style="list-style-type: none"> - To be determined
Tourism & Leisure - anchoring	<p>Management:</p> <ul style="list-style-type: none"> - Prioritisation of seagrass monitoring research programme; - Awareness raising of seagrass areas and potential impacts of anchoring <p>Measure:</p> <ul style="list-style-type: none"> - Voluntary
Tourism & Leisure	<p>Management</p> <ul style="list-style-type: none"> - Education and awareness of conduct for encounters with cetaceans <p>Measure</p> <ul style="list-style-type: none"> - Voluntary code of conduct - Voluntary 'Wise accreditation'
Tourism & leisure - vessel movement	<p>Management</p> <ul style="list-style-type: none"> - Seasonal (summer) speed restrictions around Berry Head <p>Measure</p> <ul style="list-style-type: none"> - Option 1: Byelaw - Option 2: Voluntary
Coastal Defence & Development	<p>Management:</p> <ul style="list-style-type: none"> - 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 <p>Measure :</p> <ul style="list-style-type: none"> - Marine Licence

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 NFFO representative stated the inclusion of bird features for this site without any clear indication of management measures created an uncertainty over the impact this site would have upon the fishing industry.
- The ports representative highlighted this as a site of particular concern to the ports sector, as they were uncertain over how the designation would affect their activities.

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.

- *Anchoring of small vessels*
 - It was agreed that anchoring was incompatible with seagrass habitats. It was recommended that there was further liaison with the leisure industry to identify a mooring zonation scheme that benefits the seagrass habitat. It was recommended installing eco moorings at Fishcombe Cove.
 - Seagrass beds / anchoring: voluntary zoning has been discussed for years, would need further discussion with local stakeholders. This ought to tie in with health and safety discussions (e.g. zoning to protect swimmers from jetskis).
- *Seabirds and cetaceans*
 - The question was raised as to whether MCZ is the best / most appropriate vehicle for achieving the desired protection for seabirds and cetaceans around Berry Head. There is an existing but non-enforced byelaw within a small bay south of Berry Head. It is questionable whether another byelaw under an MCZ e.g. speed restriction would achieve a change to behaviour.
 - RYA suggest that codes of practice might be a better approach than new byelaws, seasonal buoys could be put in place to demarcate areas where code of practice applies.
 - RYA would not support any measure that would restrict passage of vessels.
 - Commercial fishing cannot support the inclusion of these species in the Draft conservation objectives.
 - Some other sectors felt they could not support a designation for seabirds and cetaceans and felt the local byelaws should cover this. Some reported that the byelaw is implemented by the harbour authority who doesn't enforce it, and this area is not mapped on the admiralty chart. The Berry Head zone with the draft conservation objectives for seabirds and cetaceans was ultimately agreed with reservations, on the strength of the rationale being used (i.e. that there was evidence of current activities causing disturbance to these species, and this needed addressing).
 - 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 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 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 has proposed for the protection of wintering divers and grebes that a byelaw (for a non-disturbance zone in summer and dusk to dawn netting in the winter) would be necessary to determine that no deterioration in/loss of conservation status of the species making up the assemblage using the site (Black Throated Diver, Great Northern Diver, Great Crested Grebe, Black Necked Grebe, Red Necked Grebe, Slavonian Grebe) 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 has suggested that additional resources ought to be made available to the harbour authority if an MCZ designation results in additional work.
- *Ports*
 - The Ports of Torbay (Torquay, Paignton and Brixham) have a significant role in serving the local, regional and national economy and are of strategic significance to the County of Devon. Efforts have been made to adjust the rMCZ boundary so that it avoids the inner harbours of each port, however, by pursuing this designation it is having a direct impact on 3 ports. Assumptions on shipping have not been clarified therefore there is a real risk to navigational safety that needs to be thoroughly investigated.
 - The port authority does not support this site.
 - Tor bay Harbour Authority - implications remain:
 - Competitiveness of port
 - Competitiveness of tourism based economy
 - Possible restriction on laying moorings
 - Loss of income from fishermen
 - 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 of 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.3.22g (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.
 - Concerns were expressed with respect to inshore sites in general, but the Torbay rMCZ VA outcome elicited particularly strong negative feedback, because working group members felt that insufficient consideration had been given to local knowledge and evidence about the damage caused by bottom-towed mobile fishing gear (especially given the sensitive seagrass habitat present in the bay), and to the fact that local agreement to the MCZ recommendations had been won through many discussions and hard work.
 - This site was originally reduced in size to allow for scalloping to continue outside the rMCZ. Levels of effort by scallopers and dredgers has been seen to increase significantly and it was felt by some that if these activities were allowed to continue then there is no point including this site in the network.
 - The representative for charter skippers was strongly opposed to the outcome of the VA which suggested that the use of mobile gear will be allowed in this rMCZ. This opposition partly reflected the fact that this representative had spent a lot of time locally, speaking with stakeholders and getting local agreement for the site to be included in the recommended network, based on the assumption that mobile bottom-towed fishing gear would be excluded from the site.

- It was noted that closing this site to mobile gear use was supported by the local fishing community.
- 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.

Torbay rMCZ has raised concerns with the ports and harbours sector, who would prefer an alternative site to be found. The Torbay harbourmaster is not supportive of the site – he has been unsupportive from the beginning because of fears of impacts on harbour developments and operations. On the other hand, Torbay rMCZ has strong support from conservation and recreation representatives, and from Sea Torbay (a local cross-sectoral interest group). One of the Joint Working Group members spent a great deal of time communicating with local stakeholders, including Sea Torbay and local fishermen, and has gained support for this rMCZ (on the assumption that mobile bottom-towed gears would not be allowed in the site). This was one of the reasons why there was such a strong negative reaction to the outcome of the vulnerability assessment for Torbay rMCZ, with a sense of dismay at a lack of stronger management proposals following all the hard work to build local support for the site.

The Crown Estate provided feedback to state that the rMCZ is located in an area with coastal protection works, nearby waste water outfalls to the north and port/harbour facilities. They are supportive of the rMCZ with the assumption that MCZ designation would not restrict ongoing activities described.

The seabird and cetacean protection zone off Berry Head has strong support from the RSPB and other conservationists, as well as wider support from the stakeholders, who accept that there is a current problem with disturbance from speeding boats, and management would be beneficial. There is relatively broad support for voluntary agreements, but not for more byelaws (current byelaws in place near Berry Head are considered unenforceable by many).

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, SeaSearch 2009, MESH, 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 information on the Natura 2000 sites to which this site is related may be found on the JNCC's [website](#)³².

Torbay Coast and Countryside Trust have data on cetaceans in Torbay and an ongoing record of activities and trends. Their data is also regularly shared with the Seawatch Foundation. Further information can be obtained from Nigel Smallbones from the Torbay Coast and Countryside Trust.

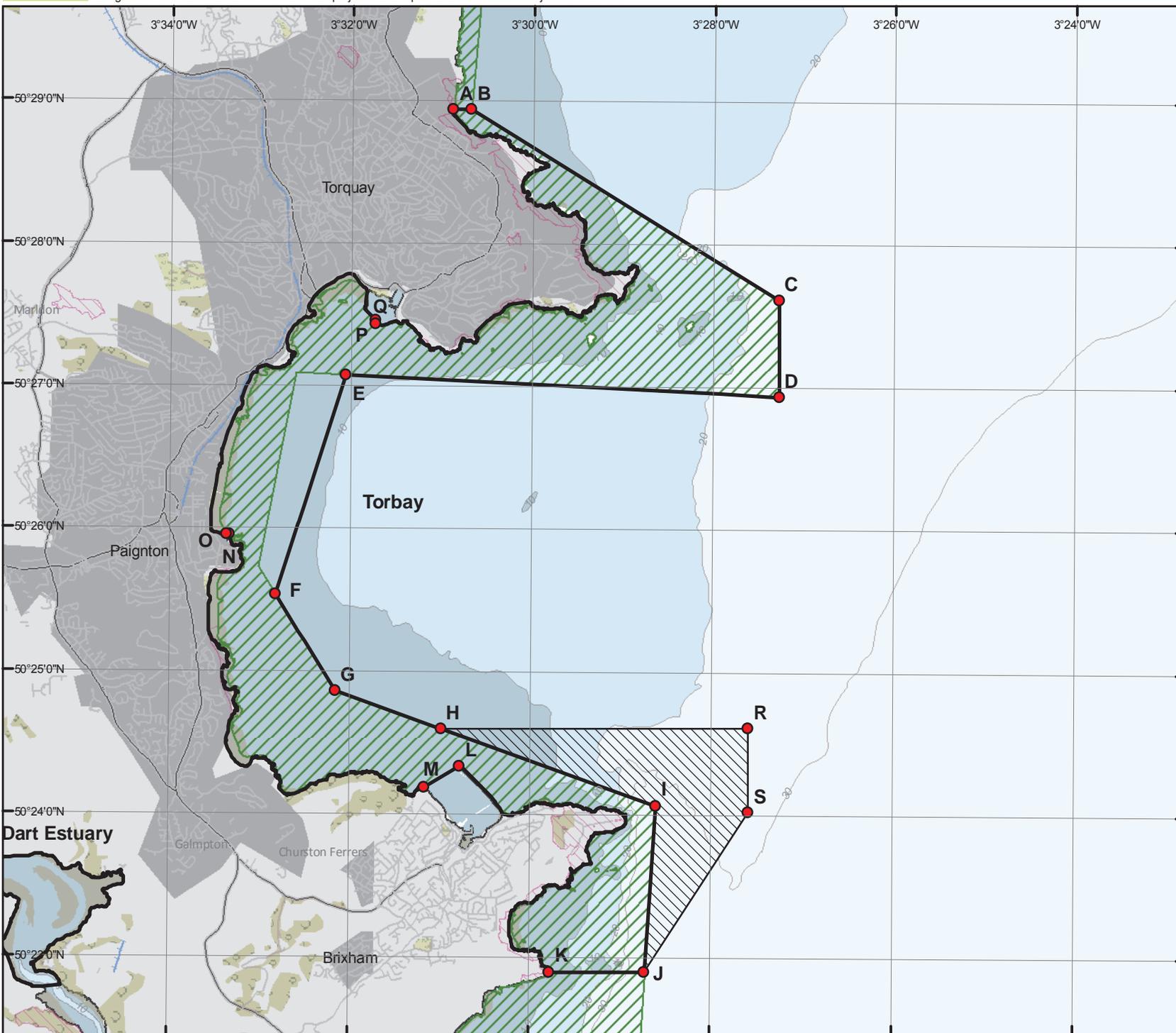
³² <http://jncc.defra.gov.uk/page-4>

Further evidence underpinning the site can be found in the publications and datasets referred to in the detailed site description. In addition, there may be relevant information about the seagrass beds in Torbay in Black & Kochanowska (2004), and Devon Wildlife Trust (1996). 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_033a) 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_033b) 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.3.22b to II.3.22e, data sources are indicated in the tables.
- The third map (FR_033c) shows socio-economic datasets excluding fisheries regulations. For spatial data showing the distribution of fishing effort, please refer to the interactive PDF maps supplied with the additional materials (see appendix 14).
- The fourth map (FR_033d) shows fisheries regulations data.
- 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.



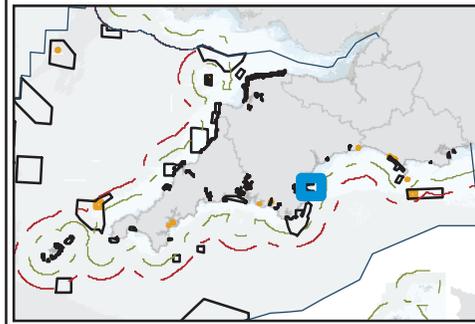
Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.4824	-3.5149	50° 28' 56" N	3° 30' 53" W
B	50.4824	-3.5115	50° 28' 56" N	3° 30' 41" W
C	50.4602	-3.4546	50° 27' 36" N	3° 27' 16" W
D	50.4490	-3.4545	50° 26' 56" N	3° 27' 16" W
E	50.4513	-3.5344	50° 27' 4" N	3° 32' 3" W
F	50.4256	-3.5471	50° 25' 32" N	3° 32' 49" W
G	50.4144	-3.5361	50° 24' 51" N	3° 32' 9" W
H	50.4100	-3.5165	50° 24' 35" N	3° 30' 59" W
I	50.4011	-3.4769	50° 24' 4" N	3° 28' 36" W
J	50.3817	-3.4788	50° 22' 54" N	3° 28' 43" W
K	50.3817	-3.4963	50° 22' 53" N	3° 29' 46" W
L	50.4056	-3.5131	50° 24' 20" N	3° 30' 47" W
M	50.4032	-3.5195	50° 24' 11" N	3° 31' 10" W
N	50.4326	-3.5557	50° 25' 57" N	3° 33' 20" W
O	50.4327	-3.5563	50° 25' 57" N	3° 33' 22" W
P	50.4577	-3.5290	50° 27' 27" N	3° 31' 44" W
Q	50.4573	-3.5290	50° 27' 26" N	3° 31' 44" W
R	50.4102	-3.4598	50° 24' 36" N	3° 27' 35" W
S	50.4004	-3.4598	50° 24' 1" N	3° 27' 35" W

Map Legend

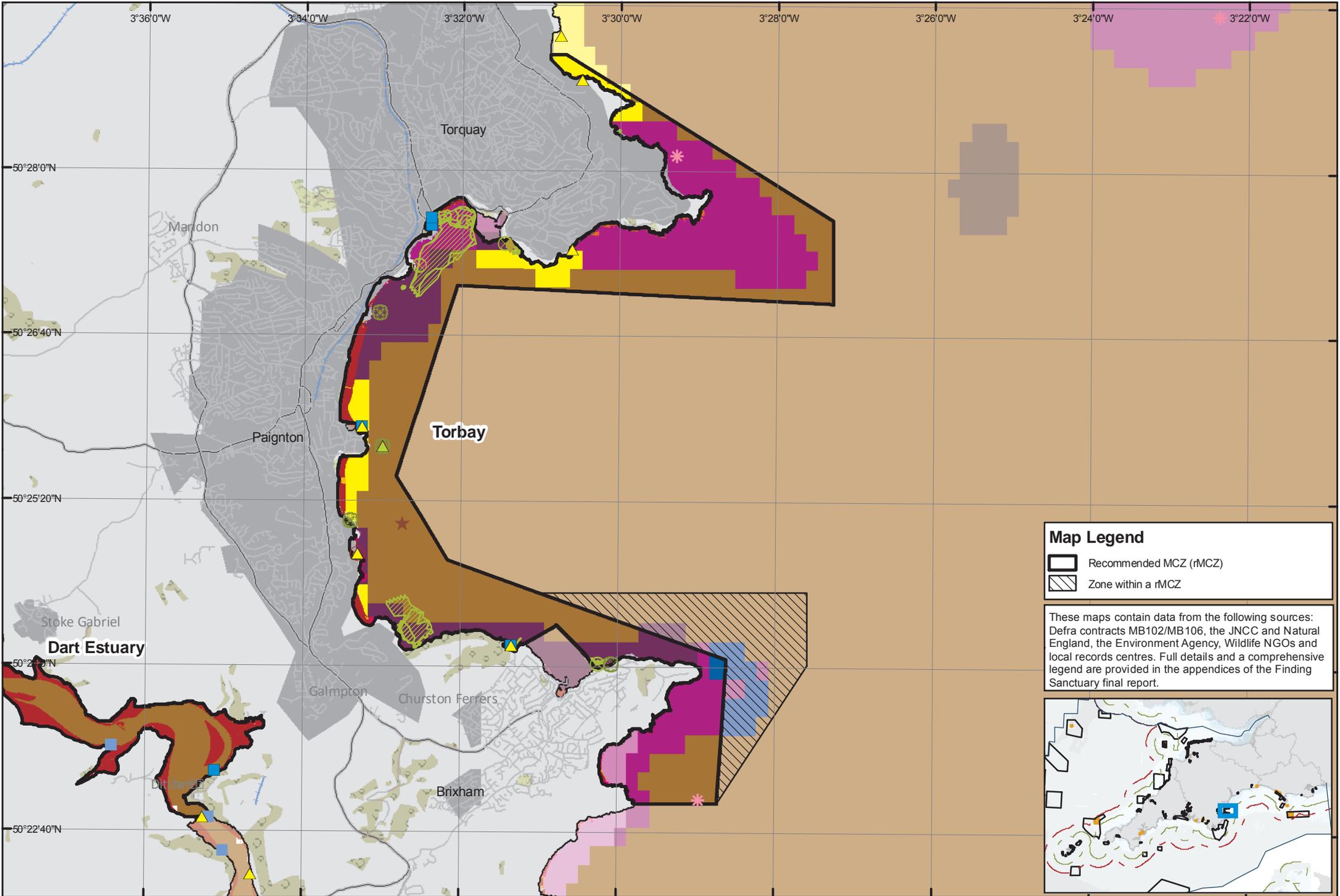
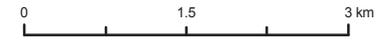
- Recommended MCZ (rMCZ)
- Zone within a rMCZ
- Existing MPAs**
- SAC
- SSSI (not part of MPA network)

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



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.

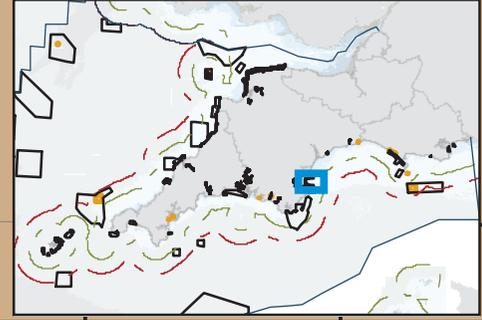
Maritime basemap © British Crown and SeaZone Solutions Limited, 2010. All Rights Reserved. Data Licence No. 062006.004. Land basemap part © OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation. Contains OS data © Crown copyright 2011.



Map Legend

-  Recommended MCZ (rMCZ)
-  Zone within a rMCZ

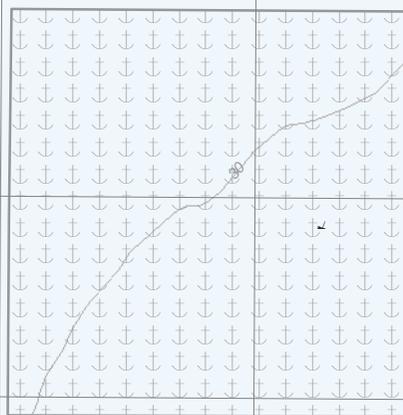
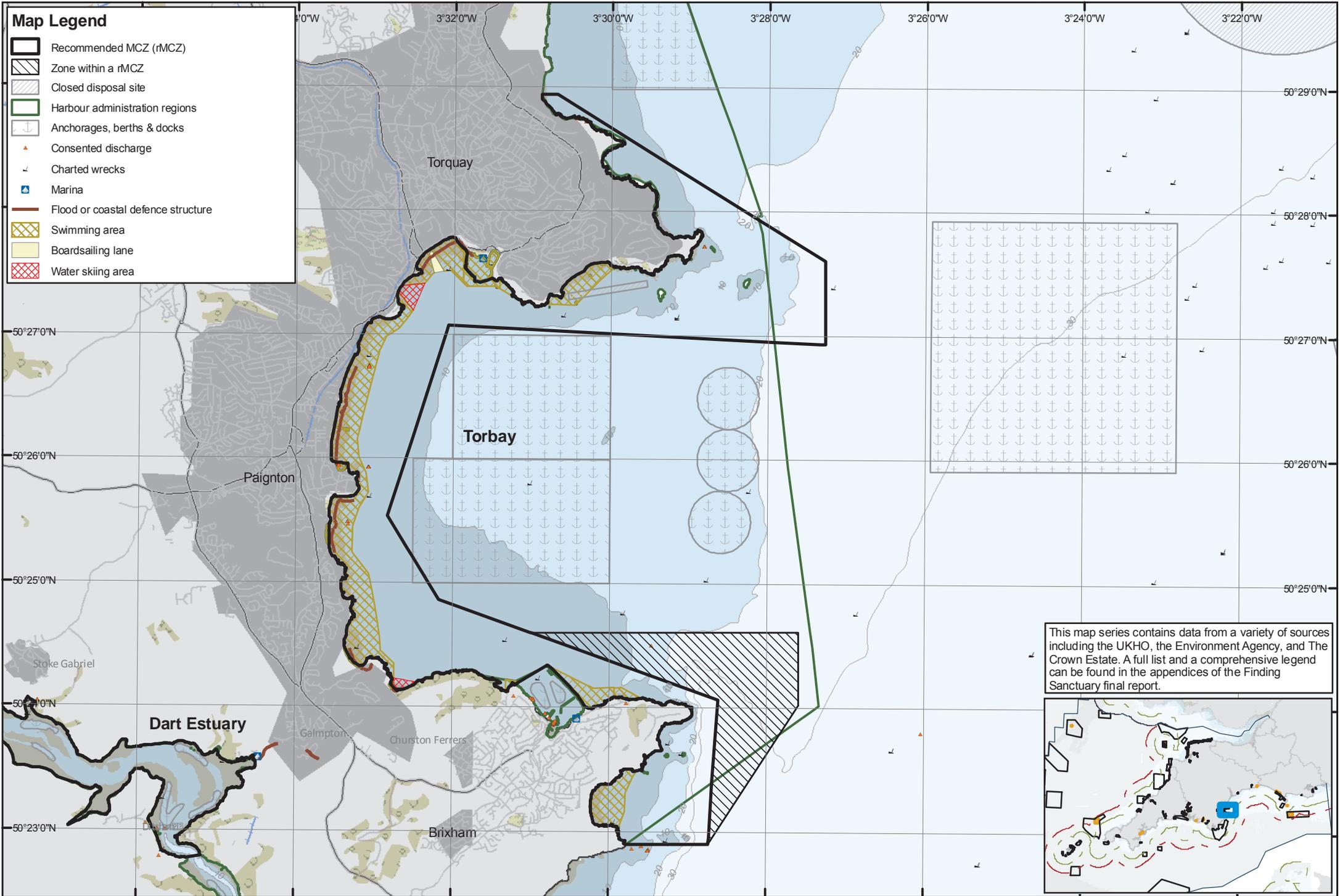
These maps contain data from the following sources: Defra contracts MB102/MB106, the JNCC and Natural England, the Environment Agency, Wildlife NGOs and local records centres. Full details and a comprehensive legend are provided in the appendices of the Finding Sanctuary final report.



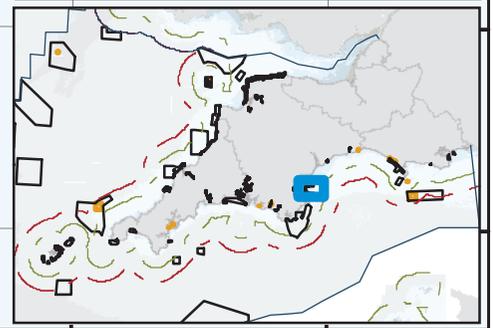


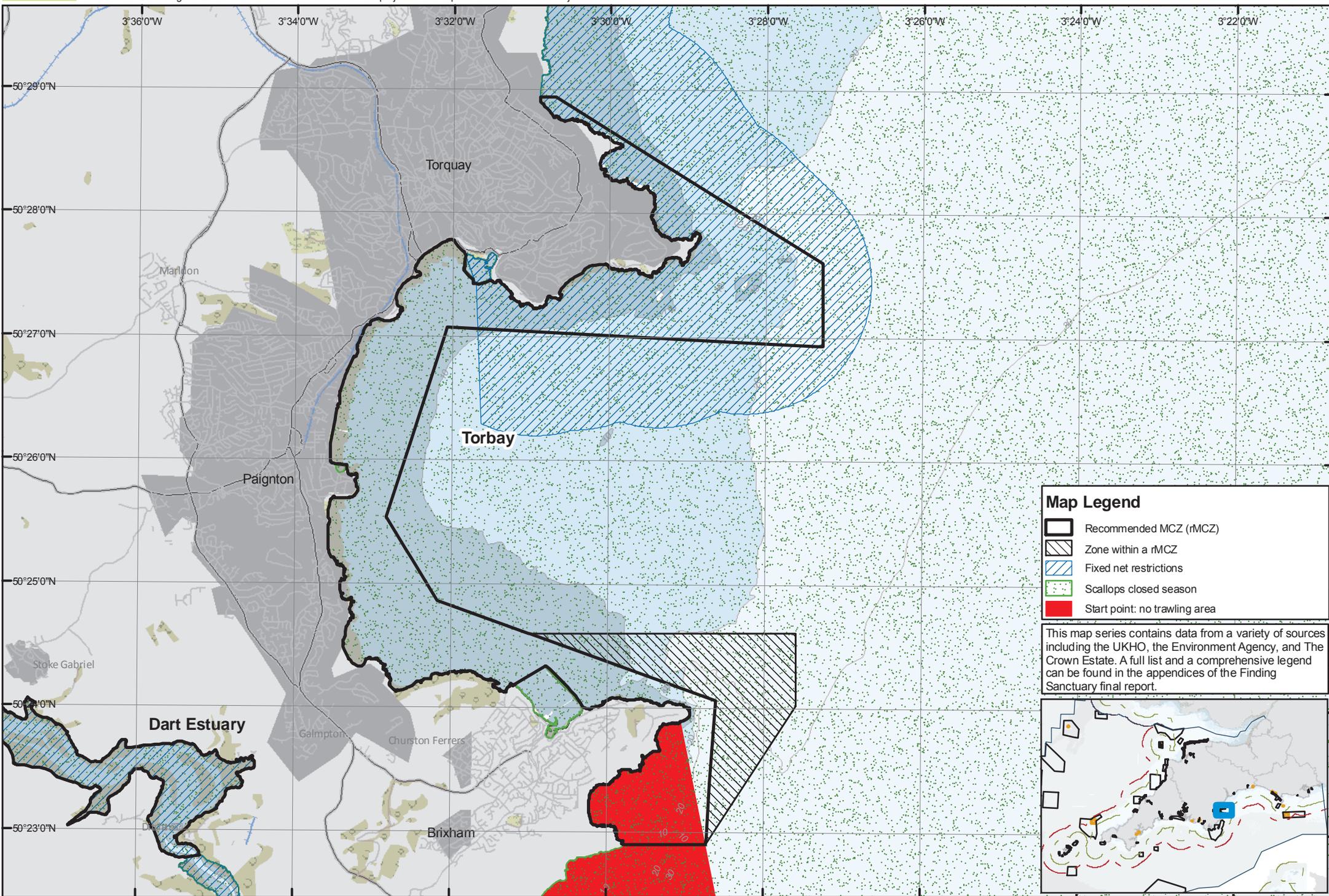
Map Legend

- Recommended MCZ (rMCZ)
- Zone within a rMCZ
- Closed disposal site
- Harbour administration regions
- Anchorages, berths & docks
- Consented discharge
- Charted wrecks
- Marina
- Flood or coastal defence structure
- Swimming area
- Boardsailing lane
- Water skiing area



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.

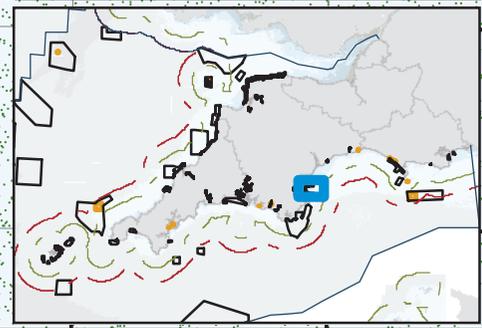




Map Legend

- Recommended MCZ (rMCZ)
- Zone within a rMCZ
- Fixed net restrictions
- Scallops closed season
- Start point: no trawling area

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.3.23 Dart Estuary rMCZ

Basic site information

Site centre location (datum used: ETRS89)

Decimal Degrees		Degrees Minutes Seconds	
Lat	Long	Lat	Long
50.3971	-3.6197	50° 23' 49" N	3° 37' 10" W

Site surface area: 4.7 km² (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea

OSPAR region: Region II: Greater North Sea

Site boundary: The site encompasses part of the upper Dart Estuary. The boundary follows the coastline along the OS Boundary Line mean high water mark from the Anchor Stone upstream as far as Totnes.

Sites to which the site is related: The site is approximately 4km upstream of part of the Lyme Bay and Torbay candidate SAC, which lies at the mouth of the Dart Estuary.

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 Dart Estuary rMCZ

Table II.3.23a Draft conservation objectives for the Dart 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
	Intertidal mud		M
	Low energy intertidal rock		M
	Coastal saltmarsh & saline reedbeds		M
Habitat FOCI	Estuarine rocky habitats		M
	Intertidal under boulder communities		M
Species FOCI	<i>Alkmaria romijni</i> ¹	Tentacled lagoon-worm	M
	<i>Anguilla anguilla</i>	European eel	? M / R ²

¹There are no records of this species in our amalgamated GIS data layers for FOCI, however, during the vulnerability assessment meetings it was highlighted that NE have knowledge of recent survey data for this species within this site (G. Black, *pers. comm.*).

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 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).

Table II.3.23b 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 mud	2.28	<0.1%	1

Table II.3.23c 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	0.1%	4
Intertidal mud	1.90	1.1%	4, 3
Coastal saltmarshes and saline reedbeds ¹	0.02	0.8%	3
Intertidal coarse sediments ²	0.05	0.3%	3

¹ The areas of coastal saltmarsh in the Dart estuary are not as extensive as in other Devon estuaries, however, the amount calculated in this GIS analysis may still be an underestimate of the actual area of saltmarsh present along the upper estuary, as the rMCZ site boundary is at OS Boundary Line mean high water, and the habitat might extend above that.

² This habitat was not considered for this site during the vulnerability assessments, which may have been an oversight due to the very small area present not having been picked up in an earlier analysis. 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 section II.2.8.

Table II.3.23d 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		5		1
Intertidal underboulder communities		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 1.02 km² 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 Dart Estuary is a ria, with steep rocky shores near the mouth of the estuary, and stretches of meandering mudflats further upstream where the rMCZ boundaries are. The upper estuary is surrounded mainly by farmland, with small patches of woodland. 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 Dart estuary was surveyed by the FSC (Moore, 1988), who described the Dart as very sheltered and an important pleasure boating area. Littoral and sublittoral habitats in the middle and upper estuary are predominantly mud, with occasional rock outcrops. In the lower estuary, muddy shores and adjacent sublittoral areas incorporate shingle with bedrock and other hard substrata. The mouth of the estuary has steep Dartmouth slate bedrock extending into the sublittoral. Mudflats within the estuary had low species richness but high biomass. Ragworm (*Hediste diversicolor*) was abundant throughout the estuary; all the infaunal communities were dominated by polychaete worms. Sublittoral habitats were predominantly composed of muddy pebbles and cobbles with sponges, hydroids and anemones characterising the communities recorded. Dredge samples of muddy sediments produced large numbers of polychaete worms. Dyer *et al.* (2000) analysed mudflats within the Dart estuary to establish a classification scheme of intertidal mudflats. The survey included classification into sediment type. Surveys were carried out between March and July 1998.

Exposed rocky shores at the mouth have extensive splash zones (extending 15m above chart datum) with well developed lichen communities. Mid shore habitats were dominated by barnacles and limpets. With increasing shelter, mid-shore habitats were characterised by algae. Rocky habitats within the lower and middle estuary had typical furoid dominated communities (Moore, 1988). An early sublittoral survey at three sites at and near the mouth of the Dart was described by Forster (1954, 1955). The turbid water limits algal growth to shallow water. The communities in deeper water were dominated by seafans, *Eunicella verrucosa*, the soft coral *Alcyonium glomeratum* and the anemones *Corynactis viridis*, *Epizoanthus couchii* (wrightii) and *Actinothoe sphyrodeta* (Moore, 1988).

Alkmaria romijni was recorded in the Dart estuary during the 1991 Dart Estuary macrobenthic Subtidal survey and in 2006-2008 during the Water Framework Directive Benthic Surveys. Burd (1989) surveyed the Dart as part of *The Saltmarsh survey of Great Britain*.

The Seahorse Trust have received a large number of seahorse sightings from the Dart Estuary, as far upstream as Dittisham (within the rMCZ boundary) where both species have been seen, and all through the estuary region including the pontoons at Kingswear and as far as 1 mile out to sea. Like all the main estuaries of the South West, the Dart is very important for seahorse populations as it provides food and shelter (Neil Garrick-Maidment, *pers. comm.*).

Spencer *et al.* (1994) surveyed the intertidal area on areas of hard substrate (shell and stone) within the Dart Estuary. This study investigated spatial and temporal relationships between rainfall, river

flows and concentrations of *Escherichia coli* in mussels (*Mytilus* spp.) and Pacific oysters (*Crassostrea gigas*) from three harvesting areas in the Dart Estuary over the period 1996–2009. Mussels growing on the riverbed were found to be more contaminated than oysters growing in the water column.

Schuerack *et al.* (2007) collected water, sediments and crabs from mid-tide level at five sites in the Dart estuary (downstream of the rMCZ boundaries) in 2004. The rocky shore of Sugary Cove is a typically furoid-dominated community, including *Ulva*, *Enteromorpha* spp., *Codium*, *Cladophora* in the littoral zone and *Laminaria* and *Chorda* spp. in the sub-littoral zone. Warfleet cove, The Pier, Sandquay and Noss Marina are mudflats with a low species richness and high biomass component.

Rossington *et al.* (2007) selected four estuaries from around the United Kingdom to give a range of morphological types, based on the behavioural characterisation of estuaries under conditions of accelerating sea-level rise. The authors described the Dart as a small estuary with very limited intertidal areas in comparison with the other three. Townsend *et al.* (2006) carried out a number of commercial surveys during 2004 and 2005 where sediment was collected (the general description of sediment in the dart was muddy).

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.3.23e 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.3.23e 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.3.23f 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.3.23e Specific assumptions and implications relating to Dart 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: none identified in VA meetings.	
Assumptions	Implications
<p>Aggregate extraction will not be allowed</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.
<p>Bottom-towed fishing gear will not be allowed</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Loss of ground for bottom-towed gear fishermen (<i>may not be relevant in this area.</i>) 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.
<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.

<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Netting and longlining will not be allowed</p> <p><i>This assumption was recorded early on for other estuaries 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</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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 <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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.) <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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

<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p><i>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.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: <ul style="list-style-type: none"> - 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. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.
<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>Following VA meetings, a potential need for managing aquaculture</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Pacific oyster farming might need to use triploid stock to prevent escape & breeding of invasive species. o This would raise some issues as the Dart Harbour Commissioners and IFCA have concerns about the oyster fishery and the impacts of the MCZ on it. The outcome of

<p>activities in this site has been identified.</p>	<p>the vulnerability assessment may offer some assurance, but the harbour commissioners are still likely to be negative. Non-native oysters have already escaped into the Dart (based on stakeholder evidence).</p> <ul style="list-style-type: none"> o Since the VA meetings, several concerns around the use of triploid stock have been raised (see additional comments)
<p>Crab tiling / bait digging will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Beach replenishment will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o A Steering Group member commented on the importance of taking into account shoreline management plan policies and planned activities.
<p>Tourism and recreational activities will be permitted.</p> <p>Following VA meetings, a potential need for managing moorings activities in this site has been identified.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Current moorings may be causing an impact on the seafloor habitat, so this needs to be monitored. If problem is identified, eco-moorings or limiting the footprint of moorings might be appropriate. Assume no increase in mooring capacity will be permissible.

<p>Activities assumed to be allowed to continue / occur within the site</p>	
<p>Assumptions</p>	<p>Implications</p>
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed <p>Benefits:</p> <ul style="list-style-type: none"> o Potential for increased and enhanced leisure and recreational activity

<p>Pelagic trawls will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>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.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption there are still the following concerns:</p> <ul style="list-style-type: none"> o Cable installation cost increases and delay o Cable repair cost, delays and lost revenue could increase due to activity restrictions on cable repair. <p>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).</p> <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.
<p>The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> o One active power cable, one inactive telecoms cable.
<p>Maintenance dredging in ports (to enable access to ports) will be permitted</p> <p><i>The project team have advised that this would mean that the dredged</i></p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

<p><i>areas of seafloor could not be counted towards ENG targets.</i></p> <p>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</p>	
<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o (no heritage wrecks currently present in the site)
<p>Anchoring of small vessels will be permitted</p> <p><i>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.
<p>Passage of ships will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Seaweed harvesting will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Table II.3.23f 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: - Convert pacific oyster farming to triploid stock Measure: - To be determined
Leisure & Recreation	Management - Prioritisation of mooring impacts monitoring research programme. If issues are identified, then use of eco-moorings or establishing a footprint limit may be appropriate. An increase in mooring capacity may not be permitted. 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).

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

- There is an uncertainty about the outcome of any future monitoring of moorings to see if they cause damage to the seabed and whether this will mean potential changes to moorings further down the line.
- It was highlighted that there are boat yards in the estuary that may need consideration as far as possible impacts are concerned.

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*
 - Estuarine partnership management arrangements should be listed as management measures for the site
- *The Wildlife Trusts*
 - Excluding lower estuary areas from MCZ limits the ecological value.
- *Navigation dredging*
 - Navigation dredging continues up the Dart to Totnes. The activity is restricted to bends in the river where sediment is deposited due to the reduction in flow rate. Whilst maintenance dredging does occur within the rMCZ this is a statutory duty for the harbour authority and should not be stopped.
- *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.
- *Ports*
 - It was stressed this recommendation does not have the support of the Dart harbour authority.
 - Regarding the rMCZ in the Dart, concerns still remain due to the absence of information on levels of protection, management measures, policing expectations and enforcement. To be specific, Dart Harbour Authority would welcome further details on what changes/ expectations if any that are envisaged in relation to: 1. moorings and 2. the Waddington Oyster fishery - so they can take an informed view on actual impact. In relation to these specific activities within the rMCZ this includes:
 - 1/3 of the moorings for the Dart which comprises 25% income for the Harbour Authority - 3 types of moorings used = Deep Water swinging moorings, trot moorings (in shallower water, involves ground chain and risers and holds for and aft of boats), and intertidal mud moorings - referred to by HA as category A, B and C

- 6 oyster bed licences for the Waddington fishery administered/ controlled by the Harbour Authority
 - As an example of existing environmental management in the Dart, the Harbour Authority have adopted a 'no more moorings' policy. Further details are available on their website: <http://www.dartharbour.org/moorings-moorings-policy/>. Feedback on these implications would be welcomed at the earliest possible convenience.
 - Loss of income for fishermen and related industries;
 - Loss of income for angling charter boats.
- *Aquaculture / Shellfish harvesting*
 - There are known to be static oyster beds (both Pacific and native oyster species) in the estuary as well as authorised fisheries for mussels, cockles, clam and crab. Each of the six licenses currently in existence entitles the License holder to 0.2 hectares, so 1.2 hectares total.
 - There are no plans for expansion – maintenance of the status quo are the intentions for the fishery.
 - The Duchy of Cornwall also issue licenses and maybe able to provide additional information.
 - Serious concerns were raised following the mention of triploid oyster stock in the vulnerability assessment discussion, as a method of preventing escape of breeding non-native oysters into the wild. The concerns are based on a lack of UK-sourced supply of triploid stock, and risks of importing disease with triploid stock from elsewhere.
- *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.3.23f (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.
 - There was surprise that the vulnerability assessment for the Dart rMCZ indicated that its condition was sufficiently favourable for its features to require maintenance (rather than recovery). This favourable status would have been achieved despite the Dart Estuary not previously being included within a statutory conservation area.
 - 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 was strong opposition from the harbour authority of Dartmouth against the inclusion of the Dart Estuary, which is the reason why the lower estuary is not included within the site boundary. The upper estuary was included despite the concerns from the port, because of the conservation interest of the estuary and the lack of current nature conservation designations in place. The harbourmaster and the Duchy of Cornwall have expressed concerns about the possible impacts of MCZ designation on moorings, aquaculture and cables. The IFCA have expressed strong concerns over the suggestion (from the vulnerability assessment) that triploid oyster stock might be required for oyster farming

(the Impact Assessment will cover this in more detail). There has also been concern from local farmers, about what an MCZ designation may mean for their farming practices in terms of the management of agricultural run-off and water quality standards.

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. There may be additional information relevant to this rMCZ in Craig & Moreton (1986) and Environment Agency (2005). Further information on the Natura 2000 sites to which this site is related may be found on the JNCC's [website](#)³³.

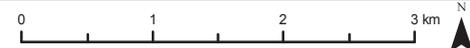
Site map series

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

- The first map (FR_034a) 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_034b) 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.3.23b to II.3.23d, data sources are indicated in the tables.
- The third map (FR_034c) 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.

³³ <http://jncc.defra.gov.uk/page-4>

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.



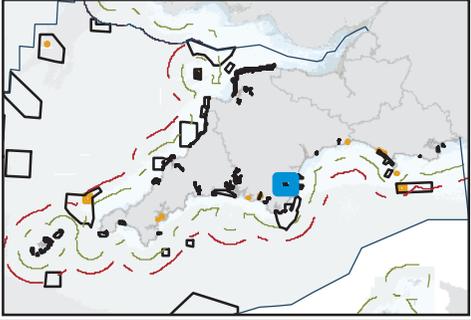
Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.3795	-3.5895	50° 22' 46" N	3° 35' 22" W
B	50.3798	-3.5863	50° 22' 47" N	3° 35' 10" W

Map Legend

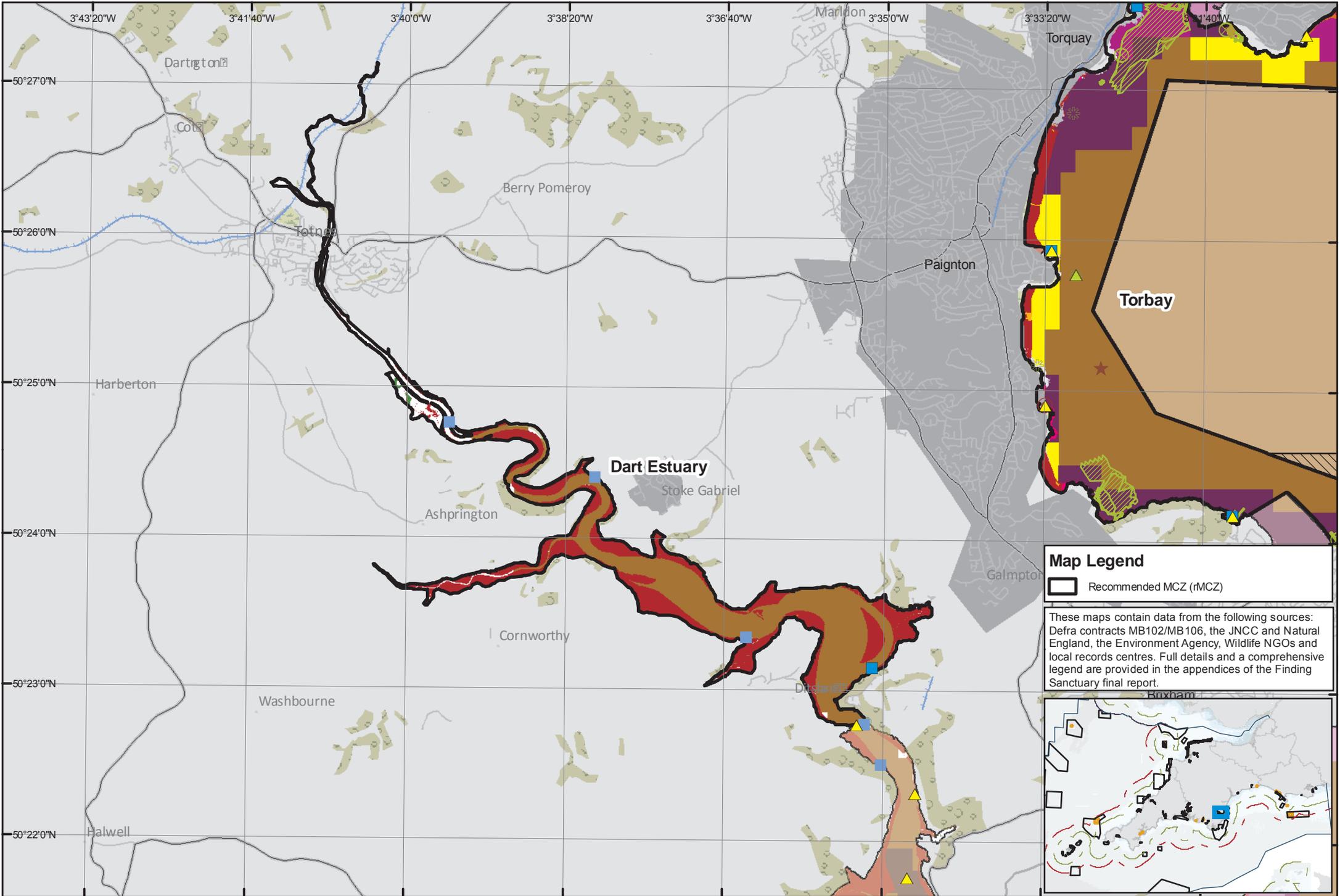
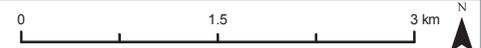
- Recommended MCZ (rMCZ)
- Existing MPAs**
- SSSI (not part of MPA network)

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



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.

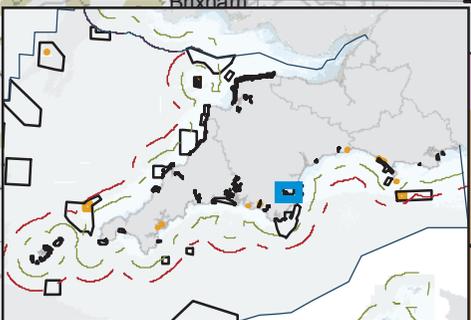
Maritime basemap © British Crown and SeaZone Solutions Limited, 2010.
All Rights Reserved. Data Licence No. 062006.004. Land basemap part
© OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation.
Contains OS data © Crown copyright 2011.

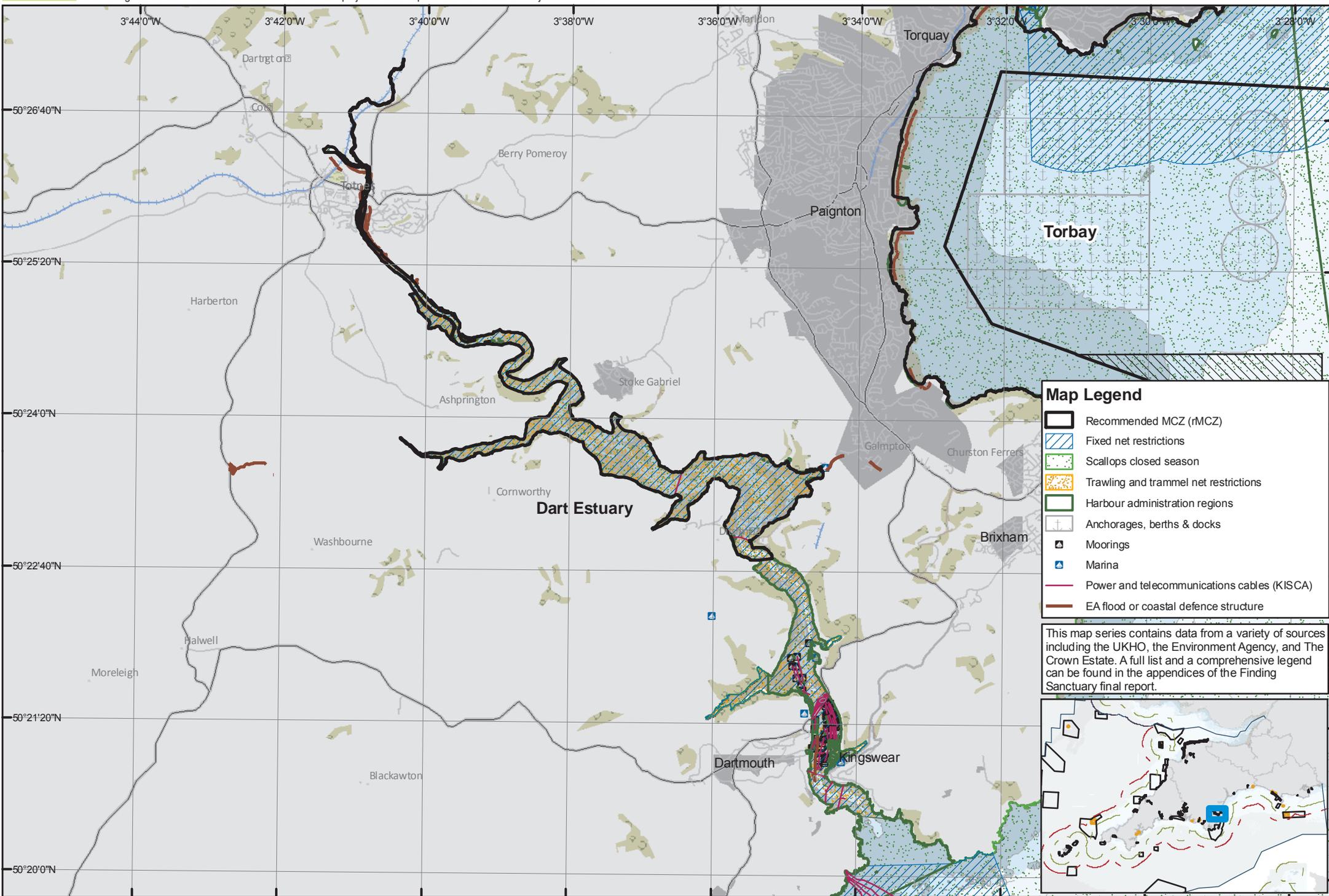


Map Legend

 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.

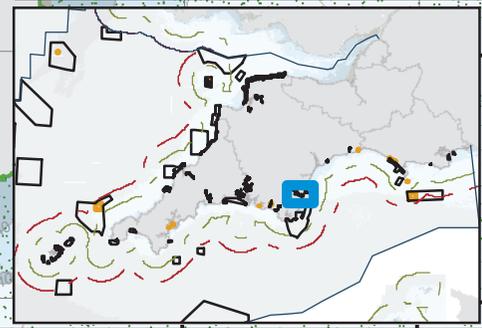




Map Legend

- Recommended MCZ (rMCZ)
- Fixed net restrictions
- Scallops closed season
- Trawling and trammel net restrictions
- Harbour administration regions
- Anchorages, berths & docks
- Moorings
- Marina
- Power and telecommunications cables (KISCA)
- EA 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.3.24 Skerries Bank and surrounds rMCZ

Basic site information

Site centre location (datum used: ETRS89)

Decimal Degrees		Degrees Minutes Seconds	
Lat	Long	Lat	Long
50.1945	-1.8859	50° 11' 40" N	3° 37' 15" W

Site surface area: (calculated in ETRS89 – LAEA) 249.69 km²

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea

OSPAR region: Region II: Greater North Sea

Site boundary: The landward boundary of the rMCZ runs along the high water mark from Leek Cove (on the eastern side of the Salcombe-Kingsbridge estuary mouth), around Prawle Point and Start Point to Torcross. The seaward boundary aligns with the boundaries of the eastern portion of the Start Point Inshore Potting Agreement (IPA), excluding a corridor that is trawled all year (see map FR_035d). Late in the process, there was discussion around a possible adjustment of the site boundary to include only those parts of the IPA that are closed to trawling year-round, which would cut the site into two portions separated by the areas that are trawled seasonally. In the end, the boundary adjustment was not carried out, and the current rMCZ boundary includes seasonally trawled portions (please refer to additional comments below).

Sites to which the site is related: The rMCZ overlaps with the Prawle Point to Plymouth Sound and Eddystone cSAC, and with the Prawle Point to Start Point draft SAC. Two SSSIs are located along the shoreline adjacent to this rMCZ: Prawle Point to Start Point, and Hallsands to Beesands. The Slapton Ley SSSI lies at the north-eastern tip of the rMCZ, and at the western end, the Salcombe and Kingsbridge estuary is also a SSSI.

Maps of the site are included at the end of this site report. The main site map shows lat/long points along the site boundary, with coordinates (calculated in WGS84 UTM30N). A map showing the IPA is included.

Features proposed for designation within the Skerries Bank and surrounds rMCZ

Table II.3.24a Draft conservation objectives for the Skerries Bank and Surrounds 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 habitat	Subtidal coarse sediment		M
	Subtidal mud		M
	Subtidal sand		M
	Moderate energy circalittoral rock		M
	Moderate energy infralittoral rock		M
	High energy infralittoral rock		M
	Moderate energy intertidal rock		M
	High energy intertidal rock		M
	Intertidal coarse sediment		M
	Intertidal mixed sediments		M
	Intertidal mud		M
	Intertidal sand and muddy sand		M
Habitat FOCI	Intertidal under boulder communities		M
Species FOCI	<i>Eunicella verrucosa</i>	Pink sea-fan	M
	<i>Hippocampus hippocampus</i>	Short snouted seahorse	M
	<i>Palinurus elephas</i>	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). The seafloor habitat area figures presented in the tables below do not include the seasonally trawled areas within the rMCZ site boundary.

Table II.3.24b **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	1.27	0.2%	1, 2
Moderate energy infralittoral rock	4.41	1.4%	1
Moderate energy circalittoral rock	101.79	0.5%	1
Subtidal coarse sediment	12.50	<0.1%	1, 2
Subtidal sand	41.55	0.1%	1, 2
Subtidal mud	4.06	<0.1%	1
High energy infralittoral rock ¹	13.73	1.9%	1
Moderate energy infralittoral rock ¹	3.47	1.1%	1
High energy circalittoral rock ¹	0.11	<0.1%	1
Moderate energy circalittoral rock ¹	22.87	0.1%	1

¹ Features / areas already protected within an overlapping MPA. See the gap table (appendix 11) for details.

Table II.3.24c **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	0.30	4.2%	4
Moderate energy intertidal rock	0.02	0.4%	4
Intertidal coarse sediments	0.08	0.4%	4, 3
Intertidal sand and muddy sand	0.04	0.4%	4
Intertidal mud	0.03	<0.1%	4, 3
Intertidal mixed sediments	0.20	4.4%	4
High energy intertidal rock ¹	<0.01	<0.1%	4
Moderate energy intertidal rock ¹	<0.01	<0.1%	4
Intertidal sand and muddy sand ¹	<0.01	<0.1%	4
Intertidal mud ¹	<0.01	<0.1%	4
Intertidal mixed sediments ¹	<0.01	<0.1%	4

¹ Features / areas already protected within an overlapping MPA. See the gap table (appendix 11) for details.

Table II.3.24d **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)
Intertidal underboulder communities		1		1
Subtidal sands and gravels ¹	52.24			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.3.24e **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 Trehwella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Eunicella verrucosa</i>	1		1
<i>Hippocampus hippocampus</i>	1		1
<i>Palinurus elephas</i>	2		1
<i>Eunicella verrucosa</i> ¹	9		1
<i>Phymatolithon calcareum</i> ²	1	1	1

¹ Features / areas already protected within an overlapping MPA. See the gap table (appendix 11) for details.

² There is a single (old) 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 1.81 km² of seahorse area polygon (refer to appendix 8 for more information).

This rMCZ intersects with the Slapton Ley/Hallsands to Beesands 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

Skerries Bank and surrounding area comprises of a rocky coast open to the full force of prevailing winds and waves. Skerries Bank is a 7-km-long series of submerged sand and gravel habitat banks. (McCarter & Thomas, 1980). The site extends from the coast line to depths of approximately 70m. The rMCZ intersects with an area of higher than average benthic species diversity (mapped in national data layers MB102), and is located within an area of higher than average pelagic interest (see interactive PDF maps accompanying this report). Local Group feedback indicates that the area is also an important breeding area for flat fish, and breeding ground for mobile species.

The recommendation for this rMCZ is conditional upon the current management being maintained in the area. The area overlaps with the Start Point Inshore Potting Agreement (IPA – map FR_35d). The IPA started as a voluntary agreement between local inshore static and mobile gear fishermen, aiming to reduce conflict between fishing gears by creating areas that are permanently or seasonally closed to mobile fishing gear (trawling), so that those areas can be used by static gear (in particular, potting). The IPA is now a legal license variation, managed through the MMO. The area is seen by some as a ‘de-facto’ MPA, as it prevents damage from bottom-towed gears in the static gear zones. For that reason, it was proposed as a part of the network configuration.

Detailed site description

Littoral and sublittoral communities at the mouth of the Salcombe and Kingsbridge Estuary were described by Earll (1978). Tows were carried out by Holme between 1975 and 1984. Exposed rocky shores were dominated by barnacles with rich sublittoral fringe communities characterised by *Fucus serratus* and *Laminaria digitata*. A dense kelp forest characterises infralittoral habitats at many sites. Epiphytic red algae grew in profusion on the kelp stipes and the adjacent bedrock. Species recorded include *Delesseria sanguinea*, *Dilsea carnososa*, *Plumaria elegans* and the tufted coralline alga *Corallina officinalis*. The fauna were characteristic of wave-exposed conditions and included the sponges *Pachymatisma johnstonia* and *Clathrina coriacea*, and the sea squirt *Distomus variolosus* (Davies, 1998).

Start Bay was surveyed by Holme (1966) during a wide-ranging study of the English Channel. Faunal associations within the bay were identified as ‘Boreal offshore muddy-sand’ and ‘Boreal offshore mud’ associations. ‘Boreal offshore muddy-sand’ was characterised by bivalve and gastropod molluscs, burrowing crustaceans (e.g. *Callianassa subterranea*), brittlestars, heart urchins *Echinocardium cordatum*, and sea cucumbers. ‘Boreal offshore mud’ was characterised by the burrowing echinuran *Maxmuelleria lankesteri* (Davies, 1998). Sediments in the area have also been described by Poulton *et al* (2002; In Jones *et al.* 2004).

The reef areas of Lyme Bay which comprise of rock and mixed ground extend from Portland Bill to central Lyme Bay and off Start Point. Their species which are listed for conservation are *Axinella*

dissimilis, *Pentapora fascialis* (ross coral), *Alcyonium digitatum* (Dead man's fingers), *Eunicella verrucosa* (Pink sea fan), and *Leptopsammia pruvoti* (Sunset cup coral) (Rees *et al.* 2010). *Eunicella verrucosa* has been recorded recently in the Skerries Bank and surrounding area by Seasearch (2008) and during the 1995-97 DWT Yealm Head to Start Point sublittoral survey. *Palinurus elephas* was recorded in the 1992 DWT Seasearch Salcombe to Prawle Point survey.

In 2005 Ambios Ltd undertook a side scan sonar survey of Start Bay. The detailed site survey enabled the authors to fully characterise areas where there were data gaps from the Lyme Bay mapping study. The Devon Biological Records Centre also has a substrate map of Lyme Bay which includes the Skerries Bank area.

Start Bay has a series of shingle banks and sandy coves leading to the rocky headland of Start Point. Staff and students from Slapton Ley Field Centre have collected a considerable amount of unpublished information on the littoral communities of Start Bay and the rocky shores between Start Point and Prawle Point (Davies, 1998). McCarter & Thomas (1980) described littoral communities around Start Point. The exposed sloping shores are dominated by limpets and barnacles with sparse mussels and algae with well developed lichen communities on the upper shore and in the splash zones. Steep littoral zones were predominantly limpet and barnacle-dominated, while increasing shelter to the east of the point results in greater algal biomass.

Austin & Masselink (2006) took morphological measurements of sediments around Start Point and Slapton Sands. Additionally, Ruiz De Alegria-Arzaburu & Masselink (2010) studied the storm response and beach rotation within Start Bay. Skerries Bank is a large 'banner bank' comprising of shelly sand (Hails, 1975) that stretches across half of Start Bay from Start Point, and has a minimum depth of 5 m ODN. Slapton Sands is exposed to a low-to-medium energy wave climate and is the largest of four gravel barriers in Start Bay, the others being Hallsands, Beesands and Blackpool Sands. At high tide, these gravel barriers represent separate environments, but, except for Blackpool Sands, they are connected during spring low tide. Start Bay as a whole can be considered a closed sediment cell: except for some localised cliff erosion, which mainly produces easily erodible fragments of shale, there is no sediment supply to the beaches Ruiz De Alegria-Arzaburu & Masselink (2010).

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.3.24f shows more specific working assumptions and implications that were recorded for this site over the course of the planning process. The most important specific assumption underlying the inclusion of this site in the network was that the current management of the area under the Inshore Potting Agreement would be maintained.

Following that, table II.3.24g 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.3.24f Specific assumptions and implications relating to Skerries Bank 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
<p>Aggregate extraction will not be allowed</p> <p style="color: green;">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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.
<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p style="color: green;">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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Possible effects on ports and harbours (this is a general concern, not just relating to the anchoring of large vessels). <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Local Group feedback indicated that some members wanted anchoring to be allowed throughout this site, there was no indication of whether this referred to small or large vessels. o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.

<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o This rMCZ is located within an area overlapping Start Bay closed disposal site. Reopening this disposal site would not be compatible with the assumptions as stated. 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.
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Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.

Assumptions	Implications
<p>The existing fishery management regime will be maintained without change.</p> <p><i>The current management regime has been established through fishermen working together to reduce gear conflict. Most of the site is currently closed permanently to bottom-towed fishing gear (to allow potting to take place), but some parts allow bottom-towed fishing gear seasonally or year-round.</i></p> <p>This assumption was reviewed during the VA meetings, and maintained in essence. An additional requirement was identified to prevent the removal of the spiny lobster from any part of the rMCZ.</p>	<p>Direct implications:</p> <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The fishing industry would rather not interfere with the IPA – it has taken a long time to get working and allows access to both mobile and static gears, notably with the use of lanes for trawls. o The SW Fishing Industry MCZ Planning Group is concerned that although the intention is to maintain existing fisheries management regime under the IPA, towed gear activities in the seasonal closed areas will be threatened in the future due to their inclusion within the site boundary. The industry wishes to have these areas excluded as had been indicated in earlier discussions on the site and their inclusion undermines their acceptance of the site. The counter argument that those areas would come under pressure to open up to full access seems implausible given the well established existing IPA regime to manage static and mobile gear fisheries. o Comments and proposals based on assumption that current IPA is working. Local input suggests some doubt. o As a precaution, and to increase local confidence, development of management measures should include independent assessment of current management. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> o There are existing fishery management measures in place, as this rMCZ follows the outline of the Start Point Inshore Potting Agreement / existing fishery byelaw. There is a risk of alienating stakeholders who have previously worked together to manage their activities in this area, if the restrictions within this area are changed. o Specific concern has been raised about the potential further limitation of mobile bottom-towed fishing gears within the site. This would mean loss of economic activity, affecting/displacing SWFPO and SWIFA members

	<ul style="list-style-type: none"> o Local Group feedback indicates that up to 12 vessels dredge within the areas where the activity is allowed, 6 of them being regular users of the area. 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.
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p> <p>The VA meetings stated that the removal of spiny lobster would not be permitted in this rMCZ (see previous row).</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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 has raised the possibility of restricting or excluding netting from Start Bay. This is not currently part of the working assumptions for the site. Static nets catching female spawning crabs was highlighted as a possible problem, but local Feedback from Devon Wildlife Trust states that the impacts of netting are not well understood in the site.

<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p><i>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.</i></p> <p>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</p>	<p>Direct implications:</p> <p>o</p> <p>Given this assumption, there are still the following concerns:</p> <p>o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in:</p> <ul style="list-style-type: none"> - 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 <p>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.</p> <p>o Enforced co-location with MCZs would dramatically restrict deployment.</p> <p>If the assumption turns out to be wrong:</p> <p>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.</p> <p>o Increased competition for sea space with other sea users.</p> <p>o Good wind resource, landscape buffer requirements making deployment less likely.</p> <p>o Minor tidal resource at headland but already within an SAC.</p>
<p>Beach replenishment will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <p>o</p>

<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> o This rMCZ is located within an area with aquaculture leases, and there is concern about possible impacts on current management of this activity resulting from MCZ designation.
<p>Crab tiling / bait digging will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Activities assumed to be allowed to continue / occur within the site	
Assumptions	Implications
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed <p>Benefits:</p> <ul style="list-style-type: none"> o Potential for increased and enhanced leisure and recreational activity
<p>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.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption there are still the following concerns:</p> <ul style="list-style-type: none"> o Cable installation cost increases and delay

<p>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.</p>	<ul style="list-style-type: none"> 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). <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.
<p>The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational)</p> <p>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.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o This rMCZ is located within an area with telecommunication cables linking the UK mainland from Torbay to Guernsey, Jersey and onto France. Two active and three inactive telecoms cables.
<p>Tourism and recreational activities will be permitted.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Local Group feedback indicated a possible need for zoning of leisure activities within the area, to help resolve conflicts between uses and to resolve possible health and safety issues.
<p>Maintenance dredging in ports (to enable access to ports) will be permitted</p> <p>The project team have advised that this would mean that the dredged</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p>

<p><i>areas of seafloor could not be counted towards ENG targets.</i></p> <p>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</p>	<ul style="list-style-type: none"> o Possible effects on ports and harbours (this is a general concern, not just relating to maintenance dredging in ports).
<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o heritage wrecks present in this site: Moor Sand and Salcombe Cannon
<p>Anchoring of small vessels will be permitted</p> <p><i>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Possible effects on ports and harbours (this is a general concern, not just relating to the anchoring of small vessels). 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.
<p>Passage of ships will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Possible effects on ports and harbours (this is a general concern, not just relating to the passage of ships).
<p>Seaweed harvesting will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Table II.3.24g 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	<p>Management</p> <ul style="list-style-type: none"> - Continuation of existing access arrangements (see South Devon Crabbing Trawling and Crabbing Chart). <p>Measure</p> <ul style="list-style-type: none"> - Option 1: Voluntary - Option 2: Byelaw - Option 3: Licence condition - Option 4: Current management body, with additional representation from conservation advisory body
Commercial Fishing	<p>Management</p> <ul style="list-style-type: none"> - Removal of <i>Palinurus elephas</i> (crawfish) not permitted <p>Measures</p> <ul style="list-style-type: none"> - Option 1: Voluntary - Option 2: Byelaw
Cables	<p>Management:</p> <ul style="list-style-type: none"> - Impacts on the rMCZ conservation objectives would need to be considered in any licence application. It is expected that cable installation & operation would be permitted with no additional mitigation likely to be required as a result of the rMCZ. <p>Measure:</p> <ul style="list-style-type: none"> - Marine Licence

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.

- *The Inshore Potting Agreement*
 - This site was included in the network recommendations to recognise the conservation benefits of the management regime that is currently in place within the area (the Start Point Inshore Potting Agreement). Local Group feedback indicates that there is good evidence that the sea bed is in good condition in the no trawling areas within this site, and that the current IPA is a well-policed agreement.
 - The area is considered a *de-facto* MPA by some, and making it an MCZ (on the assumption that current management would be maintained) would serve to consolidate the conservation benefits of the site for the future, and allow it to be 'counted' within the context of the overall network. However, there is a strong feeling amongst stakeholders that if the MCZ designation altered the current management of the site, then that would have more negative consequences than benefits (in particular, loss of goodwill of people who have been working together over years to reduce conflict). Therefore, the recommendation for this rMCZ is made on the condition that the current management under the IPA would be maintained.
 - This site differs from other rMCZs, in that it includes zones where the working assumption is that mobile bottom-towed fishing gears would be allowed to continue seasonally. In all other rMCZs, the working assumption is that bottom-towed gears would not be allowed (because they would prevent the achievement of conservation objectives). A solution to this logical inconsistency (suggested within the Local Group) might have been to reduce the size of the Skerries Bank and surrounds rMCZ, to only cover the area where trawling is permanently excluded. This would have meant dividing the site into two parts, including only the red areas on the Inshore Potting Agreement map (see end of this site report).
 - Discussions at the vulnerability assessment meetings highlighted the possible consequences of including the seasonally trawled areas within the rMCZ: Natural England highlighted that the inclusion of the seasonally trawled areas ('corridors') would mean that for the seafloor habitat within the corridors, the conservation objectives would not be met, unless the mobile gear was excluded from the entire site. The project team identified this as a potential danger to the condition based on which the site had been recommended by the stakeholder group, i.e. that current management should be maintained.
 - This prompted the project team to review the previous stakeholder discussions around this site, and reconsider the boundary. At the final Joint Working Group meeting in June 2011, the project team stated that the site boundary would be revised to only include the areas currently closed to trawling year-round, splitting the site into two parts. We regarded this boundary adjustment as a correction rather than a change, as the intention was to maintain the integrity of the stakeholder recommendations.
 - However, the suggested two-part boundary caused negative feedback from stakeholders within the JWG and from outside the working group. Concerns were raised that excluding the seasonally trawled areas would be perceived as an indication that the area within the trawl corridors is not ecologically important,

which might lead to pressure to open it year-round to mobile gears. This was perceived as a potential danger to the condition based on which the site had been recommended, i.e. that current management should be maintained.

- The dilemma we faced as a project team was that everyone was essentially expressing the same concern ('maintain current management'), but whichever way we drew the site boundary, there was a perceived risk. Ultimately, we returned the site boundary to the original single site, which includes the trawl corridors. As such, the site recommendation is treated in the same way as the Bideford to Foreland Point example, where the site recommendation states that dredging of the shipping channel should be allowed to continue within the rMCZ boundary, but that the part of the seafloor affected is not counted towards ENG targets. The seafloor habitat area figures presented in the tables above therefore do not include the seasonally trawled areas.
- There was some concern raised about the effectiveness of the enforcement of the current management regime in the area. A JWG member stated that the existing IPA is broken regularly by trawlers, and it was suggested that only vessels with VMS should be permitted to fish in this area (this statement was not supported by a fishing industry representative).
- *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 of 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, results from the regional vulnerability assessment discussions were presented to the group (the VA process is described in part I). The regional VA meetings included some initial discussions on site management, but did not reach any firm conclusions, nor did they review the previous working assumptions in detail. The presentation of the outcome of the regional VA discussions discussion generated concern within the JWG. For many of the inshore sites, this concern was based on the apparent lack of management suggested for bottom-towed mobile fishing gear, and the comments made by members of the JWG are described in detail in the other inshore rMCZ site reports. However, as explained above, this site is an exception to the others, in that it was suggested for inclusion by stakeholders on the condition that the current management of the Inshore Potting Agreement be maintained – and in this site, that does include some small areas that are seasonally trawled.
 - Please also refer to the Steering Group statement made in response to the vulnerability assessment process, which refers to the network and process as a whole (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 supported by a cross-section of stakeholders as long as the existing management regime (Inshore Potting Agreement) is not affected. The site was one of the first that was drawn onto a map by stakeholder representatives (see the first progress report) in the Devon Local Group.

The Crown Estate provided feedback to state that this rMCZ is located within a wave resource area. It is also located within an area with telecommunication cables linking the UK mainland from Torbay to Guernsey, Jersey and on to France. It also overlays a small area with an aquaculture lease and Start Bay closed disposal site. The Crown Estate is supportive with the assumption that MCZ designation would not restrict ongoing activities described.

Supporting documentation

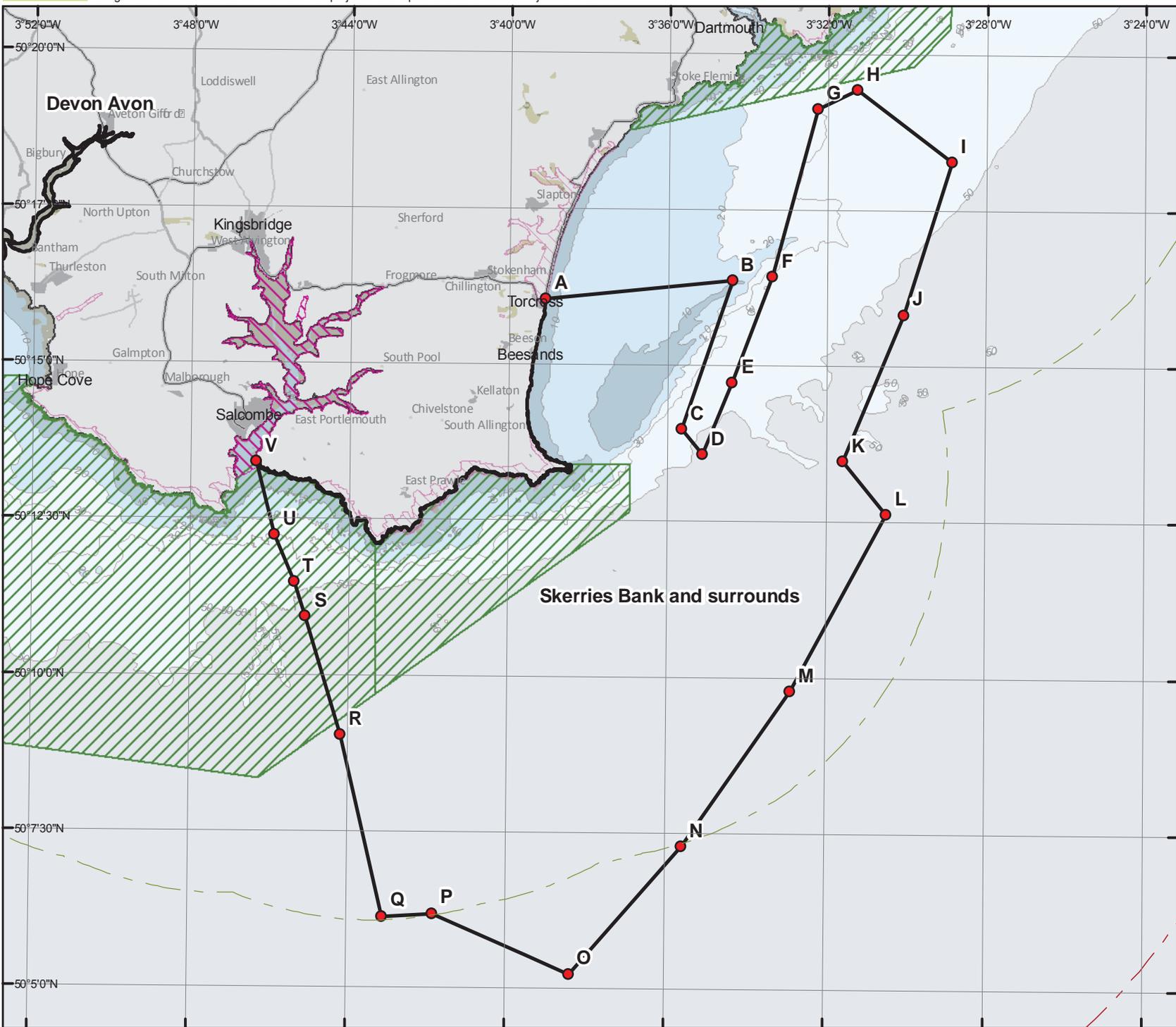
GIS data used for reporting the quantitative habitat and species figures in the tables above includes the following sources: UKSeaMap modelled broad-scale habitat data, MESH, MB102, and Environment Agency intertidal habitat data. Refer to appendix 8 for details, and to the tables above for data sources 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. There may be additional information relevant to this rMCZ in Black (1995), Cleator (1995), Grist and Smith (1995), Munro (1992), Nunny (1992), and Smith (1995a;b).

Site map series

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

- The first (map FR_035a) 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.
- The second map (map FR_035b) 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.3.24b to II.3.24e, data sources are indicated in the tables.
- The third (map FR_035c) 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).
- The fourth map (FR_035d) shows the areas managed under the current Inshore Potting Agreement referred to several times in the site report.
- 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.



Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.2677	-3.6517	50° 16' 3" N	3° 39' 6" W
B	50.2730	-3.5733	50° 16' 22" N	3° 34' 24" W
C	50.2332	-3.5941	50° 13' 59" N	3° 35' 38" W
D	50.2264	-3.5854	50° 13' 35" N	3° 35' 7" W
E	50.2456	-3.5731	50° 14' 44" N	3° 34' 23" W
F	50.2740	-3.5564	50° 16' 26" N	3° 33' 22" W
G	50.3190	-3.5380	50° 19' 8" N	3° 32' 16" W
H	50.3240	-3.5213	50° 19' 26" N	3° 31' 16" W
I	50.3048	-3.4814	50° 18' 17" N	3° 28' 52" W
J	50.2640	-3.5014	50° 15' 50" N	3° 30' 5" W
K	50.2248	-3.5265	50° 13' 29" N	3° 31' 35" W
L	50.2106	-3.5082	50° 12' 38" N	3° 30' 29" W
M	50.1631	-3.5482	50° 9' 47" N	3° 32' 53" W
N	50.1215	-3.5932	50° 7' 17" N	3° 35' 35" W
O	50.0873	-3.6399	50° 5' 14" N	3° 38' 23" W
P	50.1032	-3.6973	50° 6' 11" N	3° 41' 50" W
Q	50.1023	-3.7181	50° 6' 8" N	3° 43' 5" W
R	50.1507	-3.7364	50° 9' 2" N	3° 44' 10" W
S	50.1824	-3.7513	50° 10' 56" N	3° 45' 4" W
T	50.1915	-3.7563	50° 11' 29" N	3° 45' 22" W
U	50.2040	-3.7646	50° 12' 14" N	3° 45' 52" W
V	50.2237	-3.7727	50° 13' 25" N	3° 46' 21" W

Map Legend

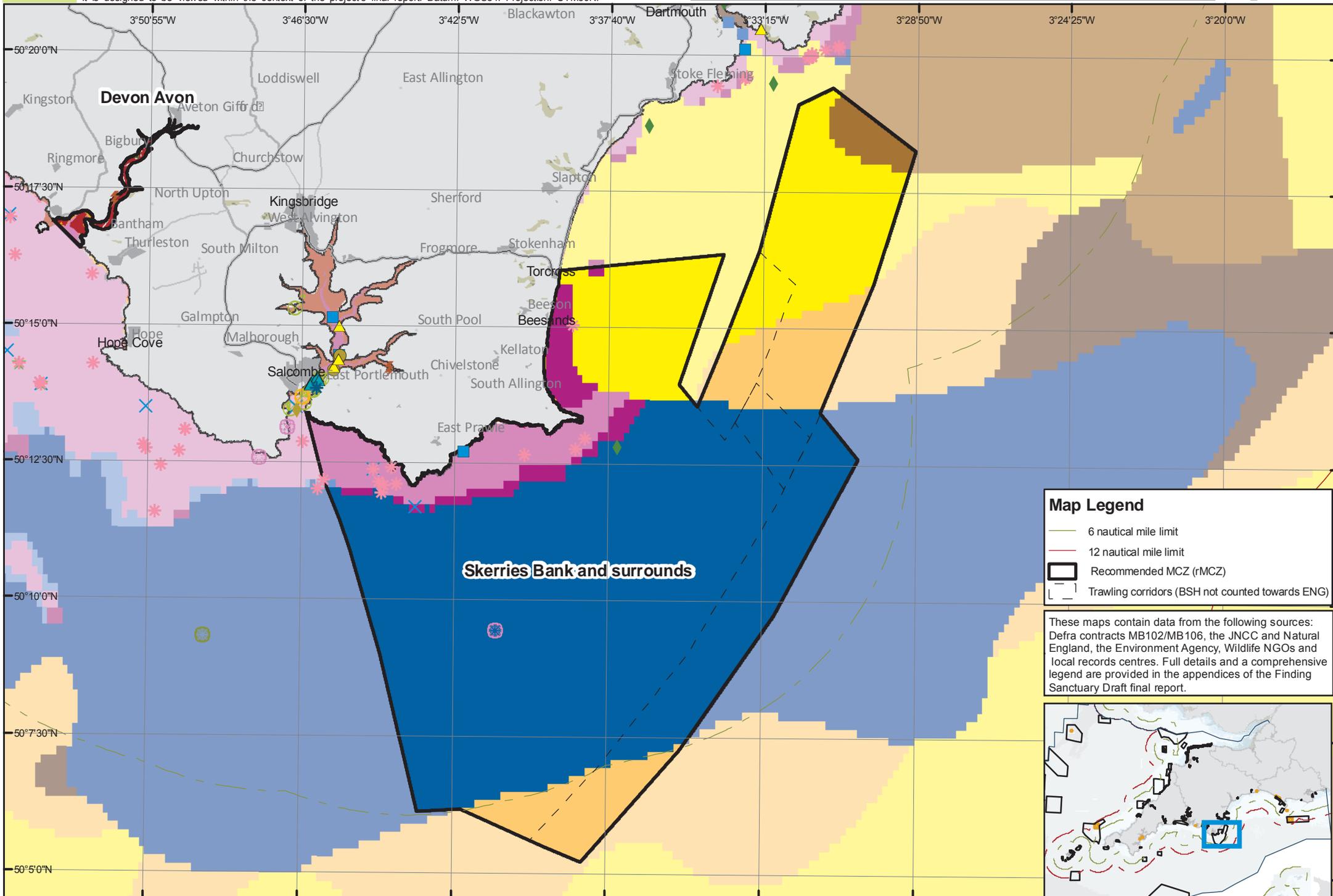
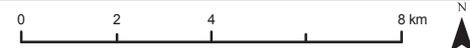
- 6 nautical mile limit (dashed green line)
- 12 nautical mile limit (dashed red line)
- Recommended MCZ (rMCZ) (black line with red dots)
- Existing MPAs:
 - SAC (green hatched area)
 - SSSI (pink hatched area)

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

Skerries Bank 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.

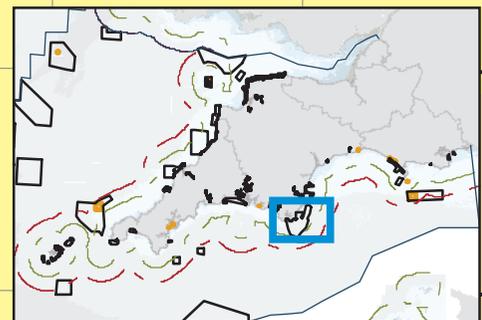
Maritime basemap © British Crown and SeaZone Solutions Limited, 2010.
All Rights Reserved. Data Licence No. 062006.004. Land basemap part
© OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation.
Contains OS data © Crown copyright 2011.

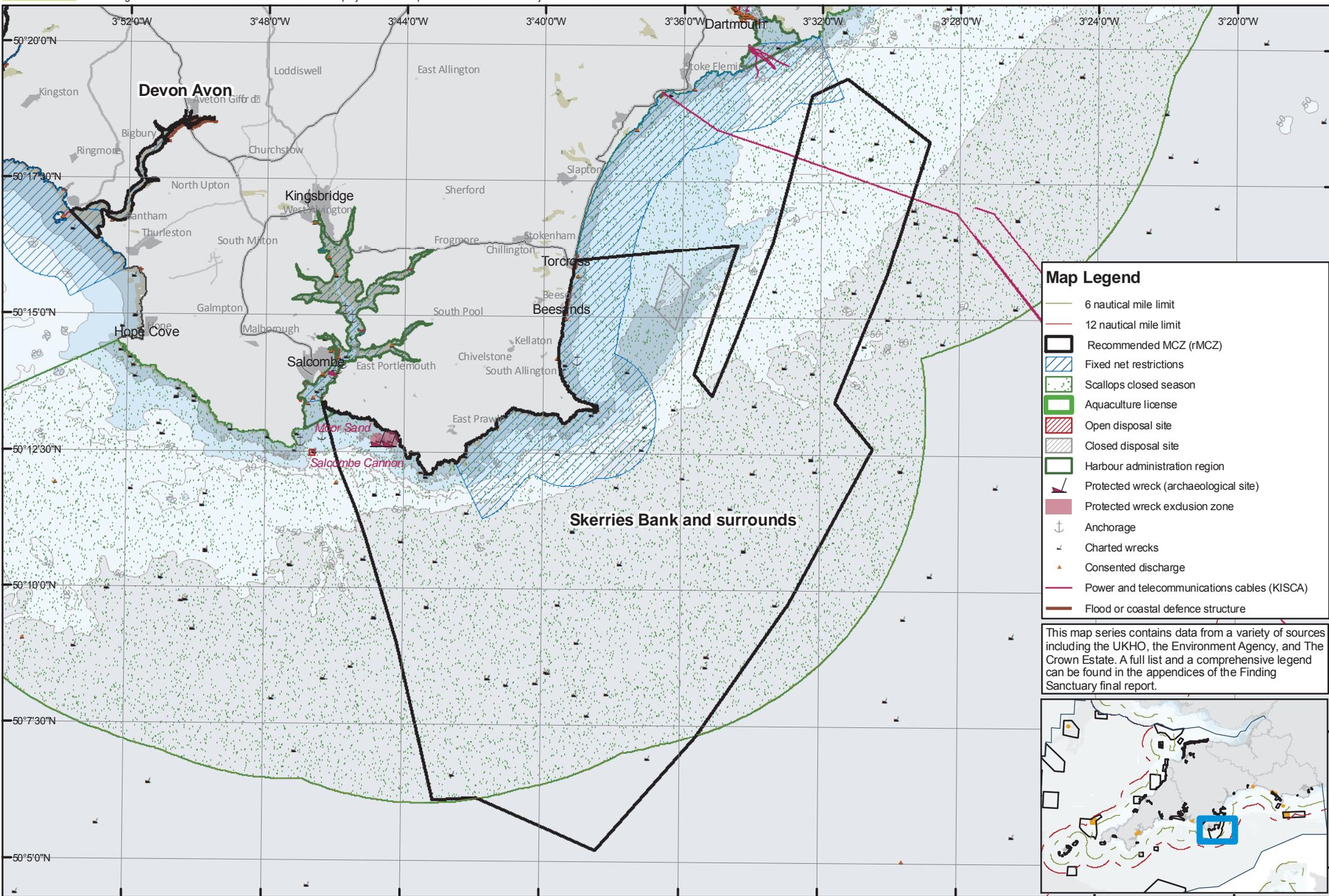
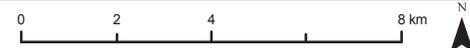


Map Legend

- 6 nautical mile limit
- 12 nautical mile limit
- Recommended MCZ (rMCZ)
- Trawling corridors (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 Draft final report.

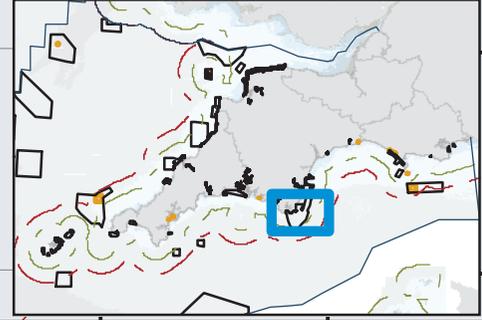


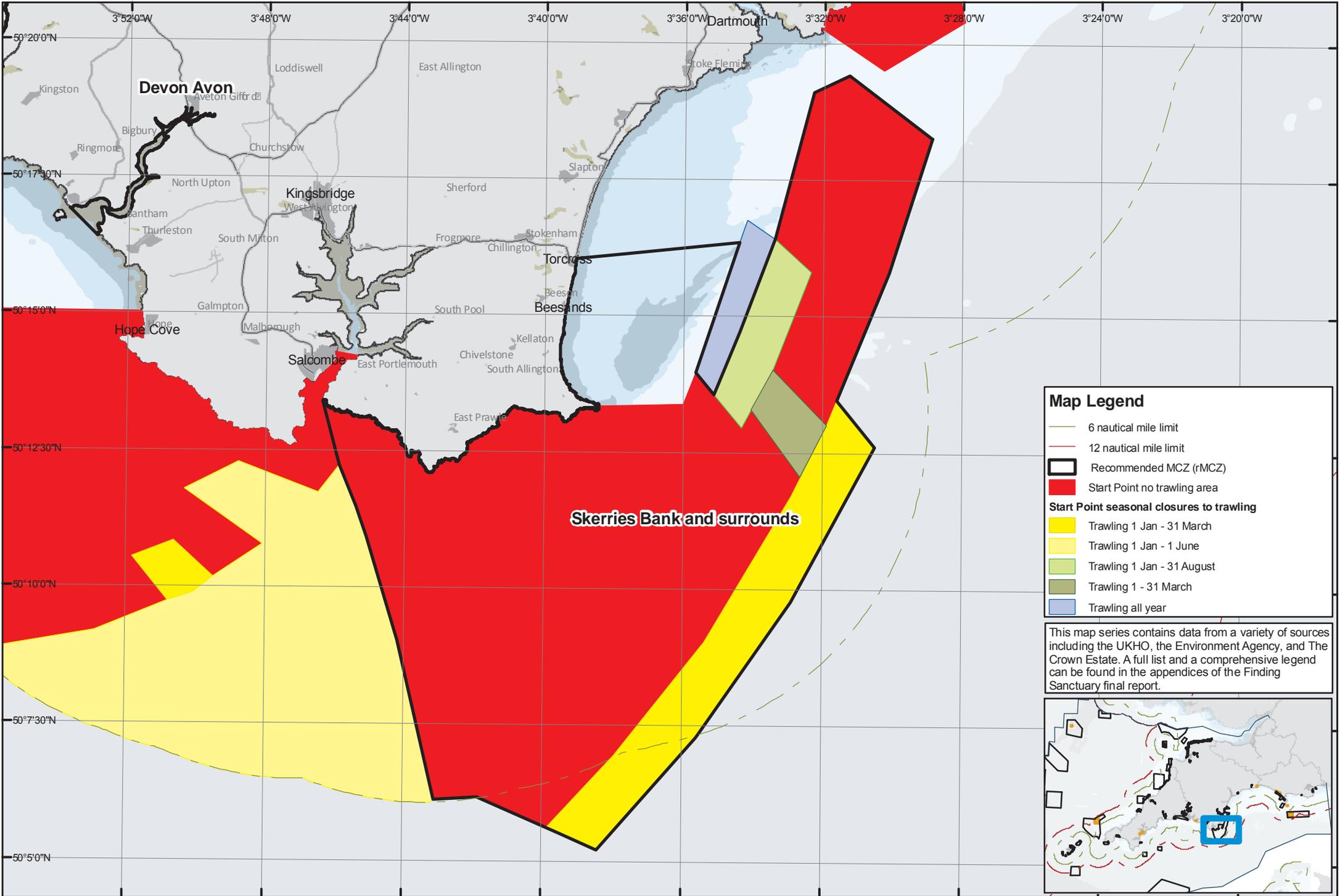
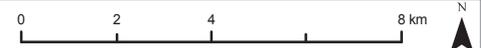


Map Legend

- 6 nautical mile limit
- 12 nautical mile limit
- Recommended MCZ (rMCZ)
- Fixed net restrictions
- Scallops closed season
- Aquaculture license
- Open disposal site
- Closed disposal site
- Harbour administration region
- Protected wreck (archaeological site)
- Protected wreck exclusion zone
- Anchorage
- Chartered 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.





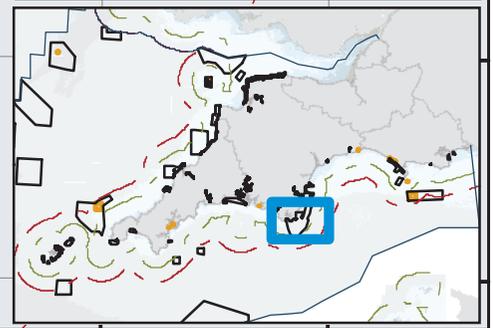
Map Legend

- 6 nautical mile limit
- 12 nautical mile limit
- Recommended MCZ (rMCZ)
- Start Point no trawling area

Start Point seasonal closures to trawling

- Trawling 1 Jan - 31 March
- Trawling 1 Jan - 1 June
- Trawling 1 Jan - 31 August
- Trawling 1 - 31 March
- Trawling all year

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.3.25 Devon Avon Estuary rMCZ

Basic site information

Site centre location (datum used: ETRS89):

Decimal Degrees		Degrees Minutes Seconds	
Lat	Long	Lat	Long
50.2883	-3.8694	50° 17' 17" N	3° 52' 9" W

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

Site surface area: 1.84 km² (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea

OSPAR region: Region II: Greater North Sea

Site boundary: The rMCZ encompasses the whole Devon Avon estuary up to the mean high water mark (mapped using OS Boundary Line mean high water), as far as Aveton Gifford. The seaward boundary has been drawn across the estuary mouth, from the end of the Burgh Island causeway at Bigbury-on-Sea to Long Stone on the eastern side of the estuary.

Sites to which the site is related: At the estuary mouth, there is a very small area of overlap between this site and the Prawle Point to Plymouth Sound and Eddystone candidate SAC.

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 Devon Avon Estuary rMCZ

Table II.3.25a Draft conservation objectives for the Devon Avon 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
	High energy infralittoral rock		M
	Coastal saltmarshes and saline reedbeds		M
	Intertidal coarse sediment		M
	Intertidal mud		M
	Intertidal sand and muddy sand		M
	Moderate energy intertidal rock		M
Species FOCI	<i>Alkmaria romijni</i> ¹	Tentacled lagoon-worm	M
	<i>Anguilla anguilla</i>	European eel	? M / R ²

¹There is only a single record of this species in the amalgamated GIS data layer for FOCI. However, the habitat in the estuary is the right habitat for the species, on that basis, the species is included on the list of draft conservation objectives for the site.

²At the time of the vulnerability assessment meetings, no decision was taken whether the conservation objective for this feature should be 'maintain' or 'recover'.

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.3.25b **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	0.24	<0.1%	1
Subtidal sand	<0.01	<0.1%	1
Subtidal mud	<0.01	<0.1%	1
High energy infralittoral rock ¹	0.01	<0.1%	1

¹Features / areas already protected within an overlapping MPA. See the gap table (appendix 11) for details.

Table II.3.25c **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)
Moderate energy intertidal rock	0.04	0.9%	4
Intertidal coarse sediments	0.01	<0.1%	3
Intertidal sand and muddy sand	0.10	0.8%	4
Intertidal mud	1.12	0.7%	4, 3
Coastal saltmarshes and saline reedbeds ¹	0.07	2.1%	3
Intertidal sand and muddy sand ²	<0.01	<0.1%	4

¹ The area of coastal saltmarsh calculated in this GIS analysis might be an underestimate of the saltmarsh area present along the estuary, as the rMCZ site boundary is at OS Boundary Line mean high water, and the habitat might extend above that. However, a visual comparison between the GIS data for this habitat within the rMCZ and the aerial imagery available on the Ordnance Survey website indicates that any difference is probably minimal.

² Features / areas already protected within an overlapping MPA. See the gap table (appendix 11) for details.

Table II.3.25d **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 Trehwella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Alkmaria romijni</i>	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 0.19 km² 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 Devon Avon Estuary is a small estuary (approximately 4 km long) consisting predominantly of a sand bottom (Kelley, 1988). According to Davidson *et al.* (1991), who conducted a comprehensive review of all estuaries in Great Britain, the Avon estuary has a total surface area of 213.5 ha, of which 146.2 ha are intertidal. The estuarine shoreline is 19.8 km long and the tidal channel is 7.8 km long. The estuary has a narrow sheltered inlet and extends for 7 km from the sands at Bigbury-on-sea and Bantham at the mouth to Aveton Gifford. The estuary has steep-sided margins, cut into relatively weak Devonian slates and grits, and is generally considered a ria-type (drowned river) estuary (Masselink *et al.* 2009). The estuary has since been in-filled by an accumulation of sediment and, at low water, the channels are narrow and shallow (Davies, 1998).

The five main depositional environments in the Avon estuary include beach and dune deposits at Bantham Ham and Cockleridge, an extensive ebb-tidal delta forming part of the tombolo behind

Burgh Island, a flood tidal delta with several intertidal shoals in the outer estuary, a main tidal channel that meanders along the entire estuary with a tidal weir at Aveton Gifford and salt marshes in the upper estuary (Masselink *et al.* 2009).

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 estuary has been described as having a coarse, scoured channel at the mouth and the head of the estuary; predominantly coarse and fine sand in the lower estuary, and a mixture of fine sand (channel and intertidal shoals) and silt (salt marsh and tidal flat) in the upper estuary. Sediment sorting generally increased from the head to the mouth of the estuary (Blake *et al.* 2007).

Uncles *et al.* (2007) reported on work undertaken by PML Applications Ltd for the Avon Siltation Study. They concluded that the lower estuary was dominated by sand-sized sediment. The upper part of the estuary had a scoured, river-like channel of very coarse sediment deposits associated with fast ebb current speeds due to tides and freshwater flow across the weir, whereas the central to upper part of the estuary had a high percentage of fine sediment, much of which was muddy, that corresponded to a minimum depth in the longitudinal, main-channel bed profile. As the estuary widened, progressing down-estuary, the silt and clay contribution to the bed sediment increased dramatically (averaging over sections) and exceeded 50%. At about 2.5 km from the weir the silt and clay fraction peaked at about 52% and, combined with the very fine sand and fine sand fractions, constituted the majority (> 87%) of bed sediments at this location. The percentage contribution of fine sand and smaller sediments then fell steadily progressing toward the sea. Main-channel grain sizes were much greater than those over the intertidal areas.

The salt marsh sediments in the Devon Avon are up to about 1m thick and are underlain by intertidal sand. A radiocarbon measurement at the base of the salt-marsh sediments in the main marsh of the estuary indicated that the marshes have been in existence for at least 500 years (Blake *et al.* 2007). The Devon Avon salt marshes are naturally constrained by the topography and geology of the river valley.

The salt marshes surveyed by Atkins (2010) were largely limited to pioneer vegetation, with a narrower band of low to mid marsh species and small areas of mid-upper marsh species. Upper salt marsh vegetation was not found within the key salt marsh areas surveyed adjacent to the main river channel, but may be found along some of the tributaries that flow into the channel, which were not included in the survey. The marshes are likely to be vulnerable to future sea level rise and coastal squeeze due to the constraints placed upon them by the valley sides. The zonation of the salt marsh units was surveyed and assessed according to the general definitions within the JNCC Guidance as follows: Pioneer marsh (*Salicornia* spp., *Suaeda maritima*, *Aster tripolium* with bare mud and sand), low-mid marsh (continuous cover with *Puccinellia maritima* or *Atriplex portulacoides* often dominant) and mid-upper marsh (*Festuca rubra*, *Limonium vulgare*, *Armeria maritima*, *Plantago maritima* often dominant).

During a survey of the benthic macroinvertebrate infauna of the Devon Avon in May 1991, the National Rivers Authority (Barfield, 1994) recorded one specimen of *Alkmaria romijni* (tentacle lagoon worm) at Villa Crusoe within the Avon Estuary in sheltered thick deep mud.

Sampling of four major taxonomic groups was carried out by Attrill *et al.* (2009) in three different estuaries in the South West including the Devon Avon. Oligochaetes; amphipod crustaceans (mainly *Gammarus* spp.; the ragworm *Nereis diversicolor* and either mysids (mainly *Neomysis integer*) or the brown shrimp *Crangon crangon*, depending on which was common were sampled (Attrill *et al.* 2009).

The mouth of the estuary has semi-exposed rock platforms with rich rockpool, underboulder and overhang communities on the low shore. In a study by Bishop & Holme (1980) the sediment shores at the mouth had characteristic exposed shore crustacean-polychaete communities. There is a small Pacific oyster fishery at Hexdown (Spencer *et al.*, 1994). Scarlett *et al.* (2007) collected sediment and *Corophium volutator* from an intertidal area of the Avon estuary near Aveton Gifford, south Devon UK.

The Avon estuary was also surveyed by Moore (1988b) who reported a restricted range of habitats. Smith & Laffoley (1992) described the saline lagoons and lagoon-like habitats within the Avon. Sheehan *et al.* (2010) conducted further sediment grain size analysis in the Devon Avon during July and August in the summers of 2003 and 2004. Burd (1989) surveyed the Devon Avon during the Saltmarsh survey of Great Britain.

Like all the main estuaries of the South West, the Devon Avon is potentially very important for seahorse populations as it provides food and shelter. The Seahorse Trust does not have sightings for seahorses in this area, but a lack of sightings does not mean that they are not there (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.3.25e 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.3.25e 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.3.25f 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.3.25e Specific assumptions and implications relating to Devon Avon 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: None identified during VA meeting	
Assumptions	Implications
<p>Aggregate extraction will not be allowed</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.
<p>Bottom-towed fishing gear will not be allowed</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Loss of ground for bottom-towed gear fishermen (<i>may not be relevant in this area.</i>) 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.

<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Netting and longlining will not be allowed</p> <p><i>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 FOCl. 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</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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 <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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.) <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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
<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p><i>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.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: <ul style="list-style-type: none"> - 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. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.

<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>Following VA meetings, a potential need for managing aquaculture activities in this site has been identified.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Pacific oyster farming might need to use triploid stock to prevent escape & breeding of invasive species. o Since the VA meetings, several concerns around the use of triploid stock have been raised (see additional comments)
<p>Crab tiling / bait digging will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Beach replenishment will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed

	<p>Benefits:</p> <ul style="list-style-type: none"> o Potential for increased and enhanced leisure and recreational activity
<p>Pelagic trawls will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>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.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption there are still the following concerns:</p> <ul style="list-style-type: none"> 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) <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.

<p>The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> o One inactive unknown cable.
<p>Tourism and recreational activities will be permitted.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Maintenance dredging in ports (to enable access to ports) will be permitted</p> <p><i>The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o (no heritage wrecks currently present in the site)
<p>Anchoring of small vessels will be permitted</p> <p><i>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</i></p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o No clear working group definition exists of what counts as a 'small' vessel - 24m was proposed some time ago by

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	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.3.25f 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: - Convert pacific oyster farming to triploid stock 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.

- *Aquaculture*
 - Serious concerns were raised following the mention of triploid oyster stock in the vulnerability assessment discussion, as a method of preventing escape of breeding non-native oysters into the wild. The concerns are based on a lack of UK-sourced supply of triploid stock, and risks of importing disease with triploid stock from elsewhere.

- *Environment Agency*
 - Suggest using existing estuarine partnership agreements already in place as basis for protection measures.

- *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.

- *Mobile species*
 - 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.

- *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.3.25f (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.

There are relatively low levels of human activity within the Devon Avon estuary, and this site is relatively uncontroversial, compared to other rMCZs. However, concerns have been raised by the IFCA over the statement in the vulnerability assessment outcome that triploid oyster stock may be considered as a management measure affecting aquaculture.

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.

Site map series

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

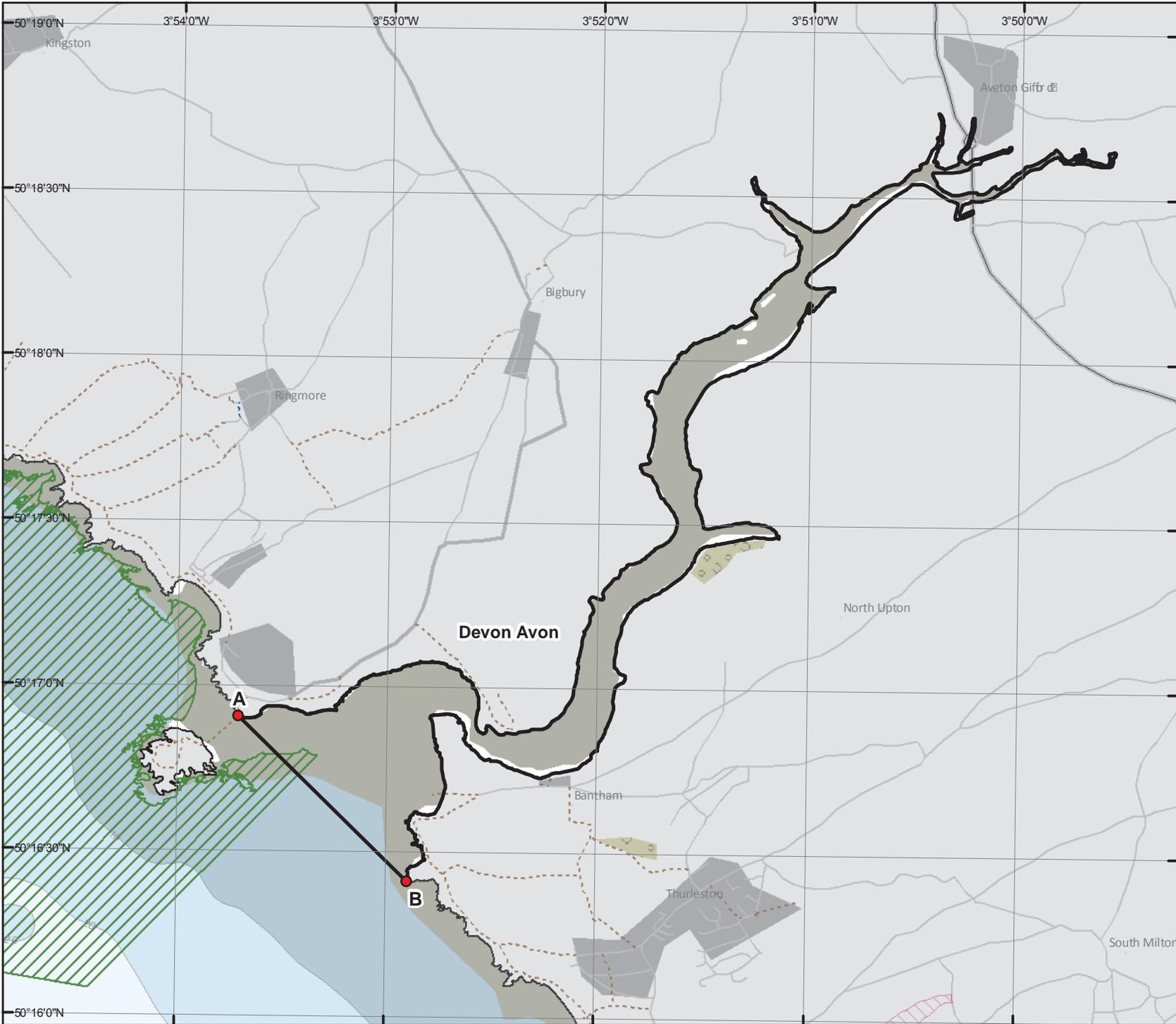
- The first map (FR_036a) is the main site map showing the rMCZ boundary and includes points with coordinates (in WGS84 UTM30N). The map also shows charted depth and

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_036b) 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.3.25b to II.3.25d, data sources are indicated in the tables.
- The third map (FR_036c) 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.

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.

Maritime basemap © British Crown and SeaZone Solutions Limited, 2010.
All Rights Reserved. Data License No. 062005.004. Land basemap part
© OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation.
Contains OS data © Crown copyright 2011.



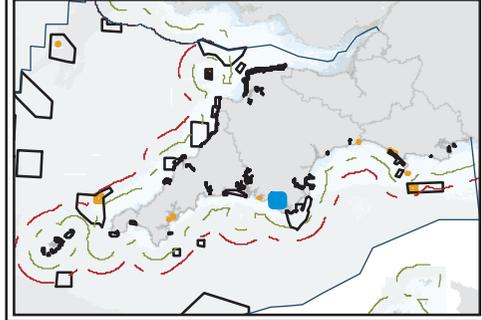
Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.2818	-3.8952	50° 16' 54" N	3° 53' 42" W
B	50.2735	-3.8817	50° 16' 24" N	3° 52' 53" W

Map Legend

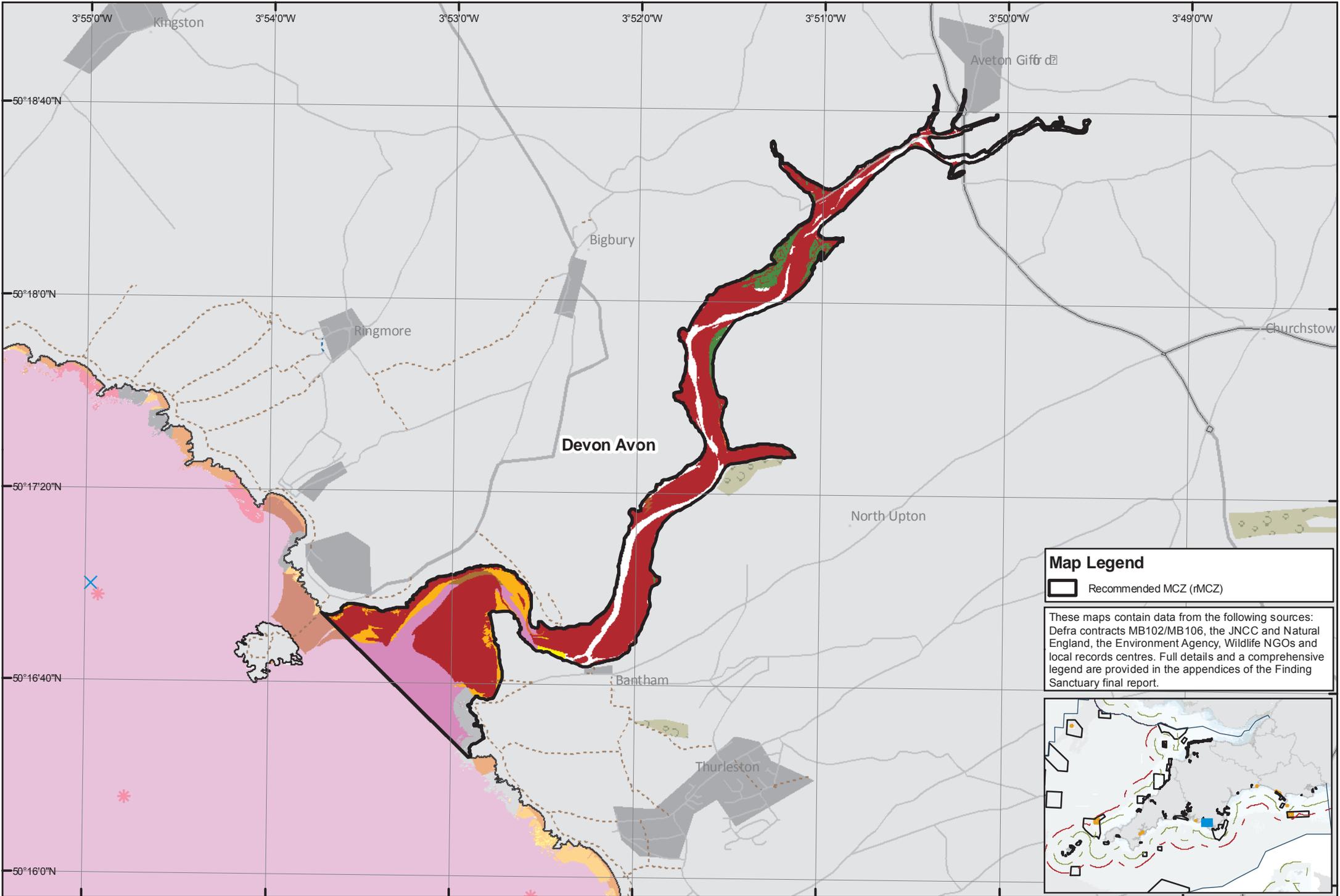
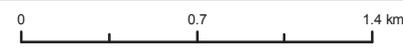
- Recommended MCZ (rMCZ)
- Existing MPAs**
- SAC

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



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.

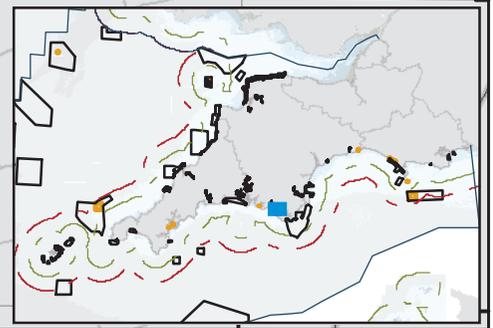
Maritime basemap © British Crown and SeaZone Solutions Limited, 2010. All Rights Reserved. Data Licence No. 062006.004. Land basemap part © OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation. Contains OS data © Crown copyright 2011.

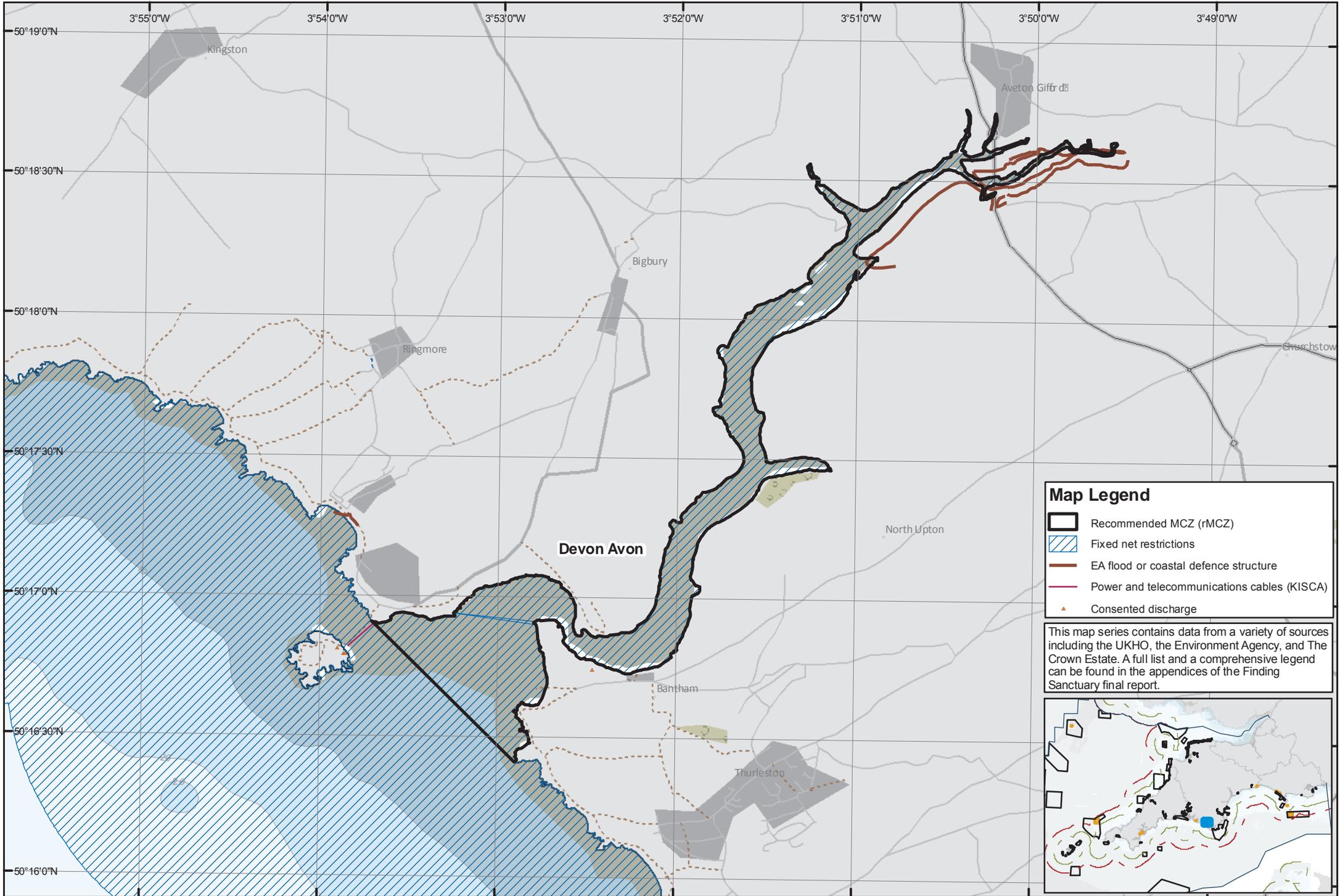


Map Legend

 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.

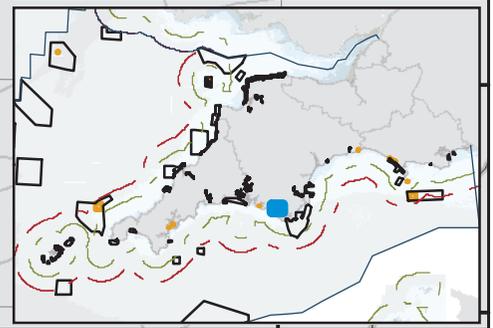




Map Legend

- Recommended MCZ (rMCZ)
- Fixed net restrictions
- EA flood or coastal defence structure
- Power and telecommunications cables (KISCA)
- Consented discharge

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.3.26 Erme Estuary rMCZ

Basic site information

Site centre location (datum used: ETRS89):

Decimal Degrees		Degrees Minutes Seconds	
Lat	Long	Lat	Long
50.3147	-3.9438	50° 18' 53" N	3° 56' 37" W

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

Site surface area: 1.32 km² (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea

OSPAR region: Region II: Greater North Sea

Site boundary: The rMCZ encompasses the whole Erme estuary up to the mean high water mark (mapped using OS Boundary Line mean high water), as far as the weir just south of Sequer's Bridge (where the A379 crosses the river). The seaward boundary of the rMCZ has been drawn at the estuary mouth, from a point at Battsborough Island to Fernycombe Point.

Sites to which the site is related: The site contains the Erme Estuary recommended reference area. The Erme estuary is a SSSI (which the rMCZ falls fully within), and at the estuary mouth, there is an area of overlap between this site and the Prawle Point to Plymouth Sound and Eddystone candidate SAC.

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 Erme Estuary rMCZ

Table II.3.26a Draft conservation objectives for the Erme 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
	Low energy infralittoral rock	M
	Moderate energy infralittoral rock	M
	High energy infralittoral rock	M
	High energy intertidal rock	M
	Intertidal coarse sediment	M
	Intertidal mixed sediments	M
	Low energy intertidal rock	M
	Moderate energy intertidal rock	M
Habitat FOCI	Estuarine rocky habitats	M
	Sheltered muddy gravels	M
Species FOCI	<i>Anguilla anguilla</i>	European eel ? M / R ¹

¹At 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).

Table II.3.26b **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	0.14	<0.1%	1
Moderate energy infralittoral rock	0.03	<0.1%	1
Low energy infralittoral rock	0.07	0.9%	1
Subtidal sand	0.04	<0.1%	1
Subtidal mud	<0.01	<0.1%	1
High energy infralittoral rock ¹	0.28	<0.1%	1
Low energy infralittoral rock ¹	<0.01	<0.1%	1
Subtidal mud ¹	<0.01	<0.1%	1

¹ Features / areas already protected within an overlapping MPA. See the gap table (appendix 11) for details.

Table II.3.26c **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	<0.01	<0.1%	4
Moderate energy intertidal rock	0.03	0.5%	4
Low energy intertidal rock	<0.01	0.2%	4
Intertidal coarse sediments	0.02	0.1%	4, 3
Intertidal mixed sediments	<0.01	0.1%	4
Moderate energy intertidal rock ¹	<0.01	<0.1%	4
Intertidal coarse sediments ¹	<0.01	<0.1%	4
Intertidal sand and muddy sand ¹	0.01	<0.1%	4
Intertidal mud ¹	0.55	0.3%	4, 3
Coastal saltmarshes and saline reedbeds ²	0.07	2.3%	3

¹ Features / areas already protected within an overlapping MPA. See the gap table (appendix 11) for details.

² The area of coastal saltmarsh calculated in this GIS analysis might be an underestimate of the saltmarsh area present along the estuary, as the rMCZ site boundary is at OS Boundary Line mean high water, and the habitat might extend above that. Stakeholder feedback stated that on the eastern bank of the upper estuary near Great Orcheton Farm, a breach in a seawall has led to the creation of an area of saltmarsh. This is clearly visible on aerial imagery available on the Ordnance Survey website (and on google maps), but is not mapped in our GIS dataset. Features / areas already protected within an overlapping MPA. Refer to the gap table (appendix 11) for details.

Table II.3.26d **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		3		1
Sheltered muddy gravels	0.07			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 0.72 km² 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 Erme is a narrow, sheltered estuary approximately 6.5 km long. It is very secluded, has steep wooded banks and a notified SSSI for its woodland interest. It lies within an Area of Outstanding Natural Beauty, and within the South Devon Heritage Coast (Davies 1998). The Erme Estuary is also designated as a Several Fishery and has managed bait and shellfish collecting (EEMAG, 2003). The

estuary remains largely unaffected by industrialisation (compared with for example the Tamar estuary) and therefore has been the focus of a number studies (Price *et al.* 2005).

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 area around the Erme estuary is privately owned by the Flete Estate. There is a protected archaeological wreck within this site (the Erme Estuary), and another one close to the site boundary at the estuary mouth (the Erme Ingot).

Detailed site description

The habitats are predominantly sedimentary with some broken sand scoured bedrock at the mouth. Mobile sediments near the channel have a typical crustacean-polychaete community characterised by the amphipods *Bathyporeia pilosa* and *Eurydice pulchra*. More sheltered sediment infaunal communities are characterised by ragworm *Hediste diversicolor*. Low shore shingle and cobble habitats are colonised by the brackish water algae *Fucus ceranoides*. The estuary is a spawning ground for sea trout and has a population of the European Otter (Davies 1998).

Anguilla anguilla was reported in the Erme during the 1992-97 Devon Wildlife Trust Stoke Point and Erme Estuary littoral survey.

Luoma & Bryan (1978) took sediment samples from the oxidized surface layer of intertidal sediments within the Erme to determine the availability of sediment-bound lead to *Scrobicularia plana*. Turner *et al.* (2009) collected sediment from the marine reaches of the estuary during June 2008. This was used as a control to antifouling paint contaminated sediment studies. Jones & Turner (2009) collected approximately 6 L of surficial sandy sediment at low water from the marine reaches of the estuary, and Sheehan *et al.* (2010) surveyed the Erme during July and August in the summers of 2003 and 2004. Sediments were classified as poorly sorted sandy muds (mean 5.3 ± 0.03 SE).

Sampling of four major taxonomic groups was carried out by Attrill *et al.* (2009) in the Erme estuary: oligochaetes; amphipod crustaceans (mainly *Gammarus* spp.); the ragworm *Nereis diversicolor* and either mysids (mainly *Neomysis integer*) or the brown shrimp *Crangon crangon*, depending on which was common.

Like all the main estuaries of the South West, the Erme is potentially very important for seahorse populations as it provides food and shelter. The Seahorse Trust does not have sightings for seahorses in this area, but a lack of sightings does not mean that they are not there (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.3.26e shows more

specific working assumptions and implications that were recorded for this site over the course of the planning process.

Following that, table II.3.26f 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.3.26e Specific assumptions and implications relating to Erme 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 <i>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</i>	Direct implications: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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 <i>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</i>	Direct implications: <ul style="list-style-type: none"> 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

	<p>concentrating effort in alternative grounds or due to new fishing ground searching activity.</p> <ul style="list-style-type: none"> o Local Group feedback indicated that this area is a key spider crab fishery (May-July).
<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Definition of large vessel needs to be clarified o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Netting and longlining will not be allowed</p> <p><i>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</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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 <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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.) <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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
<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p><i>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.</i></p> <p>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</p>	<p>Direct implications:</p> <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: <ul style="list-style-type: none"> - 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. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.

<p>Beach replenishment will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Crab tiling / bait digging will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Activities assumed to be allowed to continue / occur within the site	
Assumptions	Implications
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed <p>Benefits:</p> <ul style="list-style-type: none"> o Potential for increased and enhanced leisure and recreational activity
<p>Pelagic trawls will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>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.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Estuary is privately owned? Would this be permitted anyway? How does the Erme estuary management plan relate to this? 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) <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.

	<p>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.</p>
<p>The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational)</p> <p>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</p>	<p>Direct implications:</p> <p>o Could provide income opportunities</p>
<p>Tourism and recreational activities will be permitted.</p> <p>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</p>	<p>Direct implications:</p> <p>o</p> <p>Benefits:</p> <p>o Positive implications for local economy – advertising the ‘selling point’ of the Erme as an MCZ</p>
<p>Maintenance dredging in ports (to enable access to ports) will be permitted</p> <p><i>The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.</i></p> <p>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</p>	<p>Direct implications:</p> <p>o</p>
<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p>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</p>	<p>Direct implications:</p> <p>o Heritage wreck present in this site: Erme Estuary. Another heritage wreck is situated within 150m of the site boundary, at the estuary mouth (the Erme Ingot).</p>

<p>Anchoring of small vessels will be permitted</p> <p><i>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Definition of small vessel needs to be clarified o Concern about possible impacts on any eelgrass beds or fan mussels present voiced by a Steering Group member 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.
<p>Passage of ships will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Seaweed harvesting will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Table II.3.26f 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).

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 species*
 - 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.

- *Management measures*
 - Estuarine partnership management arrangements should be listed as management measures for the site.
 - The Local Group made a suggestion to adapt current estuary management to include zoning e.g. no-take zones.

- *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.3.26f (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.

There are low levels of human activity within this rMCZ, so it is less contentious than most of the other sites in the network. It was one of the three estuaries added to the developing recommendations relatively early in the process (see progress report 3). Ports and harbours are supportive of this rMCZ, as there is no port within it.

Supporting documentation

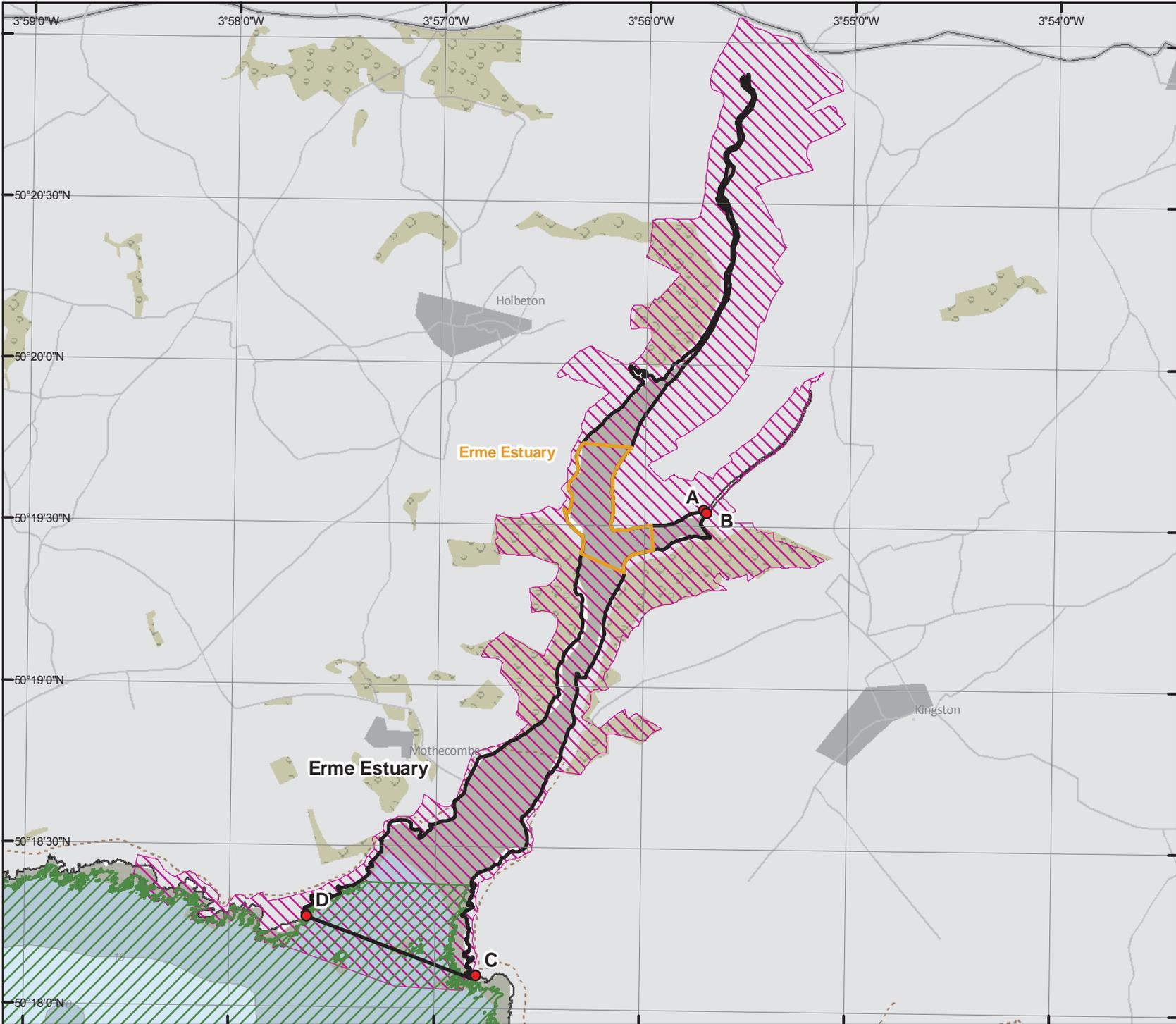
GIS data used for reporting the quantitative habitat and species figures in the tables above includes the following sources: UKSeaMap modelled broad-scale habitat data, MB102, and Environment Agency intertidal habitat data. Refer to appendix 8 for details, and to the tables above for data sources for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

Site map series

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

- The first map (FR_037a) 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_037b) 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.3.26b to II.3.26d, data sources are indicated in the tables.
- The third map (FR_37c) 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.



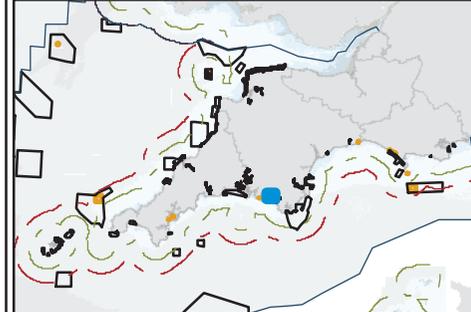
Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.3258	-3.9285	50° 19' 32" N	3° 55' 42" W
B	50.3257	-3.9283	50° 19' 32" N	3° 55' 41" W
C	50.3016	-3.9466	50° 18' 5" N	3° 56' 47" W
D	50.3046	-3.9603	50° 18' 16" N	3° 57' 37" W

Map Legend

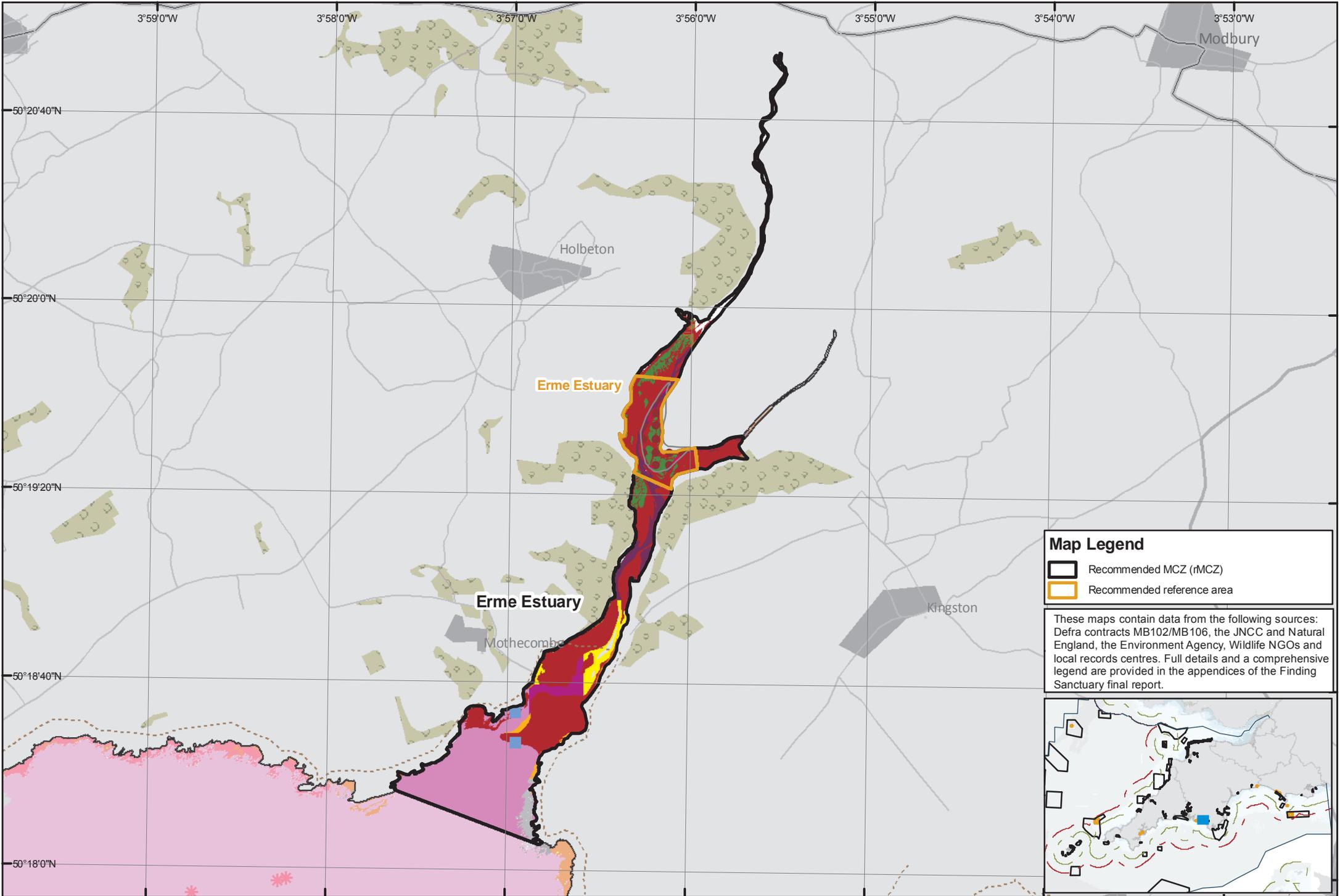
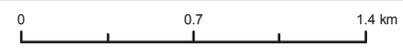
- Recommended MCZ (rMCZ)
- Recommended reference area
- Existing MPAs**
- SAC
- SSSI (part of MPA network)

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



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.

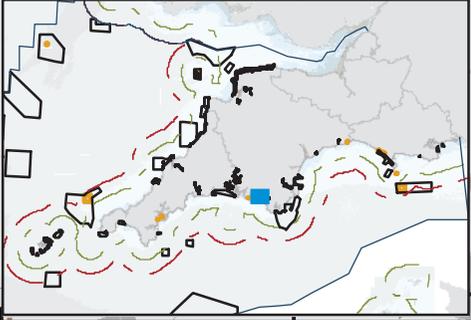
Maritime basemap © British Crown and SeaZone Solutions Limited, 2010.
All Rights Reserved. Data Licence No. 062006.004. Land basemap part © OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation. Contains OS data © Crown copyright 2011.

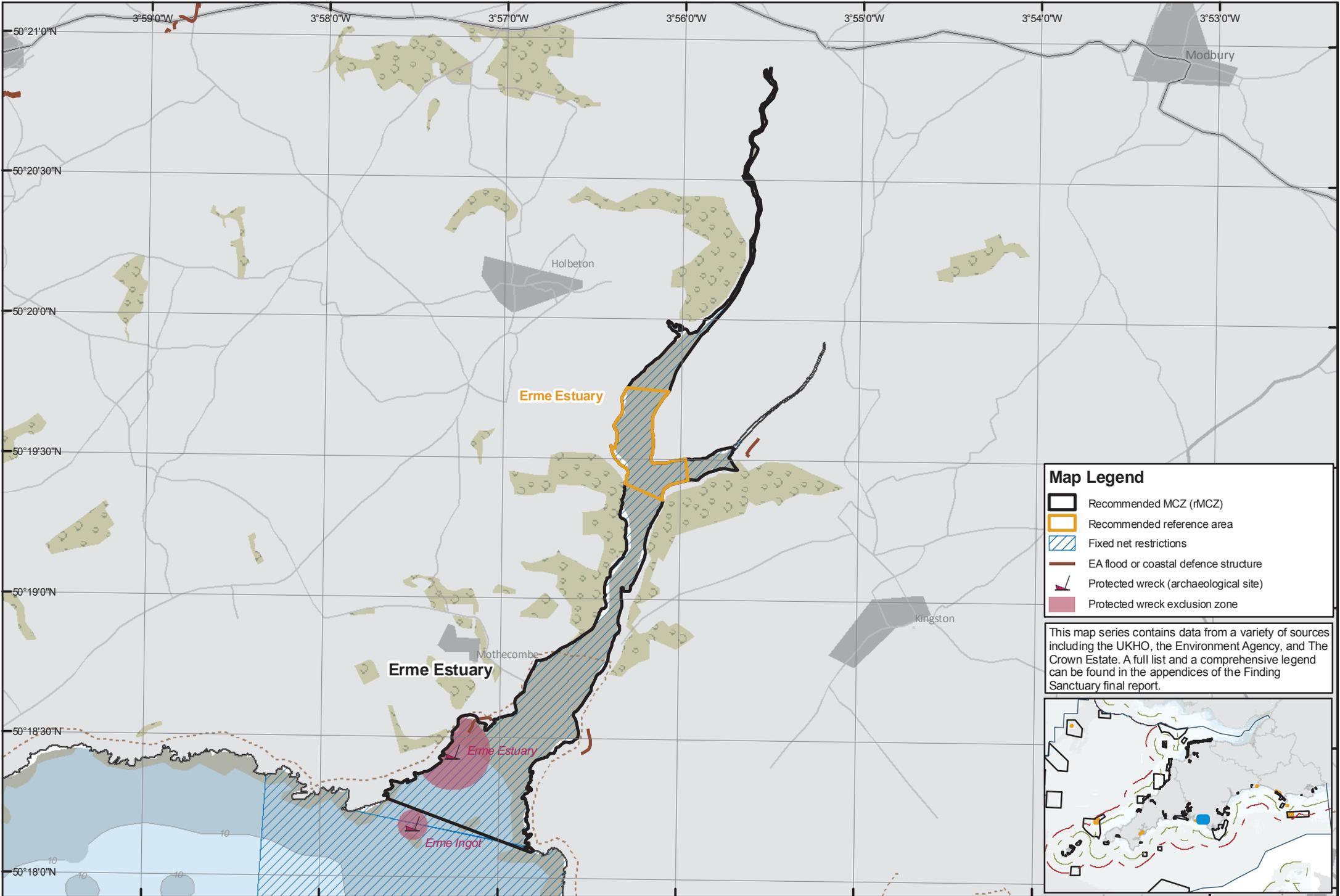
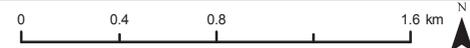


Map Legend

- 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.

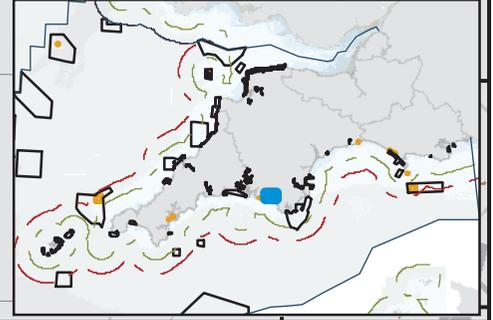




Map Legend

- Recommended MCZ (rMCZ)
- Recommended reference area
- Fixed net restrictions
- EA flood or coastal defence structure
- Protected wreck (archaeological site)
- Protected wreck exclusion zone

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.3.27 Tamar Estuary Sites 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
50.4241	-4.2214	50° 25' 26" N	4° 13' 17" W

Site surface area: 15.3 km² (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea

OSPAR region: Region II: Greater North Sea

Site boundary: This site consists of two spatially separate component areas. The upper Tamar and Tavy estuaries form one part, along the OS Boundary Line mean high water mark from Gunnislake to just north of the Tamar Bridge at Saltash. The second part consists of the Lynher estuary with its smaller tributaries, along the mean high water mark from the tidal limits at Tideford and north of Landrake to Jupiter point near the mouth of the Lynher.

Sites to which the site is related: The site is included within the Plymouth Sound and Estuaries SAC and overlaps with the Tamar Estuaries complex SPA. The Tamar-Tavy portion of the rMCZ lies within the Tamar-Tavy Estuary SSSI. The Lynher portion of the rMCZ lies within the Lynher Estuary SSSI.

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 Tamar Estuary Sites rMCZ

Table II.3.27a Draft conservation objectives for the Tamar Estuary Sites 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	Intertidal biogenic reefs		M
	Intertidal coarse sediment		M
Habitat FOCI	Blue Mussel beds (including intertidal beds on mixed and sandy sediments)		M
Species FOCI	<i>Ostrea edulis</i>	Native oyster	M
	<i>Osmerus eperlanus</i>	Smelt	? M / R ¹
	<i>Anguilla anguilla</i>	European eel	? M / R ¹

¹At 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.3.27b 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)
Low energy infralittoral rock ¹	0.03	0.4%	1
Subtidal coarse sediment ¹	0.02	<0.1%	1
Subtidal mud ¹	4.19	<0.1%	1, 2
Subtidal mixed sediments ¹	0.21	<0.1%	1, 2

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

Table II.3.27c 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)
Intertidal coarse sediments	0.04	0.2%	3
Intertidal biogenic reefs	<0.01	12.9%	4
Low energy intertidal rock ¹	0.02	0.5%	4
Intertidal mud ¹	9.05	5.3%	4, 2, 3
Coastal saltmarshes and saline reedbeds ¹	0.28	9.2%	3
Intertidal biogenic reefs ¹	<0.01	<0.1%	4

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

Table II.3.27d 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)
Blue Mussel beds		1		1
Estuarine rocky habitats ¹	< 0.01			1
Seagrass beds ¹	< 0.01			1

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

Table II.3.27e 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 Trehwella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Ostrea edulis</i>	4	4	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 3.67 km² 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

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. A specific reason for including the upper Tamar and Lynher estuaries was that they are the only estuaries in the south-west where there is good evidence that they are used by the mobile FOCI *Osmerus eperlanus* (smelt), based on evidence provided to the project by the Environment Agency (see appendix 8).

Detailed site description

The Tavy's intertidal mudflats in the upper estuary consist predominantly of silt and clay. In the central and upper estuary, superficial bed sediments in the main channel, and on the upper shores of both banks when these are not salt marsh, comprise a mixture of predominantly coarse, non-cohesive sediments with very small fractions of silt and clay. Sediment on the upper mudflat areas is essentially homogeneous and has a silt and clay content of greater than 80% (dry weight). The silt and clay content is less (but still >70%) as the mudflats increase their slopes approaching the main channel (Uncles & Stephens, 2000). Pilditch *et al.* (2008) conducted sediment analysis at a high-shore intertidal site, just below the high-water neap tide (HWNT) level, on the east bank of the Tavy estuary at Blaxton. Extensive mudflats on the western shore of Hamoaze, in Lyhner Estuary and northward along the Tamar are backed by shale or saltmarsh on the upper shore (Hiscock & Moore, 1986). Small areas of shingle shore are present, and particularly well-developed in the area of Torpoint (Hiscock & Moore, 1986).

Dyer *et al.* (2000) analysed mudflats within the Tamar estuary sites (including the Lynher) to establish a classification scheme of intertidal mudflats. The survey included classification into sediment type. Surveys were carried out between March and July 1998. Craig & Moreton (1986) conducted two surveys of South West England estuaries during the periods June-August 1981, and October 1982. Sediment samples were collected at low water from intertidal sites in the Tamar. Bale *et al.* (2007) collected sediment samples using a small inflatable boat to access intertidal mud at a number of stations along the axis of the Tamar Estuary at elevations between low water and mid tide. Sediment cores for flume experiments were also collected by Pope *et al.* (2006) from locations within the Tamar estuary.

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 shore platforms in the Tamar at the higher tidal levels were mainly artificial walls, low cliffs and beaches of muddy-sand that carry a litter of firmly bedded slates and stones. In the upper reaches of the Tamar and within its many 'lakes' and tributary estuaries, the burden of mud increases and the shores are dominated by extensive mud-

flats and saltings (Smith, 1981). Luoma & Bryan (1978) also collected sediment samples from the oxidized surface layer of intertidal sediments within the Tamar.

Bayne *et al.* (1983) studied mussels at six sites on the English and Welsh coasts. Fecundity and physiological measurements of an extensive well established population in the Lynher estuary were taken during the study. Hiscock & Moore (1986) also reported blue mussel beds in the Tamar estuary site during their survey of Harbours, Rias and Estuaries of Southern England. Mussel beds are present on intertidal sediment flats in the Lynher and Hamoaze. Those surveyed were colonised by *Elminius modestus* with generally frequent *Littorina saxatilis* and *Littorina littorea*. *Cerastoderma edule* were also present in the sediment between. Attached algae or algae living on stones amongst the mussels included *Fucus vesiculosus* and *Ascophyllum nodosum*. On the lower shore at Jupiter Point, mussels were colonised by filamentous red algae and by abundant *Halichondria* spp. and *Bowerbankia imbricata* as well as occasional *Crepidula fornicata* and *Myxilla incrustans* (Hiscock & Moore, 1986). Interstitial fauna sampled at Passage Point contained abundant *Cirriformia tentaculata* and a few other worms and amphipods. At St Johns Lake, the mussel bed was dominated by *Cirratulus cirratus* (Hiscock & Moore, 1986). Further research on mussels in the Tamar estuary has been carried out by Bignell *et al.* (2011) and Shaw *et al.* (2011).

Matt McHugh and colleagues at the Marine Biological Association have surveyed the estuary on a weekly basis between 2004 and 2009 between Cargreen and West Mud. They have also come across *Ostrea edulis* whilst surveying the Tavy area. *Mytilus edulis* is present at Cargreen, at the mouth of the Tavy, and at West Mud. *Anguilla anguilla* is regularly caught by anglers at Kingsmill Lake (M. McHugh, Marine Biological Association, pers. comm.).

Jack Sewell from the MBA has found one or two *Ostrea edulis* individuals during a few one-off surveys at Beggars Island at the mouth of the River Lynher. Surveys are to continue with youth-led SHARC (Surveying Habitats and Researching Coasts) group (MBA group) (Jack Sewell, Marine Biological Association, pers. comm.).

There are many studies that highlight the importance of the site for Smelt (*Osmerus eperlanus*), the earliest dating back well over a century. Buckland (1875) recorded that ‘... but for actual bait, with a rod and line at flood tide, a red worm is generally thought all that is necessary. At Plymouth, where I have both witnessed and enjoyed a great deal of smelt fishing, I have seen nought else employed. ... Lambhay Point was a favourite resort for smelt fishers some years since. Traffic encroachments have now interfered considerably with the successful prosecution of the sport in this immediate quarter. ... At Plymouth ... no perceptible diminution of numbers has been discoverable except at the old rendezvous of Lambhay Point. In the Sound, near ‘The Mallard’ excellent smelt fishing is still to be had, and great quantities are taken there during the summer months.’

Later sources, however, refer to the smelt as a relatively recent arrival on the south coast of Devon and Cornwall (e.g. JMBA 1973 in Maitland, 2003). Several studies have highlighted that the species breeds in the Tamar estuary, based on reports of adult fish with maturing gonads having been caught, as well as larvae, post-larvae and juveniles. Successful spawning events and indications of an established population were reported in the 1970s, highlighting the area just below Gunnislake Weir as a spawning area, and feeding areas for post-larvae between 5 and 10km downstream from the spawning zone (JMBA 1975, 1975 in Maitland, 2003). A recent review of records of this species seems to indicate that the Tamar estuary is a uniquely important location for smelt within the south-west region: ‘... the spawning grounds are just below Gunnislake Weir. ... I have a lot of trawl data and also plots of larval and post-larval distributions for the Tamar. A similar survey for the Dart did not show any. I spent a lot of time looking at old records and in the majority of these ‘smelt’ referred

to *Atherina*. There was one for the Exe for which the species was uncertain. ... smelt were there (Tamar) in 1981 with population densities up to 4 per m³. Most of the samples are still with me and I have a lot of scales and scale readings.' (P.R. Dando, University of Wales, Bangor, e-mail dated 20 November, 2002. Quoted in Maitland, 2003).

As a bycatch, smelt were taken in the River Tamar in 1988 in EA licensed salmon seine nets at Weir Quay (P.J. Coates, South Wales Sea Fisheries Committee, e-mail dated 14 November, 2002. Quoted in Maitland, 2003). Potts & Swaby (1993) record that 'Cucumber smelt (*Osmerus eperlanus*) has been caught by beam trawl in the Tamar Estuary but only following high rainfall and when the salinity is low (Hutchings, pers. comm. 1992. In Maitland, 2003).' 'Adults observed by myself in National Marine Monitoring Programme annually: 1999, 2000, 2001 – qualitative information only, though a range of sizes. ... anecdotal evidence of large numbers of smelt migrating ... Spawning in and around tidal limit at Gunnislake.' (S. Toms, Environment Agency, e-mail dated 3 December, 2002. Quoted in Maitland, 2003).

Within the Tamar and Lyhner estuaries, Calstock Bend to Weir Quay was considered of national marine biological importance (Hiscock & Moore, 1986). A well developed estuarine gradient and the presence of littoral and sublittoral hard strata are the important features in the Tamar estuary. The rarely encountered hydroid *Cordylophora caspia* was recorded in high densities. Where the estuary opens out at Weir Quay, the polyhaline *Hartlaubella gelatinosa* was recorded on shells and other hard strata. In the area off Ballast Punt, Torpoint, low shore shale cobbles and boulders support a rich assemblage of finely branching algae and a rich underboulder fauna. The cobbles and boulders on mud extend into the sublittoral (Davies, 1998).

Reef habitats occur within the Plymouth estuaries which comprises intertidal and subtidal low energy reefs, including some composed of limestone. This relatively soft rock is extensively bored by the bivalve *Hiatella arctica* and the Spionid worms *Polydora spp.*, and harbours a rich fauna. In the sublittoral this steep-sided reef is dominated by a dense hydroid and bryozoan turf interspersed with anemones and ascidians. The sublittoral is of particular importance for its kelp- and animal-dominated habitats. Abundant populations of the slow growing, long-lived, nationally important pink sea-fan *Eunicella verrucosa* also occur at this site. The reef feature is in full salinity and subject to strong coastal influence (English Nature, 2000).

Widdows *et al.* (2007a) measured sediment properties and macrofauna at two locations on the Tamar and Tavy estuaries. *Spartina anglica* saltmarsh is present in the Tavy, and *Phragmites australis* beds on the upper tidal riverbanks of the Tamar at Calstock.

The Tamar estuaries are a prime, very important site for both species of seahorse. The Seahorse Trust has records of a number of live and dead specimens from this region, many of which have been provided by the Marine Biological Association in Plymouth (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.3.27f 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.3.27f 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.3.27g 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.3.27f Specific assumptions and implications relating to Tamar Estuary Sites 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: none identified during VA meetings	
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	<p>Direct implications:</p> <ul style="list-style-type: none"> 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.

<p>Bottom-towed fishing gear will not be allowed</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Loss of ground for bottom-towed gear fishermen (<i>may not be relevant in this area.</i>) 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.
<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p>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</p>	<p>Direct implications:</p> <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is a general right of anchoring as a consequence of and incidental to the Public Right of Navigation
<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Netting and longlining will not be allowed</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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 <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o SAFFA fixed net restrictions apply.

<p>remains around netting, where the activity may have an impact on nursery habitat - this uncertainty was not resolved through the VA</p> <p>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</p>	
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Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.

Assumptions	Implications
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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.) <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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
<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p><i>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.</i></p> <p>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</p>	<p>Direct implications:</p> <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: <ul style="list-style-type: none"> - 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. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> o If co-location assumptions are not correct the impacts would/could be: site locations that can't be developed,

	<p>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.</p> <ul style="list-style-type: none"> o Increased competition for sea space with other sea users.
<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Pacific oyster farming might need to use triploid stock to prevent escape & breeding of invasive species. o Since the VA meetings, several concerns around the use of triploid stock have been raised (see additional comments)
<p>Crab tiling / bait digging will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o A steering group member stated that this activity does take place within this site. o A steering group member stated that their understanding is that bait collection may be restricted for intertidal habitat protection.
<p>Beach replenishment will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed <p>Benefits:</p> <ul style="list-style-type: none"> o Potential for increased and enhanced leisure and recreational activity
<p>Pelagic trawls will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>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.</p> <p>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</p>	<p>Direct implications:</p> <p>Given this assumption there are still the following concerns:</p> <ul style="list-style-type: none"> 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) <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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 . 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 New cables and pipelines need to be permitted - the Tamar is a 'must cross' river to service Devon & Cornwall.

<p>The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> o Four active power cables, one active unknown cable, seven inactive telecoms cables and a gas pipeline.
<p>Tourism and recreational activities will be permitted.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Maintenance dredging in ports (to enable access to ports) will be permitted</p> <p><i>The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o (no heritage wrecks currently present in the site)
<p>Anchoring of small vessels will be permitted</p> <p><i>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</i></p> <p>Activity not taking place / not taking</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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

place at high enough levels to cause a problem in this site, so this was not considered during the VA meetings	would adopt that size in MCZ planning. o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
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.3.27g 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).

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.

- *MOD*
 - MOD activities take place in the southern reaches of the estuary which may not be compatible with an MCZ.
- *The Wildlife Trusts*
 - Adding features to current SAC/SPA/SSSI protection will result in more holistic approach to site management
- *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 *Osmerus eperlanus*, smelt and *Anguilla anguilla*, European eel, the uncertainty around netting applies.
- *Aquaculture*
 - Serious concerns were raised following the mention of triploid oyster stock in the vulnerability assessment discussion, as a method of preventing escape of breeding non-native oysters into the wild. The concerns are based on a lack of UK-sourced supply of triploid stock, and risks of importing disease with triploid stock from elsewhere.
- *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 of 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*
 - The Tamar Estuary Consultative Forum (TECF) current management measures e.g. zoning etc should be included in the potential management for this site. The forum should be involved in the management and implementation of the site.
- *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.3.27g (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.

A range of human use and socio-economic considerations led to the upper estuarine reaches only being included in this rMCZ (the upper reaches is also where smelt breed, and the main reason for the inclusion of this site was the presence of smelt). The boundaries were defined by the Tamar Estuaries Consultative Forum at the request of the Working Group. The Duchy of Cornwall have voiced concerns over potential restrictions to moorings and other licensed commercial activities, and the Tamar Estuaries Consultative Forum has voiced concerns over whether they have the resources necessary to deal with site implementation. Stakeholders have emphasized the importance that the estuary forum be involved in future management and implementation of 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, Cornwall Wildlife Trust, 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. There may be additional information relevant to this rMCZ in Gee *et al.*, (1985), Langston *et al.*(2003), Warwick and Price (1975, 1979), and Warwick and Radford, 1989. Further information on the Natura 2000 sites to which this site is related may be found on the JNCC's [website](#)³⁴.

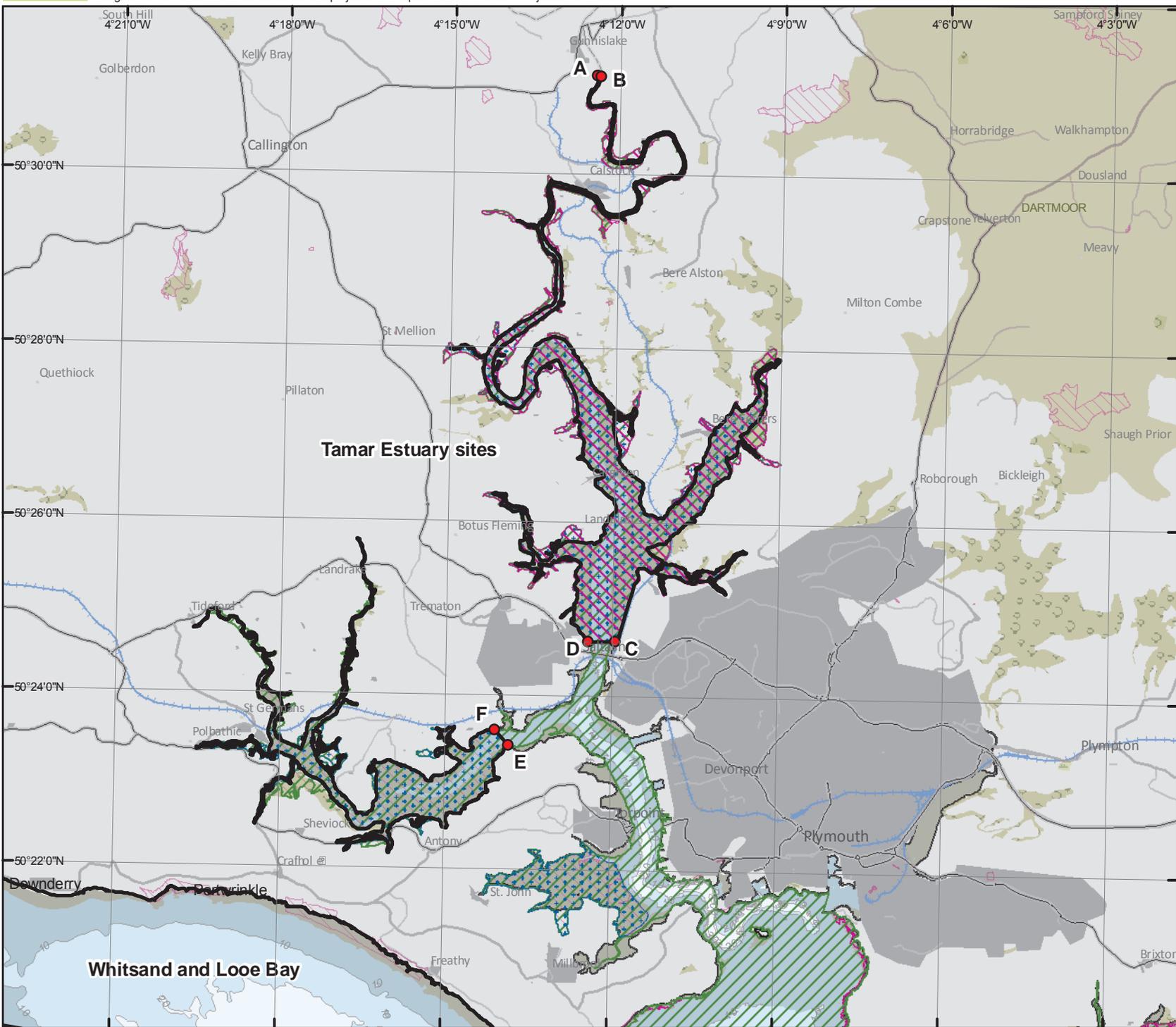
Site map series

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

- The first map (FR_038a) 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_038b) shows the rMCZ boundary over broad-scale habitats, and records of habitat and species FOCl. The data shown on this map corresponds with the information in tables II.3.27c to II.3.27e, data sources are indicated in the tables.
- The third map (FR_038c) shows socio-economic datasets, excluding fisheries regulation. For spatial data showing the distribution of fishing effort, please refer to the interactive PDF maps supplied with the additional materials (see appendix 14).
- The fourth map (FR_38d) shows fisheries regulation data.

³⁴ <http://jncc.defra.gov.uk/page-4>

- 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.



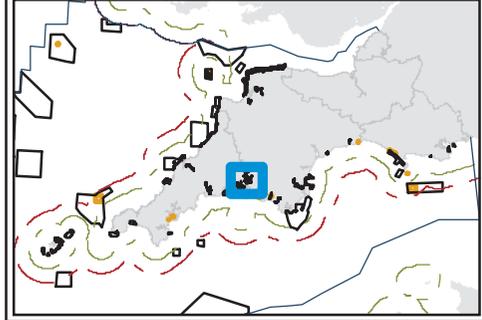
Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.5192	-4.2069	50° 31' 9" N	4° 12' 24" W
B	50.5190	-4.2059	50° 31' 8" N	4° 12' 21" W
C	50.4106	-4.1991	50° 24' 38" N	4° 11' 56" W
D	50.4105	-4.2070	50° 24' 37" N	4° 12' 25" W
E	50.3904	-4.2309	50° 23' 25" N	4° 13' 51" W
F	50.3934	-4.2351	50° 23' 36" N	4° 14' 6" W

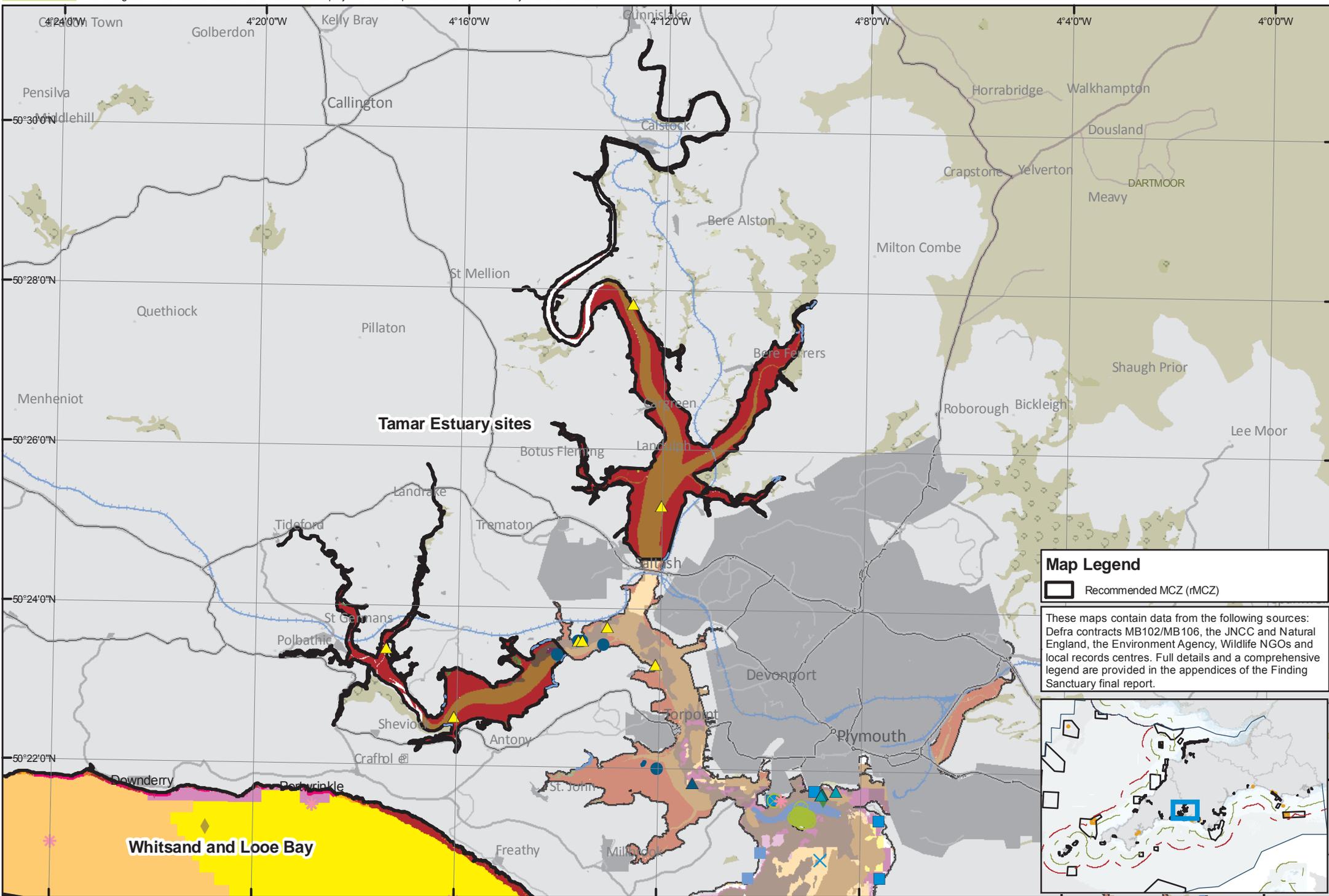
Map Legend

- Recommended MCZ (rMCZ)
- Existing MPAs**
- SAC
- SPA
- 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.



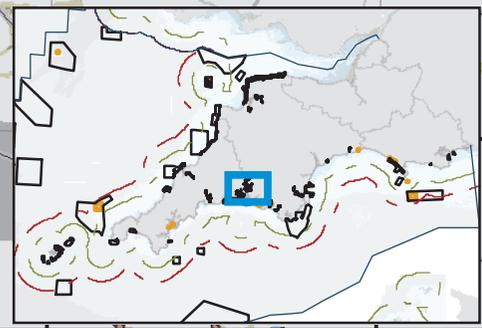
This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with biophysical information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

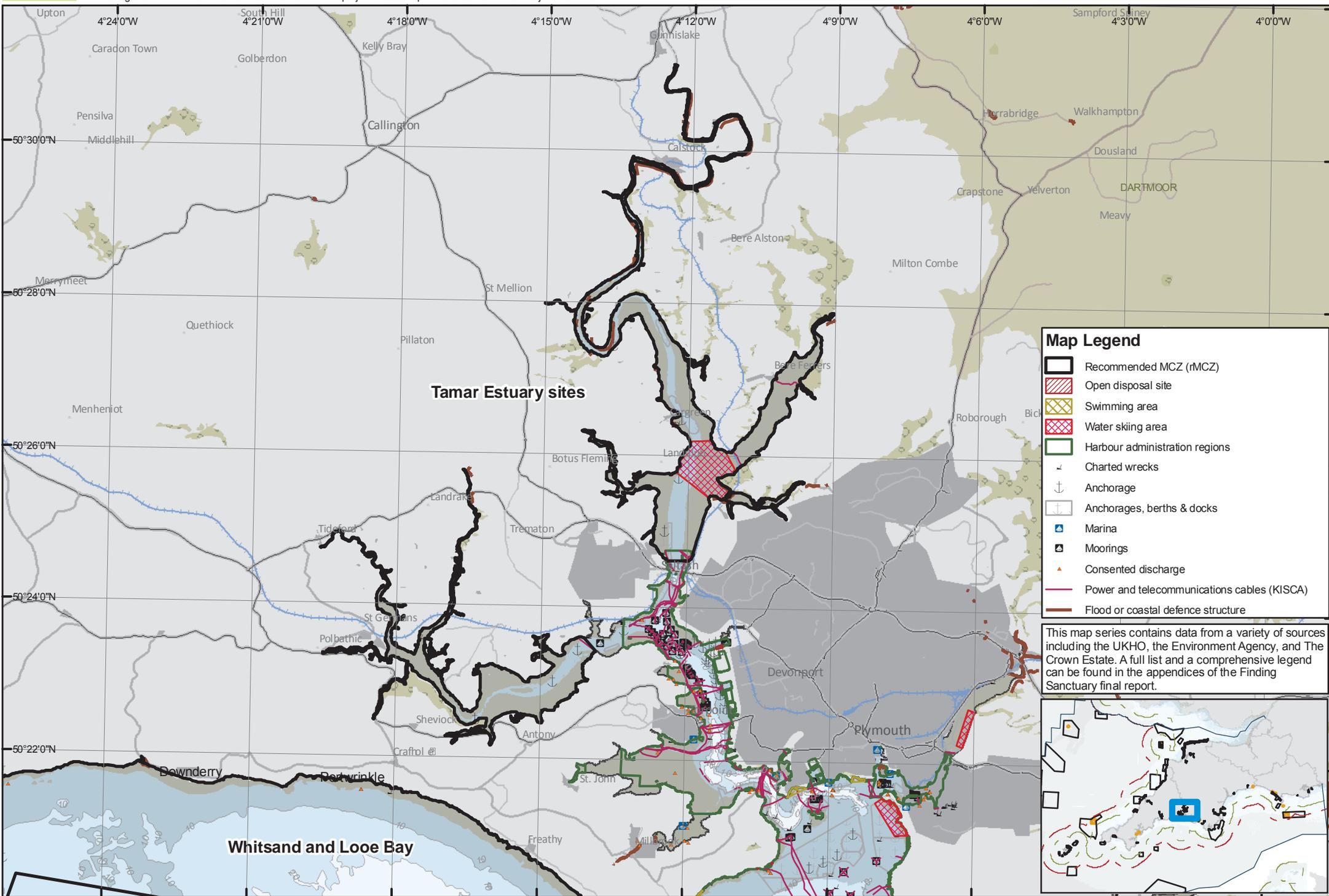
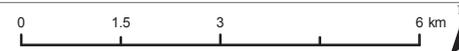


Map Legend

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.





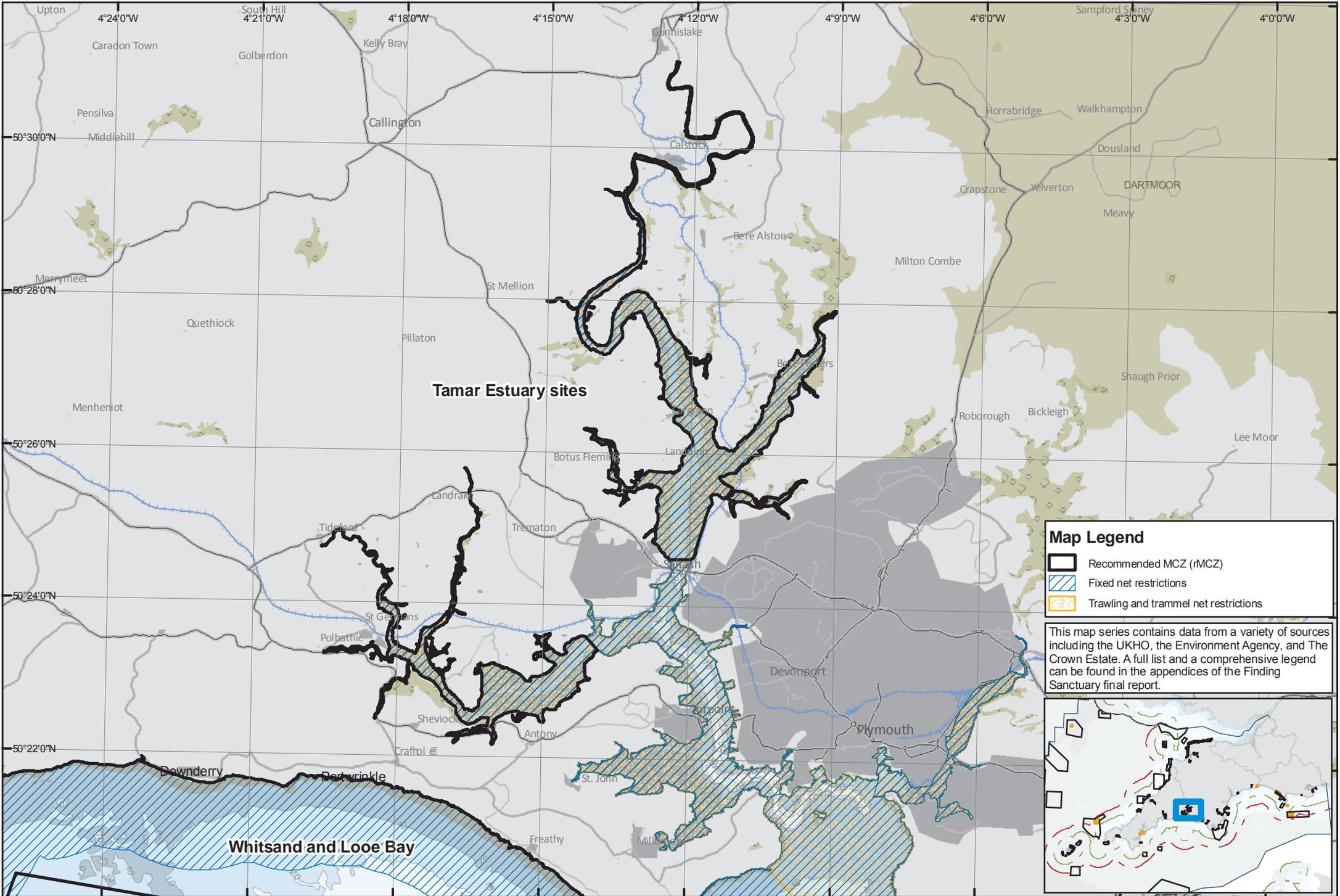
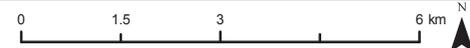
Map Legend

- Recommended MCZ (rMCZ)
- Open disposal site
- Swimming area
- Water skiing area
- Harbour administration regions
- Charted wrecks
- Anchorage
- Anchorages, berths & docks
- Marina
- Moorings
- 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.



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



Map Legend

-  Recommended MCZ (rMCZ)
-  Fixed net restrictions
-  Trawling and trammel net restrictions

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.3.28 Whitsand and Looe Bay rMCZ

Basic site information

Site centre location (datum used: ETRS89):

Decimal Degrees		Degrees Minutes Seconds	
Lat	Long	Lat	Long
50.3434	-4.3459	50° 20' 36" N	4° 20' 45" W

Site surface area: 51.5 km² (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea

OSPAR region: Region II: Greater North Sea

Site boundary: The site boundary follows the coastline along the OS Boundary Line mean high water mark from Hore Stone near Talland Bay in the west, to a point between Queener Point and Long Cove on Rame Head in the east. The seaward boundary is formed by a straight line across the bay, with a small extension jutting out to the south around Looe Island (following the outline of the Looe voluntary marine conservation area).

Sites to which site is related: The site lies to the west of the Plymouth Sound and Estuaries SAC and includes the Looe voluntary marine conservation area. Eglarooze Cliff SSSI, and Whitsand Bay and Rame Head SSSI lie along the shoreline of 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 Whitsand and Looe Bay rMCZ

Table II.3.28a Draft conservation objectives for Whitsand and Looe 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 habitat	Subtidal coarse sediment		M
	Subtidal sand		M
	Moderate energy circalittoral rock ¹		M
	High energy infralittoral rock		M
	High energy intertidal rock		M
	Intertidal coarse sediment		M
	Intertidal mixed sediments		M
	Intertidal sand and muddy sand		M
	Low energy intertidal rock		M
	Moderate energy intertidal rock		M
Habitat FOCI	Seagrass beds		M
Species FOCI	<i>Amphianthus dohrnii</i>	Sea-fan anemone	M
	<i>Arctica islandica</i>	Ocean quahog	M
	<i>Eunicella verrucosa</i>	Pink sea-fan	M
	<i>Gobius cobitis</i>	Giant Goby	M
	<i>Haliclystus auricula</i>	Stalked jellyfish	M
	<i>Hippocampus guttulatus</i>	Long snouted seahorse	M

¹ There is no data in the combined EUNIS level 3 GIS data (described in appendix 8), but local group and scientific feedback states that there are rocky ledges present in the bay. There are hard substrate species present (e.g. pink sea fan), and a detailed sidescan sonar dataset of the seafloor of the area exists which shows the rocky ledges (see detailed site description).

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.3.28b **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	1.26	0.2%	1
Subtidal coarse sediment	25.61	<0.1%	1
Subtidal sand	22.35	<0.1%	1
Subtidal sand ¹	<0.01	<0.1%	1

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

Table II.3.28c **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	0.07	1.5%	4
Low energy intertidal rock	0.06	1.7%	4
Intertidal coarse sediments	0.47	2.4%	4, 3
Intertidal sand and muddy sand	0.18	1.6%	4
Intertidal mixed sediments	0.45	10.0%	4
High energy intertidal rock ¹	0.02	0.2%	4
Intertidal coarse sediments ¹	<0.01	<0.1%	4
Intertidal mud ¹	0.01	<0.1%	3
Intertidal mixed sediments ¹	<0.01	0.2%	4
Intertidal mud ²	0.95	0.6%	3

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

² Part of the extent of this habitat within the rMCZ boundary is protected within an overlapping MPA (see appendix 11). This feature was not discussed at the vulnerability assessment meeting for this site, which may have been an oversight (i.e. the mistaken assumption that the whole extent of the habitat was already protected). 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.

Table II.3.28d **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)
Seagrass beds	0.02			1
Subtidal sands and gravels ¹	42.91			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.3.28e **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 Trehwella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Amphianthus dohrnii</i>	4		1, 3
<i>Arctica islandica</i>	3		1, 5
<i>Eunicella verrucosa</i>	26	1	1, 3, 5
<i>Gobius cobitis</i>	3	1	1, 3
<i>Haliclystus auricula</i>	2	1	1, 3
<i>Hippocampus guttulatus</i>	1		3
<i>Phymatolithon calcareum</i> ¹	1		1

¹ 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 1.16 km² of seahorse area polygon (refer to appendix 8 for more information).

This rMCZ intersects with Rame Head & Whitsand Bay 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

Whitsand Bay is a 6km stretch of sand and shingle with gullies carved by strong tides and cross currents (Davies, 1998). The combined EUNIS level 3 GIS data (described in appendix 8) maps the whole subtidal area of the site as sediment, but local group and scientific feedback states that there are rocky ledges present in the bay. There are hard substrate species present (e.g. pink sea fan), and a detailed sidescan sonar dataset of the seafloor of the area exists which shows the rocky ledges (Stephen Cotterell, University of Plymouth and Keith Hiscock, Marine Biological Association, pers. comm.). The depth range of the rMCZ is 0 to 25m. The site intersects with an area of higher than average benthic species diversity (within the south-west context). Local Group feedback indicates that this is a good breeding area and nursery for commercial fish species, as well as an important site for seabirds. Local Group feedback mentions that blue mussel beds, intertidal underboulder communities, tide swept biotopes, the fan mussel *Atrina pectinata* and the sunset cup coral *Leptopsammia pruvoti* are found at this site, but we have no data mapped for these FOCL in this area. There was a suggestion from some Local Group members to add protection for birds to this site. Local Group feedback also mentions this area is an important habitat for seahorses, confirming the data mapped by The Seahorse Trust.

Detailed site description

Poulton et al (2002) in Jones et al (2004) describe sediments in the coastal area around Whitsand Bay. East Whitsand Bay composed of clean sand also dominated by polychaetes with *Magelona mirabilis* occurring in abundance. Further west, the sediment is muddier and characterised by an *Echinocardium cordatum* – *Amphiura filiformis* community (Holme, 1966).

Hannafore Point (opposite Looe Island) was highlighted as an area of special interest for the range of habitats present by Davies (1998). An extensive series of gullies, overhangs, reefs and rockpools were present on the lower shore. Also extensive shallow lagoons, partially sand-filled supported a great variety of plants and animals, including patches of *Zostera marina*. *Jania rubens*, a southern species of red corraline alga was unusually abundant within these pools (Davies, 1998). *Artica islandica* was recorded at Hannafore Point by J Nunn for the Conchological Society of Great Britain & Ireland in 2003 (included in MB102 data). The Marine Conservation Society also undertook a Seasearch Survey in 2009, where they recorded *Artica islandica* on the seabed to west of James Eagan Layne. In 2006, *Artica islandica* was sampled during the Norman Holmes Resurvey of the English Channel Survey (Hinz et al., 2011).

Southward *et al.* (2004) undertook dredging, trawling, SCUBA diving to recover *Solidobalanus fallax*, during which active searches for *Eunicella verrucosa* were carried out. At the wreck of 'Rosehill', west Whitsand Bay, *Eunicella verrucosa* was reported at 29m on in 2002 and 2003. *Eunicella verrucosa* has also been recorded by several SeaSearch surveys in recent years in the Looe and Whitsand Bay area, as has *Amphianthus dohrnii*. *Gobius cobitis* was recorded in the area during the 1952-1983 British Coasts survey of *Gobius cobitis* (Wheeler, 1993).

Records were made and images were collected by Hiscock *et al.* (2010) on all of the dives that the authors undertook on the reef since 2004. The dives were undertaken about once a month in the first 18 months following placement of HMS Scylla on 27 March 2004. Sea fans, *Eunicella verrucosa*, were first observed in August 2007.

Most of the seahorse sightings in this region are of short snouted seahorses and have come mainly from the Looe area. This does not mean that they are not in Whitsand Bay as there is anecdotal evidence that they have or do live here (Neil Garrick-Maidment, pers. comm). Nick Pope from the Marine Biological Association has conducted biological surveys around Looe Island and the surrounding area.

Offshore sediment communities were described by Holme (1953). His results indicated, that off Rame Head, the sediment was mainly fine sand and mud. Infaunal communities were numerically dominated by polychaetes but, in addition, the sea cucumbers *Leptosynapta inhaerens* and *Trachythyone elongata* and the burrowing prawn *Callinassa subterranean* were present (Davies, 1998).

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.3.28f shows more specific working assumptions and implications that were recorded for this site over the course of the planning process.

Following that, table II.3.28g 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.3.28f Specific assumptions and implications relating to Whitsand and Looe Bay 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
<p>Aggregate extraction will not be allowed</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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 The SW Fishing Industry MCZ Planning Group has noted significant concerns over this site given the implied closure of an inshore ground.

<p>Bottom-towed fishing gear will not be allowed</p> <p><i>Project team comment: the last bullet point under 'implications' may not be a problem if there is a limit on the amount of static gear used.</i></p> <p>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 the eastern portion of the site, over specific FOCI and BSH (see right hand column). Note that benthic towed gear would also not be permitted over the small seagrass area near Looe, however, the activity currently does not take place there so no management is necessary.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o For small boats this area is fished when the weather is too rough to go elsewhere so there are safety implications. o Loss of ground for bottom-towed gear fishermen (Local Group feedback mentions that this is an important trawling ground for Plymouth and Looe (no. of vessels not known) 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.
<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>This activity was discussed at the VA meeting, and it is expected that disposal of material at the nearby Rame Head disposal site would be permitted to continue with no additional mitigation likely to be required as a result of the rMCZ.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is currently an active disposal site adjacent to - within 150m of this rMCZ (at Rame Head), and concern has been raised that this would not be compatible with the assumption as stated (not because it overlaps with the site boundary itself, but because it is close and there may be downstream impacts such as siltation within the rMCZ from its use). However, the environmental impacts of the Rame Head disposal site have been independently assessed on behalf of the MMO and found to be tolerable (see report on MMO website). o Concern that 150m offshore is not a sufficient buffer to prevent impact of disposal site. o Local Group feedback has raised concerns that the knock-on effects of the Rame Head dump site on the rMCZ reduce the viability of the rMCZ. o If there is any uncertainty that develops regarding the continued existence of this adjacent disposal site then this should be addressed in the economic impact assessment and the continued inclusion of this site in the network reconsidered. o Dumping of large amounts of spoil from capital dredging is likely to impact on MCZ - based on previous experience.

<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o This area is the only local anchorage in periods of easterly winds and therefore a significant issue for navigational safety and economic impact for the port. Large vessels over the size of 24 metres will anchor regularly during easterlies and therefore serious consideration should be given to relaxing this restriction for navigational safety and economic reasons or the site reconsidered. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
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Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	Implications
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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.) <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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 indicates that the Local group discussed the possibility of limiting netting in the area, to enhance fish stocks, but that there was more evidence needed on the impacts of netting on the site. It is not clear whether this related to ring netting or static netting. The restriction of static netting is not currently part of the working assumptions for the site.
<p>Ring netting will be permitted, but there may need to be a limit on the amount of gear used in the area.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p><i>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.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: <ul style="list-style-type: none"> - 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. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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 Potential wind resource, but landscape buffer and aviation danger area making deployment less likely.
<p>Beach replenishment will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p>

<p>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</p>	<p>o The Crown Estate have highlighted that the rMCZ contains a waste water outfall which needs to be able to continue.</p>
<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <p>o</p>
<p>Coastal development and defence will be permitted with mitigation/management.</p> <p>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</p>	<p>Direct implications:</p> <p>o Environment Agency notes that within the Looe Estuary (which flows into this rMCZ but is not within the site boundary), the coastal defence policy is ‘hold the line’ in the town and ‘managed retreat’ in the estuary.</p>
<p>Crab tiling / bait digging will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <p>o</p>

<p>Activities assumed to be allowed to continue / occur within the site</p>	
<p>Assumptions</p>	<p>Implications</p>
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>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</p>	<p>Direct implications:</p> <p>o</p> <p>Given this assumption, there are still the following concerns:</p> <p>o Local Group feedback indicates potential benefits to recreational angling.</p> <p>o Handliners might face possible additional costs for mitigation measures, should they be needed</p> <p>o There would be costs if monitoring is needed</p> <p>Benefits:</p> <p>o Potential for increased and enhanced leisure and recreational activity</p>

<p>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.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption there are still the following concerns:</p> <ul style="list-style-type: none"> 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). <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.
<p>The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Tourism and recreational activities will be permitted.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Benefits:</p> <ul style="list-style-type: none"> o Profound socio-economic effects – cost benefits o Local Group feedback mentions potential benefits to diving (James Egan Layne and Scylla wrecks); and a stakeholder representative stated they would like it explicitly recorded that the assumption should apply to recreational sub-aqua diving o Local Group feedback mentions that wildlife watching and recreational angling could benefit.

<p>Maintenance dredging in ports (to enable access to ports) will be permitted</p> <p><i>The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.</i></p> <p>This activity was discussed during the VA meeting, and it is expected that maintenance dredging would be permitted with no additional mitigation likely to be required as a result of the rMCZ.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p><i>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</i></p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o (no heritage wrecks currently present in the site)
<p>Anchoring of small vessels will be permitted</p> <p><i>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</i></p> <p><i>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</i></p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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. o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation. o There are seagrass beds present in this rMCZ, and concern was expressed that anchoring would not be compatible with seagrass beds.
<p>Passage of ships will be permitted</p> <p><i>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</i></p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Seaweed harvesting will be permitted</p> <p><i>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</i></p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Table II.3.28g 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: <ul style="list-style-type: none"> - Option 1: Dredges and beam trawls: Prohibition of fishing over specific BSH/FOCIs in the rMCZ. These are: moderate energy circalittoral rock, <i>Amphianthus dohrnii</i>, <i>Arctica islandica</i>, <i>Eunicella verrucosa</i>. - Option 2: no management Measure: <ul style="list-style-type: none"> - Option 1: voluntary - Option 2: byelaw
Navigational Dredging	Management: <ul style="list-style-type: none"> - Impacts on the rMCZ conservation objectives 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 : <ul style="list-style-type: none"> - Marine Licence or Harbour Acts and Orders
Disposal at Sea	Management: <ul style="list-style-type: none"> - Impacts on the rMCZ conservation objectives would need to be considered in any licence application for disposal of material at the Rame Head disposal site. 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 : <ul style="list-style-type: none"> - Marine Licence

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*
 - Due to the crude resolution of fisheries activities mapping it is possible that the vulnerability of this site to bottom gears has been underestimated. This should be considered in the design of management measures for this site.
 - Seasonal closures are an inappropriate measure for benthic conservation.
 - Whitsand and Looe Bay site boundary was moved inshore to specifically avoid areas used by bottom-towed gears on the assumption that these activities would be excluded from the whole site.
 - The whole site should be closed to bottom trawling.

- *Dumping and disposal sites*
 - The licensed disposal site of Rame Head has existed for years and, notwithstanding local pressures, its effect on the environment has been deemed tolerable by independent assessors. The designation of an MCZ so close to the site may well lead to a view being formed that its location is undesirable, forcing a search for a new site away from what is an acceptable one. Both the MoD & the civilian port authorities require use of the site. Assurance that its proximity to the MCZ boundary will not cause its future use to be threatened is sought.
 - Without use of this site the ports infrastructure (both military & civilian) would be compromised.
 - It was decided to leave the boundary as it is, despite the proximity of the disposal area, because a recent report for the MMO did not see it as a problem (Cefas, 2010) and the site is unlikely to be relocated. The ports sector are concerned that if this is designated an MCZ they could be asked to move the disposal site or will become vulnerable to refusal when applying for the licence to dispose at this site. It was agreed that uncertainties regarding the socio-economic impact of the rMCZ on port dredging activities needs capturing.
 - A working group member stated that dumping of large amounts of spoil from capital dredging is likely to impact on MCZ - based on previous experience

- *The Wildlife Trusts*
 - Protection and enhancement of VMCA habitats may benefit local education activities and local businesses e.g. glass bottom boat

- *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 of 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.3.28g (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 Local Group has raised concern over the proximity to the licensed disposal ground and the resulting deterioration in the quality of the area. The Working Group recognised this concern, but kept the site in the recommendations. The Queen's harbourmaster at Plymouth is concerned about any potential restrictions on the use of the disposal site in future, as is the MOD.

There is a small number of local Looe-based mobile gear fishermen (using otter trawls), who are concerned that the site will restrict their fishing grounds. However, the site has strong support from conservationists, and the area of the VMCA around Looe Island was added in response to a suggestion from the Local Group.

The Crown Estate provided feedback to state that the area is located in a wave resource area. It is also within an area where there is a wastewater outfall, and the disposal site off Rame Head is less than 1km from the site boundary. They support the rMCZ based on the assumption that the activities they mention 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, MESH, 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.

There is further information about the Looe voluntary marine conservation zone (the western portion of the rMCZ) available via Cornwall Wildlife Trust's website (including a [map of the VMCA](#)³⁵, further [information about the wildlife found there](#)³⁶, and [information on how to volunteer for the area](#)³⁷), and also via the [website of Looe Boat Owners Association](#)³⁸.

Dr Stephen Cotterell at the University of Plymouth has carried out survey work in Whitsand Bay and has high resolution seabed acoustic data that indicates the presence of rocky outcrops in the subtidal area.

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 Holme

³⁵http://www.cornwallwildlifetrust.org.uk/Resources/Cornwall%20Wildlife%20Trust/PDF%20Documents/Looe_Voluntary_Marine_Conservation_Area_map.pdf

³⁶http://www.cornwallwildlifetrust.org.uk/conservation/livingseas/yourshore/Discovering_the_Wonders_of_Looe_Marine_Heritage_Cornwall_Wildlife_Trust

³⁷http://www.cornwallwildlifetrust.org.uk/nature_reserves/where_to_find_the_nature_reserves_1/st_georges_island/Looe_Island_volunteering

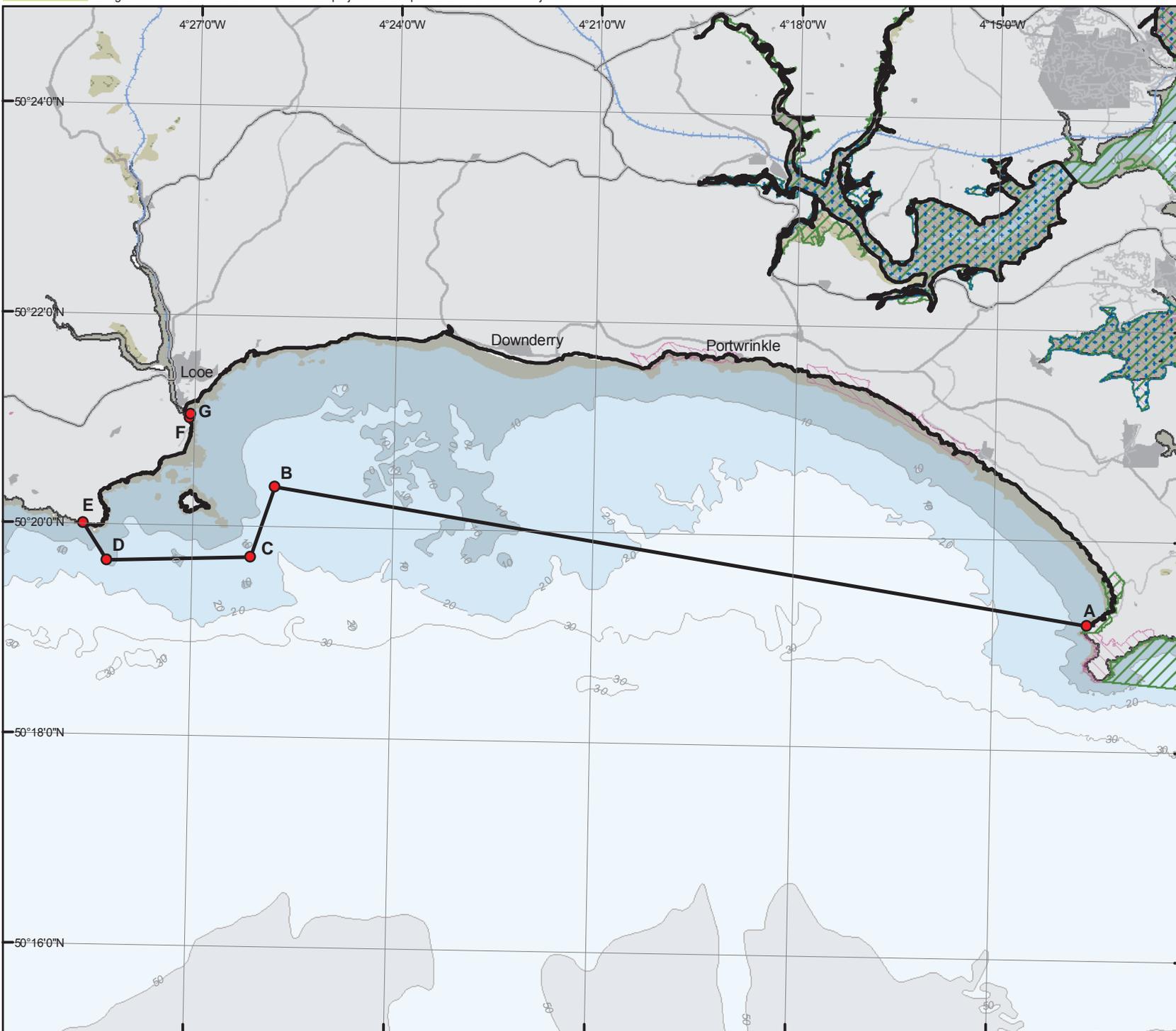
³⁸<http://lboa.co.uk/Conservation.aspx>

(1961), Hinz *et al.* (2011), and Kaiser *et al.* (1998) – these papers report on benthic invertebrate research carried out in the English Channel.

Site map series

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

- The first map (FR_039a) 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_039b) 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.3.28b to II.3.28e, data sources are indicated in the tables.
- The third map (FR_039c) shows key socio-economic datasets.
- 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.



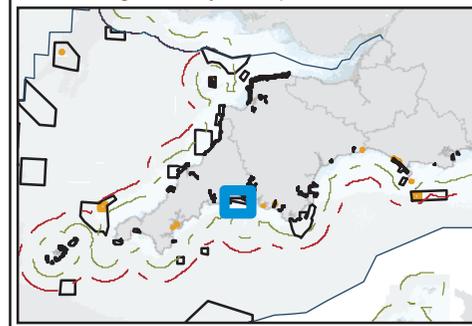
Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.3198	-4.2264	50° 19' 11" N	4° 13' 34" W
B	50.3396	-4.4296	50° 20' 22" N	4° 25' 46" W
C	50.3284	-4.4353	50° 19' 42" N	4° 26' 7" W
D	50.3276	-4.4712	50° 19' 39" N	4° 28' 16" W
E	50.3334	-4.4772	50° 20' 0" N	4° 28' 37" W
F	50.3504	-4.4512	50° 21' 1" N	4° 27' 4" W
G	50.3509	-4.4510	50° 21' 3" N	4° 27' 3" W

Map Legend

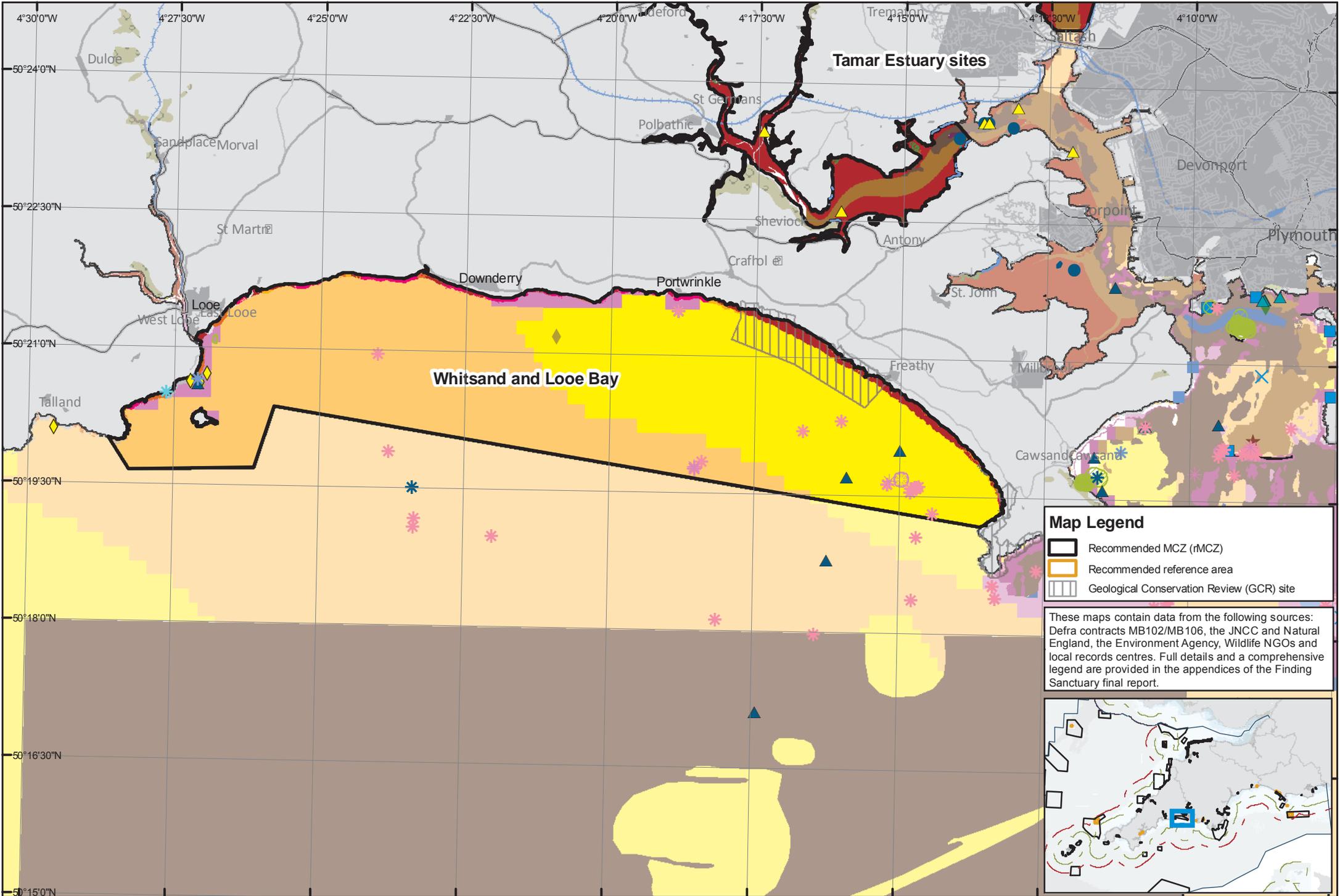
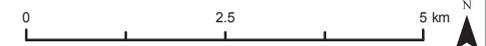
- Recommended MCZ (rMCZ)
- Existing MPAs**
- SAC
- SPA
- SSSI (part of MPA network)
- SSSI (not part of MPA network)

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



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.

Maritime basemap © British Crown and SeaZone Solutions Limited, 2010. All Rights Reserved. Data Licence No. 062006.004. Land basemap part © OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation. Contains OS data © Crown copyright 2011.



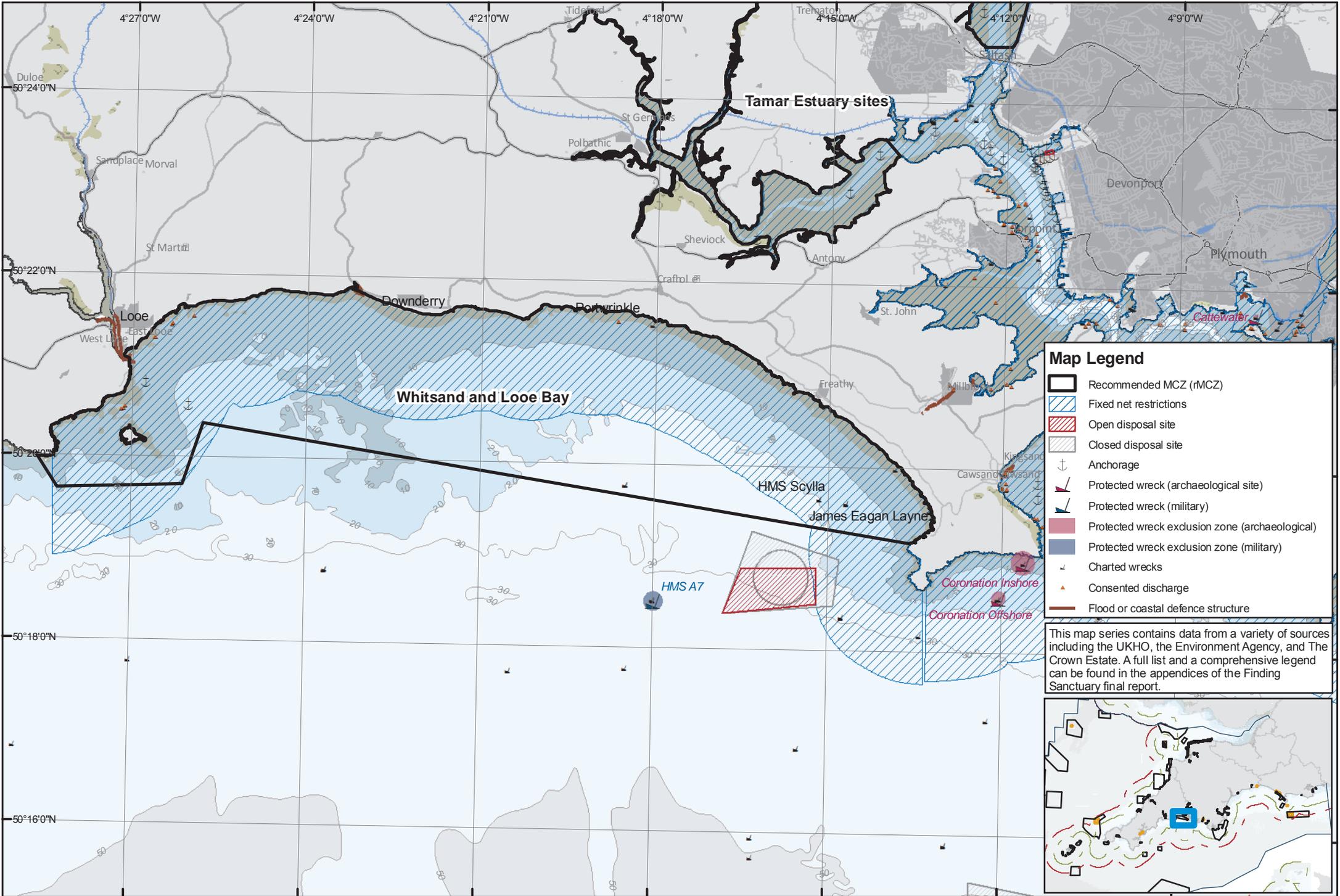
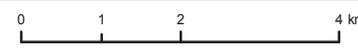
Map Legend

- Recommended MCZ (rMCZ)
- Recommended reference area
- Geological Conservation Review (GCR) site

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.



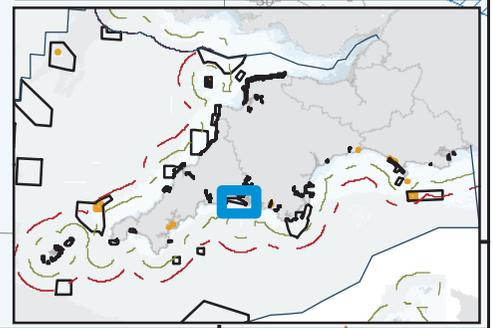
This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with socio-economic information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.



Map Legend

- Recommended MCZ (rMCZ)
- Fixed net restrictions
- Open disposal site
- Closed disposal site
- Anchorage
- Protected wreck (archaeological site)
- Protected wreck (military)
- Protected wreck exclusion zone (archaeological)
- Protected wreck exclusion zone (military)
- Charted wrecks
- Consented discharge
- 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.3.29 Upper Fowey and Pont Pill 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
50.3699	-4.6393	50° 22' 11" N	4° 38' 21" W

This rMCZ occupies two distinct locations. The site centroid therefore falls outside the boundary of the rMCZ.

Site surface area: 2 km² (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea

OSPAR region: Region II: Greater North Sea

Site boundary: This rMCZ consists of two parts. The larger part consists of the upper Fowey estuary, based on the boundary of the Fowey Estuary Voluntary Marine Conservation Area. The site boundary follows the coastline along the OS Boundary Line mean high water mark, from the tidal limit at Lostwithiel to Bodmin Pill, a small tributary to the estuary south of Golant. The second part consists of Pont Pill, a tributary estuary flowing into the Fowey on the eastern side, at Polruan.

Sites to which the site is related: The site encompasses the Fowey Estuary Voluntary Marine Conservation Area, managed through the Fowey Estuary Partnership. There is a coastal SSSI (Polruan to Polperro) to the south, extending eastwards along the shore from the mouth of the estuary.

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 Upper Fowey and Pont Pill rMCZ

Table II.3.29a Draft conservation objectives for the Upper Fowey and Pont Pill 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
	Intertidal sand and muddy sand		M
	Low energy intertidal rock		M
Habitat FOCI	Estuarine rocky habitats		M
	Sheltered muddy gravels		M
Species FOCI	<i>Anguilla anguilla</i>	European eel	? M / R ¹

¹At 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). No subtidal broad-scale habitats are mapped within this rMCZ. 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.3.29b **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	0.7%	4
Intertidal coarse sediments	<0.01	<0.1%	3
Intertidal sand and muddy sand	<0.01	<0.1%	4
Intertidal mud	1.51	0.9%	4, 3
Coastal saltmarshes and saline reedbeds ¹	0.01	0.4%	3

¹ The area of coastal saltmarsh calculated in this GIS analysis may be an underestimate of the saltmarsh area present along the estuary, as the rMCZ site boundary is at OS Boundary Line mean high water, and the habitat might extend above that (Friend *et al.*, 2006, give a figure of 3ha of saltmarsh within the estuary).

Table II.3.29c **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		13		1
Sheltered muddy gravels	0.01			1
Seagrass beds ¹	< 0.01			1

¹ There are seagrass beds present within the Fowey estuary, but they are primarily located in the lower estuary between Polruan and Fowey. A tiny fragment has been mapped in the upper estuary, within the rMCZ boundary, a circular polygon of about 10m diameter originating from the MB102 dataset – possibly a conversion of a point record into a circular polygon. No draft conservation objective has been included for this habitat.

Table II.3.29d **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 Trehwella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Hippocampus guttulatus</i> ¹	1	1	3

¹ A single record of this species of seahorse is located within the boundaries of this rMCZ, provided by Cornwall Wildlife Trust, and dating from 1960. No draft conservation objective has been included for this species in this rMCZ.

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 Fowey estuary is a ria, with areas of intertidal mud and saltmarsh in the upper reaches of the estuary. Fowey has a sheltered natural harbour which has been a busy port since the middle ages. The port has been important for shipping of locally mined china clay (Davies (ed.) 1998). The total area of the estuary (the whole estuary, not the rMCZ) is 305 ha, of which 146 ha are intertidal mud and sand deposits and 3 ha are saltmarsh (Friend *et al.* 2006). 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 Fowey ria system comprises the River Fowey catchment, the Fowey estuary, the cliffs and bays adjacent to the ria mouth, and part of the inner continental shelf of the English Channel. Previously, large quantities of sediment were introduced into the upper ria by ore mining activity. Today, in common with other rias, the Fowey receives a low riverine sediment input. Material from maintenance dredging in the lower ria is dumped in a spoil ground outside the ria mouth. In September 1996 the sediments of the system were investigated using an integrated approach to determine sediment distribution and sediment transport pathways. Surface sediments were analysed for grain size and mineralogy. Grain size trend analysis was used to examine sediment dispersal patterns away from the locus of deposition in the spoil ground. Archived data was used to

investigate the seabed morphology and to determine long-term (100 year) bathymetric changes (Friend *et al.* 2006). During sampling in the upper reaches, several examples of recent channel bank collapse were observed. The Fowey estuary was surveyed by Burd (1989) during the Saltmarsh survey of Great Britain. The estuary was visited by the MBA and SMBA Intertidal Survey Unit (Powell *et al.* 1978) and later surveyed by the FSC during the study of Harbours, Rias and Estuaries in Southern Britain; the results are included in Moore (in prep.).

Pirrie *et al.* (2002) carried out geochemical analyses of intertidal sediments from the northern part of the Fowey Estuary, Cornwall, UK. Seventeen shallow (< 1 m) cores, 6.5 cm in diameter, were manually recovered from the intertidal sediments predominantly in the northern part of the estuary. The impact of crab-tiling on *Carcinus maenas* population structure was determined by Sheehan *et al.* (2008) by sampling crabs from tiled estuaries and non-tiled estuaries using baited drop-nets. Data were collected from the Fowey estuary on two sampling occasions: October-November 2004 and May-June 2005. Sediment samples were collected by Luoma & Bryan (1978) from the oxidized surface layer of intertidal sediments in the Fowey estuary. Rogers (2001) also collected sediment samples (~250 g) at harbour and estuarine sites either by grab or core sampling from small boats or on foot from bankside access points.

Mytilus edulis was collected from a small population on the Fowey estuary mussel bed (Kent, 1979). A survey of the macro-invertebrate fauna of the Fowey River receiving china clay wastes was carried out during 1971 and 1972 by Nuttall & Beilby (1973). Bryan & Hummerstone (1973) compared concentrations of zinc and cadmium in the polychaete *Nereis diversicolor* with those of the sediments in the estuaries of 26 rivers which included the Fowey estuary. Worms and sediments were collected from the upper part of the Fowey estuary.

Anguilla anguilla was reported during the 1986 OPRU Fowey Estuary survey (sourced from MB102).

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.3.29e 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.3.29e 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.3.29f 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.3.29e Specific assumptions and implications relating to Upper Fowey and Pont Pill 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: none identified at the VA meeting.	
Assumptions	Implications
<p>Aggregate extraction will not be allowed</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.
<p>Bottom-towed fishing gear will not be allowed (includes benthic trawling and hydraulic dredging)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Loss of ground for bottom-towed gear fishermen (<i>may not be relevant in this area.</i>) 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.

<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Netting and longlining will not be allowed</p> <p><i>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 FOCl. 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</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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 <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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.) <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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
<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p><i>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.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: <ul style="list-style-type: none"> - 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. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.

<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>Following VA meetings, a potential need for managing aquaculture activities in this site has been identified.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o measures needed to avoid the introduction of non-native species. o Since the VA meetings, several concerns around the use of triploid stock have been raised (see additional comments)
<p>Crab tiling / bait digging will be permitted with mitigation / management</p> <p>Following VA meetings, a potential need for managing this activity in this site has been identified.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Beach replenishment will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed <p>Benefits:</p> <ul style="list-style-type: none"> o Potential for increased and enhanced leisure and recreational activity
<p>Pelagic trawls will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>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.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption there are still the following concerns:</p> <ul style="list-style-type: none"> 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). <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.

<p>The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> o Four active power cables, one active unknown cable, seven inactive telecoms cables.
<p>Tourism and recreational activities will be permitted.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Maintenance dredging in ports (to enable access to ports) will be permitted</p> <p><i>The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o (no heritage wrecks currently present in the site)
<p>Anchoring of small vessels will be permitted</p> <p><i>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.

<p>Passage of ships will be permitted</p> <p>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</p>	<p>Direct implications:</p> <p>o</p>
<p>Seaweed harvesting will be permitted</p> <p>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</p>	<p>Direct implications:</p> <p>o</p>

Table II.3.29f 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
Bait digging	<p>Management:</p> <ul style="list-style-type: none"> - Reduction of bait digging effort over the intertidal mud <p>Measure:</p> <ul style="list-style-type: none"> - Option 1: permit scheme - Option 2: maximum extraction and/or visit limits - Option 3: monitoring of activity - Option 4: awareness raising of impacts of bait digging and best practice / code of conduct
Aquaculture	<p>Management</p> <ul style="list-style-type: none"> - Reduce risk of introduction of non-indigenous species from relaying of mussel seed. Most likely mechanism to achieve this to be determined. <p>Measure</p> <ul style="list-style-type: none"> - 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.
- *Aquaculture*
 - Serious concerns were raised following the mention of triploid oyster stock in the vulnerability assessment discussion, as a method of preventing escape of breeding non-native oysters into the wild. The concerns are based on a lack of UK-sourced supply of triploid stock, and risks of importing disease with triploid stock from elsewhere.
- *Environment Agency*
 - Suggest using existing estuarine partnership agreements (if already in place) as basis for protection measures.
- *Ports*
 - The port authority was keen for the estuary to become a rMCZ in hope this will bring in funding.
- *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 of 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.3.29f (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 lower part of the estuary, which is the part that is most heavily used, is not included within the rMCZ. The Fowey harbourmaster has welcomed the rMCZ as a way to reinforce the existing VMCA. Stakeholders have recognised the importance of engaging with the local estuary partnership in site management and implementation.

Supporting documentation

GIS data used for reporting the quantitative habitat and species figures in the tables above includes the following sources: MB102, Cornwall Wildlife Trust, 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. *Anguilla anguilla* was recorded during the 1985 OPRU HRE Fowey Estuary survey (Rostron, 1985).

Site map series

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

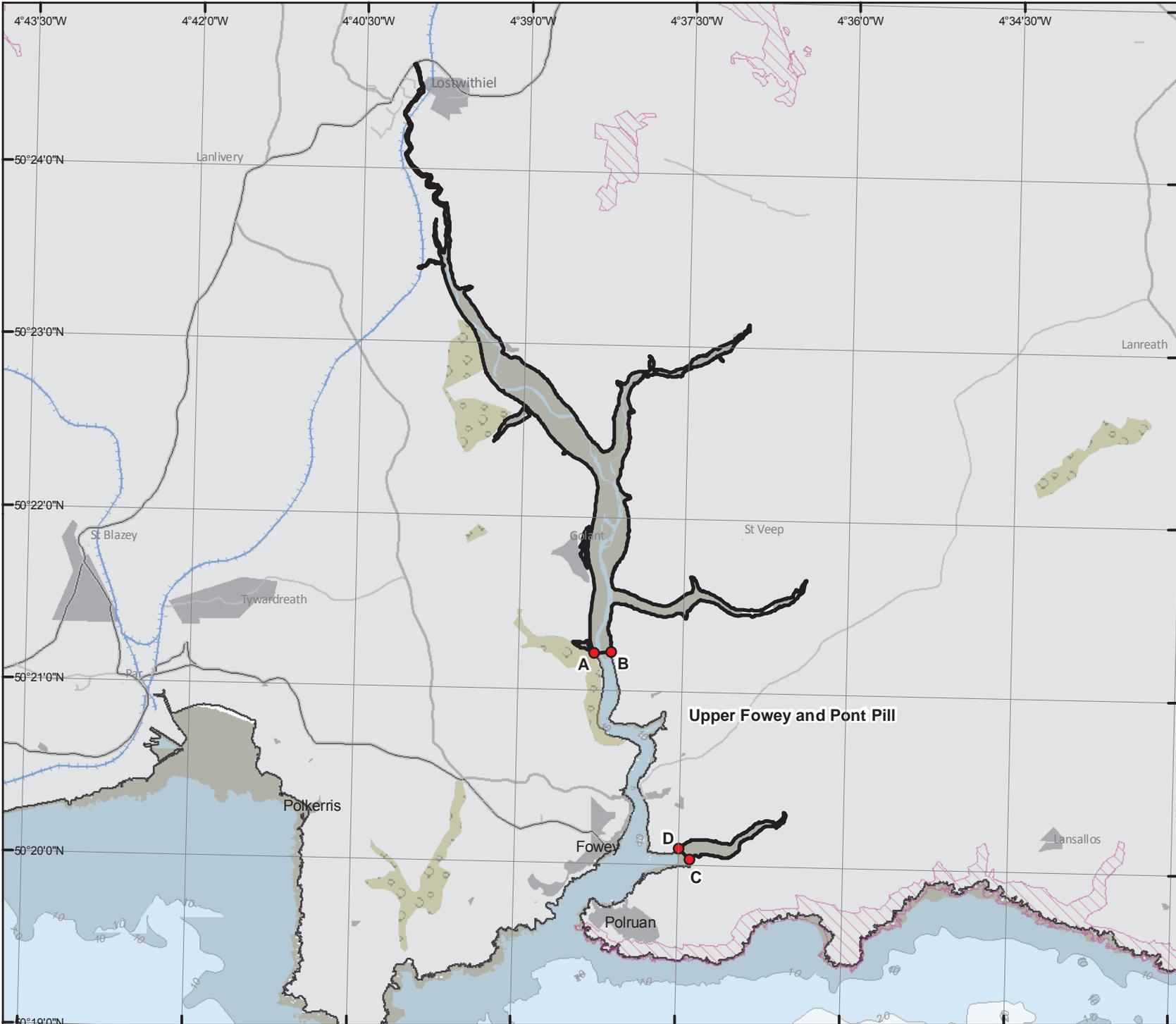
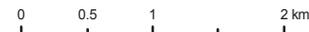
- The first map (FR_040a) is the main site map showing the rMCZ boundary and includes points with coordinates (in WGS84 UTM30N). The map also shows charted depth and existing Marine Protected Areas for reference. Please note: the lat/long coordinates of the vertices in the following maps have been calculated 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_040b) 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.3.29b and II.3.29c, data sources are indicated in the tables.
- The third map (FR_040c) 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.

Upper Fowey and Pont Pill 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.

Maritime basemap © British Crown and SeaZone Solutions Limited, 2010.
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Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.3536	-4.6384	50° 21' 12" N	4° 38' 18" W
B	50.3537	-4.6359	50° 21' 13" N	4° 38' 9" W
C	50.3338	-4.6232	50° 20' 1" N	4° 37' 23" W
D	50.3348	-4.6248	50° 20' 5" N	4° 37' 29" W

Map Legend

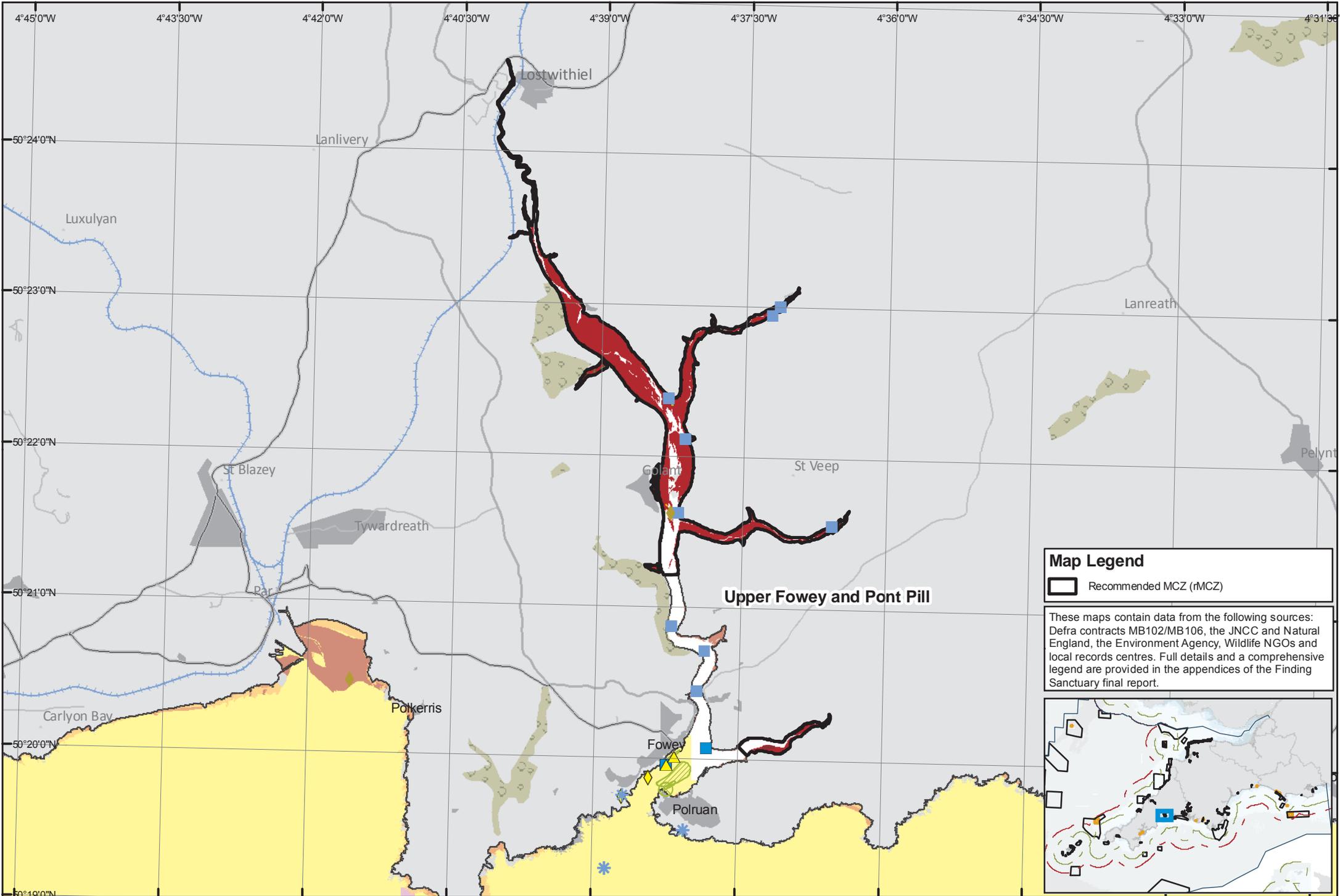
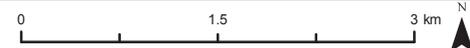
- Recommended MCZ (rMCZ)
- Existing MPAs**
- SSSI (not part of MPA network)

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



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.

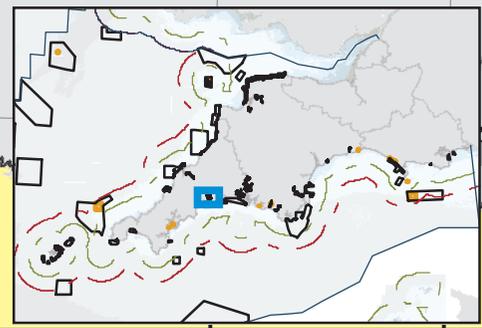
Maritime basemap © British Crown and SeaZone Solutions Limited, 2010.
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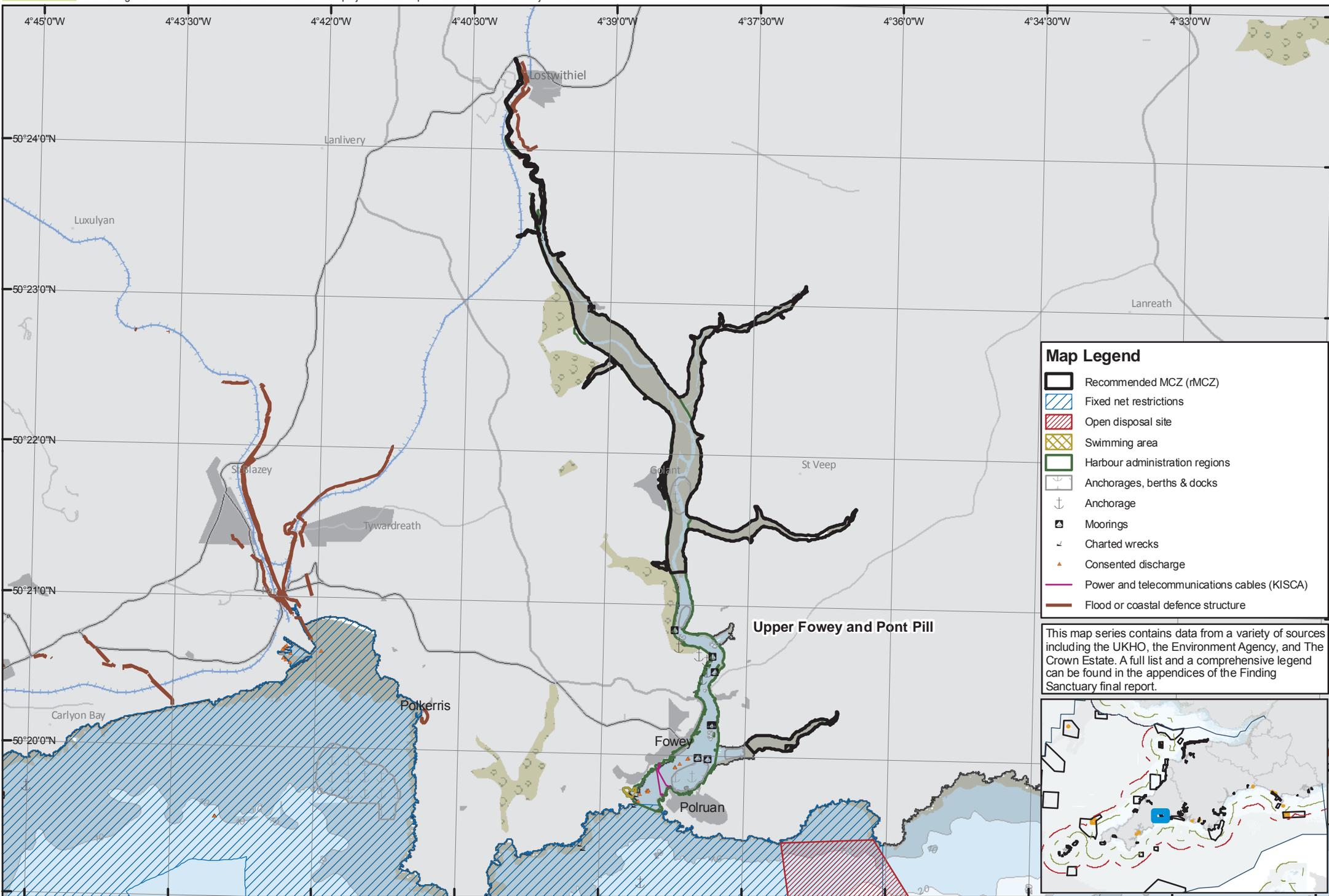


Map Legend

 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.

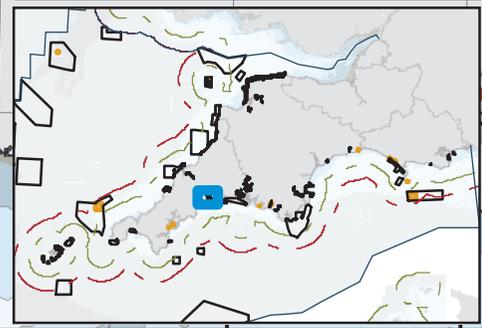




Map Legend

- Recommended MCZ (rMCZ)
- Fixed net restrictions
- Open disposal site
- Swimming area
- Harbour administration regions
- Anchorage, berths & docks
- Anchorage
- Moorings
- 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.3.30 South-East of Falmouth rMCZ

Basic site information

Site centre location (datum used: ETRS89):

Decimal Degrees		Degrees Minutes Seconds	
Lat	Long	Lat	Long
49.9830	-4.7143	49° 58' 58" N	4° 42' 51" W

Site surface area: 25 km² (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea

OSPAR region: Region II: Greater North Sea

Site boundary: The site is a simple square, with borders running north-south and east-west, measuring 5km on each side in line with ENG guidelines. The north-west corner of the rMCZ intersects with the 12nm limit, the remainder of the site lies beyond 12nm.

Sites to which the site is related: The site lies approximately 22km south-west of the Fal and Helford SAC.

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 South-East of Falmouth

Table II.3.30a Draft conservation objectives for South-East of Falmouth 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		R
	Subtidal sand		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.3.30b 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	24.35	<0.1%	1
Subtidal sand	0.69	<0.1%	1

Table II.3.30c **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	21.01			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 site is located in an area of seasonal frontal systems, which means the area has high productivity and scores highly as an area of additional ecological (pelagic) importance (see AAEI map, FR_081). The area is heavily used by fishermen, in particular, mobile benthic and pelagic gear fishermen. The site's seabed is approximately 70 metres below chart datum.

Detailed site description

A literature search was carried out on this site, but as for other for non-coastal sites in the network it has proved difficult to find information associated with this specific site.

Poulton *et al.* (2002) In Jones *et al.* (2004) describe the offshore sediments around the coast of Britain which included the English Channel. The consequences of a changing climate have been relatively well documented in the English Channel for fish, plankton and intertidal benthos (see, for example, Genner *et al.* 2004; Hawkins *et al.* 2008). During the 1950s, Norman Holme sampled benthic infaunal and epifaunal communities on a large geographical scale spanning the entire English Channel (Holme, 1961, 1966). Part of Holme's benthic survey was revisited in 2006, covering a large extent of the Channel coast (Hinz *et al.* 2011). The main aims of this resurvey were to describe the current status of benthic communities and compare the data to the historic survey to investigate potential changes in the communities. Comparison of the 1950s and 2006 surveys showed benthic species distributions remained similar, in general, with little or no obvious trends consistent with warming sea temperatures.

Benthic biodiversity and seabed sediments derived from cluster analysis of presence/absence data was carried out by Rees *et al.* (1999) in the general area around South-East of Falmouth. It may be that this work overlapped the rMCZ, but further checks need to be made.

Site 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.3.30d 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.3.30d is based on what had previously been recorded for a previous, larger site that had been included in the developing network configuration in the area, and which was replaced by two smaller sites, South-East of Falmouth rMCZ and South of Falmouth rMCZ, following Local Group and fisheries sector feedback. The previously stated assumptions 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.3.30e 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.3.30d Specific assumptions and implications relating to South-East of Falmouth 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). This site has been recently added to the network (after the third progress report). No detailed assumptions were drawn up by the working groups & project team for this site specifically.

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 in the VA meetings, and the assumption was confirmed.	Direct implications: <ul style="list-style-type: none"> o Loss of ground for bottom-towed gear fishermen, both UK and non-UK (Mobile benthic fishing does occur in the area, which is deemed important for scalloping and beam trawling. However, this rMCZ was selected by the Working Groups out of several building blocks in the area, as it was deemed the least contentious to the fishing industry and it was recognised that a protected area is required in this area in order to meet the Ecological Network Guidance). 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

	<p>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.)</p> <ul style="list-style-type: none"> o The SW Fishing Industry MCZ Planning Group notes significant concerns over this site given the importance of the fishing grounds in this area. o Potential environmental implications derived from concentrating effort in alternative grounds or due to new fishing ground searching activity. <p>Benefits:</p> <ul style="list-style-type: none"> o Protection of areas of high pelagic interest will increase ecological value of network
<p>Aggregate extraction will not be allowed</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.
<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	Implications
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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.) <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Local Group feedback indicated that some Local group members thought that mitigation measures should be put in place to prevent bycatch in static nets, including regulation of when and how nets are set. Other Local Group members indicated that bycatch of birds was not a problem in set nets in this area. The protection of birds is not currently included in the developing conservation objectives for this 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
<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

<p>Crab tiling / bait digging will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Beach replenishment will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p><i>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.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: <ul style="list-style-type: none"> - 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. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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 -

	<p>£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.</p> <ul style="list-style-type: none"> o Increased competition for sea space with other sea users. o Potential longer term wave resource area, but navigational constraints significant.
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Activities assumed to be allowed to continue / occur within the site	
Assumptions	Implications
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed <p>Benefits:</p> <ul style="list-style-type: none"> o Potential for increased and enhanced leisure and recreational activity
<p>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.</p> <p>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</p>	<p>Direct implications:</p> <p>Given this assumption there are still the following concerns:</p> <ul style="list-style-type: none"> 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). <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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

	<p>change targets etc.</p> <ul style="list-style-type: none"> o Possible cable route to renewables resources.
<p>The operation of cables (power and telecommunications) and pipelines will be permitted (i.e. any existing cables will be allowed to stay operational)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Tourism and recreational activities will be permitted.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Maintenance dredging in ports (to enable access to ports) will be permitted</p> <p><i>The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o (No heritage wrecks currently present in the site)
<p>Anchoring of small vessels will be permitted</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

<p>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</p> <p>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</p>	<p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.
<p>Passage of ships will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Seaweed harvesting will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Table II.3.30e 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
<p>Commercial Fishing – all mobile bottom gears</p>	<p>Management:</p> <ul style="list-style-type: none"> - Prohibition of fishing within the rMCZ <p>Measure:</p> <ul style="list-style-type: none"> - 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.

- *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*
 - Most of this rMCZ lies beyond the 12nm limit. 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.3.30e (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 located within a region that has high pelagic productivity, and which is heavily fished by static and mobile gear fishermen, both UK and non-UK. There is strong gear conflict. Fishing representatives are not supportive of this site, but find this rMCZ less bad than a larger area that was included in this region previously (see third progress report). The rMCZ is strongly supported by conservationists, as it lies within an area of additional ecological importance because of its high productivity and seasonal frontal systems. The current rMCZ (together with the South of Falmouth rMCZ) represents the outcome of a genuine negotiation between conservation and fishing interests, where both sides have gained and lost – fishermen would have preferred no rMCZs at all in this area, and conservationists would have preferred the larger area previously included in the developing recommendations.

The Crown Estate provided feedback to state that they were supportive of this rMCZ. Early Local Group feedback indicated that this area was preferred to other alternatives containing the same broad scale habitats, and it was considered the ‘least bad’ option in that area.

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.

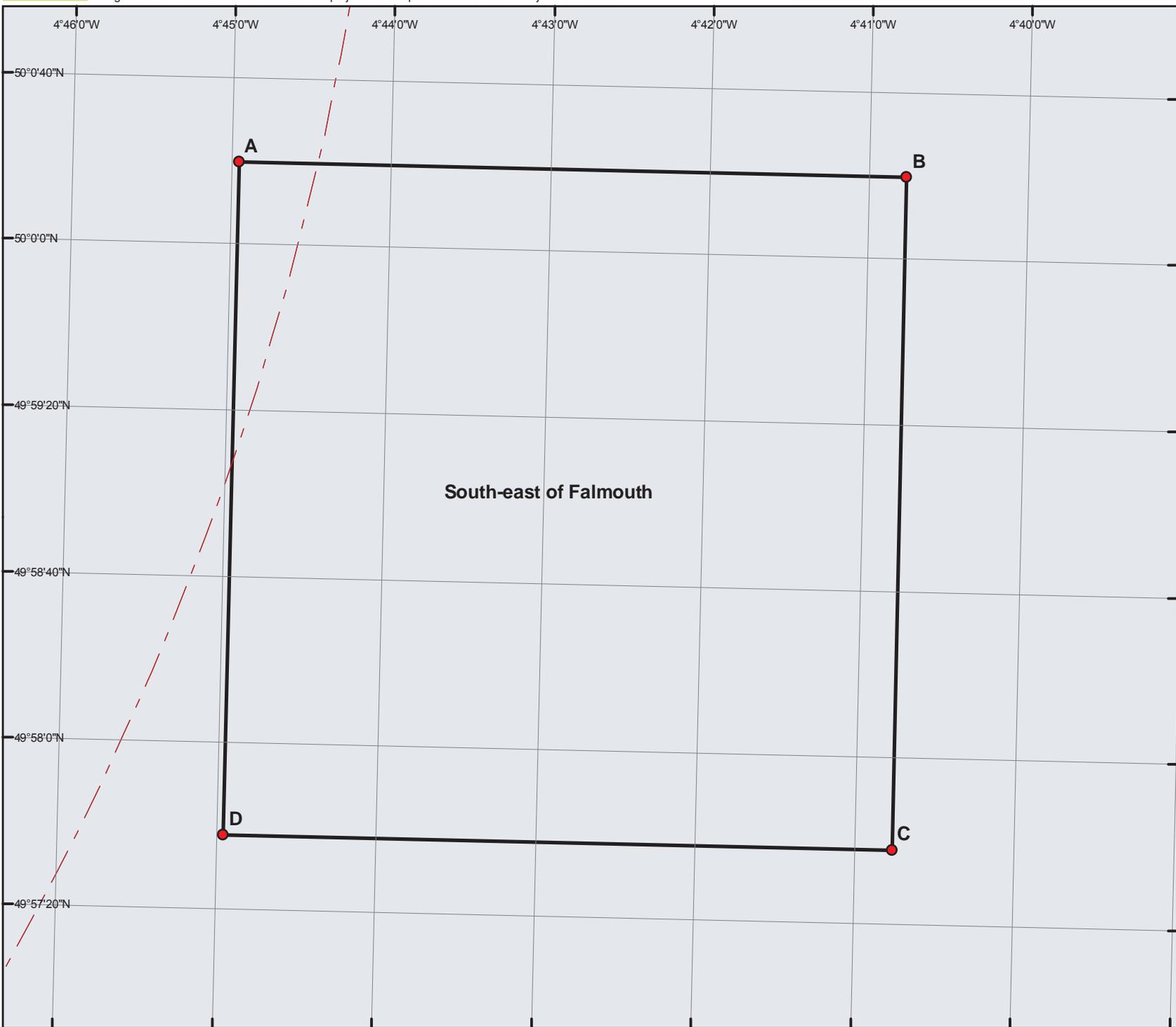
Site map series

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

- The first map (FR_042a) 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_042b) 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.3.30b, data sources are indicated in the table.
- 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.



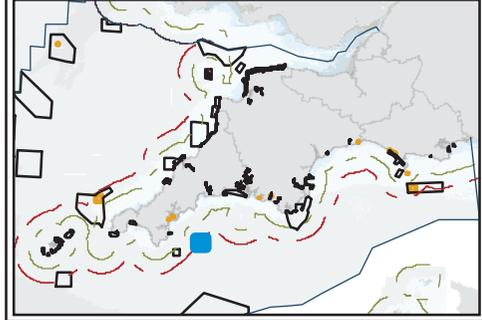
Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.0055	-4.7492	50° 0' 19" N	4° 44' 57" W
B	50.0055	-4.6794	50° 0' 19" N	4° 40' 46" W
C	49.9605	-4.6794	49° 57' 37" N	4° 40' 45" W
D	49.9605	-4.7492	49° 57' 37" N	4° 44' 57" W

Map Legend

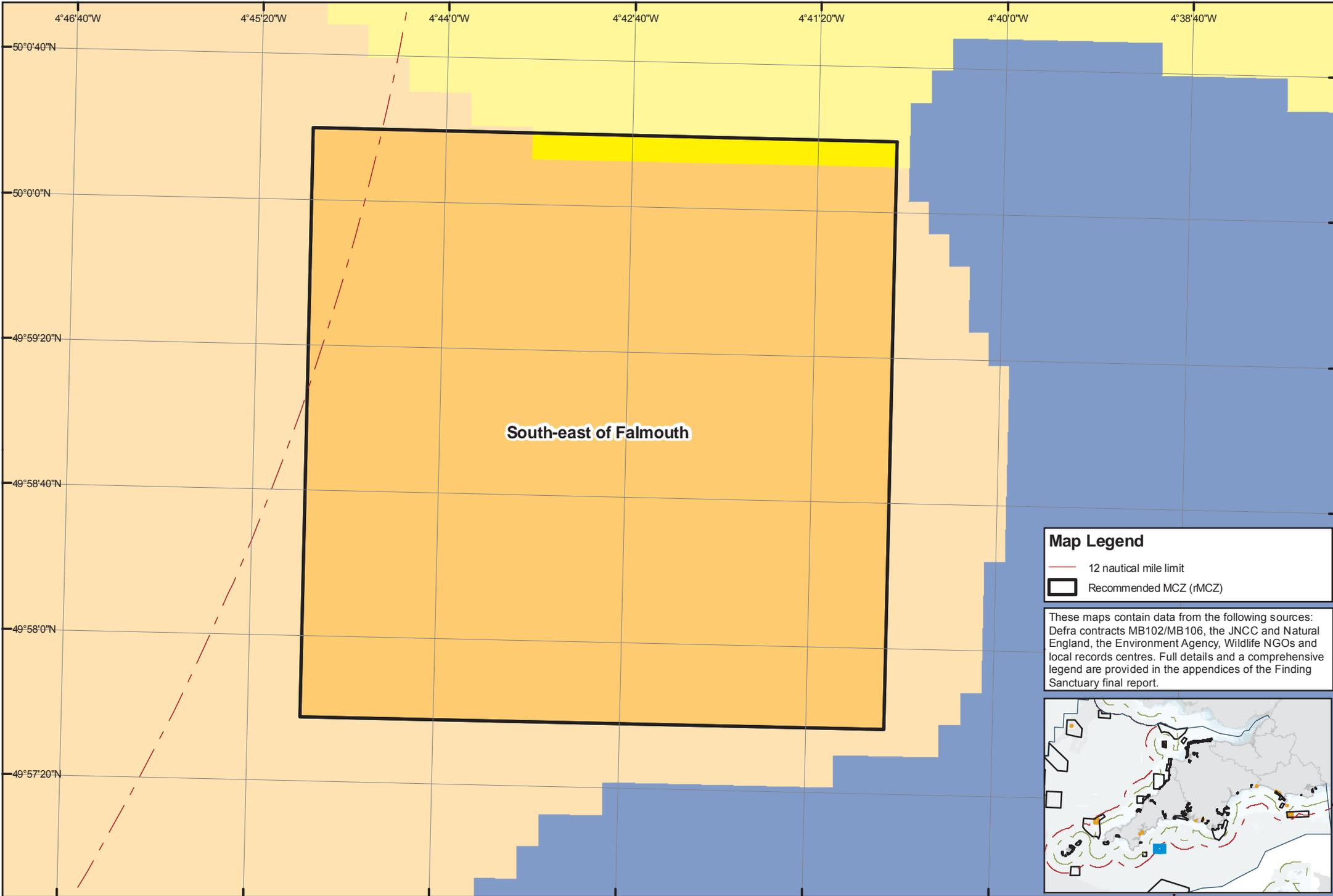
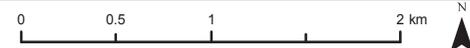
- 12 nautical mile limit
- Recommended MCZ (rMCZ)

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



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.

Maritime basemap © British Crown and SeaZone Solutions Limited, 2010. All Rights Reserved. Data Licence No. 062006.004. Land basemap part © OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation. Contains OS data © Crown copyright 2011.

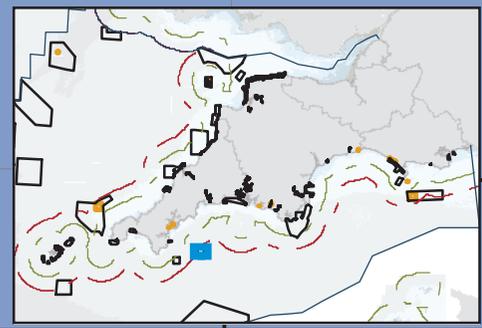


South-east of Falmouth

Map Legend

-  12 nautical mile limit
-  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.3.31 South of Falmouth rMCZ

Basic site information

Site centre location (datum used: ETRS89):

Decimal Degrees		Degrees Minutes Seconds	
Lat	Long	Lat	Long
49.9077	-4.9760	49° 54' 27" N	4° 58' 33" W

Site surface area: 25 km² (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea

OSPAR region: Region II: Greater North Sea (on the boundary to Region III: Celtic Waters)

Site boundary: The site is a simple square, with borders running north-south and east-west, measuring 5km on each side in line with ENG guidelines. The north-west corner of the site intersects with the 6nm limit, the remainder of the site lies beyond 6nm.

Sites to which the site is related: The site lies approximately 9 km east of the Lizard Point candidate SAC.

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 South of Falmouth rMCZ

Table II.3.31a Draft conservation objectives for the South of Falmouth 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		R
	Subtidal coarse sediment		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.3.31b 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	2.69	<0.1%	1
Subtidal coarse sediment	22.29	<0.1%	1

Table II.3.31c **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	22.86			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 site is located in an area of seasonal frontal systems, which means the area has high productivity and scores highly as an area of additional ecological (pelagic) importance (see AAEI map, FR_081). The area is heavily used by fishermen, in particular, mobile benthic and pelagic gear fishermen. The depth of the site ranges from 77 to 83 metres.

Detailed site description

A literature search was carried out on this site, but as for other for non-coastal sites in the network it has proved difficult to find information associated with this specific site.

Poulton *et al.* (2002) In Jones *et al.* (2004) describe the offshore sediments around the coast of Britain which included the English Channel. The consequences of a changing climate have been relatively well documented in the English Channel for fish, plankton and intertidal benthos (see, for example, Genner *et al.* 2004; Hawkins *et al.* 2008). During the 1950s, Norman Holme sampled benthic infaunal and epifaunal communities on a large geographical scale spanning the entire English Channel (Holme, 1961; 1966). Part of Holme’s benthic survey was revisited in 2006, covering a large extent of the Channel coast (Hinz *et al.* 2011). The main aims of this resurvey were to describe the current status of benthic communities and compare the data to the historic survey to investigate potential changes in the communities. Comparison of the 1950s and 2006 surveys showed benthic species distributions remained similar, in general, with little or no obvious trends consistent with warming sea temperatures.

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.3.31d 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.3.31d is based on what had previously been recorded for a previous, larger site that had been included in the developing network configuration in the area, and which was replaced by two smaller sites, South-East of Falmouth rMCZ and South of Falmouth rMCZ, following Local Group and fisheries sector feedback. The previously stated assumptions 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.3.31e 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.3.31d Specific assumptions and implications relating to South of Falmouth 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). This site has been recently added to the network (after the third progress report). No detailed assumptions were drawn up by the working groups & project team for this site specifically.

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 in the VA meetings, and the assumption was confirmed.	Direct implications: <ul style="list-style-type: none"> o Loss of ground for bottom-towed gear fishermen, both UK and non-UK (Mobile benthic fishing does occur in the area, which is deemed important for scalloping and beam trawling. However, this rMCZ was selected by the Working Groups out of several building blocks in the area, as it was deemed the least contentious to the fishing industry and it was recognised that a protected area is required in this area in order to meet the Ecological Network Guidance). 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 The SW Fishing Industry MCZ Planning Group notes

	<p>significant concerns over this site given the importance of the fishing grounds in this area.</p> <ul style="list-style-type: none"> o Potential environmental implications derived from concentrating effort in alternative grounds or due to new fishing ground searching activity. <p>Benefits:</p> <ul style="list-style-type: none"> o Protection of areas of high pelagic interest will increase ecological value of network
<p>Aggregate extraction will not be allowed</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.
<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	Implications
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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.) <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Local Group feedback indicated that some Local group members thought that mitigation measures should be put in place to prevent bycatch in static nets, including regulation of when and how nets are set. Other Local Group members indicated that bycatch of birds was not a problem in set nets in this area. The protection of birds is not currently included in the developing conservation objectives for this 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.
<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Crab tiling / bait digging will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

<p>Beach replenishment will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p><i>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.</i></p> <p>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</p>	<p>Direct implications:</p> <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: <ul style="list-style-type: none"> - 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. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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 There is some overlap with accessible wind resource area. o Possible medium term wave resource area, but navigational constraints significant.

Activities assumed to be allowed to continue / occur within the site	
Assumptions	Implications
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed <p>Benefits:</p> <ul style="list-style-type: none"> o Potential for increased and enhanced leisure and recreational activity
<p>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.</p> <p>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</p>	<p>Direct implications:</p> <p>Given this assumption there are still the following concerns:</p> <ul style="list-style-type: none"> 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). <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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, further offshore.
<p>The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational)</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> o Two active telecoms cables.

<p>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</p>	
<p>Tourism and recreational activities will be permitted.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Maintenance dredging in ports (to enable access to ports) will be permitted</p> <p><i>The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o (no heritage wrecks currently present in the site)
<p>Anchoring of small vessels will be permitted</p> <p><i>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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: 0
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: 0

Table II.3.31e 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 within the rMCZ 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.
- *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*
 - Most of this rMCZ lies beyond the 6nm limit. There may be non-UK vessels with historical rights that fish within 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.3.31e (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.

This rMCZ is located within a region that has high pelagic productivity, and which is heavily fished by static and mobile gear fishermen, both UK and non-UK. There is strong gear conflict. Fishing representatives are not supportive of this site, but find this rMCZ less bad than a larger area that was included in this region previously (see third progress report). The rMCZ is strongly supported by conservationists, as it lies within an area of additional ecological importance because of its high productivity and seasonal frontal systems. The current rMCZ (together with the South-east of Falmouth rMCZ) represents the outcome of a genuine negotiation between conservation and fishing interests, where both sides have gained and lost – fishermen would have preferred no rMCZs at all in this area, and conservationists would have preferred the larger area previously included in the developing recommendations.

The Crown Estate provided feedback to state that they were supportive of this rMCZ. Early Local Group feedback indicated that this area was preferred to other alternatives containing the same broad scale habitats, and it was considered the ‘least bad’ option in that area.

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.

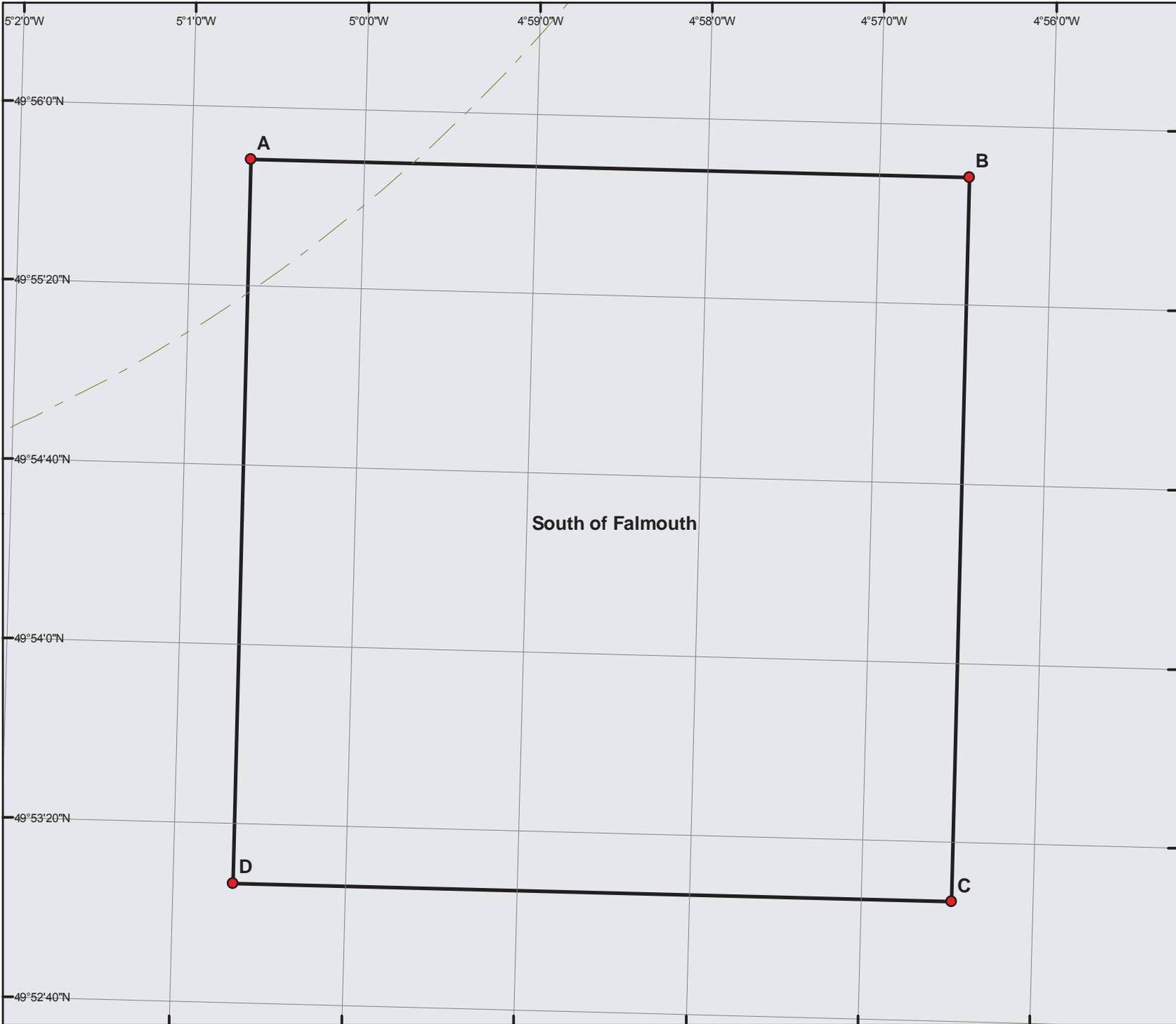
Further evidence underpinning the site can be found in the publications and datasets referred to in the detailed site description.

Site map series

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

- The first map (FR_043a) 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_043b) 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.3.31b, data sources are indicated in the table.
- The third map (FR_043c) 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.



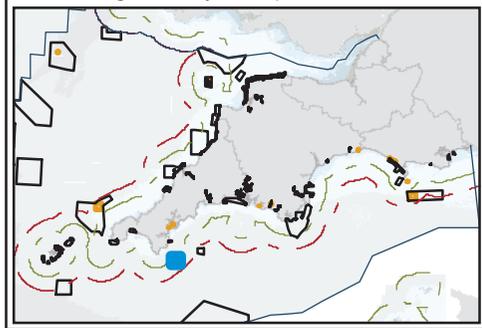
Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	49.9301	-5.0108	49° 55' 48" N	5° 0' 39" W
B	49.9302	-4.9413	49° 55' 48" N	4° 56' 28" W
C	49.8852	-4.9412	49° 53' 6" N	4° 56' 28" W
D	49.8852	-5.0108	49° 53' 6" N	5° 0' 38" W

Map Legend

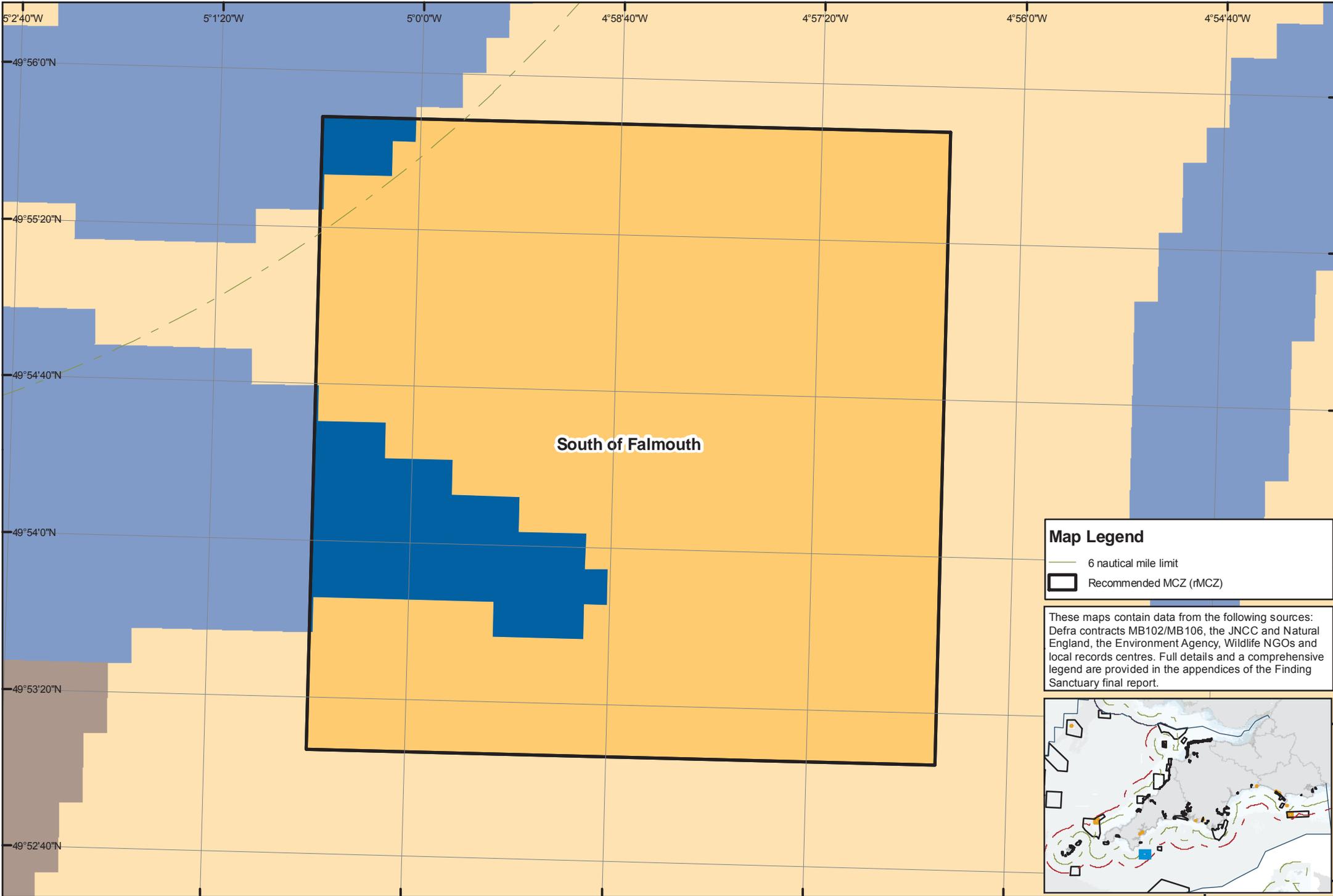
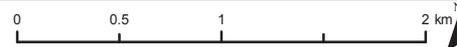
- 6 nautical mile limit
- Recommended MCZ (rMCZ)

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



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.

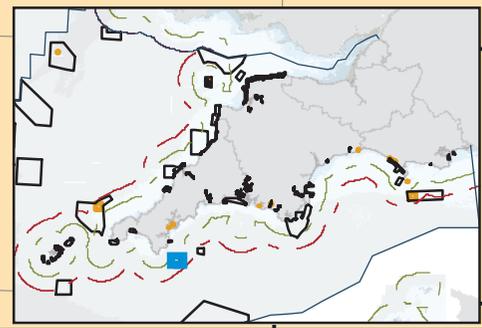
Maritime basemap © British Crown and SeaZone Solutions Limited, 2010.
All Rights Reserved. Data Licence No. 062006.004. Land basemap part
© OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation.
Contains OS data © Crown copyright 2011.



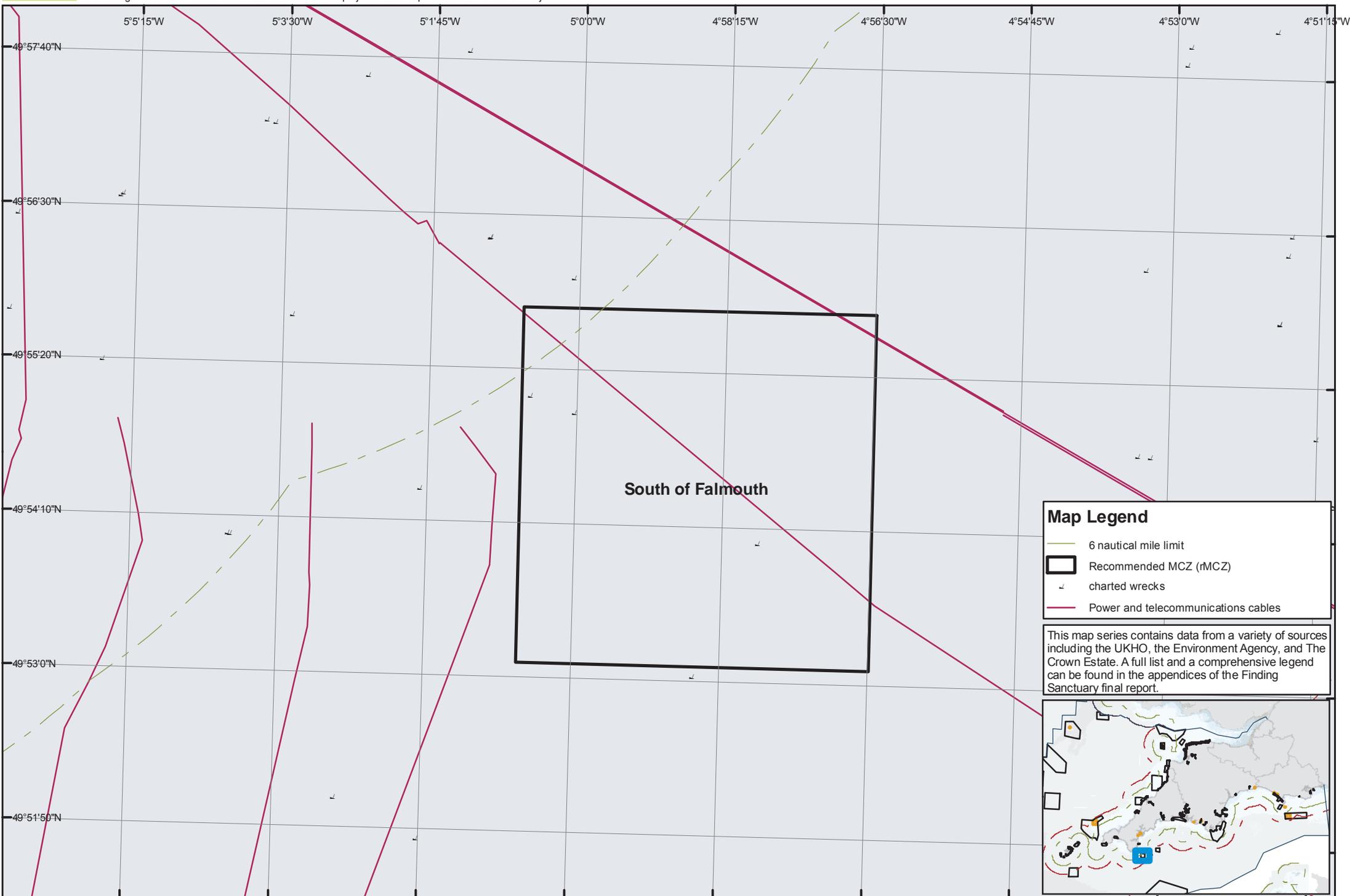
Map Legend

- 6 nautical mile limit
- 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.



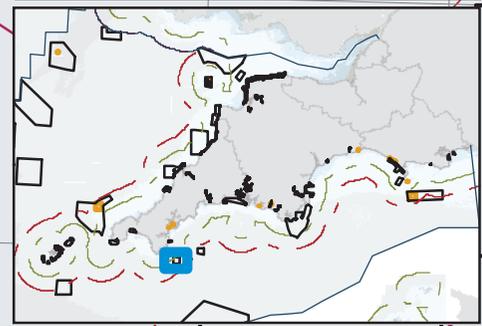
This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with socio-economic information. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.



Map Legend

- 6 nautical mile limit
- Recommended MCZ (rMCZ)
- charted wrecks
- Power and telecommunications cables

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.3.32 The Manacles rMCZ

Basic site information

Site centre location (datum used: ETRS89):

Decimal Degrees		Degrees Minutes Seconds	
Lat	Long	Lat	Long
50.0467	-5.050	50° 2' 48" N	5° 3' 0" W

Site surface area: 3.5 km² (calculated in ETRS89 – LAEA)

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea

OSPAR region: Region III: Celtic Waters (on the boundary to Region II: Greater North Sea)

Site boundary: The landward boundary of this site runs along the OS Boundary Line mean high water mark from Porthoustock Point around Manacle Point, as far as Polcries (the small bay at Dean Quarries). The seaward boundary is rectangular, with borders running east-west and north-south, extending about 2.3km to sea, to encompass the Manacles rocky reef.

Sites to which site is related: The Coverack to Porthoustock SSSI extends along the shoreline of the rMCZ. The north-western corner of the rMCZ clips the southern tip of the Fal and Helford SAC.

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 Manacles rMCZ

Table II.3.32a Draft conservation objectives for the Manacles 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 macrophyte-dominated sediment		M
	Subtidal mixed sediments		M
	Subtidal sand		M
	Moderate energy circalittoral rock		M
	Moderate energy infralittoral rock		M
	Intertidal coarse sediment		M
	Intertidal mixed sediments		M
	Intertidal mud		M
	Intertidal sand and muddy sand		M
	Moderate energy intertidal rock		M
Habitat FOCI	Maërl beds		M
Species FOCI	<i>Amphianthus dohrnii</i>	Sea-fan anemone	M
	<i>Eunicella verrucosa</i>	Pink sea-fan	M
	<i>Haliclystus auricula</i>	Stalked jellyfish	M
	<i>Leptopsammia pruvoti</i>	Sunset cup-coral	M
	<i>Palinurus elephas</i>	Spiny lobster	R
Mobile species not listed in ENG	<i>Cetorhinus maximus</i>	Basking sharks	M
	<i>Phocoena phocoena</i>	Harbour porpoise	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).

Table II.3.32b **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 infralittoral rock	0.19	<0.1%	1, 2
Moderate energy circalittoral rock	0.18	<0.1%	2
Subtidal coarse sediment	0.95	<0.1%	1, 2
Subtidal sand	0.96	<0.1%	1, 2
Subtidal mixed sediments	0.08	<0.1%	2
Subtidal macrophyte-dominated sediment	1.03	5.1%	1, 2
Moderate energy infralittoral rock ¹	<0.01	<0.1%	1, 2
Subtidal sand ¹	0.01	<0.1%	1, 2
Subtidal macrophyte-dominated sediment ¹	<0.01	<0.1%	1, 2

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

Table II.3.32c **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)
Moderate energy intertidal rock	0.04	0.7%	4
Intertidal coarse sediments	0.03	0.2%	4, 3
Intertidal sand and muddy sand	<0.01	<0.1%	4
Intertidal mud	<0.01	<0.1%	4
Intertidal mixed sediments	0.02	0.4%	4
Moderate energy intertidal rock ¹	<0.01	<0.1%	4
Intertidal coarse sediments ¹	<0.01	<0.1%	3

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

Table II.3.32d **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)
Maerl beds	1.01			1
Maerl beds ¹	< 0.01			1
Subtidal sands and gravels ²	1.61			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.3.32e **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 Trehwella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Amphianthus dohrnii</i>	3		1, 3
<i>Eunicella verrucosa</i>	58	3	1, 3, 5
<i>Haliclystus auricula</i>	1	1	3
<i>Leptopsammia pruvoti</i>	2		3
<i>Palinurus elephas</i>	2		1

Local Group feedback also indicates that the FOCI habitats 'fragile sponge & anthozoan communities on subtidal rocky habitats' and 'intertidal underboulder communities' are present in this site, but we do not have records of these features mapped. These features are therefore not reflected in the tables above. In the network statistics (section II.2.8), this site has not been counted as a replicate for these non-mapped FOCI.

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 0.43 km² 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 Manacles are a large underwater rocky reef system and a popular dive spot due to the high number of shipwrecks that surround them. The depth of the site is between 14 and 57 metres below sea level (chart datum). The primary reason for selecting this area as a rMCZ was the high-quality reefs present in the site, and the associated FOCI species (protection of broad-scale habitats was not a primary reason for the selection of this site, and the size of the area does not meet the minimum size guidelines for broad-scale habitats in the ENG). Local stakeholder and scientific feedback indicates that there are productive tidal fronts in this area. The area is of importance for basking sharks, and an important feeding area for small cetaceans, in particular, harbour porpoises and (seasonally) minke whales. Local Group feedback indicates that this is one of the best examples of pink sea fan communities and the pink sea fan anemone in the region.

Detailed site description

Wood (2003) found dense populations of *Eunicella verrucosa* at the Manacles in surveys carried out in 2001 / 2002, particularly on the flat open seabed below The Voices on The Manacles, and on Pencra Reef nearby. All of these sites were at least 20m below chart datum. Twenty-six of the sea fans had the sea fan anemone on them (*Amphianthus dohrnii*). The Ross coral *Pentapora foliacea* has also been recorded at the site (Davies, 1998). Southward *et al.* (2004) carried out dredging, trawling, and SCUBA diving to recover *S. Fallax*, during which active searches for *Eunicella verrucosa* were carried out. One colony was observed at 30 m on Raglan Reef on the Manacles in 2003. *E. verrucosa* has also been recorded during the 1981 South Cornwall sublittoral survey (James, 1983)

and 1980 NCC Isles of Scilly & south Cornwall sublittoral survey (Dipper, 1981). *Amphianthus dohrnii* has been reported in the area from 1980-present MarLIN UK expert sighting records (Brown, 1980) and the 2005 MCS Seasearch survey of the Manacles, Cornwall.

Palinurus elephas has been recorded both during the 2005 and 2006 MCS Seasearch of the Manacles, Cornwall. There have been a number of Short Snouted Seahorses seen around the Manacles area over the years and the area is a perfect type of site for this species (Neil Garrick-Maidment, *pers. comm.*).

The west of the Manacles has deeply gullied outcropping bedrock, with gullies opening out into an area of large boulders. Gully sides almost sheer and up to 5m high. The top of the gully sides contain sparse kelp and red foliose algae. The gully floor and sides are dominated by hydroids, including *Aglaophenia pluma* and *Halecium halecinum* (abundant). Anthozoans were also strongly represented, with *Actinothoe sphyrodeta*, occasional colonies of *Alcyonium glomeratum*, *Caryophyllia*, *Corynactis* and *Metridium senile* (James, 1983).

In the east, the seabed consisted of large boulders and rocky outcrops separated by areas of muddy shell gravel. The majority of the rock surface is covered by a hydroid/bryozoans turf in which *Polyzonias* and *Obelia dichotoma* were all common. Other conspicuous species included *Eunicella verrucosa*, *Alcyonium digitatum*, *Nemertesia antennina* and *Pentapora foliacea* (James, 1983).

At the north, an open cliff face dropping down to a large shelf of coarse sand and broken shell was reported. This in turn sloped gently away to further drop-off. The cliff face was overhung in places, with deep crevices, small caves and splits in the rock. The rock surface was carpeted with barnacles and *Corynactis*, with a small amount of hydroid/bryozoans turf. *Antedon bifida* and *Metridium senile* was also prominent (James, 1983).

Bloomfield & Solandt (2006) report on 20 years of Basking Shark sightings off the British coast, which includes several sightings off the Manacles, described as a 'hotspot' for congregations of Basking sharks when there are high densities of copepods.

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.3.32f shows more specific working assumptions and implications that were recorded for this site over the course of the planning process.

Following that, table II.3.32g 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.3.32f Specific assumptions and implications relating to The Manacles 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
<p>Bottom-towed fishing gear will not be allowed (includes benthic trawling and hydraulic dredging)</p> <p style="color: red;">This was discussed at the VA meeting and confirmed.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Loss of ground for bottom-towed gear fishermen (Steering Group feedback indicates that scallopers use the area beyond the feature of The Manacles). 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 Local fishing industry wish to see the site restricted to the vicinity of the Manacles feature in order to avoid the location of their existing activities. o The SW Fishing Industry MCZ Planning Group notes significant concerns over this site given the importance of the fishing grounds in this area. 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.
<p>Aggregate extraction will not be allowed</p> <p style="color: green;">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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.

<p>Pelagic trawls will not be allowed</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Local Group suggestions have included the seasonal exclusion of trawlers (note that no unanimously supported suggestions were made).
<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	Implications
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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.) <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Static gear fishermen might possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed
<p>Tourism and recreational activities will be permitted.</p> <p>The VA meetings considered that a code of conduct may be needed for recreational divers to avoid impacts on sensitive species and habitats on the rocky seafloor. Previous WG and LG meetings considered this area of importance for cetaceans and basking sharks, and following JWG5 the Wildlife Trusts have advised a code of conduct and voluntary wildlife tour operator accreditation schemes to avoid disturbance to and collisions with these animals in this area.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o A suggestion was made by a Local Group member to impose a speed restriction on motorised vessels to protect cetaceans and basking sharks. <p>Benefits:</p> <ul style="list-style-type: none"> o There is a substantial socio-economic benefit from recreational divers visiting this area. Also, most dive boats do not anchor. o Protection of attractive and interesting seabed habitats will help support local diving businesses
<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p>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.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: <ul style="list-style-type: none"> - 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

	<p>will be less attractive to potential investors.</p> <ul style="list-style-type: none"> 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. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.
<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Local Group feedback has indicated that there is an area (only partially in Manacles) suitable for suspended mussel culture. The person making the comment was concerned that, if made a MCZ, this activity should be permitted. Existing farms are starting up in these bays.
<p>Crab tiling / bait digging will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

<p>Beach replenishment will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
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Activities assumed to be allowed to continue / occur within the site

Assumptions	Implications
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed <p>Benefits:</p> <ul style="list-style-type: none"> o Potential for increased and enhanced leisure and recreational activity
<p>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.</p> <p>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</p>	<p>Direct implications:</p> <p>Given this assumption there are still the following concerns:</p> <ul style="list-style-type: none"> 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). <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.

<p>The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Maintenance dredging in ports (to enable access to ports) will be permitted</p> <p><i>The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o (no heritage wrecks currently present in the site)
<p>Anchoring of small vessels will be permitted</p> <p><i>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.

<p>Passage of ships will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o A suggestion was made by a Local Group member to impose a speed restriction on motorised vessels to protect cetaceans and basking sharks.
<p>Acoustic Surveys, sonar</p> <p>The Working Groups had not made any explicit assumptions about acoustic surveys / sonar in this site, nor were any made by the project team in their 'homework' on assumptions for inshore sites. A member of the Steering Group stated at the February 2011 meeting that the assumption should be made that acoustic surveys will be allowed e.g. sub bottom profiling.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Seaweed harvesting will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Table II.3.32g 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 within the rMCZ Measure: - Option 1: voluntary - Option 2: byelaw
Tourism & Leisure	Management - Education and awareness of conduct for encounters with backing sharks, cetaceans Measure - Voluntary code of conduct - Voluntary ‘Wise accreditation’
Tourism & Leisure	Management - Education and awareness of conduct for diving Measure - Voluntary code of conduct

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.

- *The Wildlife Trusts*
 - There is some concern that the reduced size of the rMCZ (compared to an original building block that extended beyond the rocky reef), and consequent lack of buffer around the reef features, limits the ecological value of designation.
 - Exclusion of netting would increase diver safety in a heavily used site.
- *Anchoring and aggregates*
 - This rMCZ was realigned to take account of anchoring and aggregate export.
- *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 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 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*
 - A Local Group fishing representative suggested looking at static net access with the use of pingers to mitigate by-catch, and the Local Group suggested that a speed limit could be considered to protect cetaceans and basking sharks.
 - 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.
 - The netting / longlining assumption and the Local Group suggestions have been superseded by the fact that the stakeholder group agreed on a different set of assumptions for mobile species (largely around the need for monitoring, and some possible voluntary codes of conduct, but no fishing restrictions).
- *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.3.32g (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 was unanimously suggested by the Cornwall Local Group. The Local Group strongly support this rMCZ, they view it as an essential component of the network.

A fishing representative on the Steering Group commented that they would not support an rMCZ extending beyond the feature of The Manacles itself, and the boundary of the site was adjusted from a larger pre-cursor to bring it close to the reef feature in order to accommodate this concern.

The Crown Estate provided feedback on what was a much bigger building block in the area (iH12), stating that they were supportive of the area becoming a rMCZ.

Dean Quarries are concerned over impacts on their jetty & dredged channel for boat access for freighting stone, and Falmouth Harbour expressed concern over any potential impacts on their shipping lane close by.

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, Environment Agency intertidal habitat data, data from Cornwall Wildlife Trust, and Seasearch 2009. Refer to appendix 8 for details, and to the tables above for data sources for specific features in this site.

Seaquest Southwest sightings, both ad hoc and effort based, land and boat based, CWT basking shark project data, and Seaquest Netsafe acoustic data are available for *Cetorhinus maximus* in the area of the rMCZ. Key Cornish datasets have been analysed recently with University of Exeter in Cornwall and papers have been written which support the raw data (See Witt *et al.* in prep; Pikesley *et al.* in press).

Further evidence underpinning the site can be found in the publications and datasets referred to in the detailed site description. There is also a lot of local knowledge about the site within the Local Group. Further information on the Natura 2000 sites to which this site is related may be found on the JNCC's [website](#)³⁹.

Seaquest Southwest sightings, both ad hoc and effort based, land and boat based, CWT basking shark project data, and Seaquest Netsafe acoustic data are available for *Cetorhinus maximus* in the area of the rMCZ. Key Cornish datasets have been analysed recently with University of Exeter in Cornwall and papers have been written which support the raw data (See Witt *et al.* in prep; Pikesley *et al.* in press).

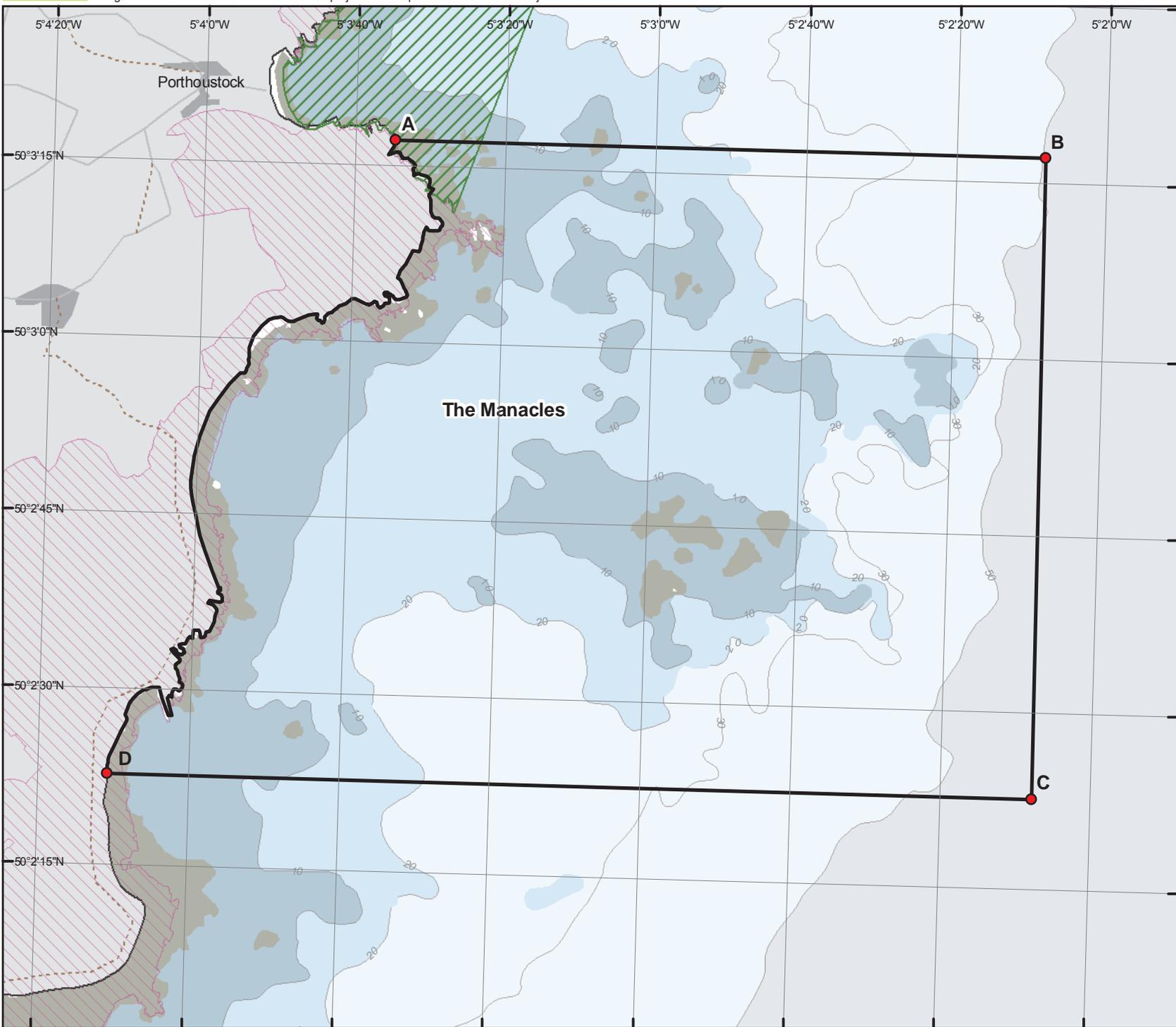
Site map series

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

- The first map (FR_044a) 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_044b) shows the rMCZ boundary over broad-scale habitats. The data shown on this map corresponds with the information in tables II.3.32b and II.3.32c, data sources are indicated in the tables.
- The third map (FR_044c) shows records of habitat and species FOCI. The data shown on this map corresponds with the information in tables II.3.32b to II.3.32e, data sources are indicated in the tables. In most site reports, broad-scale habitats and FOCI are shown on a single map, but for this site they have been split, because there is a large area of the FOCI habitat 'maërl beds' mapped as a polygon feature within the site, and if that polygon is layered on top of the broad-scale habitats data, it is easily confused with the broad-scale habitat 'high energy infralittoral rock', as the symbology is similar (see appendix 7).
- The fourth map (FR_044d) 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).

³⁹ <http://jncc.defra.gov.uk/page-4>

- 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.



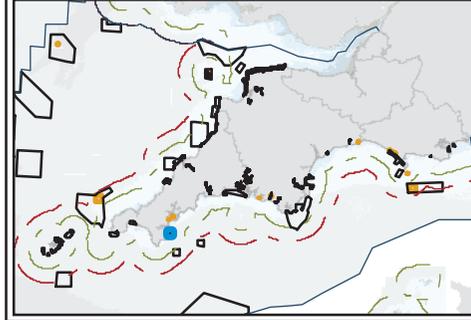
Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.0548	-5.0596	50° 3' 17" N	5° 3' 34" W
B	50.0548	-5.0356	50° 3' 17" N	5° 2' 8" W
C	50.0396	-5.0355	50° 2' 22" N	5° 2' 7" W
D	50.0396	-5.0696	50° 2' 22" N	5° 4' 10" W

Map Legend

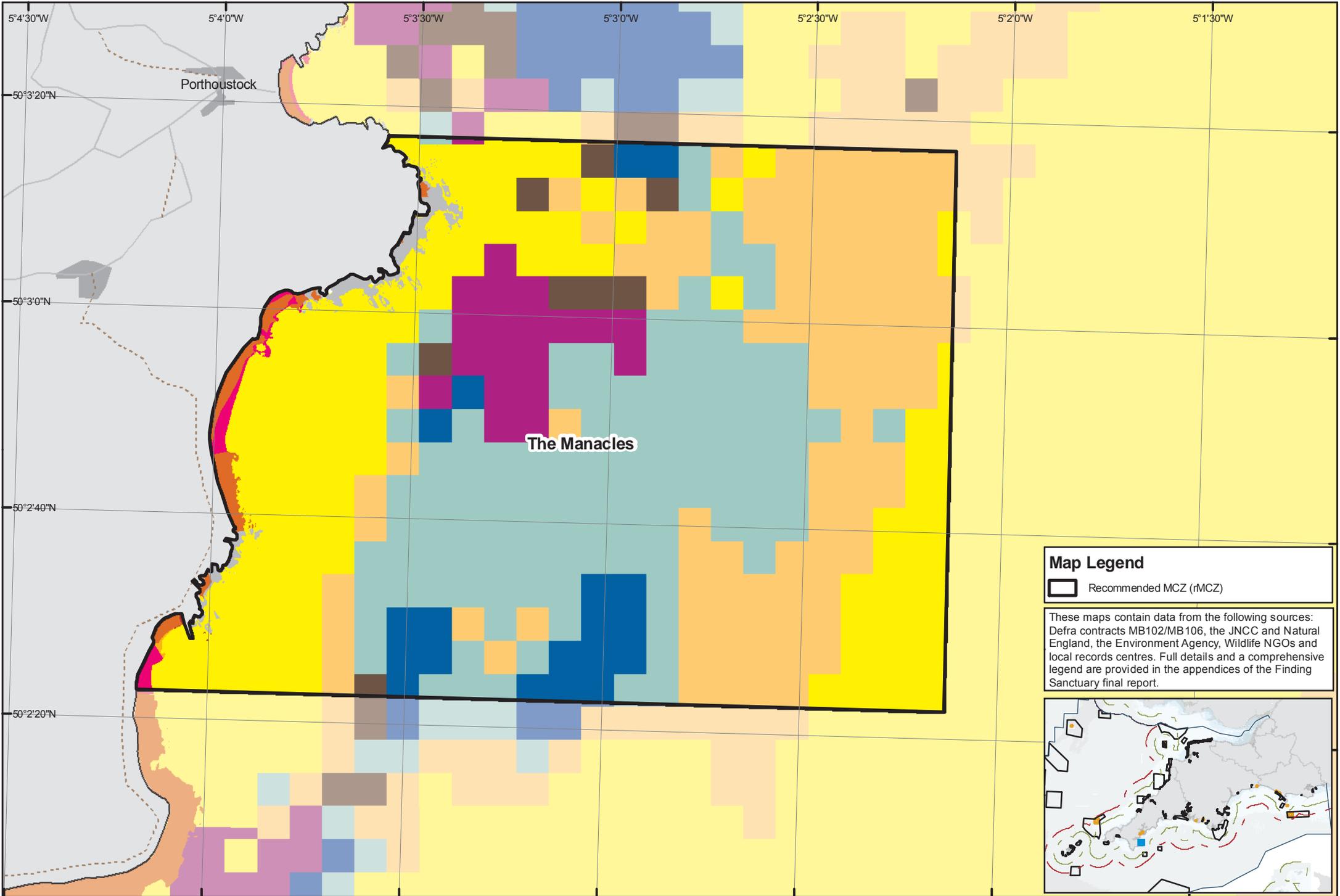
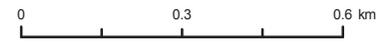
- Recommended MCZ (rMCZ)
- Existing MPAs**
- SAC
- SSSI (not part of MPA network)

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



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

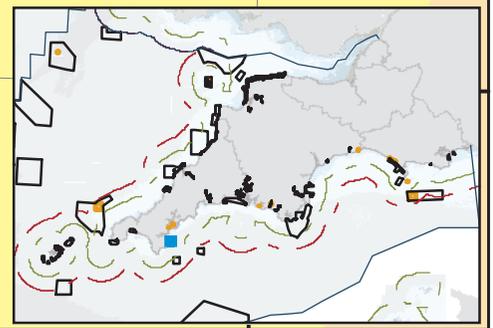
Maritime basemap © British Crown and SeaZone Solutions Limited, 2010.
All Rights Reserved. Data Licence No. 062006.004. Land basemap part
© OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation.
Contains OS data © Crown copyright 2011.



Map Legend

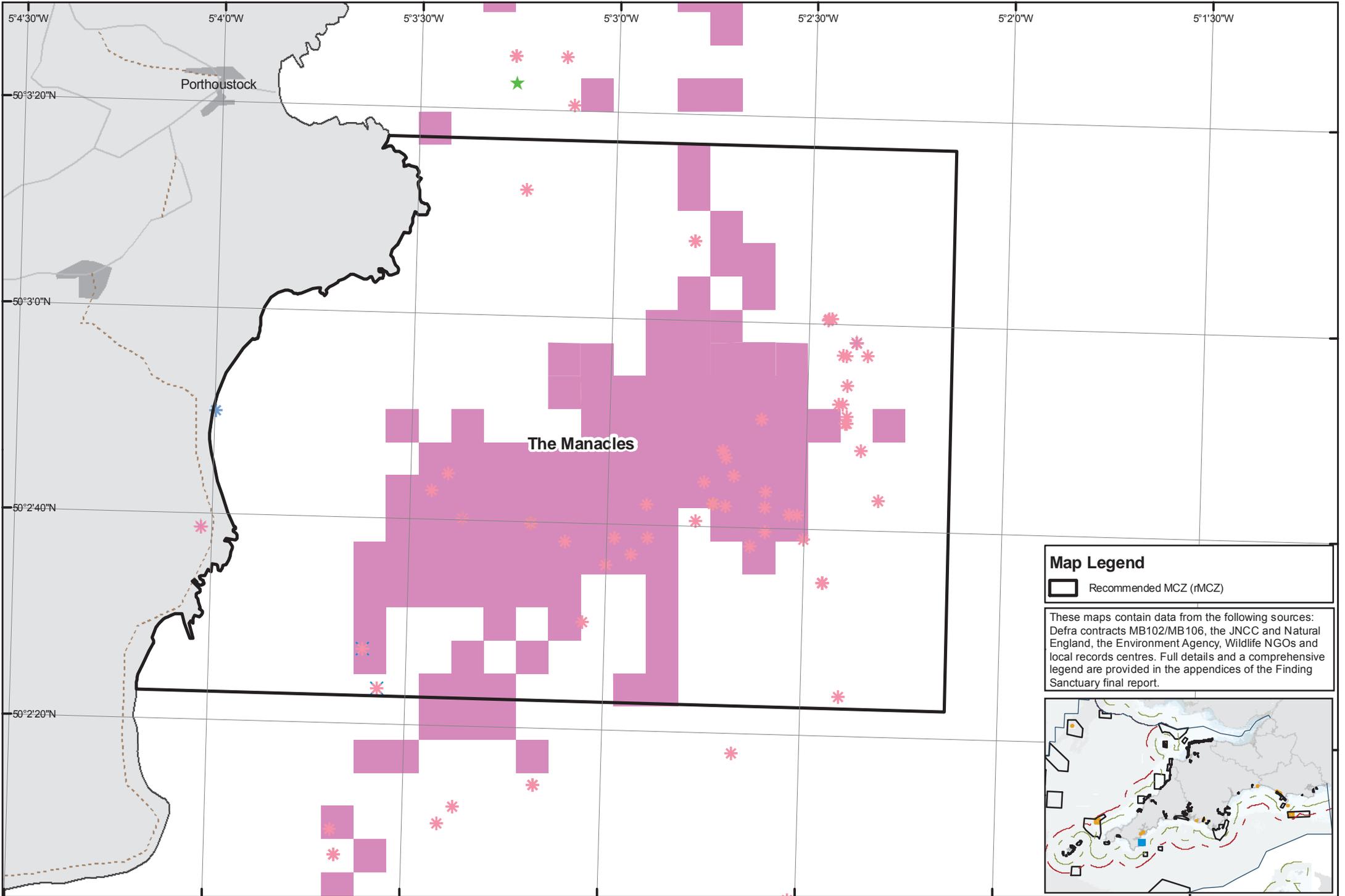
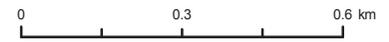
 Recommended MCZ (rMCZ)

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.



The Manacles rMCZ

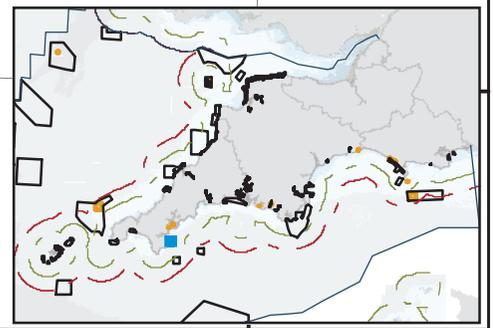
This is one of a series of maps showing Finding Sanctuary's final MCZ recommendations, with habitat and species FOCI. It is designed to be viewed within the context of the project's final report. Datum: WGS84. Projection: UTM30N.

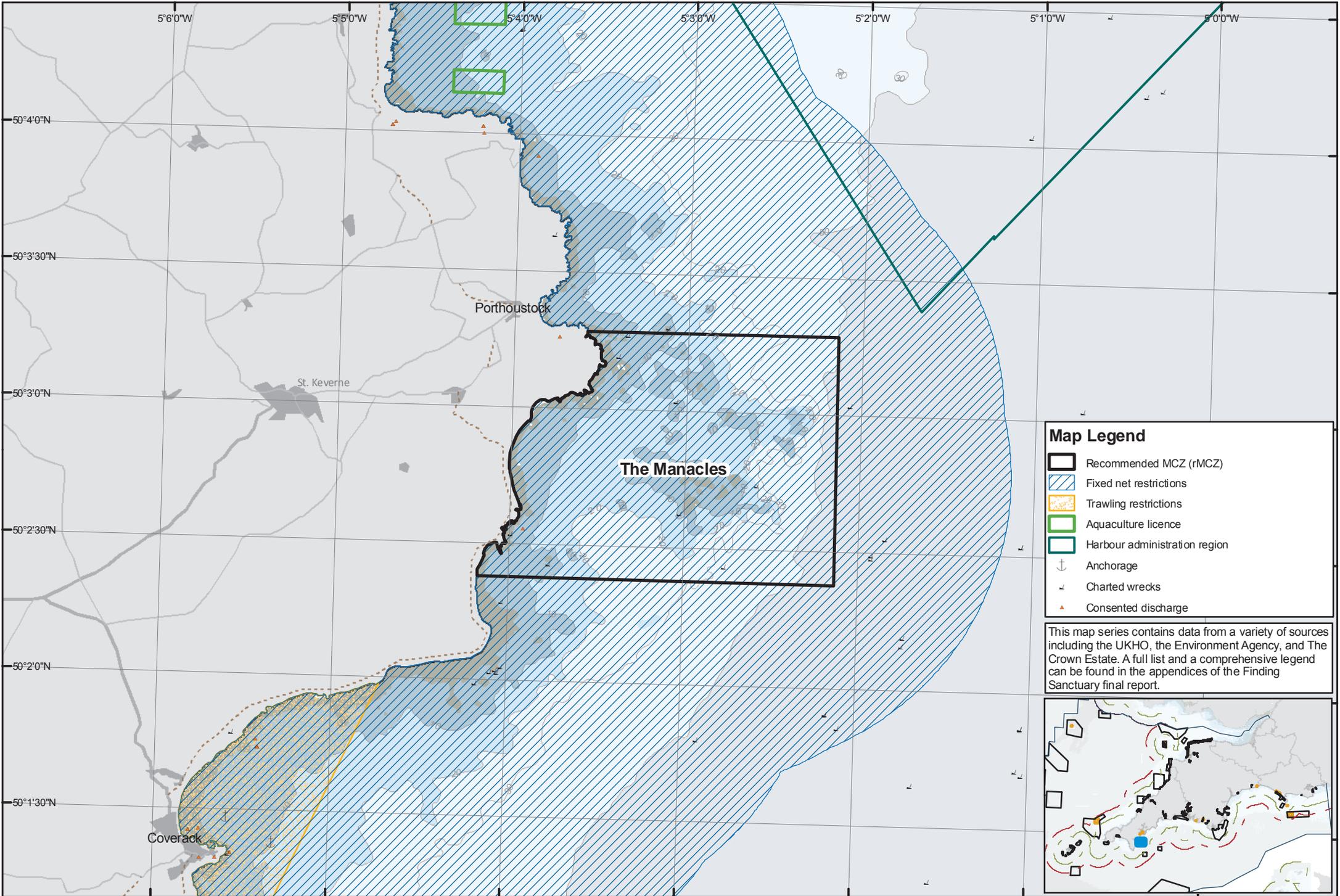


Map Legend

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.

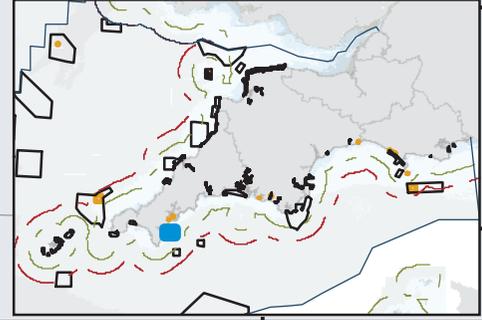




Map Legend

- Recommended MCZ (rMCZ)
- Fixed net restrictions
- Trawling restrictions
- Aquaculture licence
- Harbour administration region
- Anchorage
- Chartist wrecks
- Consented discharge

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.3.33 Mounts Bay rMCZ

Basic site information

Site centre location (datum used: ETRS89):

Decimal Degrees		Degrees Minutes Seconds	
Lat	Long	Lat	Long
50.1111	-5.4701	50° 6' 39" N	5° 28' 12" W

Site surface area: 11.2 km² (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 the beach at Long Rock (west of Marazion), around St Michael's Mount to Cudden Point, between Praa Sands and Perranuthnoe. From the beach at Long Rock, the site boundary extends N-S for approximately 2.8km, and from there it extends eastwards to Cudden Point.

Sites to which the site is related: There is a small coastal SSSI on the southern side of St Michael's Mount, and another coastal SSSI at Cudden Point (Cudden Point to Prussia Cove).

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 Mounts Bay rMCZ

Table II.3.33a Draft conservation objectives for the Mounts 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 mixed sediments		M
	Subtidal sand		M
	High energy infralittoral rock		M
	High energy intertidal rock		M
	Intertidal coarse sediment		M
	Intertidal mixed sediments		M
	Intertidal sand and muddy sand		M
	Moderate energy intertidal rock		M
Habitat FOCI	Seagrass beds		M
Species FOCI	<i>Arctica islandica</i>	Ocean quahog	M
	<i>Gobius cobitis</i>	Giant Goby	M
	<i>Haliclystus auricula</i>	Stalked jellyfish	M
	<i>Lucernariopsis campanulata</i>	Stalked jellyfish	M
	<i>Lucernariopsis cruxmelitensis</i>	Stalked jellyfish	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).

Table II.3.33b 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	0.16	<0.1%	1
Subtidal sand	10.32	<0.1%	1
Subtidal mixed sediments	0.01	<0.1%	1

Table II.3.33c 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	0.12	1.7%	4
Moderate energy intertidal rock	0.04	0.9%	4
Intertidal coarse sediments	0.56	2.9%	4, 3
Intertidal sand and muddy sand	<0.01	<0.1%	4
Intertidal mixed sediments	<0.01	0.2%	4

Table II.3.33d 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)
Seagrass beds	0.01			1
Subtidal sands and gravels ¹	9.31			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.3.33e **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 Trehwella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Arctica islandica</i>	2	1	3
<i>Gobius cobitis</i>	3		3
<i>Haliclystus auricula</i>	4	4	3
<i>Lucernariopsis campanulata</i>	1	1	1
<i>Lucernariopsis cruxmelitensis</i>	1	1	1
<i>Atrina pectinata</i> ¹	1	1	3
<i>Phymatolithon calcareum</i> ¹	1	1	3

¹ There is a single record of each of these two species (fan shell and maërl) present within the boundaries of this site. Both records are old (dating from between 1900 and 1910). Neither species was 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 0.94 km² 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

Mounts Bay rMCZ encompasses an area of relatively sheltered coast (compared to other parts of the Cornish coastline), encompassing the area around the iconic landmark of St Michael's Mount. The bay is predominantly sandy, with infralittoral and intertidal rocky outcrops that support algal communities, and sheltered areas with seagrass beds present. The depth of the site ranges from the shoreline to approximately 17 metres below sea level. The area intersects with an area of higher than average benthic species diversity (within the south-west context, mapped from MB102 data). The Environment Agency has highlighted the nursery function of the area, and the importance of the area as a sea trout foraging area. Local Group feedback has indicated that this area is of importance for wintering diving birds. Indirectly, Local Group feedback has also indicated that the area is of importance for basking sharks and cetaceans (by Local Group members having suggested that measures be put in place to protect these features).

Detailed site description

Mounts Bay is one of the more sheltered stretches of the South Cornwall coast where there are extensive sandy shores and rocky reefs. Sublittoral habitats and communities were surveyed by James (1983). Infralittoral habitats were characterised by dense kelp forests; circalittoral bedrock was characterised by sea anemones, especially the jewel anemone *Corynactis viridis*.

Stackhouse cove near Cudden Cove is a semi-exposed rocky shore backed by low cliffs which consists of a series of sloping irregular platforms dissected by deep gullies. Upper and midshore habitats

were dominated by limpets and snails. Low shore habitats had a wide variety of algae; vertical walls within gullies had rich sponge and sea squirt communities. St Michaels Mount is a tidal island separated from the mainland by a paved causeway. Boulder shores on the north-west corner had exceptionally rich communities with a very high biomass. Large specimens of the red alga *Palmaria palmata* were found here. A small seagrass (*Zostera marina*) bed was found to the east of the causeway. Great Hogus reef located to the west of St Michael's Mount is an isolated rock outcrop set within a long sandy coast. The reef was an important reference area following the Torrey Canyon oil spill in 1967 (Powell *et al.* 1978).

A single specimen of *Arctica islandica* was recorded in 1992 during a littoral Survey by a member of the Porcupine Marine Natural History Society. The Conchological Society reported a live specimen of *Paludina littorina* off Rinsey Head (SW 590 296) in 2000.

Mounts Bay is home to both species of Seahorse and the Seahorse Trust has a number of sightings throughout the bay. Its relatively sheltered aspect means that it has a good habitat and plenty of sheltered shallow water for seahorses to thrive, especially the Spiny Seahorse which is known to occupy the seagrass meadows in the region (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.3.33f shows more specific working assumptions and implications that were recorded for this site over the course of the planning process.

Following that, table II.3.33g 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.3.33f Specific assumptions and implications relating to Mounts Bay 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
<p>Aggregate extraction will not be allowed</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.
<p>Bottom-towed fishing gear will not be allowed (includes benthic trawling and hydraulic dredging)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Loss of ground for bottom-towed gear fishermen o Given that this area is surrounded by a number of major Cornish fishing ports it is expected to be heavily fished. However only one trawler is known to work within the 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.

<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>Disposal of material at the Mounts Bay disposal site (beyond the boundaries of this rMCZ) was discussed in the VA. It is expected that disposal of material at the site would be permitted with no additional mitigation to be required as a result of the rMCZ.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is an open/active disposal site in Mounts Bay and a closed disposal site in waters adjacent to Newlyn and Penzance harbour. If disposal in the active site were to be discontinued this would have detrimental impact on the ports. The boundaries have been amended to exclude these sites. o Although the VA stated that this activity would be able to continue in the Mounts Bay disposal site, there is concern about impacts on future license applications.
<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Possible effects on ports and harbours (this is a general concern, not just relating to the anchoring of large vessels). <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.

Assumptions	Implications
<p>Coastal development and defence</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o A Steering Group member commented that there are managed retreat sites along the shoreline of this rMCZ.
<p>Static fishing gear will be permitted, but there may need to be a limit on the amount of static gear used in the area.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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. Stakeholder feedback indicates that this statement may not be appropriate for this site as static gear fishing is not taking place to such an extent. It is already an area where no towing happens so there would be no change.)

	<p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The Environment Agency have suggested adding a netting restriction in the water column to protect fish nursery function and sea trout foraging. o SAFFA fixed net restrictions apply adjacent to this site. o Local group feedback has included the suggestion to allow static nets with pingers, which implies that the area is of importance for cetaceans. Other Local Group feedback has suggested restricting gill and trammel netting to avoid cetacean bycatch. Cetaceans are not currently part of the developing conservation objectives. 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
<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p><i>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.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: <ul style="list-style-type: none"> - 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. <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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 Near-shore wave resource potential within parts of site. o Good wind resource, landscape buffer requirements making deployment less likely.

<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o This rMCZ is located within an area overlapping the Mounts Bay open disposal site and Newlyn Harbour closed disposal site. Not permitting disposal or reopening the closed disposal site would not be compatible with the assumptions as stated.
<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Crab tiling / bait digging will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Beach replenishment will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o A Steering Group member commented that there are managed retreat sites along the shoreline of this rMCZ.

Activities assumed to be allowed to continue / occur within the site	
Assumptions	Implications
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Local group feedback has indicated this as a good area for recreational sea anglers targeting bass and plaice. o Handliners might face possible additional costs for mitigation measures, should they be needed o There would be costs if monitoring is needed <p>Benefits:</p> <ul style="list-style-type: none"> o Potential for increased and enhanced leisure and recreational activity
<p>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.</p> <p>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</p>	<p>Direct implications:</p> <p>Given this assumption there are still the following concerns:</p> <ul style="list-style-type: none"> 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). <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.

<p>The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is an active power cable located within this rMCZ (at Marazion). These activities need to remain unrestricted.
<p>Tourism and recreational activities will be permitted.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The area is used for recreational boating, including moorings. There is concern around this activity being impacted. <p>Benefits:</p> <ul style="list-style-type: none"> o Potential benefits to ecotourism and the diving industry.
<p>Maintenance dredging in ports (to enable access to ports) will be permitted</p> <p><i>The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Possible effects on ports and harbours (this is a general concern, not just relating to maintenance dredging in ports).
<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o (no heritage wrecks currently present in the site)
<p>Anchoring of small vessels will be permitted</p> <p><i>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</i></p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Possible effects on ports and harbours (this is a general

<p>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</p>	<p>concern, not just relating to the anchoring of small vessels).</p> <ul style="list-style-type: none"> o Recreational boat mooring should not be affected. 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.
<p>Passage of ships will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Possible effects on ports and harbours (this is a general concern, not just relating to the passage of ships). o Local Group feedback has included a suggestion to add a speed limit to protect basking sharks in the area. Basking sharks are currently not part of the developing conservation objectives.
<p>Seaweed harvesting will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Table II.3.33g 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
Disposal at Sea	<p>Management:</p> <ul style="list-style-type: none"> - Impacts on the rMCZ conservation objectives would need to be considered in any licence application for disposal of material at the Mounts Bay disposal site. 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 <p>Measure :</p> <ul style="list-style-type: none"> - Marine Licence
Coastal Defence & Development	<p>Management:</p> <ul style="list-style-type: none"> - 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 <p>Measure :</p> <ul style="list-style-type: none"> - Marine Licence

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*

- Due to the crude resolution of fisheries activities mapping it is possible that the vulnerability of this site to bottom gears has been underestimated. This should be considered in the design of management measures for this site.
- Seasonal closures are an inappropriate measure for benthic conservation.
- *Dumping and disposal sites*
 - Sediment plumes created by beach replenishment schemes need to be considered as a possible pressure upon the site.
 - Concern 150m offshore is not a sufficient buffer to prevent impact of disposal site
- *Anchoring*
 - Anchoring is not compatible with seagrass beds.
- *Non-ENG listed mobile species*
 - Some Local Group members have suggested measures be put in place to protect basking sharks and cetaceans in Mounts Bay.
- *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.3.33g (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 site boundary for this rMCZ was retracted from a precursor site which covered the whole bay. The southern boundary of the rMCZ was brought in closer to shore, in order to avoid the disposal sites in the outer bay, and the western part of the bay was excluded following feedback from the ports representative at Cornwall Council about anchorages outside Newlyn harbour. The re-drawing of the site boundary addressed key concerns by the ports sector and The Crown Estate, and as a result the site is less controversial. However, the Wildlife Trusts commented that the reduced size of the rMCZ means that areas of seagrass bed in the western half of Mounts Bay are no longer within the site (although seagrass beds near St Michael's Mount are still within the boundary). As a result, the ecological value of the designation is lower than it might have been if the larger site had gone forward.

The Crown Estate indicated that the area includes an active power/telecommunications cable at Marazion, and recreational boat mooring and port/harbour facilities. In addition there is the Mounts Bay open disposal site and Newlyn Harbour closed disposal site. They are supportive with the assumption that MCZ designation would not restrict ongoing 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, MB102, Environment Agency intertidal habitat data, and records from Cornwall Wildlife Trust. 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. Additional relevant information might be found in Turk (1974).

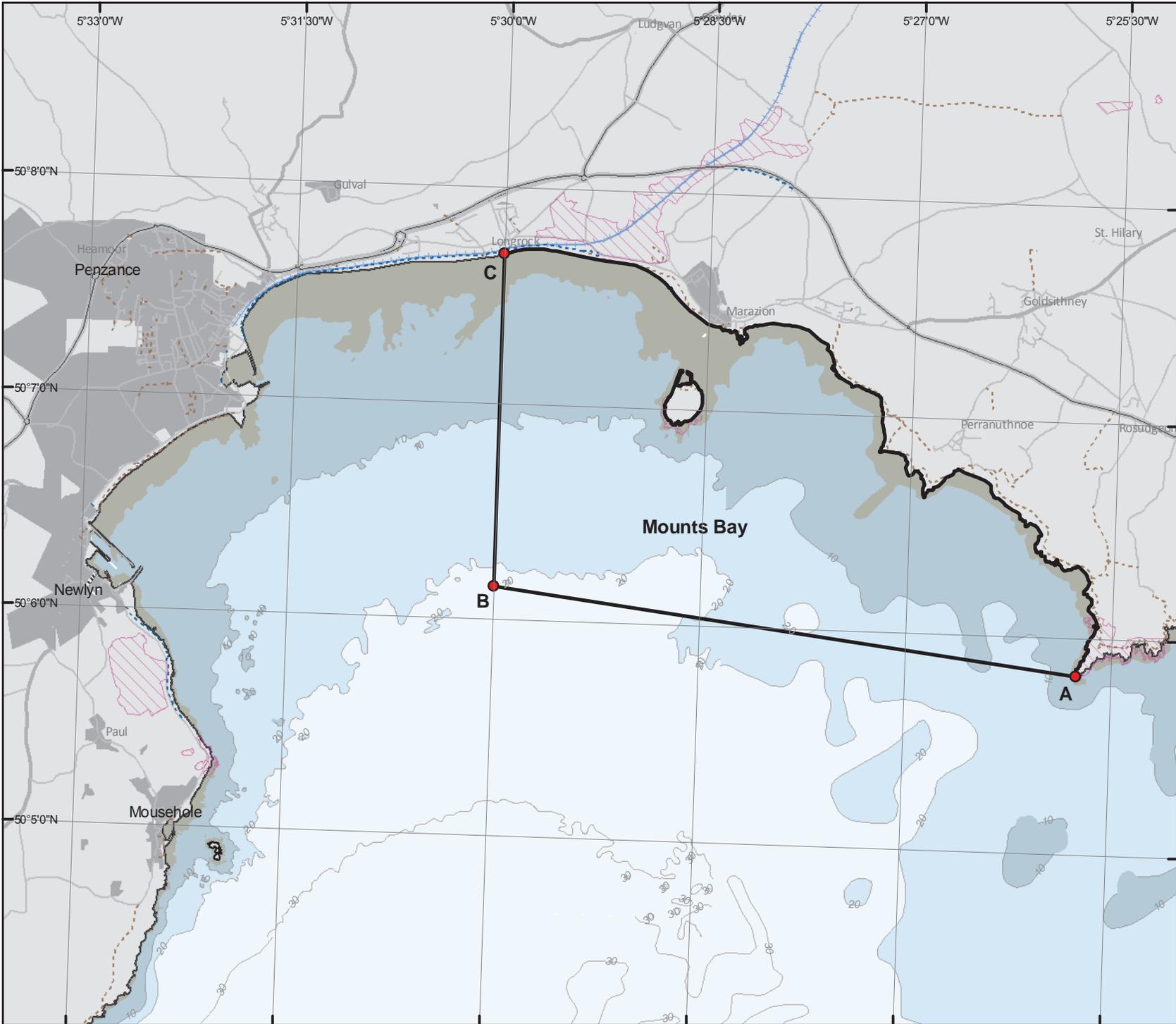
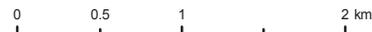
Site map series

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

- The first map (FR_045a) 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_045b) 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.3.33b to II.3.33e, data sources are indicated in the tables.
- The third map (FR_045c) 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.

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.

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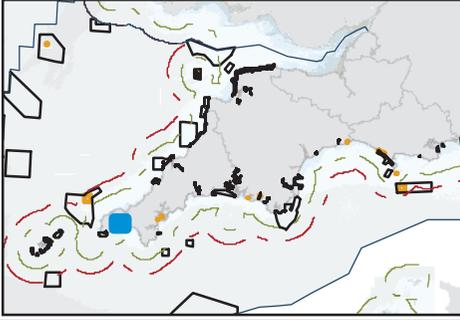
Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.0971	-5.4293	50° 5' 49" N	5° 25' 45" W
B	50.1026	-5.5000	50° 6' 9" N	5° 29' 59" W
C	50.1282	-5.5000	50° 7' 41" N	5° 29' 59" W

Map Legend

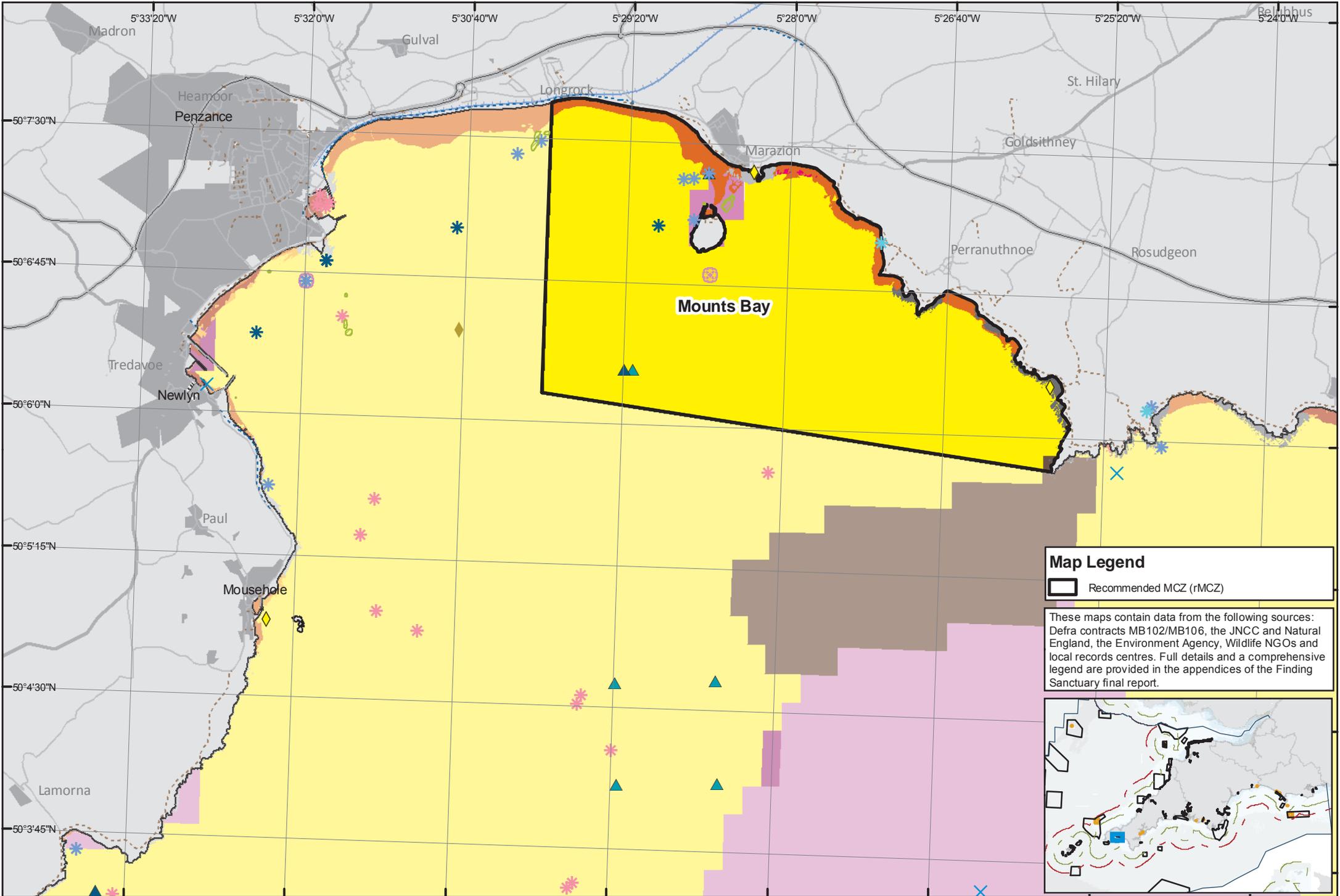
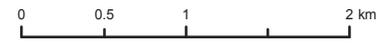
-  Recommended MCZ (rMCZ)
- Existing MPAs**
-  SSSI (not part of MPA network)

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



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.

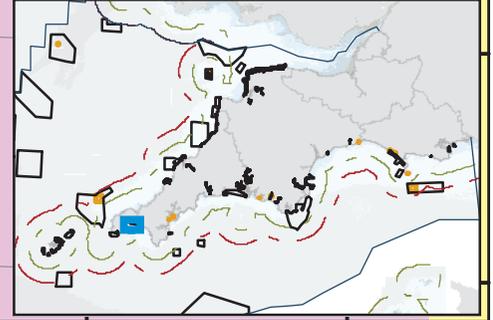
Maritime basemap © British Crown and SeaZone Solutions Limited, 2010. All Rights Reserved. Data License No. 062005.004. Land basemap part © OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation. Contains OS data © Crown copyright 2011.

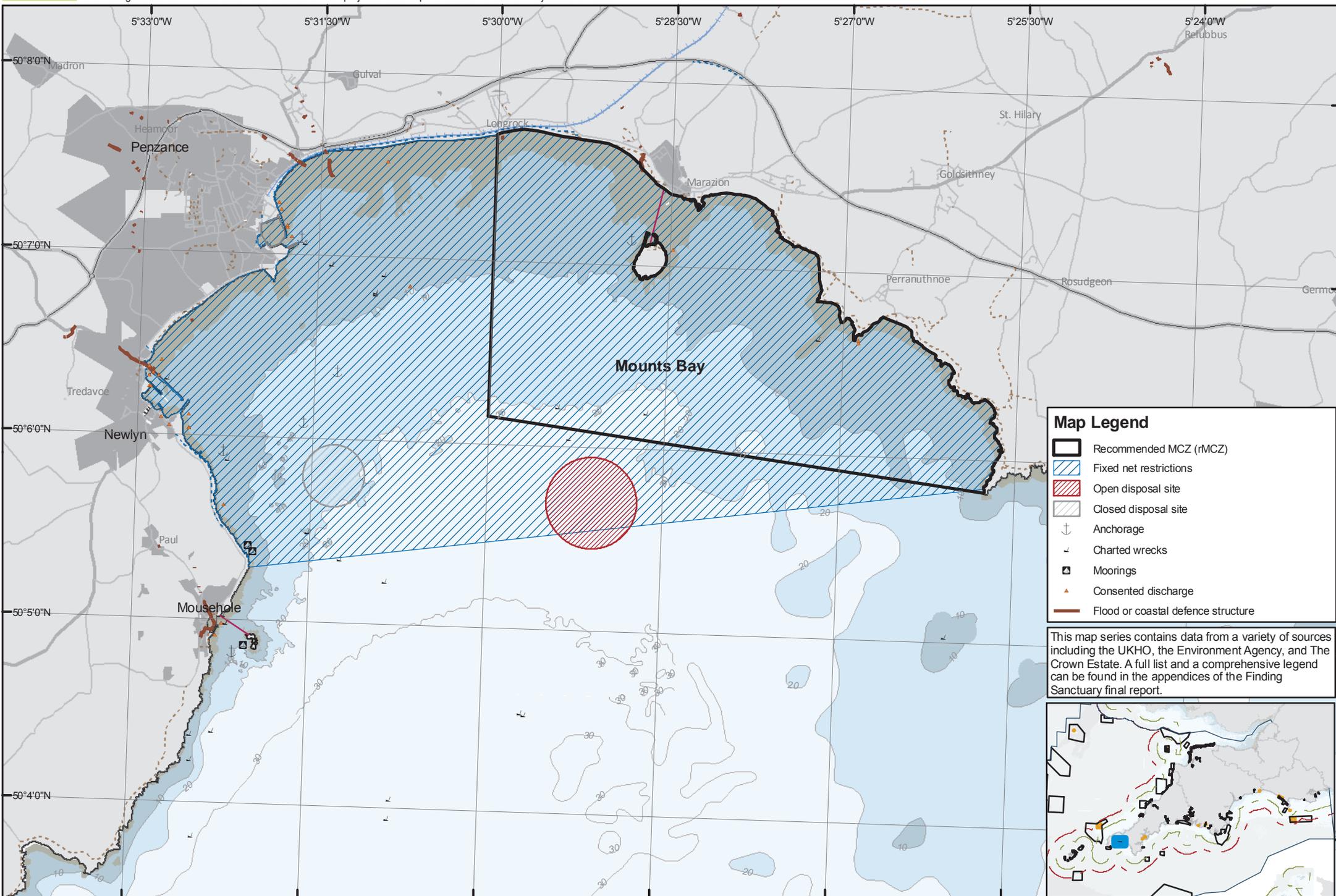


Map Legend

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.

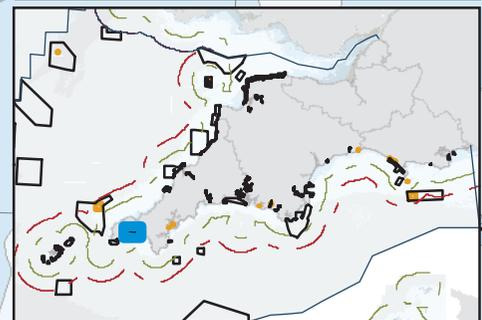




Map Legend

- Recommended MCZ (rMCZ)
- Fixed net restrictions
- Open disposal site
- Closed disposal site
- Anchorage
- Chartist wrecks
- Moorings
- Consented discharge
- 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.3.34 Land's End rMCZ

Basic site information

Site centre location (datum used: ETRS89):

Decimal Degrees		Degrees Minutes Seconds	
Lat	Long	Lat	Long
50.0257	-5.6743	50° 1' 32" N	5° 40' 27" W

Site surface area: 18.6 km² (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 Treen Cliff / Cribba Head to the east of Porthcurno, to Gwennap Head in the west. The seaward boundary extends westwards for about 3.5km and then runs back in an arch towards Cribba Head. The Land's End Peninsula is located in a high wave resource area, and the renewables sector had concerns that there might be no place of access to the shoreline for potential future infrastructure (including cables) to be built, if the rMCZ boundary was to extend as far as the southern boundary of the Land's End and Cape Bank cSAC. This is why the northern boundary of the rMCZ has been cut off in a line that is parallel to the cSAC boundary, leaving a free 'corridor' between the two sites. [The boundary shown on the site map series was hand-digitised from a hand-drawn boundary, and may require some smoothing.]

Sites to which the site is related: Two coastal SSSIs are located alongside this rMZC: Treen Cliff SSSI in the east and Porthgwarra to Pordenack Point SSSI in the west.

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 Land's End rMCZ

Table II.3.34a Draft conservation objectives for Land's End rMCZ. M = maintain in favourable condition, R = recover to favourable condition. This is an extract of the conservation objective summary tables in section II.2.26. **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 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
Species FOCI	<i>Eunicella verrucosa</i>	Pink sea-fan	M
	<i>Paludinella littorina</i>	Sea snail	M
Mobile species not listed in ENG	<i>Cetorhinus maximus</i>	Basking shark	M
	<i>Tursiops truncatus</i>	Bottlenose dolphin	M
	<i>Phocoena phocoena</i>	Harbour porpoise	M
	Seabirds ²		M

¹The recording of this habitat in this rMCZ is likely to be down to a mistranslation in habitat types between classification systems (see appendix 8), the habitat present is intertidal sand, as this stretch of coast is exposed to wave action.

²Species to be confirmed. The site encompasses Runnelstone reef, which is of importance for feeding birds.

Table II.3.34b **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	3.36	0.5%	1
Moderate energy infralittoral rock	0.27	<0.1%	1
High energy circalittoral rock	0.09	<0.1%	1
Moderate energy circalittoral rock	1.74	<0.1%	1
Subtidal coarse sediment	1.92	<0.1%	1
Subtidal sand	11.09	<0.1%	1

Table II.3.34c **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
Intertidal coarse sediments	0.01	<0.1%	4, 3
Intertidal sand and muddy sand	0.02	0.1%	4
Intertidal mud	0.03	<0.1%	4, 3

Table II.3.34d **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	9.52			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.3.34e **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 Trehwella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Eunicella verrucosa</i>	2		1
<i>Paludinella littorina</i>	1	1	3

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

This site encompasses an arc of sea area around an exposed shoreline with granite cliffs and sandy inlets. The site occupies a depth range between 0 and approximately 60 metres. It contains the Runnelstone reef, a hazard to mariners but ecologically of high importance for a large range of mobile species, including seabirds, cetaceans and basking sharks who use the area as a feeding area. Stakeholder feedback (from scientists and conservationists on the regional and local stakeholder groups) indicates that the area is of importance for migratory seabirds including Balearic shearwaters, auks, kittiwakes and gannets, that it is an important feeding area for small cetaceans, in particular harbour porpoises and seasonally, minke whales, that basking sharks frequent the area, and that the area is an important haul-out and pupping location for grey seals. *Haliclystus auricula* and *Palinurus elephas* have been recorded close to the boundaries of this rMCZ, and may also be present within it. The Land's End peninsula (from Penzance to St Ives) is the only place in the region where the gooseneck barnacle *Pollicipes pollicipes* has been recorded, including near Land's End itself, Sennen Cove, and at Tater Du (MB102 data and Keith Hiscock, *pers. comm.*). This rMCZ intersects with an area of higher than average benthic species diversity (within the south-west context, as mapped from MB102 data).

Detailed site description

The Land's End peninsula is a granite outcrop exposed to the full force of the Atlantic breakers (Davies, ed. 1998). The area contains fine examples of very exposed rocky shore communities. Upper shores are dominated by barnacles, limpets and winkles. Low shores are carpeted with the pink tufted coralline alga *Corallina officinalis* and overlain with the kelp *Alaria esculenta* (Natural England, 2010).

Sublittoral habitats and communities were surveyed by James (1983) during the South Cornwall Sublittoral Survey of 1981. Carn Base and Porthcurno in the Land's End rMCZ are both subject to extreme wave action and strong tidal streams. James (1983) reported the water here 'conspicuously clearer' than elsewhere in the South Cornwall survey area. A dense forest of *Laminaria hyperborea* covered the shallow horizontal surfaces, with an understory dominated by foliose red, green and brown algae. The sublittoral fringe recorded at Porthcurno contained *Alaria esculenta*, *Himanthalia elongata*, *Mytilus edulis* and coralline red algae. With increasing depth, vertical surfaces become dominated by *Corynactis* and *Metridium*, with tubes of Jassid amphipods prevalent on upfaces. At 34m at Carn Base, several other species appeared, including *Holothuria*, *Stolonia socialis* and *Raspailia*, all of which occurred in shallow water at more sheltered sites (James, 1983). *Eunicella verrucosa* has also been observed in the Land's End area in 2003 and 2005 Seasearches of Penzance and Land's End.

The SeaWatch Southwest project is a volunteer project that encourages members of the public to report any sightings of Basking Sharks and other megafauna that they make around the coast. In 2007 the project was developed to record marine and avian megafauna sightings off Gwennap Head, at the western end of the rMCZ boundary. A large number of basking sharks have been observed interacting at the surface. The project intends to run for at least 5 years. Annual reports of the project are available for download on their [website](#)⁴⁰ (e.g. Wynn *et al.* 2010). The work of the project has highlighted the importance of the Runnelstone reef as a feeding area for seabirds, and the site is considered an important stage on the migration route of the Balearic Shearwater (Russell Wynn, *pers. comm.*).

Another volunteer project recording sightings of marine megafauna around the southwest is Seaquest southwest, co-ordinated jointly by Devon and Cornwall Wildlife Trusts (see their [website](#)⁴¹).

Bloomfield & Solandt (2006) report on 20 years of Basking Shark sightings off the British coast, which includes several sightings off Land's End. The Wildlife Trusts Basking Shark Project was established in 1999, and in 2006 completed eight years of effort-corrected line transect surveys in the waters off the west coast of the UK. During the first three years (1999-2001), the project concentrated on the south coast of Devon and Cornwall (Bloomfield & Solandt, 2006). Several key sites for the species were identified, including the areas around Lizard Point and Land's End (information is available to download [here](#)⁴²).

Stakeholder narrative: Assumptions and Implications

⁴⁰ www.seawatch-sw.org

⁴¹ http://www.ercis.co.uk/wildlife_recording/Marine_Recording/seaquest_southwest

⁴² <http://baskingsharks.wildlifetrusts.org/>

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.3.34f 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.3.34f Specific assumptions and implications relating to Land's End 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 <i>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</i>	Direct implications: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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) <i>Activity not taking place / not taking place at high enough levels to cause</i>	Direct implications: <ul style="list-style-type: none"> o Loss of ground for bottom-towed gear fishermen (but the area is difficult to fish) 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

<p>a problem in this site, so this was not considered during the VA meetings</p>	<p>protected areas are close together</p> <ul style="list-style-type: none"> 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.
<p>Anchoring of large vessels will not be allowed (except in emergencies)</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o There is a general right of anchoring as a consequence of, and incidental to, the Public Right of Navigation.
<p>Dumping and disposal will not be allowed. That includes dumping of fish waste, munitions, or dumping of waste from dredging</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o

Activities assumed to possibly need restricting (limiting or mitigating) within the site or parts of the site.	
Assumptions	Implications
<p>Tourism and recreational activities will be permitted.</p> <p>Following JWG5, the Wildlife Trust have indicated a need for education / voluntary code of conduct to avoid disturbance to basking sharks and cetaceans.</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Local Group members have raised concerns over disturbance to grey seal haul-out sites, and have suggested measures to ensure no approach within 100m of shoreline and no disturbance from land where seal sites exist <p>Benefits:</p> <ul style="list-style-type: none"> o Benefits to ecotourism 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.

<p>Static fishing gear will be permitted, with possible need for mitigation against bycatch of cetaceans, sharks and seabirds. There may need to be a limit on the amount of static gear used in the area.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> 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.) <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Local Group feedback suggests the possibility of excluding gill netting within a mile off the shoreline, or a seasonal netting restriction. Local Group fishing representatives suggested allowing netting with pingers. 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 raised concern that longlining may be prohibited in the site, a prohibition they would not support, on the basis that longlining in the area is small scale only from small vessels and for tagged Bass scheme. o Pinger trial to reduce cetacean bycatch still ongoing. Results to inform management of netting in MCZ.
<p>The installation, operation and maintenance of renewable energy devices will be permitted</p> <p><i>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.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o This area has been highlighted as an area of significant nearshore wave energy resource, which would be lost as an exploitable resource. <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The MCZ designation may mean that additional management requirements are defined for renewable energy developments. This could result in: <ul style="list-style-type: none"> - 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. o MCZ boundaries have already changed to meet needs of renewable energy sector

	<p>o A Steering Group member commented to question whether the wave resource would really be exploitable in such a remote rural area, and that if not, this consideration should be discounted as part of the discussion. However, the wave resource potential of the area was highlighted repeatedly during Working Group discussions, and also by The Crown Estate. We consider this to be a relevant consideration, which (previously) led to the Working Groups developing two alternative sites in this location.</p> <p>If the assumption turns out to be wrong:</p> <p>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.</p> <p>o Increased competition for sea space with other sea users.</p> <p>o Excellent Wind resource but landscape buffer requirements likely to deter development .</p> <p>o Potential near shore wave resource.</p> <p>Benefits:</p> <p>o This site boundary has been drawn in such a way to allow cabling for renewable devices from Land's End.</p>
<p>Sewerage disposal, industrial and agricultural liquid discharges will be permitted with management / mitigation</p> <p>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.</p>	<p>Direct implications:</p> <p>o</p>
<p>Aquaculture of fin fish and shell fish will be permitted with mitigation / management</p> <p>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.</p>	<p>Direct implications:</p> <p>o</p>

<p>Crab tiling / bait digging will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o A Steering Group member commented that this assumption is not relevant to this area
<p>Beach replenishment will be permitted with mitigation / management</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Pelagic trawls will be permitted with mitigation against bycatch of cetaceans, sharks and seabirds.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Local group feedback suggests that mobile netting may be causing bycatch problems.

Activities assumed to be allowed to continue / occur within the site	
Assumptions	Implications
<p>Handlining (recreational angling and commercial handlining) will be permitted. Handlining includes sea angling and trolling.</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o The rationale for this assumption has been strongly questioned in recent comments, as bycatch is not considered a problem for the kind of longlining in the region. o Handliners might face possible additional costs for mitigation measures and costs due to monitoring needed <p>Benefits:</p> <ul style="list-style-type: none"> o Potential for increased and enhanced leisure and recreational activity
<p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o Should cables not be permitted, this will have a significant effect on the worldwide transmission of data. This area is one of a few in Cornwall suitable for cable landings and should be preserved at all costs.

<p>renewable energy devices), and telecommunications cables.</p> <p>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</p>	<p>o If renewable energy cables are assumed to be permitted throughout the network then there is no reason why Telecom and other cables should not also.</p> <p>Given this assumption there are still the following concerns:</p> <ul style="list-style-type: none"> 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). <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> 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.
<p>The operation of cables (power and telecommunications) & pipelines will be permitted (i.e. any existing cables will be allowed to stay operational)</p> <p>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</p>	<p>Direct implications:</p> <p>If the assumption turns out to be wrong:</p> <ul style="list-style-type: none"> o Should operation be discontinued the consequences will be significant at a national and international economy level. o Four active and eighteen inactive telecoms cables.

<p>Maintenance dredging in ports (to enable access to ports) will be permitted</p> <p><i>The project team have advised that this would mean that the dredged areas of seafloor could not be counted towards ENG targets.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o
<p>Anchoring for maintenance and access for licensed visitors to heritage wrecks will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o (no heritage wrecks currently present in the site)
<p>Anchoring of small vessels will be permitted</p> <p><i>There isn't a clear, agreed Working Group definition for what constitutes a 'small vessel'.</i></p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> 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.
<p>Passage of ships will be permitted</p> <p>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</p>	<p>Direct implications:</p> <ul style="list-style-type: none"> o <p>Given this assumption, there are still the following concerns:</p> <ul style="list-style-type: none"> o Local Group members have raised concerns over disturbance to grey seal haul-out sites, and have suggested measures to ensure no approach within 100m of shoreline and no disturbance from land where seal sites exist.

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
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Table II.3.34g 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
Tourism & Leisure	Management - Education and awareness of conduct for encounters with backing sharks, cetaceans Measure - Voluntary code of conduct - Voluntary 'Wise accreditation'

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.

- *Site name*
 - o Several stakeholder representatives and a SAP member have commented that the site name is not appropriate, since the rMCZ is not located directly at Land's End, but at Porthcurno on the southern side of the Land's End peninsula. Alternative

suggestions have included naming the site after the Runnelstone reef, Gwennap Head, or Porthcurno.

- *Mobile bottom gear*
 - Seasonal closures are an inappropriate measure for benthic conservation.
- *Renewables*
 - The corridor-shaped gap in between this rMCZ and the candidate SAC boundary to the north of it was left in order to accommodate the concerns of the renewables sector. The Land's End peninsula is a high wave resource area, which may be exploited in the future, and there was concern about the entire stretch of coastline being given protected status, potentially hampering access for wave energy installations and cable routes.
- *Traditional fishing*
 - Local Group feedback highlights the existence of traditional fishing methods in the area, and the Local Group would like to see these activities enhanced and protected. Concern was raised over any potential moves to put in place a reference area within this area, because small fishing boats based in coves would be unable to move to alternative fishing grounds, and the fishing carried out by the small cove boats is deemed sustainable.
 - These Local Group concerns were discussed during group work sessions at the Joint Working Group, and several JWG members commented that they would not wish to recommend a site that might impact negatively on small-scale cove fishermen using traditional and low-impact fishing methods in the area.
 - Local Group feedback indicates that the Runnelstone 'box' has been successful in protecting the area and the livelihoods of local cove fishermen. An extension of similar regulation would offer protection and security to cove fishermen.
- *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.

- *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.3.34g (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.

There is strong support for an rMCZ in this area from the Cornwall Local Group, who unanimously suggested what was originally building block iK5, and supported the slightly larger Land's End 'co-location' site that was included in the third progress report. The smaller site was eventually selected due to concerns from the renewables sector (as described in the site boundary description at the beginning of this site report). There is strong support from conservationists for this site.

The Runnelstone reef was one of the first specific locations that was suggested to be put forward for protection within the Finding Sanctuary project, by a participant of Finding Sanctuary's science workshops in early 2008, before the project had become formalised (see part I).

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.

Seaquest Southwest sightings, both ad hoc and effort based, land and boat based, CWT basking shark project data, and Seaquest Netsafe acoustic data are available for *Cetorhinus maximus* in the area of the rMCZ. Key Cornish datasets have been analysed recently with University of Exeter in Cornwall and papers have been written which support the raw data (See Witt *et al.* in prep; Pikesley *et al.* in press).

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

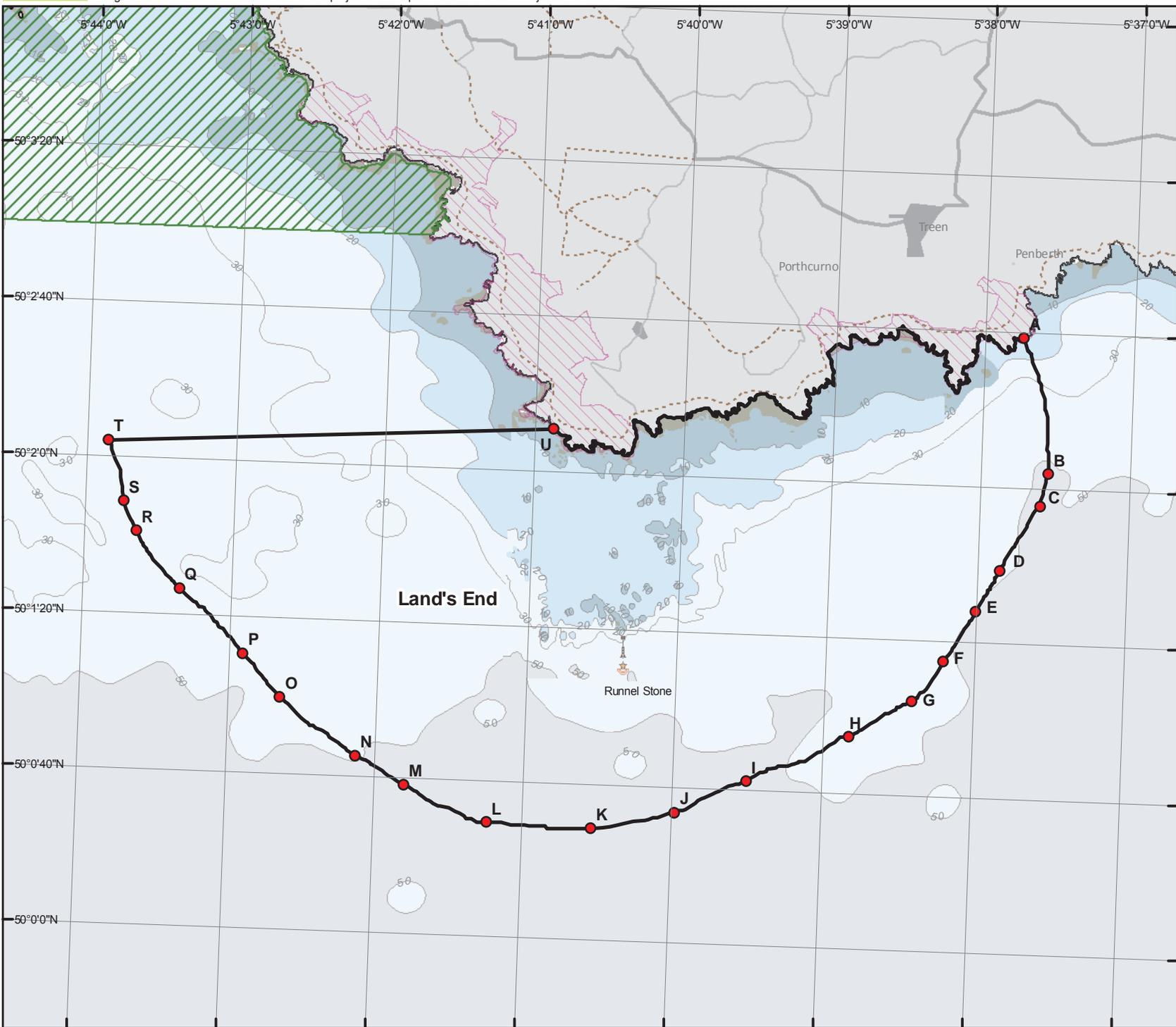
Further information about the Runnelstone reef and its importance for seabirds, cetaceans and other mobile megafauna can be obtained from [Seawatch Southwest](http://www.seawatch-sw.org/)⁴³. Information and data on seabirds from the area of the rMCZ can be obtained from the RSPB.

Site map series

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

- The first map (FR_046a) 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_046b) shows the rMCZ boundary over broad-scale habitats, and records of habitat and species FOCl. The data shown on this map corresponds with the information in tables II.3.15b, II.3.15c, and II.3.15e, data sources are indicated in the tables.
- The third map (FR_046c) 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.

⁴³ <http://www.seawatch-sw.org/>



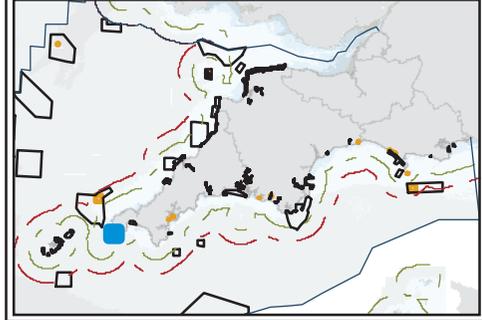
Lat/Long Co-ordinates (WGS84)

	Decimal degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
A	50.0441	-5.6290	50° 2' 38" N	5° 37' 44" W
B	50.0344	-5.6258	50° 2' 3" N	5° 37' 32" W
C	50.0321	-5.6266	50° 1' 55" N	5° 37' 35" W
D	50.0274	-5.6309	50° 1' 38" N	5° 37' 51" W
E	50.0244	-5.6333	50° 1' 27" N	5° 38' 0" W
F	50.0207	-5.6368	50° 1' 14" N	5° 38' 12" W
G	50.0178	-5.6401	50° 1' 4" N	5° 38' 24" W
H	50.0151	-5.6471	50° 0' 54" N	5° 38' 49" W
I	50.0117	-5.6583	50° 0' 42" N	5° 39' 29" W
J	50.0093	-5.6662	50° 0' 33" N	5° 39' 58" W
K	50.0079	-5.6755	50° 0' 28" N	5° 40' 31" W
L	50.0081	-5.6871	50° 0' 29" N	5° 41' 13" W
M	50.0106	-5.6966	50° 0' 38" N	5° 41' 47" W
N	50.0125	-5.7021	50° 0' 45" N	5° 42' 7" W
O	50.0166	-5.7107	50° 0' 59" N	5° 42' 38" W
P	50.0195	-5.7150	50° 1' 10" N	5° 42' 54" W
Q	50.0241	-5.7224	50° 1' 26" N	5° 43' 20" W
R	50.0280	-5.7274	50° 1' 40" N	5° 43' 38" W
S	50.0302	-5.7289	50° 1' 48" N	5° 43' 44" W
T	50.0345	-5.7308	50° 2' 4" N	5° 43' 51" W
U	50.0364	-5.6812	50° 2' 10" N	5° 40' 52" W

Map Legend

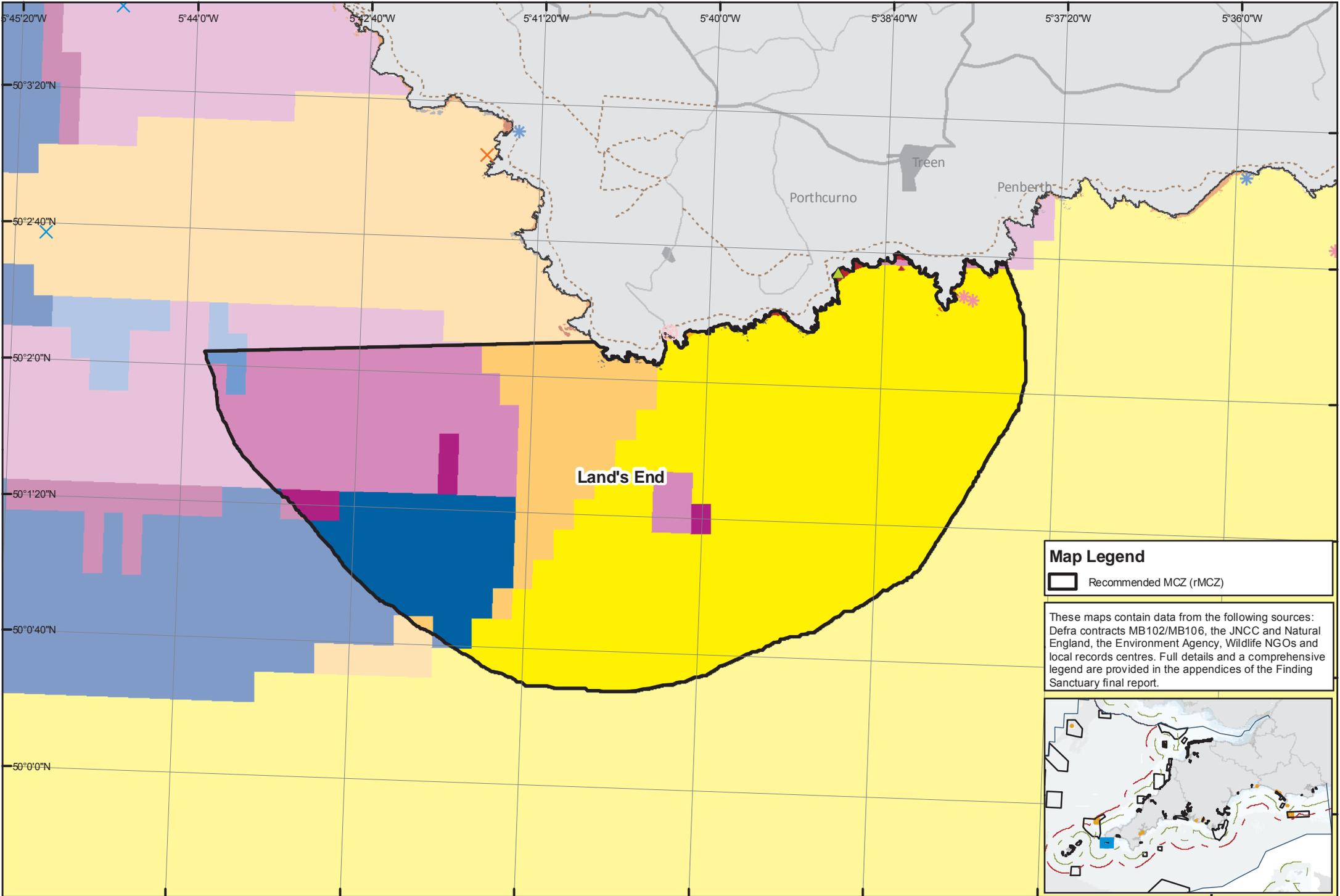
- Recommended MCZ (rMCZ)
- Existing MPAs**
- SAC
- SSSI (not part of MPA network)

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



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.

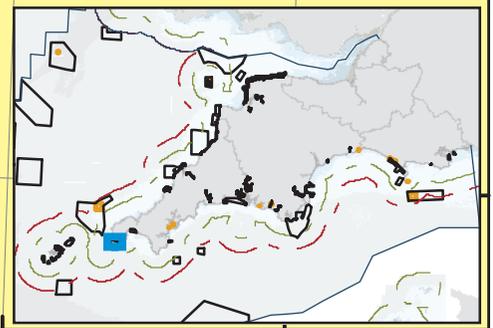
Maritime basemap © British Crown and SeaZone Solutions Limited, 2010. All Rights Reserved. Data License No. 062006.004. Land basemap part © OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation. Contains OS data © Crown copyright 2011.

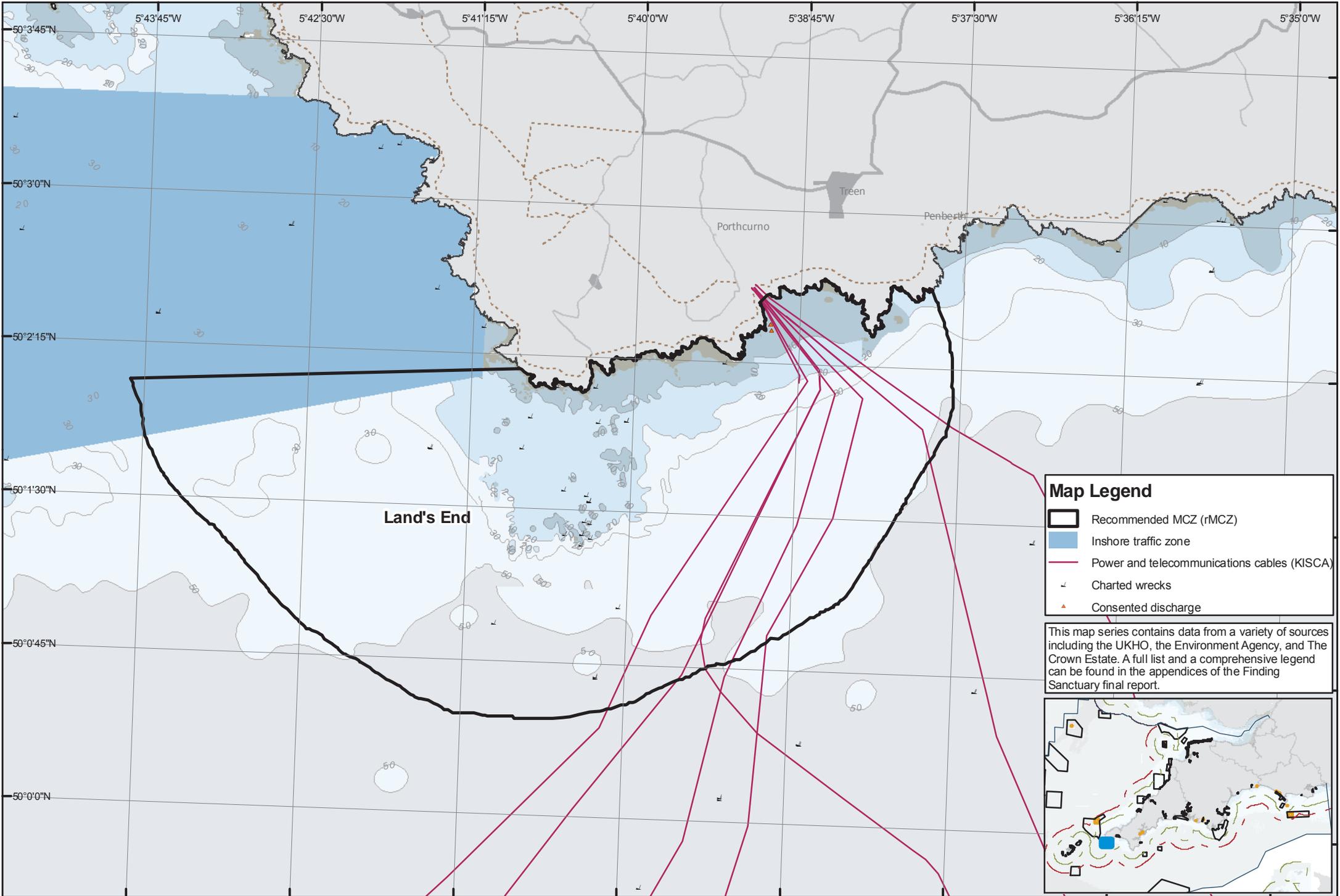
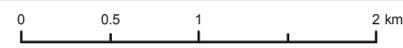


Map Legend

 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.

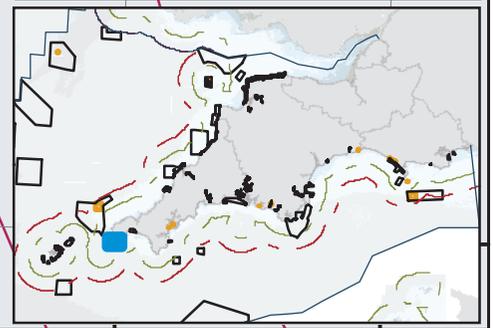




Map Legend

- Recommended MCZ (rMCZ)
- Inshore traffic zone
- Power and telecommunications cables (KISCA)
- Chartist wrecks
- Consented discharge

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.3.35 Isles of Scilly Sites rMCZ

Introduction to the Isles of Scilly Sites rMCZ site report

The Isles of Scilly sites were amongst the first sites to be included in the developing network recommendations (see first progress report). They were put forward by the Isles of Scilly Local Group. This site report should be read alongside the materials supplied directly by the Local Group, which are included with the additional materials listed in appendix 14.

The Isles of Scilly Sites rMCZ consists of 11 spatially separate areas. Two of the 11 areas (Smith Sound Tide Swept Channel and Tean) contain a suggested 'non-ground disturbance site', where the Local Group have suggested higher levels of restriction of human activities than in the remaining areas.

Whilst the Isles of Scilly Sites rMCZ is treated as a single rMCZ consisting of multiple areas, it differs from other multipart rMCZs (such as the Taw Torridge Estuary rMCZ, or the Upper Fowey and Pont Pill rMCZ) in that there are differences in the draft conservation objectives between the 11 areas, and differences in the working assumptions underpinning each area. For this reason, this site report is more complex than others. Some of the site report sub-headings contain 11 separate sections treating the areas as separate entities, while in other sub-headings, the Isles of Scilly Sites rMCZ is discussed as one whole.

Basic site information

Site centre location (datum used: ETRS89): The lat/lon points listed below are the centroids of each component area of the 11-part rMCZ.

Site Name	Decimal Degrees		Degrees Minutes Seconds	
	Lat	Long	Lat	Long
Bishop to Crim	49.8861	-6.4508	49° 53' 9" N	6° 27' 2" W
Bristows to the Stones	50.0136	-6.1709	50° 0' 49" N	6° 10' 15" W
Gilstone to Gorregan	49.8626	-6.3934	49° 51' 45" N	6° 23' 36" W
Hanjague to Deep Ledge	49.9656	-6.2552	49° 57' 56" N	6° 15' 18" W
Higher Town	49.9529	-6.2730	49° 57' 10" N	6° 16' 22" W
Lower Ridge to Innisvouls	49.9411	-6.2540	49° 56' 28" N	6° 15' 14" W
Men a Vaur to White Island	49.9785	-6.3032	49° 58' 42" N	6° 18' 11" W
Peninnis to Dry Ledge	49.9136	-6.2845	49° 54' 48" N	6° 17' 4" W
Plympton to Spanish Ledge	49.8889	-6.3269	49° 53' 19" N	6° 19' 36" W
Smith Sound Tide Swept Channel	49.8888	-6.3591	49° 53' 19" N	6° 21' 32" W
Tean	49.9634	-6.3121	49° 57' 48" N	6° 18' 43" W

Site surface area: This is presented for each of the 11 areas separately (calculated in ETRS89 – LAEA)

Site Name	km ²	Site Name	km ²
Bishop to Crim	7.07	Men a Vaur to White Island	3.33
Bristows to the Stones	22.80	Peninnis to Dry Ledge	2.81
Gilstone to Gorregan	1.75	Plympton to Spanish Ledge	2.54
Hanjague to Deep Ledge	3.12	Smith Sound Tide Swept Channel	1.44
Higher Town	2.03	Tean	1.49
Lower Ridge to Innisvouls	1.84		

Biogeographic region:

JNCC regional sea: Western Channel and Celtic Sea

OSPAR region: Region III: Celtic Waters

Site boundary: The boundaries of the sites were defined entirely by the Isles of Scilly Local Group, based on local knowledge and survey data. They mostly follow contour lines (generally the 50m depth contour) for ease of navigation. Straight lines for site boundaries (as requested in the ENG) were not deemed appropriate for these relatively small sites between the islands. Most of the boundaries come up to mean high water springs, except for a couple of bays which have explicitly been excluded due to high use.

Sites to which the site is related: The site overlaps with Western Rocks SSSI, St. Helen's SSSI, Annet SSSI, St Martin's Sedimentary Shore SSSI and Chapel Down (St. Martin's) SSSI. Ten of the eleven component areas lie completely within the Isles of Scilly Complex SAC, whereas one area (Bristows to the Stones) lies outside the SAC boundary.

Maps of the site are included at the end of this site report, with points along the site boundaries showing coordinates (in WGS84 UTM30N).

Features proposed for designation within the Isles of Scilly Sites rMCZ

Unlike other rMCZs that consist of more than one spatially separate area, the 11 areas that form this rMCZ each have their own specific list of draft conservation objectives. For all other rMCZs, draft conservation objectives were not written for features where the whole extent is already protected by an existing MPA. However, for the Isles of Scilly rMCZ, draft conservation objectives have been included for features that are already protected within the Isles of Scilly Complex SAC, because these features are the reason why sites have support from the Local Group.

Below, there is a subheading for each of the 11 areas. Under each subheading, there is a list of draft conservation objectives, showing features that are already protected in the SAC in red, followed by ENG-related statistics, reported from spatial data available in Finding Sanctuary's GIS datasets. The GIS datasets do not incorporate much of the detailed additional evidence provided by the Local Group, included in the additional materials listed in appendix 14). 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). Habitat features protected in the Isles of Scilly SAC are sometimes listed twice, where part of the mapped feature falls outside the boundary of the SAC, so there is a 'protected' portion of the feature, and an 'unprotected' portion of the feature within the site (this happens along the shoreline, where the GIS boundary of the rMCZ does not always correspond with the GIS boundary of the SAC).

There are some minor discrepancies between features that are highlighted in red in the draft conservation objective tables in this site report, and the gap analysis table in appendix 11 (which lists the existing MPAs in the south-west planning region, including the species and habitats protected within them. The features highlighted in red are based on advice received from regional Natural England staff, with first-hand knowledge of the Isles of Scilly and the Isles of Scilly SAC.

In the network-level statistics (section II.2.8), any feature that has a draft conservation objective in one or more of the 11 areas is counted once, as a single replicate within the network.

Bishop to Crim

Table II.3.35a Draft conservation objectives for the **Bishop to Crim** part of the Isles of Scilly rMCZ. M = maintain in favourable condition, R = recover to favourable condition. Features in red are listed as protected in the existing SAC. 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	
	High energy infralittoral rock	M	
	Moderate energy circalittoral rock	M	
	Moderate energy infralittoral rock	M	
	Subtidal coarse sediment	M	
FOCI habitats	Fragile sponge & anthozoan communities on subtidal rocky habitats ¹	M	
FOCI species	<i>Eunicella verrucosa</i>	Pink sea-fan	M
	<i>Palinurus elephas</i> ¹	Spiny lobster	R

¹There is No GIS data for this feature in this area, but the draft conservation objective has been included based on evidence provided by the Local Group (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.3.35b **Subtidal broad-scale habitats** recorded in the **Bishop to Crim** part of the Isles of Scilly 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	3.57	0.5%	1
Moderate energy infralittoral rock	0.19	<0.1%	1
High energy circalittoral rock	0.49	<0.1%	1
Moderate energy circalittoral rock	2.79	<0.1%	1
Subtidal coarse sediment	0.04	<0.1%	1, 2

Table II.3.35c **FOCI species** recorded in the **Bishop to Crim** part of the Isles of Scilly 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)
<i>Eunicella verrucosa</i>	1		5

Bristows to the Stones

Table II.3.35d Draft conservation objectives for the **Bristows to the Stones** part of the Isles of Scilly rMCZ. M = maintain in favourable condition, R = recover to favourable condition. Features in red are listed as protected in the existing SAC. 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 infralittoral rock ¹		R
	High energy circalittoral rock ¹		R
	Moderate energy circalittoral rock		R
	Moderate energy infralittoral rock		R
	Subtidal coarse sediment		M
	Subtidal mixed sediments		M
	FOCI habitats	Fragile sponge & anthozoan communities on subtidal rocky habitats ¹	
FOCI species	<i>Eunicella verrucosa</i> ¹	Pink sea-fan	R
	<i>Palinurus elephas</i> ¹	Spiny lobster	R

¹There is No GIS data for this feature in this area, but the draft conservation objective has been included based on evidence provided by the Local Group (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.3.35e **Subtidal broad-scale habitats** recorded in the **Bristows to the Stones** part of the Isles of Scilly 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 infralittoral rock	3.05	1.0%	1
Moderate energy circalittoral rock	18.12	<0.1%	1
Subtidal coarse sediment	1.60	<0.1%	1
Subtidal mixed sediments	0.03	<0.1%	1

Table II.3.35f **FOCI habitats** recorded in the **Bristows to the Stones** part of the Isles of Scilly 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	11.96			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.

Gilstone to Gorregan

Table II.3.35g Draft conservation objectives for the **Gilstone to Gorregan** part of the Isles of Scilly rMCZ. M = maintain in favourable condition, R = recover to favourable condition. Features in red are listed as protected in the existing SAC. 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 infralittoral rock		M
	High energy circalittoral rock ¹		M
	Moderate energy circalittoral rock		M
	Moderate energy infralittoral rock		M
	Subtidal coarse sediment		M
	High energy intertidal rock ¹		M
	Moderate energy intertidal rock ¹		M
FOCI habitats	Fragile sponge & anthozoan communities on subtidal rocky habitats		M
	Tide-swept channels		M
FOCI species	<i>Amphianthus dohrnii</i> ¹	Sea-fan anemone	M
	<i>Eunicella verrucosa</i>	Pink sea-fan	M
	<i>Gobius cobitis</i>	Giant goby	M
	<i>Haliclystus auricula</i>	Stalked jellyfish	M
	<i>Palinurus elephas</i>	Spiny lobster	R
	<i>Paludinella littorina</i>	Sea snail	M

¹There is No GIS data for this feature in this area, but the draft conservation objective has been included based on evidence provided by the Local Group (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.3.35h **Subtidal broad-scale habitats** recorded in the **Gilstone to Gorregan** part of the Isles of Scilly 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 ²	0.01	<0.1%	1
Moderate energy infralittoral rock	0.66	0.2%	1
High energy infralittoral rock ¹	0.13	<0.1%	1
Moderate energy circalittoral rock	0.87	<0.1%	1
Subtidal coarse sediment	0.08	<0.1%	1, 2

¹This area of habitat falls within the boundary of the SAC

²This area of habitat falls outside the boundary of the SAC

Table II.3.35i **FOCI habitats** recorded in the **Gilstone to Gorregan** part of the Isles of Scilly 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)
Tide-swept channels		1		3
Fragile sponge & anthozoan communities on subtidal rocky habitats		3		3

Table II.3.35j **FOCI species** recorded in the **Gilstone to Gorregan** part of the Isles of Scilly 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 Trehwella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Gobius cobitis</i>	2	1	3
<i>Haliclystus auricula</i>	1	1	3
<i>Palinurus elephas</i>	1	1	3
<i>Paludinella littorina</i>	1		3
<i>Eunicella verrucosa</i>	7		1, 3, 5

Hanjague to Deep Ledge

Table II.3.35k Draft conservation objectives for the **Hanjague to Deep Ledge** part of the Isles of Scilly rMCZ. M = maintain in favourable condition, R = recover to favourable condition. Features in red are listed as protected in the existing SAC. 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 mixed sediments		M
	Subtidal sand		M
	Low energy circalittoral rock		M
	Low energy infralittoral rock		M
	Moderate energy circalittoral rock		M
	Moderate energy infralittoral rock		M
	High energy infralittoral rock ¹		M
	High energy circalittoral rock ¹		M
	High energy intertidal rock		M
	Intertidal coarse sediment		M
Moderate energy intertidal rock ¹		M	
FOCI habitats	Fragile sponge & anthozoan communities on subtidal rocky habitats		M
	Intertidal under boulder communities ¹		M
FOCI species	<i>Amphianthus dohrnii</i>	Sea-fan anemone	M
	<i>Eunicella verrucosa</i>	Pink sea-fan	M
	<i>Leptosammia pruvoti</i> ¹	Sunset cup coral	M
	<i>Palinurus elephas</i>	Spiny lobster	R

¹There is No GIS data for this feature in this area, but the draft conservation objective has been included based on evidence provided by the Local Group (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.3.35l Subtidal broad-scale habitats recorded in the Hanjague to Deep Ledge part of the Isles of Scilly 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 infralittoral rock	0.02	<0.1%	1
Low energy infralittoral rock	0.20	2.5%	1
Moderate energy infralittoral rock	2.01	0.6%	1
Low energy circalittoral rock	0.06	1.6%	1
Moderate energy circalittoral rock	0.17	<0.1%	1
Subtidal sand	0.12	<0.1%	1, 2
Subtidal mixed sediments	0.49	<0.1%	1, 2

Table II.3.35m Intertidal broad-scale habitats recorded in the Hanjague to Deep Ledge part of the Isles of Scilly 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	0.04	0.6%	4
Intertidal coarse sediments	0.01	<0.1%	4, 3

Table I II.3.35n FOCI habitats recorded in this sub-site of the Isles of Scilly Sites 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		6		1, 3

Table II.3.35o FOCI species recorded in the Hanjague to Deep Ledge part of the Isles of Scilly 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 Trewella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Amphianthus dohrnii</i>	5		1, 3
<i>Palinurus elephas</i>	1		5
<i>Eunicella verrucosa</i>	27		1, 3, 5

This area 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 0.44 km² of seahorse area polygon (refer to appendix 8 for more information). This area intersects with the Eastern Isles Geological Conservation Review site.

Higher Town

Table II.3.35p Draft conservation objectives for the **Higher Town** part of the Isles of Scilly rMCZ. M = maintain in favourable condition, R = recover to favourable condition. Features in red are listed as protected in the existing SAC. 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 macrophyte-dominated sediment		M
	Subtidal mixed sediments		M
	Subtidal sand		M
	Moderate energy infralittoral rock		M
	High energy infralittoral rock		M
	Intertidal coarse sediment		M
	Intertidal mud ¹		M
	Intertidal sand and muddy sand ¹		M
	Low energy intertidal rock		M
	Moderate energy intertidal rock ²		M
FOCI habitats	Intertidal under boulder communities		M
	Peat & clay exposures		M
	Seagrass beds		M
	Tide-swept channels ²		M
FOCI species	<i>Haliclystus auricula</i>	Stalked jellyfish	M
	<i>Lucernariopsis campanulata</i>	Stalked jellyfish	M

¹The accuracy of this information has been questioned. The GIS data for this habitat present in the Isles of Scilly is derived from the Environment Agency intertidal data (see appendix 8), where there is a known translation problem between two habitat classification systems which results in areas that are sand being labelled as mud. It may be necessary to substitute this conservation objective with one for intertidal sand.

²There is No GIS data for this feature in this area, but the draft conservation objective has been included based on evidence provided by the Local Group (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.3.35q **Subtidal broad-scale habitats** recorded in the **Higher Town** part of the Isles of Scilly 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 ²	0.06	<0.1%	1
Moderate energy infralittoral rock ²	<0.01	<0.1%	1
Subtidal mixed sediments ²	0.01	<0.1%	1, 2
Subtidal macrophyte-dominated sediment	0.09	0.4%	1, 2
High energy infralittoral rock ¹	0.34	<0.1%	1
Moderate energy infralittoral rock ¹	0.01	<0.1%	1
Subtidal macrophyte-dominated sediment	0.66	3.3%	1, 2
Subtidal sand	<0.01	<0.1%	2
Subtidal mixed sediments ¹	0.80	<0.1%	1, 2

¹ This area of habitat falls within the boundary of the SAC

² This area of habitat falls outside the boundary of the SAC

Table II.3.35r **Intertidal broad-scale habitats** recorded in the **Higher Town** part of the Isles of Scilly rMCZ Z, 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 ³	0.01	0.4%	4
Intertidal coarse sediments ³	0.01	<0.1%	4, 3
Intertidal mud ^{3,4}	0.02	<0.1%	3
Intertidal mixed sediments ^{1,3}	<0.01	<0.1%	4
Intertidal coarse sediments ²	<0.01	<0.1%	4
Intertidal mixed sediments ^{1,2}	<0.01	<0.1%	4
Intertidal mud ^{4,2}	0.01	<0.1%	3
Intertidal sand and muddy sand	<0.01	<0.1%	4
Low energy intertidal rock ²	<0.01	<0.1%	4

¹ No draft conservation objective is included for this feature, this may have been an oversight.

² This area of habitat falls within the boundary of the SAC

³ This area of habitat falls outside the boundary of the SAC

⁴ The accuracy of this information has been questioned. The GIS data for this habitat present in the Isles of Scilly is derived from the Environment Agency intertidal data (see appendix 8), where there is a known translation problem between two habitat classification systems which results in areas that are sand being labelled as mud.

Table II.3.35s **FOCI habitats** recorded in the **Higher Town** part of the Isles of Scilly 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)
Peat and clay exposures		1		3
Tide-swept channels		1		3
Seagrass beds	0.75	15		1
Intertidal underboulder communities		1		1

Table II.3.35t **FOCI species** recorded in the **Higher Town** part of the Isles of Scilly 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 Trehwella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Haliclystus auricula</i>	10		1, 3
<i>Lucernariopsis campanulata</i>	2		1

This area 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 0.44 km² of seahorse area polygon (refer to appendix 8 for more information).

This area intersects with the Eastern Isles Geological Conservation Review site.

Lower Ridge to Innisvouls

Table II.3.35u Draft conservation objectives for the **Lower Ridge to Innisvouls** part of the Isles of Scilly rMCZ. M = maintain in favourable condition, R = recover to favourable condition. Features in red are listed as protected in the existing SAC. 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 macrophyte-dominated sediment		M
	Subtidal mixed sediments		M
	Subtidal sand		M
	High energy circalittoral rock		M
	High energy infralittoral rock		M
	Moderate energy circalittoral rock		M
	Moderate energy infralittoral rock		M
	Moderate energy intertidal rock ¹		M
FOCI habitats	Fragile sponge & anthozoan communities on subtidal rocky habitats		M
	Tide-swept channels ¹		M
	Seagrass beds ²		M
FOCI species	<i>Eunicella verrucosa</i>	Pink sea-fan	M
	<i>Amphianthus dohrnii</i> ¹	Sea-fan anemone	M
	<i>Palinurus elephas</i> ¹	Spiny lobster	R
	<i>Leptopsammia pruvoti</i>	Sunset cup coral	M

¹There is No GIS data for this feature in this area, but the draft conservation objective has been included based on evidence provided by the Local Group (see appendix 8).

²The accuracy of this information has been questioned. There is only a very small area of this habitat mapped at this location.

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.3.35v **Subtidal broad-scale habitats** recorded in the **Lower Ridge to Innisvouls** part of the Isles of Scilly 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 ²	0.01	<0.1%	1
Moderate energy infralittoral rock ²	0.07	<0.1%	1
High energy infralittoral rock ¹	0.01	<0.1%	1
Moderate energy infralittoral rock ¹	1.56	0.5%	1
Moderate energy circalittoral rock	<0.01	<0.1%	1
Subtidal sand	0.07	<0.1%	1, 2
Subtidal mixed sediments	0.12	<0.1%	1, 2
Subtidal macrophyte-dominated sediment	<0.01	<0.1%	1, 2

¹This area of habitat falls within the boundary of the SAC

²This area of habitat falls outside the boundary of the SAC

Table II.3.35w **FOCI habitats** recorded in the **Lower Ridge to Innisvouls** part of the Isles of Scilly 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)
Seagrass beds	<0.01			1
Fragile sponge & anthozoan communities on subtidal rocky habitats		8		3

Table II.3.35x **FOCI species** recorded in the **Lower Ridge to Innisvouls** part of the Isles of Scilly 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 Trehella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Eunicella verrucosa</i>	12	1	1, 3, 5
<i>Leptopsammia pruvoti</i>	4		1, 5

This area intersects with the Eastern Isles Geological Conservation Review site.

Men a Vaur to White Island

Table II.3.35y Draft conservation objectives for the **Men a Vaur to White Island** part of the Isles of Scilly rMCZ. M = maintain in favourable condition, R = recover to favourable condition. Features in red are listed as protected in the existing SAC. 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 sand		M
	Moderate energy circalittoral rock		M
	Moderate energy infralittoral rock		M
	High energy infralittoral rock		M
	High energy circalittoral rock ¹		M
	High energy intertidal rock		M
	Intertidal coarse sediment		M
	Intertidal mud		M
	Intertidal sand and muddy sand		M
	Moderate energy intertidal rock ¹		M
FOCI habitats	Fragile sponge & anthozoan communities on subtidal rocky habitats		M
	Intertidal under boulder communities		M
	Seagrass beds		M
	Tide-swept channels ¹		M
FOCI species	<i>Amphianthus dohrnii</i>	Sea-fan anemone	M
	<i>Eunicella verrucosa</i>	Pink sea-fan	M
	<i>Haliclystus auricula</i>	Stalked jellyfish	M
	<i>Lucernariopsis campanulata</i>	Stalked jellyfish	M
	<i>Palinurus elephas</i>	Spiny lobster	R

¹There is No GIS data for this feature in this area, but the draft conservation objective has been included based on evidence provided by the Local Group (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.3.35z **Subtidal broad-scale habitats** recorded in the **Men a Vaur to White Island** part of the Isles of Scilly 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 ²	0.12	<0.1%	1
Moderate energy infralittoral rock ²	0.13	<0.1%	1
Moderate energy circalittoral rock ²	<0.01	<0.1%	1
High energy infralittoral rock ¹	0.10	<0.1%	1
Moderate energy infralittoral rock ¹	1.85	0.6%	1
Moderate energy circalittoral rock ¹	0.46	<0.1%	1
Subtidal sand	0.51	<0.1%	1, 2

¹This area of habitat falls within the boundary of the SAC

²This area of habitat falls outside the boundary of the SAC

Table II.3.35za **Intertidal broad-scale habitats** recorded in the **Men a Vaur to White Island** part of the Isles of Scilly 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 ²	0.02	0.2%	4
Intertidal coarse sediments ²	0.08	0.4%	4, 3
Intertidal sand and muddy sand ²	0.02	0.2%	4
Intertidal mud	0.02	<0.1%	3
High energy intertidal rock ¹	<0.01	<0.1%	4
Intertidal coarse sediments ¹	<0.01	<0.1%	4
Intertidal sand and muddy sand ¹	<0.01	<0.1%	4

¹This area of habitat falls within the boundary of the SAC

²This area of habitat falls outside the boundary of the SAC

Table II.3.35zb **FOCI habitats** recorded in the **Men a Vaur to White Island** part of the Isles of Scilly 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		2		1, 3
Intertidal underboulder communities		2		1

Table II.3.35zc **FOCI species** recorded in the **Men a Vaur to White Island** part of the Isles of Scilly 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 Trehwella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Haliclystus auricula</i>	2	1	3
<i>Lucernariopsis campanulata</i>	1	1	1
<i>Palinurus elephas</i>	1		1
<i>Eunicella verrucosa</i>	8		1, 3, 5

This area intersects with the Tean Geological Conservation Review site.

Peninnis to Dry Ledge

Table II.3.35zd Draft conservation objectives for the **Peninnis to Dry Ledge** part of the Isles of Scilly rMCZ. M = maintain in favourable condition, R = recover to favourable condition. Features in red are listed as protected in the existing SAC. 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 mixed sediments		M
	Subtidal sand		M
	Moderate energy circalittoral rock		M
	Moderate energy infralittoral rock		M
	High energy infralittoral rock		M
	High energy circalittoral rock ¹		M
	Intertidal coarse sediment		M
	Intertidal mixed sediments		M
	Intertidal mud ²		M
	Intertidal sand and muddy sand ²		M
	Low energy intertidal rock		M
	Moderate energy intertidal rock		M
FOCI habitats	Fragile sponge & anthozoan communities on subtidal rocky habitats		M
	Intertidal under boulder communities		M
FOCI species	<i>Amphianthus dohrnii</i>	Sea-fan anemone	M
	<i>Arctica islandica</i>	Ocean quahog	M
	<i>Eunicella verrucosa</i>	Pink sea-fan	M
	<i>Gobius cobitis</i>	Giant goby	M
	<i>Haliclystus auricula</i>	Stalked jellyfish	M
	<i>Leptopsammia pruvoti</i>	Sunset cup coral	M
	<i>Lucernariopsis campanulata</i>	Stalked jellyfish	M
	<i>Palinurus elephas</i>	Spiny lobster	R
<i>Paludinella littorina</i>	Sea snail	M	

¹There is No GIS data for this feature in this area, but the draft conservation objective has been included based on evidence provided by the Local Group (see appendix 8).

²The accuracy of this information has been questioned.

Table II.3.35ze **Subtidal broad-scale habitats** recorded in the **Peninnis to Dry Ledge** part of the Isles of Scilly 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 ²	<0.01	<0.1%	1
Moderate energy infralittoral rock ²	0.03	<0.1%	1
High energy infralittoral rock ¹	0.24	<0.1%	1
Moderate energy infralittoral rock ¹	2.15	0.7%	1
Moderate energy circalittoral rock	0.04	<0.1%	1
Subtidal coarse sediment	0.04	<0.1%	1, 2
Subtidal sand	0.05	<0.1%	1, 2
Subtidal mixed sediments	<0.01	<0.1%	2

¹This area of habitat falls within the boundary of the SAC

²This area of habitat falls outside the boundary of the SAC

Table II.3.35zf **Intertidal broad-scale habitats** recorded in the **Peninnis to Dry Ledge** part of the Isles of Scilly 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)
Moderate energy intertidal rock ²	0.11	2.3%	4
Intertidal coarse sediments ²	0.08	0.4%	4, 3
Intertidal sand and muddy sand ²	0.04	0.4%	4
Intertidal mud ²	<0.01	<0.1%	4
Intertidal mixed sediments ²	0.01	0.1%	4
Moderate energy intertidal rock ¹	0.01	0.1%	4
Intertidal coarse sediments ¹	<0.01	<0.1%	4
Intertidal sand and muddy sand ¹	<0.01	<0.1%	4
Intertidal mud ¹	<0.01	<0.1%	4
Intertidal mixed sediments ¹	<0.01	<0.1%	4

¹This area of habitat falls within the boundary of the SAC

²This area of habitat falls outside the boundary of the SAC

Table II.3.35g **FOCI habitats** recorded in the **Peninnis to Dry Ledge** part of the Isles of Scilly 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		18		1, 3
Intertidal underboulder communities		2		3

Table II.3.35zh **FOCI species** recorded in the **Peninnis to Dry Ledge** part of the Isles of Scilly 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 Trehwella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Amphianthus dohrnii</i>	2	1	1, 3
<i>Arctica islandica</i>	3		1, 3
<i>Gobius cobitis</i>	5	3	1, 3
<i>Haliclystus auricula</i>	1	1	3
<i>Lucernariopsis campanulata</i>	3	3	1, 3
<i>Palinurus elephas</i>	6	4	1, 3
<i>Paludinella littorina</i>	1		1
<i>Eunicella verrucosa</i>	50	15	1, 3, 5
<i>Leptosammia pruvoti</i>	9		1, 3, 5

This area 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 0.44 km² of seahorse area polygon (refer to appendix 8 for more information).

Plympton to Spanish Ledge

Table II.3.35zi Draft conservation objectives for the **Plympton to Spanish Ledge** part of the Isles of Scilly rMCZ. M = maintain in favourable condition, R = recover to favourable condition. Features in red are listed as protected in the existing SAC. 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 sand		M
	Moderate energy circalittoral rock		M
	Moderate energy infralittoral rock		M
	High energy circalittoral rock ¹		M
	High energy infralittoral rock		
	High energy intertidal rock		M
	Intertidal sand and muddy sand		M
	Moderate energy intertidal rock		M
FOCI habitats	Fragile sponge & anthozoan communities on subtidal rocky habitats		M
	Intertidal under boulder communities		M
FOCI species	<i>Amphianthus dohrnii</i>	Sea-fan anemone	M
	<i>Eunicella verrucosa</i>	Pink sea-fan	M
	<i>Leptopsammia pruvoti</i>	Sunset cup coral	M
	<i>Palinurus elephas</i> ¹	Spiny lobster	R

¹There is No GIS data for this feature in this area, but the draft conservation objective has been included based on evidence provided by the Local Group (see appendix 8).

Table II.3.35zj **Subtidal broad-scale habitats** recorded in the **Plympton to Spanish Ledge** part of the Isles of Scilly 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 ²	<0.01	<0.1%	1
Moderate energy infralittoral rock ²	<0.01	<0.1%	1
High energy infralittoral rock ¹	0.46	<0.1%	1
Moderate energy infralittoral rock ¹	1.81	0.6%	1
Moderate energy circalittoral rock	0.17	<0.1%	1
Subtidal sand	<0.01	<0.1%	1, 2

¹This area of habitat falls within the boundary of the SAC

²This area of habitat falls outside the boundary of the SAC

Table II.3.35zk **Intertidal broad-scale habitats** recorded in the **Plympton to Spanish Ledge** part of the Isles of Scilly 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 ²	0.04	0.6%	4
Moderate energy intertidal rock ²	0.02	0.3%	4
Intertidal coarse sediments	<0.01	<0.1%	3
Intertidal sand and muddy sand ²	0.03	0.2%	4
High energy intertidal rock ¹	<0.01	<0.1%	4
Moderate energy intertidal rock ¹	<0.01	<0.1%	4
Intertidal sand and muddy sand ¹	<0.01	<0.1%	4

¹This area of habitat falls within the boundary of the SAC

²This area of habitat falls outside the boundary of the SAC

Table II.3.35zl **FOCI habitats** recorded in the **Plympton to Spanish Ledge** part of the Isles of Scilly 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		6		1, 3
Intertidal underboulder communities		1		3

Table II.3.35zm **FOCI species** recorded in the **Plympton to Spanish Ledge** part of the Isles of Scilly 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 Trehwella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Amphianthus dohrnii</i>	3		1, 3
<i>Palinurus elephas</i>	1		5
<i>Eunicella verrucosa</i>	12	1	1, 3, 5
<i>Leptosammia pruvoti</i>	3		1, 3

This area 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 0.44 km² of seahorse area polygon (refer to appendix 8 for more information).

Smith Sound Tide Swept Channel

Table II.3.35zn Draft conservation objectives for the **Smith Sound Tide Swept Channel** part of the Isles of Scilly rMCZ. M = maintain in favourable condition, R = recover to favourable condition. Features in red are listed as protected in the existing SAC. 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 sand		M
	Moderate energy circalittoral rock ¹		M
	Moderate energy infralittoral rock		M
	High energy infralittoral rock		M
	High energy intertidal rock		M
	Moderate energy intertidal rock ¹		M
FOCI habitats	Tide-swept channels ¹		M
FOCI species	<i>Cruoria cruoriaeformis</i>	Red seaweed	M
	<i>Eunicella verrucosa</i> ¹	Pink sea-fan	M
	<i>Amphianthus dohrnii</i> ¹	Sea-fan anemone	M
	<i>Gobius cobitis</i>	Giant goby	M
	<i>Lucernariopsis cruxmelitensis</i>	Stalked jellyfish	M
	<i>Palinurus elephas</i> ¹	Spiny lobster	R

Smith Sound non-ground disturbance area

Broad-scale habitats	High energy infralittoral rock		M
	Moderate energy infralittoral rock		M
	Moderate energy intertidal rock ¹		M
FOCI habitats	Tide-swept channels ¹		M
FOCI species	<i>Eunicella verrucosa</i> ¹	Pink sea-fan	M
	<i>Amphianthus dohrnii</i> ¹	Sea-fan anemone	M
	<i>Palinurus elephas</i> ¹	Spiny lobster	R

¹There is No GIS data for this feature in this area, but the draft conservation objective has been included based on evidence provided by the Local Group (see appendix 8).

Table II.3.35zo **Subtidal broad-scale habitats** recorded in the **Smith Sound Tide Swept Channel** part of the Isles of Scilly 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 ²	0.03	<0.1%	1
High energy infralittoral rock ¹	1.28	0.2%	1
Moderate energy infralittoral rock	0.08	<0.1%	1
Subtidal sand	0.03	<0.1%	1, 2

¹This area of habitat falls within the boundary of the SAC

²This area of habitat falls outside the boundary of the SAC

Table II.3.35zp **Intertidal broad-scale habitats** recorded in the **Smith Sound Tide Swept Channel** part of the Isles of Scilly 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 ²	0.02	0.3%	4
High energy intertidal rock ¹	<0.01	<0.1%	4

¹This area of habitat falls within the boundary of the SAC

²This area of habitat falls outside the boundary of the SAC

Table II.3.35zq **FOCI habitats** recorded in the **Smith Sound Tide Swept Channel** part of the Isles of Scilly 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)
Tide-swept channels		4		3

Table II.3.35zr **FOCI species** recorded in the **Smith Sound Tide Swept Channel** part of the Isles of Scilly 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 Trehwella Survey Log 2010.

Species	Number of point records (total)	Number of point records (pre-1980)	Source(s)
<i>Cruoria cruoriaeformis</i>	2		1, 3
<i>Grateloupia montagnei</i>	2		1, 3
<i>Lucernariopsis cruxmelitensis</i>	1		3

This area 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 0.44 km² of seahorse area polygon (refer to appendix 8 for more information).

Tean

Table II.3.35zs Draft conservation objectives for the **Tean** part of the Isles of Scilly rMCZ. M = maintain in favourable condition, R = recover to favourable condition. Features in red are listed as protected in the existing SAC. 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 macrophyte-dominated sediment	M
	Subtidal mixed sediments	M
	Subtidal sand	M
	Moderate energy infralittoral 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 ²	M
FOCI habitats	Fragile sponge & anthozoan communities on subtidal rocky habitats	M
	Intertidal under boulder communities	M
	Seagrass beds	M
	Tide-swept channels ²	M
FOCI species	Stalked jellyfish (2 species) ³	M

Tean non-ground disturbance area

Broad-scale habitats	Subtidal macrophyte-dominated sediment	M
	Subtidal mixed sediments	M
	Moderate energy infralittoral rock	M
	Intertidal coarse sediment	M
	Moderate energy intertidal rock ²	M
FOCI habitats	Fragile sponge & anthozoan communities on subtidal rocky habitats ²	M
	Intertidal under boulder communities ²	M
	Seagrass beds ²	M
	Tide-swept channels ²	M
FOCI species	Stalked jellyfish (2 species) to be confirmed by LG ³	M

¹The accuracy of this information has been questioned. The GIS data for this habitat present in the Isles of Scilly is derived from the Environment Agency intertidal data (see appendix 8), where there is a known translation problem between two habitat classification systems which results in areas that are sand being labelled as mud. It may be necessary to substitute this conservation objective with one for intertidal sand.

²There is No GIS data for this feature in this area, but the draft conservation objective has been included based on evidence provided by the Local Group (see appendix 8).

³Species to be confirmed by Local Group. There is No GIS data for this feature in this area, but the draft conservation objective has been included based on evidence provided by the Local Group (see appendix 8).

Table II.3.35zt **Subtidal broad-scale habitats** recorded in the **Tean** part of the Isles of Scilly 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 infralittoral rock ²	0.20	<0.1%	1
Subtidal mixed sediments ²	0.02	<0.1%	1, 2
High energy infralittoral rock	0.10	<0.1%	1
Moderate energy infralittoral rock ¹	0.79	0.3%	1
Subtidal sand	<0.01	<0.1%	1, 2
Subtidal mixed sediments ¹	0.18	<0.1%	1, 2
Subtidal macrophyte-dominated sediment	0.10	0.5%	1, 2

¹This area of habitat falls within the boundary of the SAC

²This area of habitat falls outside the boundary of the SAC

Table II.3.35zu **Intertidal broad-scale habitats** recorded in the **Tean** part of the Isles of Scilly 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	<0.01	<0.1%	4
Intertidal coarse sediments	0.08	0.4%	4, 3
Intertidal sand and muddy sand ²	<0.01	<0.1%	4
Intertidal mud ^{2,3}	<0.01	<0.1%	3
Intertidal sand and muddy sand ¹	<0.01	<0.1%	4
Intertidal mud ^{1,3}	<0.01	<0.1%	3

¹This area of habitat falls within the boundary of the SAC

²This area of habitat falls outside the boundary of the SAC

³The accuracy of this information has been questioned. The GIS data for this habitat present in the Isles of Scilly is derived from the Environment Agency intertidal data (see appendix 8), where there is a known translation problem between two habitat classification systems which results in areas that are sand being labelled as mud.

Table II.3.35zv **FOCI habitats** recorded in the **Tean** part of the Isles of Scilly 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)
Tide-swept channels		1		3
Seagrass beds ¹	0.10	4		1, 3

This area 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 0.44 km² of seahorse area polygon (refer to appendix 8 for more information).

This area intersects with the Tean Geological Conservation Review site.

Site summary

The areas within this rMCZ range in depth from sea level to approximately 70 metres. They largely cover high and moderate energy infralittoral rock, and moderate energy circalittoral rock. They also include some patches of subtidal coarse sediment and subtidal mixed sediments, and subtidal macrophyte-dominated sediment (which coincide with the FOCI habitat seagrass beds). A diverse range of intertidal habitats are also within these areas.

The primary reason including this multipart rMCZ is the large range and quality of FOCI that occur in the Isles of Scilly. The primary FOCI habitats are fragile sponge and anthozoan communities, and seagrass beds, but there are records of others including intertidal underboulder communities, and the only SW records of tide swept communities. These habitats support a large range of FOCI species including *Eunicella verrucosa*, *Leptopsammia pruvoti*, *Palinurus elephas*, *Gobius cobitis*, *Lucernariopsis campanulata*, and areas of importance for sea horses. The Isles of Scilly are an area of exceptionally high biodiversity (both species and habitat), and this is evident in the benthic biodiversity information supplied through MB102.

The Isles of Scilly sites rMCZ is unique, as it is well supported by local stakeholders, contributes to many ENG targets, and covers areas of reef habitat that are of exceptional quality.

Detailed site description

The Isles of Scilly have been well-studied for their intertidal and shallow sublittoral biota, and are considered to be exceptionally rich in biodiversity, as well as representative of exceptionally high quality examples of a range of habitats. Within the time available, it has not been possible to carry out an exhaustive review of the literature, but some of the research carried out in the Isles of Scilly is reported here. Readers are also referred to the detailed evidence supplied by the Isles of Scilly Local Group (see appendix 14).

The Isles of Scilly archipelago was selected as a Special Area of Conservation (SAC) in part due to the extensive subtidal and intertidal sandy sediments that occur between the islands. These sediment features form the Annex I Habitats “sandbanks which are slightly covered by sea water all the time” and “Mudflats and sandflats not covered by seawater at low tide”. In the Isles of Scilly these sandbanks are particularly important due to their extent and associated communities, which are very specific due in part to the combination of sheltered conditions, mild climate, constant salinity and low silt conditions. The latter are primarily a result of the oceanic nature of the surrounding seas which have a low suspended sediment concentration and the lack of any major riverine input. These factors provide ideal conditions for some of the most extensive and diverse beds of seagrass *Zostera marina* found in the UK (Jackson *et al.* 2011).

Extensive sediment areas occur in the Isles of Scilly and support rich intertidal communities, in addition to the extensive beds of seagrass *Zostera marina*. The Isles of Scilly also has a high diversity of seaweeds; probably about 40% of UK seaweed total (Brodie *et al.* 2007).

Hard bedrock reef, both infralittoral and circalittoral, in some cases extending well beyond 50m depth. Exposure levels vary at this site: some reefs are very exposed, others sheltered. The surrounding waters are full salinity and there is minimal coastal influence. The topographic complexity of the reefs is low. The south-westerly position of the islands leads to a range of warm water species being present, including sunset cup-coral *Leptopsammia pruvoti*, pink sea-fans *Eunicella verrucosa*, and Weymouth carpet-coral *Hoplanguia durotrix* (Natural England, 2010).

In 1997, Ambios Environmental Consultants, funded by English Nature, carried out a Marine Nature Conservation Review (MNCR) biotope survey in the Isles of Scilly, to inform the SAC designation process (Munro & Nunny, 1998). This mapped the extent of subtidal sediment habitats, from mean low water down to around the 50m depth contour, but with most effort concentrated around the shallower (<30m) sedimentary areas. Rostron (1983; 1989) surveyed the animal communities from sublittoral sediments in Isles of Scilly during July 1983.

Extensive littoral, sublittoral and rocky shore surveys of the Isles of Scilly have been carried out by Seasearch between 1983 and 1985 (Hiscock, 1984a; b; 1985) during which *Eunicella verrucosa* was recorded in the rMCZ. The Underwater Conservation Society completed a series of broadscale surveys of sublittoral habitats in the Isles of Scilly (Dipper, 1981) during which *Palinurus elephas* was recorded. Sublittoral sediment communities range from coarse sand and gravel to fine sand to muddy gravel. Seven sediment types and associated communities were identified by Rostron (1989). The density of the *Zostera marina* within five main beds (Old Grimsby Harbour, Tresco; Higher Town Bay, St. Martin's; Broad Ledge, Tresco; West Broad Ledge, St Martin's, and Little Arthur, Eastern Isles) have been recorded as part of an annual diving expedition for the past 12 years (Cook & Foden 2005). Densities at these sites range from 50 to over 200 shoots per m² (Foden & Brazier, 2007).

There have also been a number of previous attempts to map the extent of the *Zostera marina* beds. An aerial photo-mapping exercise was undertaken by Irving *et al.* (1998) in the summer of 1996 to map the distribution of *Zostera* and estimate densities of the beds. Between 1984 and 1988 the Nature Conservancy Council (NCC) monitored the density of seagrass in Scilly through diver survey work, and again in 1991 after a gap of two years which showed a deterioration of seagrass with the appearance of wasting disease, invasion by wireweed (*Sargassum muticum*) and extensive storm damage (Fowler & Pilley, 1992).

Since 1992, a volunteer diver based monitoring programme has run almost annually to look at the health of seagrass in Scilly (Jackson *et al.* 2011). This was initiated by the Coral Cay sub aqua club and funded by English Nature. Initially the research targeted sites of English Island East Higher Town Bay, St Martin's and Old Grimsby Harbour, and additional sites at West Broad Ledge, St Martin's and East Broad Ledge were added. In 1999 beds at Bar Point, St Marys and Rushy Bay were added (Cook, 2002, 2004a, b, Cook & Foden, 2005, Cook, 2006, Cook & Paver, 2007, Cook *et al.* 2008). *Zostera marina* is essentially a subtidal species, although in the Isles of Scilly very low spring tides expose seagrass at several sites (Hugh Town Harbour, Porth Cressa, Gimble Porth, the cove between St Agnes and Gugh and Porth Conger) (Lewis *et al.* 2008).

Jackson *et al.* (2011) mapped the extent of seagrass *Zostera marina* in the Isles of Scilly from image analysis which included an area within Men a Vaur just off Porth Morran on White Island and off Pernagie Point. Tim Allsop from Scilly Diving also reported two areas of seagrass near Great Merrick Ledge. The seagrass has also been annually surveyed in the area by Cook, 2002; 2004a; b; Cook & Foden, 2005; Cook, 2006; and Cook & Paver, 2007.

A total of 628 ground control points (GCPs) were visited during the summer 2009. Of these 97 were identified in situ as too deep for seagrass growth (greater than 10m) despite bathymetry map predictions. In addition to these positions a further 282 positions of seagrass were collated from past surveys (Munro & Nunny, 1998; Cook, 2002; 2004a; b; Cook & Foden, 2005; Cook, 2006; Cook & Paver, 2007) and maps form the Environmental Records centre for Cornwall and the Isles of Scilly. All ground truthing operations were undertaken by locally based company St. Martin's Diving Services. The Environmental Records Centre holds records of seagrass for Cornwall and the Isles of Scilly

(Hocking & Tompsett, 2002). A further survey of the Scilly Isles seagrass was carried out in August 2010 (Cook, in prep).

There are many reports in the scientific and survey literature of records of FOCI species and habitats within the Isles of Scilly:

- *Arctica islandica* was reported in the Isles of Scilly sublittoral sediment survey (Rostron, 1983).
- *Eunicella verrucosa*: 1980 NCC Isles of Scilly & south Cornwall sublittoral survey (Dipper, 1981); 1983 OPRU Isles of Scilly sublittoral survey (Hiscock, 1983); the Pink Sea Fan survey (Wood, 2008); and recent Seasearches.
- *Leptopsammia pruvoti*: 1985-86 Isles of Scilly sublittoral monitoring (Irving, 1987); 1983 OPRU Isles of Scilly sublittoral survey (Hiscock, 1983); 1991 Isles of Scilly marine monitoring (Fowler, 1992); 1983-1984 Lundy and Isles of Scilly sessile epifaunal survey (Fowler & Laffoley, 1993); and Seasearches.
- *Cruoria cruoriaeformis* was reported within the rMCZ during the 1983 OPRU Isles of Scilly sublittoral survey. *Lucernariopsis cruxmelitensis* was reported during the 2009 IOS Wildlife Trust Seasearch Surveys.
- *Palinurus elephas*: 2004 MCS Seasearch Survey of the Isles of Scilly.
- *Paludinella littorina*: Conchological society records (Light & Killeen, 2001).
- *Gobius couchii*: 1952-1983 British Coasts survey *Gobius cobitis* (Wheeler, 1993).
- Both species of seahorse (*Hippocampus hippocampus* and *Hippocampus guttulatus*) are found in the Isles of Scilly. The Spiny Seahorse is quite often found on the Eastern end of St. Martins and the Short Snouted is found around St. Marys; however the whole of the island complex are suitable for seahorses (the author has spent a great deal of time exploring the islands). There is a dried specimen of a Short Snouted Seahorse in the museum on St. Marys (Neil Garrick-Maidment, *pers. comm.*).
- Bowden *et al.* (2001) sampled one large and one small patch of *Zostera marina* within or close to Tean rMCZ for the associated macroinvertebrate fauna.
- Jackson *et al.* (2011) integrated aerial survey and GIS methods with historic information, contextual information, and ground-truthing to produce an up to date, accurate map showing the current extent of seagrass *Zostera marina* in the Isles of Scilly.
- Records of seagrass distribution include the Isles of Scilly seagrass annual survey data (Cook 2002, 2004a, b, Cook & Foden 2005, Cook 2006, Cook & Paver 2007; Cook *et al.* 2009); [National Biodiversity Network](http://data.nbn.org.uk)⁴⁴ data; Environmental Records Centre for Cornwall and the Isles of Scilly (Hocking & Tompsett 2002). Munro & Nunny (1998) took grab and video records of seagrass in the Tean rMCZ area as well as in other meadows at the Isles of Scilly.
- Seagrass beds surveyed during the 1983 OPRU Isles of Scilly sublittoral survey (Hiscock, 1984) and in 1997 by Ambios Environmental Consultants, funded by English Nature, carried out a Marine Nature Conservation Review (MNCR) biotope exercise in the Isles of Scilly, to inform the SAC designation process (Munro & Nunny, 1998).

The Bishop to Crim area contains tide-swept channels which were surveyed during the 2005-2009 Seasearch survey of Cornwall and Isles of Scilly and the 1983 OPRU Isles of Scilly sublittoral survey (Hiscock, 1984a; b). High energy circalittoral rock was also recorded during the 1983 OPRU Isles of Scilly sublittoral survey (Hiscock, 1984a; b).

Eunicella verrucosa has been recorded within the Gilstone to Gorregan area during the 1980 NCC Isles of Scilly & south Cornwall sublittoral survey (Dipper, 1981), during the Pink Sea Fan Survey (Wood, 2008) and 2005 MCS Seasearch Survey of the Isles of Scilly.

⁴⁴ <http://data.nbn.org.uk>

Amphianthus dohrnii was reported within the Hanjague to Deep Ledge area during the 2004, 2006 and 2007 MCS Seasearch survey Isles of Scilly. *Eunicella verrucosa* has been reported within the same area during the 1983 OPRU Isles of Scilly sublittoral survey; 2008 Seasearch Isles of Scilly (Maggs & Hiscock, 1979) and Pink Sea Fan Survey 2004-2006 (Wood, 2008).

Haliclystus auricula was recorded within the Higher Town area by (Hiscock, 1985) and (Irving, 1987). *Lucernariopsis campanulata* was recorded at Higher Town by (Hiscock, 1985). Bowden *et al.* (2001) sampled one large and one small patch of *Zostera marina* at Higher Town rMCZ for the associated macroinvertebrate fauna. Warwick *et al.* (2006) collected core samples in April 2001 on uniform clean coarse sand at extreme low water of spring tides on St Martin's Flats near or within the Higher Town area. A Shore Thing survey was carried out by the Isles of Scilly Wildlife Trust in September 2009 on the rocky shores of St Martins within the Higher Town area (see [here](#)⁴⁵). *Calliostoma zizphinum* (Painted topshell) was recorded as frequent.

Within or near the Lower Ridge to Innisvoulcs area, *Eunicella verrucosa* was reported during the sublittoral survey of the Scilly Isles and south Cornwall (Dipper, 1981) and during the Pink Sea Fan Survey 2004-2006 (Wood, 2008). *Leptopsammia pruvoti* was reported during the Seasearch of the Isles of Scilly Survey in May 2006 (Sharrock, 2006). *Palinurus elephas* was recorded during the 1977 Isles of Scilly underwater observation scheme.

Within or near the Men a Vaur to White Island area, *Eunicella verrucosa* was reported by (Wood, 2008), and during the 1983 OPRU Isles of Scilly sublittoral survey; 2005 MCS Seasearch Survey; and Marine Conservation Society Seasearch 2009. *Palinurus elephas* was recorded during the 1980 NCC Isles of Scilly & south Cornwall sublittoral survey (references for these surveys are included above).

Within or near the Peninnis to Dry Ledge area, there are records of *Arctica islandica* (Rostron, 1983), *Amphianthus dohrnii*, *Eunicella verrucosa* (Dipper, 1981; Hiscock, 1983), *Leptopsammia pruvoti* (Irving, 1987; Hiscock, 1983; Fowler, 1992; Fowler & Lafoley, 1993) and *Gobius couchii* (Wheeler, 1993). *Palinurus elephas* was recorded by the 2004 MCS Seasearch Survey of the Isles of Scilly. At St Mary's, *Paludinella littorina* has been recorded from the following places: Porth Cressa just outside of the Peninnis to Dry Ledge rMCZ), Old Town (SV 914 101), Porth Hellick (SV 927 107), and Toll's Island (SV 930 120) (Light & Killeen, 2001). A Shore Thing surveys were carried out by the Natural England Zostera Survey group during 2009 and 2010 on the rocky shores of St Marys within Peninnis to dry Ledge rMCZ (weblink is included above). *Asterina gibbosa* (Cushion star) and red coralline algae was recorded as frequent; with abundant Snakeslocks anemones (*Anemonia viridis*). *Eunicella verrucosa* was recorded within the area during the Pink Sea Fan Survey 2004-2006 (Wood, 2008).

Within or near the Plympton to Spanish Ledge area, *Amphianthus dohrnii* was recorded off St. Agnes during the 2008 Seasearch Isles of Scilly and 2008 Seasearch of Devon & Isles of Scilly. *Eunicella verrucosa* was recorded during the 2005; 2006; 2007; 2008 Seasearch Isles of Scilly; and the Pink Sea Fan Survey 2004-2006 (Wood, 2008). *Leptopsammia pruvoti* was recorded during the 2008 Seasearch Isles of Scilly and 2007 MCS Seasearch Isles of Scilly. *Paludinella littorina* has been recorded at St. Agnes at Porth Congor (North side of Bar) crevices in upper shore boulders and rock faces; on the South side of the Bar on granite boulders and cobble with chippings, interstitial sediment and detritus beneath; at Porth Coose (East end) within a bank of granite boulders and cobble with chippings, interstitial sediment and detritus beneath; and at Porth Killier (bank of granite boulders, some embedded with silt and detritus beneath) (Light & Killeen, 2001).

⁴⁵ http://www.marlin.ac.uk/shore_thing/

At Porth Coose on St. Agnes, just outside of Smith Sound Tide Swept Channel (SV 877 087), *Paludinella littorina* was recorded on a bank of granite boulders and cobble with chippings, interstitial sediment and detritus beneath (Light & Killeen, 2001). A Shore Thing surveys were carried out by Julia Nunn during 2010 on the rocky shores off Annet within Smith Sound Tide Swept Channel rMCZ (weblink is included above). *Asterina gibbosa* (Cushion star) was recorded as frequent; with abundant topshells (*Gibbula umbilicalis* and *Osilinus lineatus*). *Eunicella verrucosa* was recorded within the rMCZ during the Pink Sea Fan Survey 2004-2006 (Wood, 2008).

Within or near the Tean area, Bowden *et al.* (2001) sampled one large and one small patch of *Zostera marina* within or close to Tean rMCZ for the associated macroinvertebrate fauna. Jackson *et al.* (2011) integrated aerial survey and GIS methods with historic information, contextual information, and ground-truthing to produce an up to date, accurate map showing the current extent of seagrass *Zostera marina* in the Isles of Scilly. Records of seagrass distribution include the Isles of Scilly seagrass annual survey data (Cook 2002, 2004a, b, Cook & Foden 2005, Cook 2006, Cook & Paver 2007; Cook *et al.* 2009); National Biodiversity Network data (weblink above); Environmental Records Centre for Cornwall and the Isles of Scilly (Hocking & Tompsett 2002). Munro & Nunny (1998) took grab and video records of seagrass in the Tean rMCZ area as well as in other meadows at the Isles of Scilly. Seagrass beds surveyed during the 1983 OPRU Isles of Scilly sublittoral survey (Hiscock, 1984) and in 1997 by Ambios Environmental Consultants, funded by English Nature, carried out a Marine Nature Conservation Review (MNCR) biotope exercise in the Isles of Scilly, to inform the SAC designation process (Munro & Nunny, 1998).

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.**

Assumptions and implications tables developed by the Local, Working and Steering Groups appear in each of the site reports for rMCZs in this document. However, along with their boundary recommendations, the Isles of Scilly Local Group (referred to by themselves as the Isles of Scilly MCZ Working Group) developed their own proposals for activity restrictions that might apply in the areas that make up the Isles of Scilly Sites rMCZ.

The blue text below is taken directly from their MCZ proposals, and has been slightly edited by the Finding Sanctuary project team to make it more clear outside of the context of their original report. The full report is included in the additional materials listed in appendix 14. Note that the Local Group report does not include any commentary on implications. The text refers to 'pMCZs', because at the time it was written, that was what the individual Isles of Scilly areas were being referred to as.

Isles of Scilly recommendations

It should be noted that the following 11 recommendations have 100% of support from all sectors in Scilly and many of them are ideas suggested by the local fishermen. Uniquely these eleven recommendations have, therefore, been agreed unanimously by the IoS MCZ WG and apply to all the proposed MCZ (pMCZ) sites for Scilly, except where stated.

1. **3 month commercial fishing closure - All IoS pMCZs:** No commercial fishing gear of any type in any Scilly pMCZ site for 3 months of each year (between mid December and mid March annually). Dates to be set every year through the IFCA.
2. **Mobile gear restrictions - All IoS pMCZs:** The Fisherman's Association have agreed to give up rights to all MOBILE gear (towed gear, trawling, dredging, etc) in all the Scilly pMCZ sites. Static gear will remain, only restricted by (1) above and (11) below.
3. **Diving for shellfish - All IoS pMCZs:** No removal of any shellfish by divers at any time of the year within any pMCZ. The three dive charters, professional and club divers on the Isles of Scilly have agreed not to collect any shellfish within the zones identified. They fully support the banning of shellfish collection by divers within the zones.
4. **Commercial sand eel fishery restriction - All IoS pMCZs:** No commercial sand eel fishing would be allowed within any pMCZ, particularly in the zones near Western Rocks (Gilstone to Gorregan and Bishop to Crim) and around St Martin's (Men-a-vaur to White Island, Tean, Higher Town and Lower Ridge to Innisvouls). This would ensure the protection of the food supply for birds and would not affect any existing fishing activity as sand eels are not currently caught at a commercial scale.
 - a. **IoS IFCA District Commercial Sand-eel Fishery Restriction:** An island-wide ban on a commercial sand-eel fishery could be of some benefit as an example of 'future-proofing' and also for protecting food supplies for Pollack and sea birds. This will be taken up by the new IFCA after April 2011.
5. **Voluntary V-notching of berried lobsters - All IoS pMCZs and IoS IFCA District:** Voluntary v-notching of berried lobsters in every pMCZ and throughout the IFCA district i.e. to 6nm.
 - a. **IoS SFC Byelaw – Lobster MLS:** Although the national Minimum Landing Size (MLS) for lobsters is 87mm, an Isles of Scilly Sea Fisheries Committee byelaw has made the MLS 90mm in common with Cornwall Sea Fisheries.
6. **Commercial Kelp Cutting Restrictions - IoS pMCZs Hanjague to Deep Ledge, Lower Ridge to Innisvouls, Peninnis to Dry Ledge and Plympton to Spanish Ledge:** The group would like to protect the pMCZs listed above from commercial kelp cutting as these are the most accessible areas for this to occur.
7. **Local Recording Zone - Within Plympton to Spanish Ledge pMCZ:** This is a proposal for a monitoring record sheet whereby fishermen, both commercial and hobby, would record the species taken and returned to the site. It was agreed that one of the roles of the IFCA would be to collect and record the data. The recording form (at the end of the IoS MCZ proposals report) was developed by a local fisherman who is not a member of the IoS MCZ WG. This demonstrates how the MCZ process is being welcomed in Scilly and taken on board wholeheartedly by all the local community.

- 8. Control Site - Reef Comparison Sites Trenemene (within Gilstone to Gorregan pMCZ) and Gugh (within Plympton to Spanish Ledge pMCZ):** This is a proposal for a comparison of 2 reef sites, one fished and one not fished (see IoS MCZ proposals report for further details). It should be noted that Prof Steve Hill (University of Plymouth) is currently putting in a bid for money to carry out extensive monitoring in Scilly and part of this work will include the monitoring of Trenemene and Gugh. Money for 5 data loggers has already been funded. There is full support from Council, AONB, fishermen and divers as a Scilly consortium to carry out this monitoring.
- 9. Seagrass Non-Ground Disturbance Site - Within Tean pMCZ:** This proposal is to fulfil a request to include a small area within the Tean pMCZ, which may be monitored as a non-ground disturbance control site (see IoS MCZ proposals report for further details).
- 10. Anchoring Restrictions (on vessels over 10m) (within pMCZs Hanjague to Deep Ledge, Higher Town, Lower Ridge to Innisvouls and Plympton to Spanish Ledge) and Control of Future Mooring Expansions (within pMCZs Higher Town and Lower Ridge to Innisvouls):** The proposal is to protect vulnerable habitats by placing restrictions on larger vessels (over 10m) anchoring. No anchoring of vessels over 10m within these 3 pMCZs. This has already been agreed for Hanjague to Deep Ledge. Control of future mooring expansions to be considered for Higher Town and Lower Ridge to Innisvouls only. These 2 proposals are to be confirmed at the next IoS Local Group meeting (April 2011).
- 11. IoS IFCA District Static Gear Limitation Byelaw Proposal:** At the IoS IFCA meeting on 27th January 2011 it was proposed (by one of the active commercial fishing representatives) that a pot and static net limit be considered as an IFCA byelaw. This is to be discussed at the Fishermen's Association Meeting on March 3rd 2011 and the outcome reported back to the IFCA (9th June 2011). This is another example of how conservation measures are being suggested from the heart of the local fishing industry in Scilly.

Site specific recommendations are included in the site specific pages in yellow text (*"yellow text" refers to the original report from the IoS which contains highlighted areas of text*) and key site specific recommendations are included in the table below:

pMCZ Name	Site Specific Key Recommendations
Bristows to the Stones	Static gear only
Men-a-vaur to White Island	
Hanjague to Deep Ledge	Commercial Kelp Cutting Restrictions Over 10m anchoring restrictions (agreed)
Tean	Seagrass Non-Ground Disturbance Site
Higher Town	Over 10m anchoring restrictions – TBC Control of Future Mooring Expansions - TBC
Lower Ridge to Innisvouls	Commercial Kelp Cutting Restrictions Over 10m anchoring restrictions – TBC Control of Future Mooring Expansions - TBC
Peninnis to Dry Ledge	Commercial Kelp Cutting Restrictions
Plympton to Spanish Ledge	Gugh Reef Local Recording Zone / Commercial Kelp Cutting Restrictions / Over 10m anchoring restrictions - TBC
Smith Sound Tide Swept Channel	
Gilstone to Gorregan	Trenemene Reef
Bishop to Crim	

Table II.3.35zw below 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 for full details).

Table II.3.35zw 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	<p>Management</p> <ul style="list-style-type: none"> - Prohibition of mobile bottom gear in all areas - Seasonal (3 month Dec-Feb) prohibition of all commercial fishing in all areas - V-notching of berried lobster in all areas - Prohibition of commercial sandeel fishing in all areas - No removal of <i>Palinurus elephas</i> from any areas - Prohibition of commercial kelp cutting at some areas (Hanjague to Deep Ledge, Higher Town, Lower Ridge to Innisvouls, Peninnis to Dry Ledge, Plympton to Spanish Ledge) - Prohibition of all commercial fishing in the non-ground disturbance areas of Smith Sound and Tean areas - Recording of all catch in a zone within Plympton to Spanish Ledge area <p>Measure</p> <ul style="list-style-type: none"> - Voluntary
Tourism & leisure	<p>Management</p> <ul style="list-style-type: none"> - No removal of shellfish by divers - Promotion of good dive practice for Men a Vaur to White Island area and Gilstone to Gorregan area - No anchoring of vessels over 10m in some areas (Hanjague to Deep Ledge, Higher Town, Lower Ridge to Innisvouls, Plympton to Spanish Ledge) - Control of future moorings expansion at Lower Ridge to Innisvouls <p>Measure</p> <ul style="list-style-type: none"> - Voluntary

Stakeholder narrative: Uncertainties and Additional Comments

- The Isles of Scilly Local Group have unanimously agreed that they would not like any reference areas in the Isles of Scilly. This is because they believe their marine environment is already well protected by other MPA designations and they feel they work as a community to manage their marine activities, including fishing, as sustainably as possible.
- The SAP has advised that they would like to see a reference area within the Isles of Scilly. The Working Groups considered the possibility of a reference area option within the Isles of Scilly, but decided that they would prefer the discussion to happen within the Local Group.
- In response, the Local Group proposed two non-ground disturbance areas (one in the Tean rMCZ and one in the Smith Sound Tide Swept Channel rMCZ) for greater protection and with more strict management suggested. As such, no reference areas are included in the network within the Isles of Scilly. The non-ground disturbance sites and comparative monitoring sites have been proposed in lieu of these.
- Renewables and cables representatives have made a general comment that they would be more supportive of rMCZ if an assumption was made that there would be **no** additional cost to cable installation, operation and maintenance within MCZs (as opposed to the current assumption that it would not be 'prohibitively expensive', without stating at what level cost would be deemed 'prohibitive').

Levels of support

The suggestions above for the potential management of the 11 sites proposed by the Isles of Scilly Local Group, and indeed the boundaries of the sites themselves, have been unanimously agreed by the group. The work by the Local Group was done in partnership between local stakeholders of wide-ranging commercial and recreational interests, and as such, the unified proposals were accepted by the Working Groups and wider Steering Group.

The Crown Estate highlighted that there are many active power/ telecommunications cables interconnecting the Isles of Scilly, and with the UK mainland. They are supportive with the assumption that MCZ designation would not restrict maintenance/repair of cables described. The feedback from The Crown Estate acknowledges the local support for these sites.

Supporting documentation

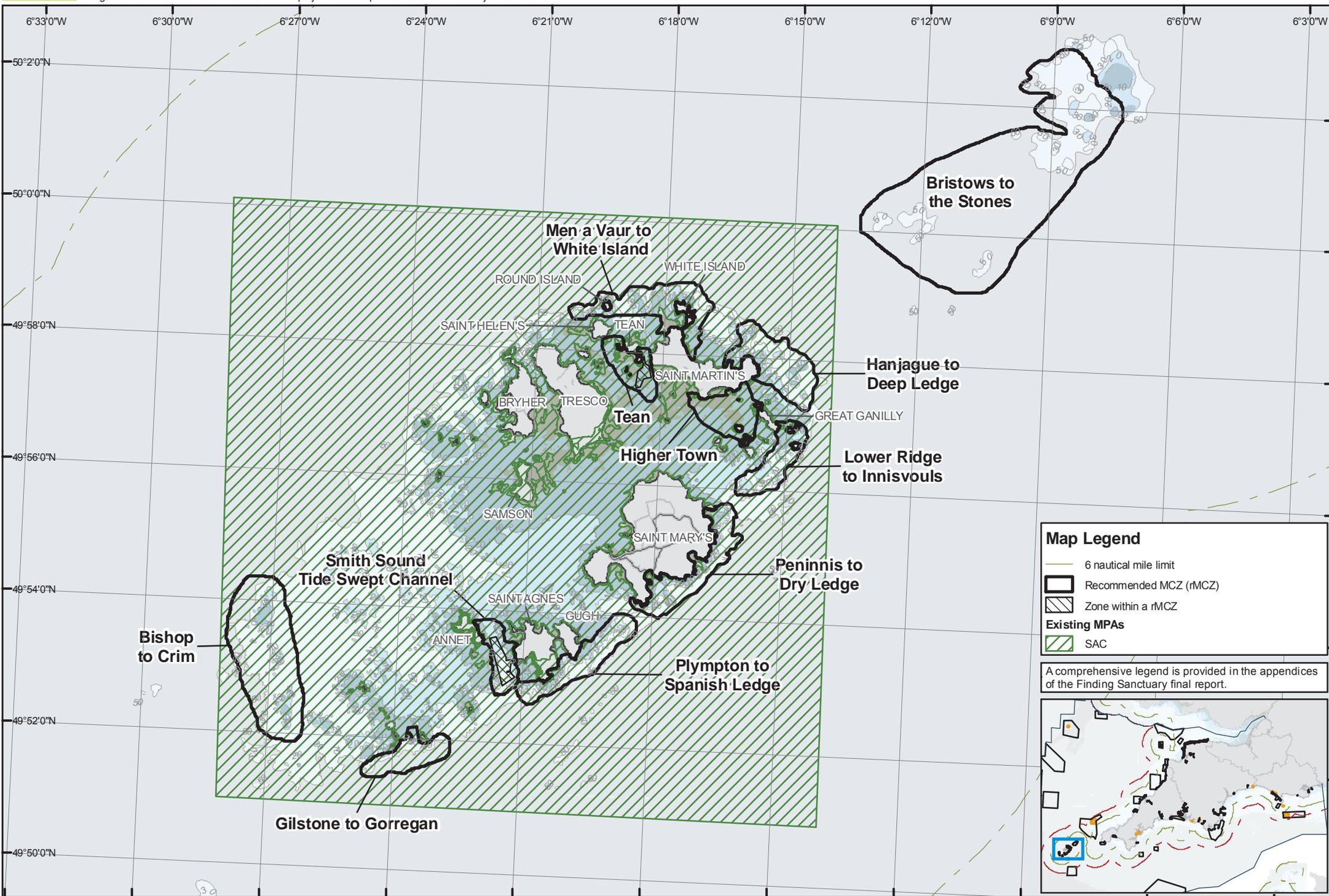
Sources of GIS data used for reporting the quantitative habitat and species figures in the tables above are listed in each table, for each feature. Refer to appendix 8 for details. Further evidence underpinning the site can be found in the publications and datasets referred to in the detailed site description.

Full details on the conservation interest of these areas was provided by the Isles of Scilly Local Group, in the shape of photographs from a large number of locations within these rMCZs, showing a large range of the FOCI and additional biodiversity present. Much of the information on the photos is not included in the regional GIS datasets. Due to time and resource constraints, the Finding Sanctuary project team have been unable to convert these photographic records to GIS data, so this information is not accounted for in the GIS tables in this report. The photographic materials were, however, made available directly to the SAP, following the second progress report. They are also included in the additional materials listed in appendix 14.

Site map series

On the following pages there are sixteen maps of these sites.

- The first map (FR_047a) is an overview of all eleven sites in the rMCZ.
- The next eleven maps (FR_048a-f and FR_049a-e) are the main site maps showing each rMCZ boundary in turn. These include points with coordinates (in WGS84 UTM30N). The maps 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 next two maps (FR_048g and FR_049f) show the rMCZ boundaries over broad-scale habitats, and records of habitat and species FOCI. The data shown on these maps corresponds with the information in tables II.3.15b, II.3.15c, and II.3.15e, data sources are indicated in the tables.
- The last two maps (FR_048h and FR_049g) show 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.



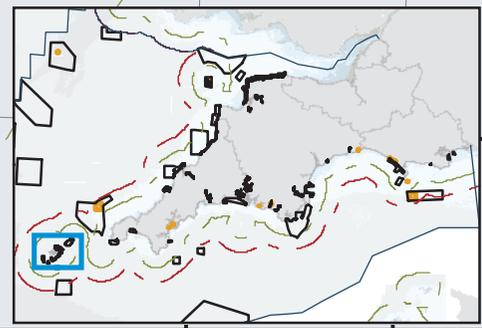
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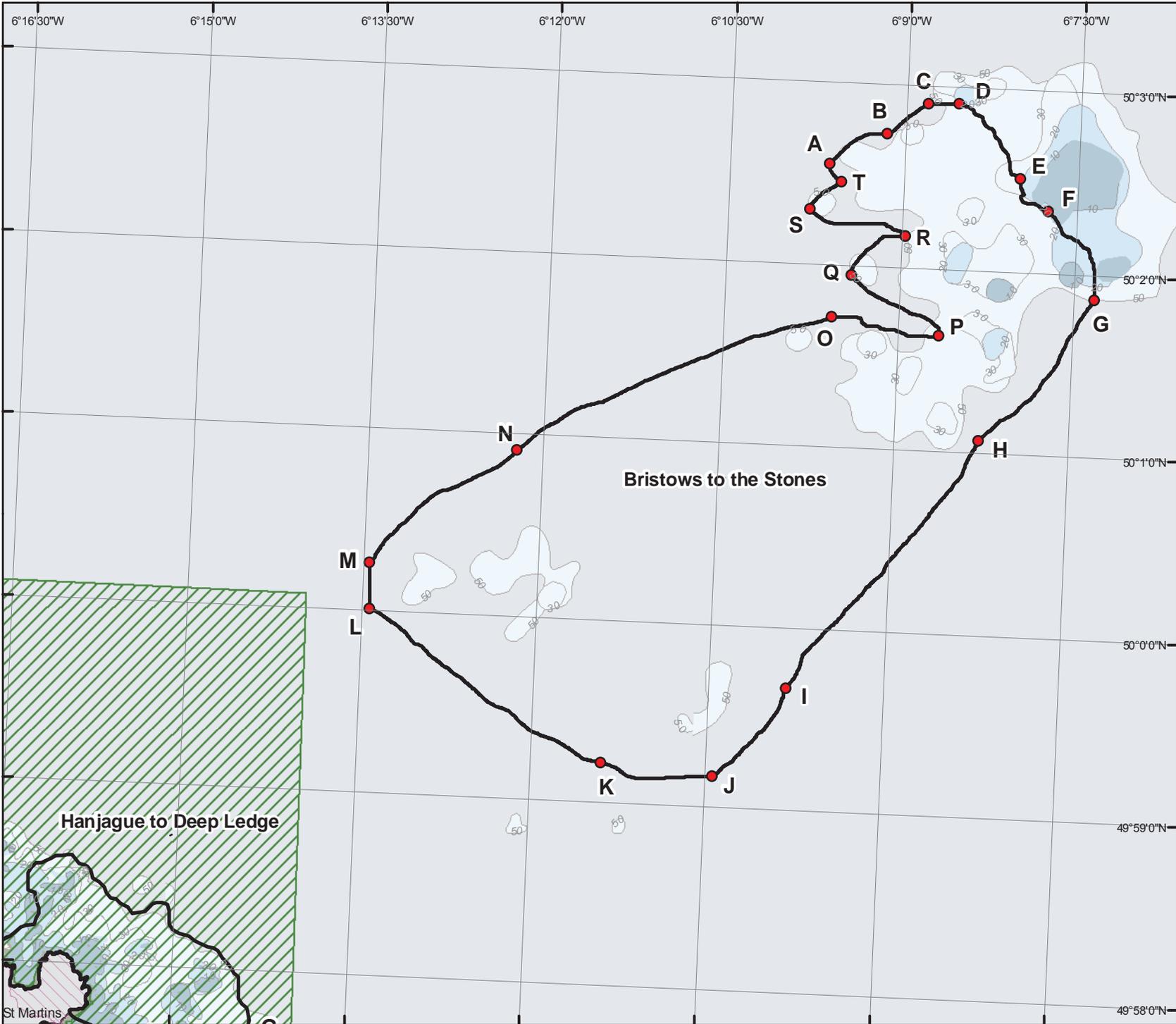
- 6 nautical mile limit
- Recommended MCZ (rMCZ)
- Zone within a rMCZ

Existing MPAs

- SAC

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





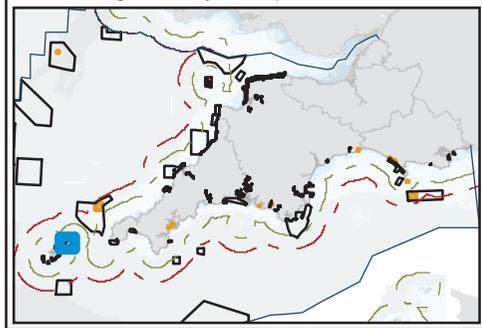
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B	50.0455	-6.1526	50° 2' 43" N	6° 9' 9" W
C	50.0484	-6.1470	50° 2' 54" N	6° 8' 49" W
D	50.0485	-6.1425	50° 2' 54" N	6° 8' 33" W
E	50.0419	-6.1333	50° 2' 30" N	6° 7' 59" W
F	50.0390	-6.1292	50° 2' 20" N	6° 7' 45" W
G	50.0311	-6.1221	50° 1' 51" N	6° 7' 19" W
H	50.0178	-6.1378	50° 1' 4" N	6° 8' 16" W
I	49.9944	-6.1638	49° 59' 39" N	6° 9' 49" W
J	49.9862	-6.1739	49° 59' 10" N	6° 10' 26" W
K	49.9869	-6.1899	49° 59' 12" N	6° 11' 23" W
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M	50.0043	-6.2240	50° 0' 15" N	6° 13' 26" W
N	50.0152	-6.2036	50° 0' 54" N	6° 12' 13" W
O	50.0286	-6.1595	50° 1' 42" N	6° 9' 34" W
P	50.0273	-6.1441	50° 1' 38" N	6° 8' 38" W
Q	50.0324	-6.1569	50° 1' 56" N	6° 9' 24" W
R	50.0362	-6.1495	50° 2' 10" N	6° 8' 58" W
S	50.0383	-6.1633	50° 2' 17" N	6° 9' 47" W
T	50.0410	-6.1590	50° 2' 27" N	6° 9' 32" W

Map Legend

- Recommended MCZ (rMCZ)
- Existing MPAs**
- SAC
- SSSI (not part of MPA network)

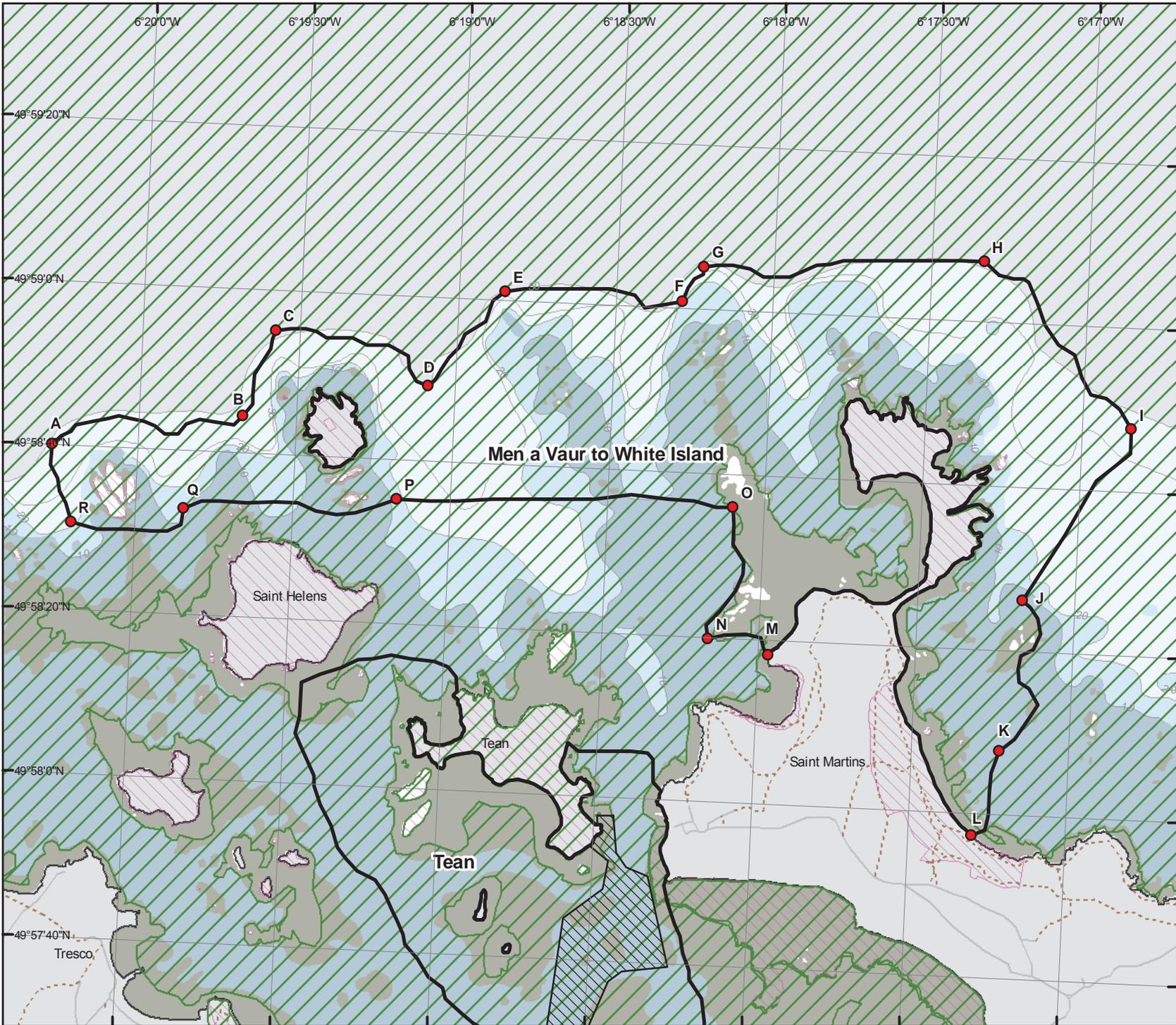
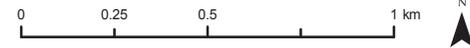
A comprehensive legend is provided in the appendices of the Finding Sanctuary final report.



Isles of Scilly Sites rMCZ (Men a Vaur to White Island)

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.

Maritime basemap © British Crown and SeaZone Solutions Limited, 2010.
 All Rights Reserved. Data Licence No. 062002.004. Land basemap part
 © OpenStreetMap & contributors, CC-BY-SA. Not to be used for navigation.
 Contains OS data © Crown copyright 2011.



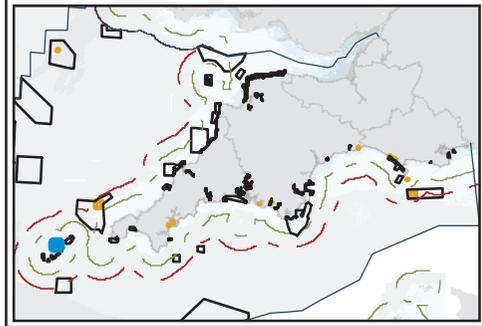
Lat/Long Co-ordinates (WGS84)

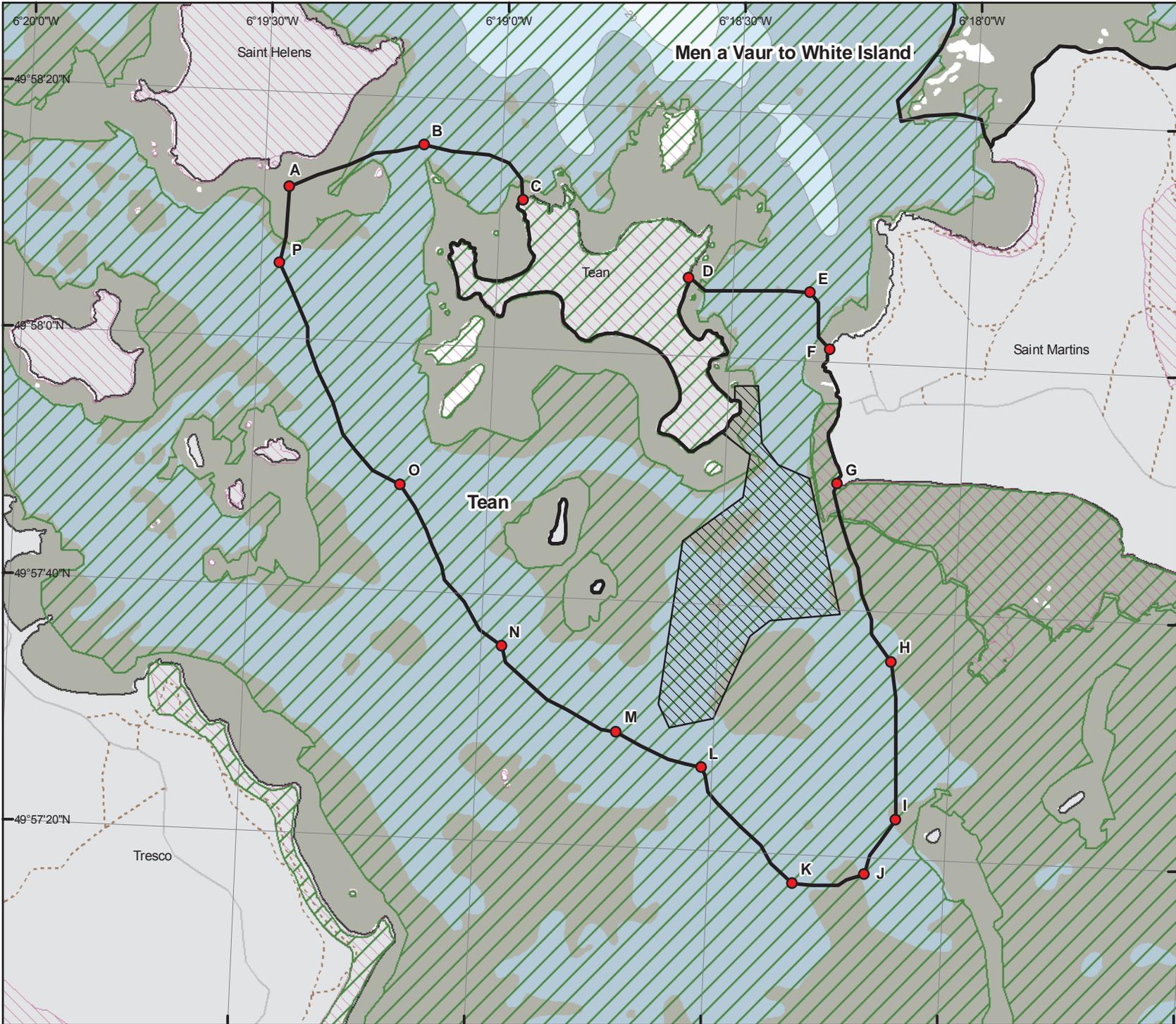
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I	49.9799	-6.2806	49° 58' 47" N	6° 16' 50" W
J	49.9739	-6.2860	49° 58' 26" N	6° 17' 9" W
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L	49.9659	-6.2882	49° 57' 57" N	6° 17' 17" W
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O	49.9767	-6.3016	49° 58' 36" N	6° 18' 5" W
P	49.9764	-6.3194	49° 58' 35" N	6° 19' 9" W
Q	49.9758	-6.3307	49° 58' 32" N	6° 19' 50" W
R	49.9752	-6.3366	49° 58' 30" N	6° 20' 11" W

Map Legend

- Recommended MCZ (rMCZ)
- Zone within a rMCZ
- Existing MPAs**
- SAC
- SSSI (not part of MPA network)

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





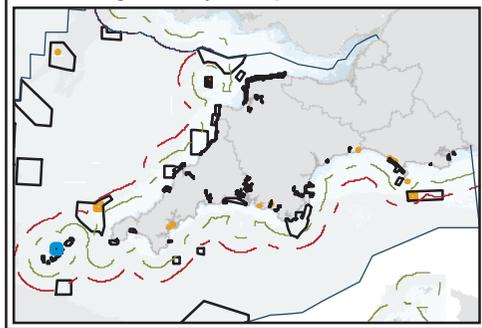
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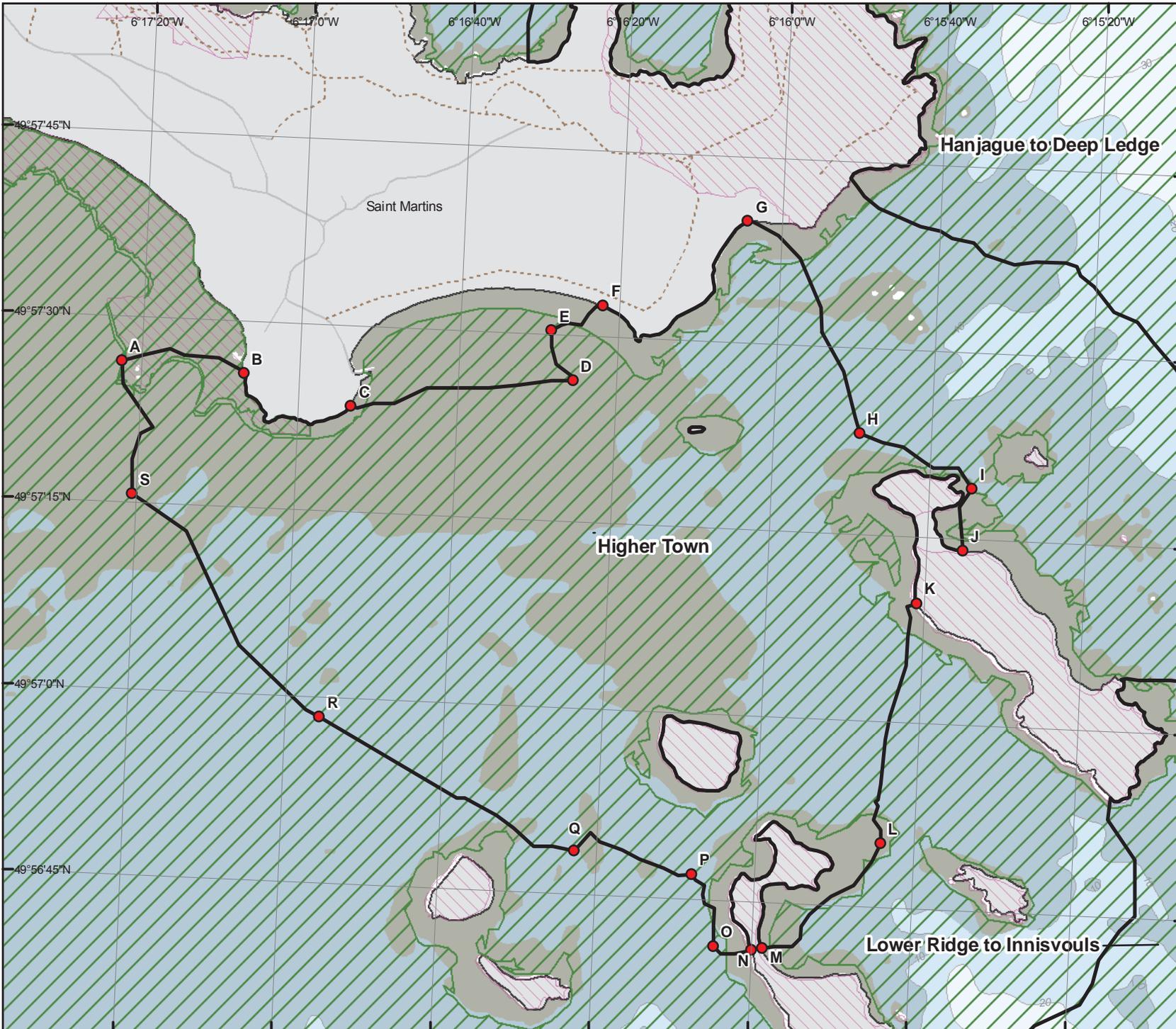
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K	49.9549	-6.3052	49° 57' 17" N	6° 18' 18" W
L	49.9574	-6.3086	49° 57' 26" N	6° 18' 30" W
M	49.9581	-6.3117	49° 57' 29" N	6° 18' 41" W
N	49.9600	-6.3158	49° 57' 35" N	6° 18' 56" W
O	49.9635	-6.3196	49° 57' 48" N	6° 19' 10" W
P	49.9684	-6.3242	49° 58' 6" N	6° 19' 27" W

Map Legend

- Recommended MCZ (rMCZ)
- Zone within a rMCZ
- Existing MPAs**
- SAC
- SSSI (not part of MPA network)

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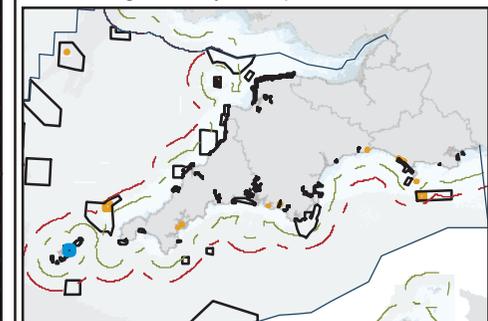
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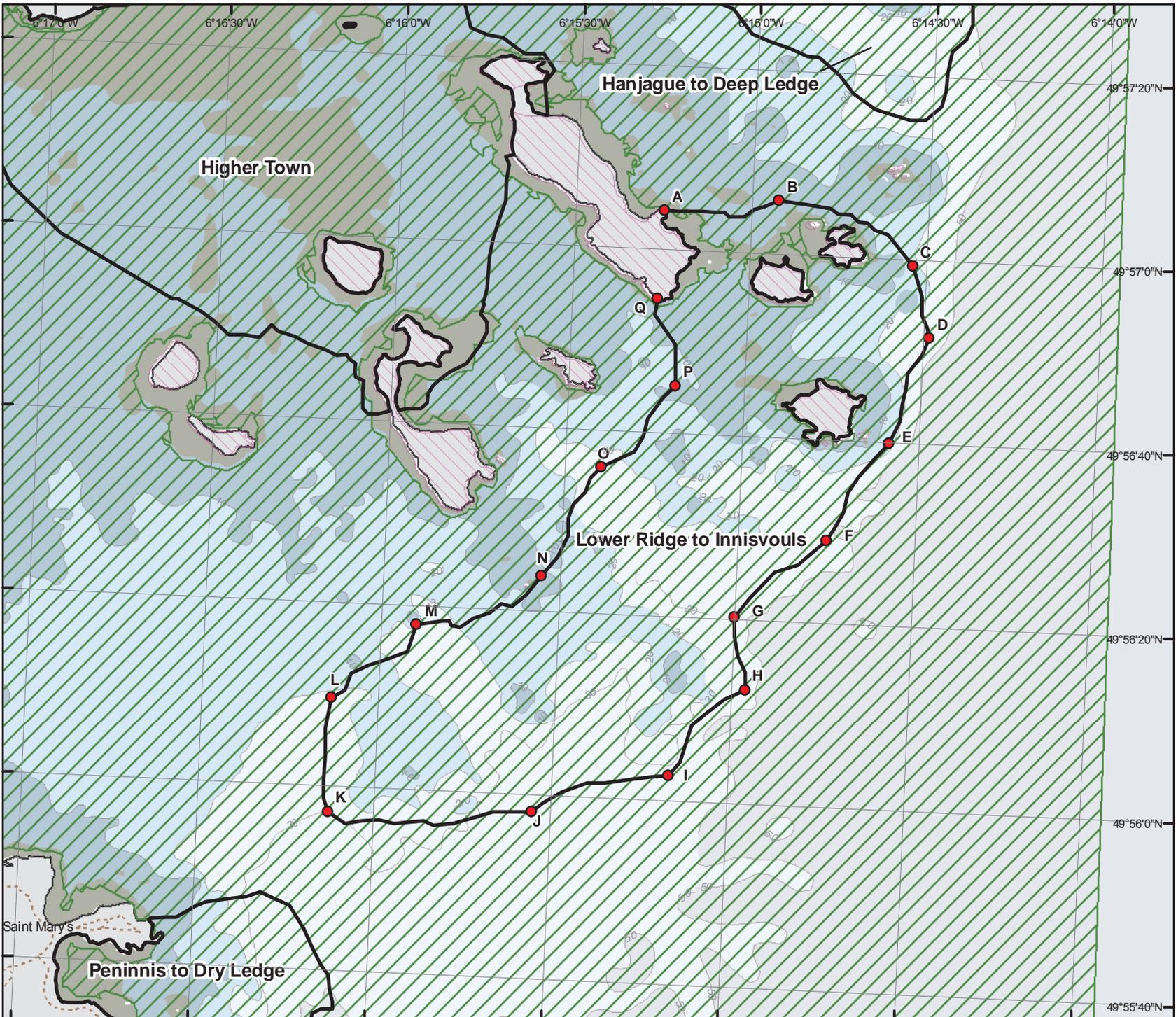
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Q	49.9468	-6.2729	49° 56' 48" N	6° 16' 22" W
R	49.9495	-6.2820	49° 56' 58" N	6° 16' 55" W
S	49.9544	-6.2889	49° 57' 15" N	6° 17' 20" W

Map Legend

- Recommended MCZ (rMCZ)
- Existing MPAs**
- SAC
- SSSI (not part of MPA network)

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





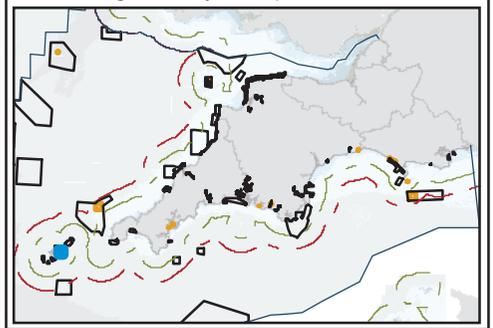
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P	49.9459	-6.2532	49° 56' 45" N	6° 15' 11" W
Q	49.9485	-6.2542	49° 56' 54" N	6° 15' 15" W

Map Legend

- Recommended MCZ (rMCZ)
- Existing MPAs**
- SAC
- SSSI (not part of MPA network)

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



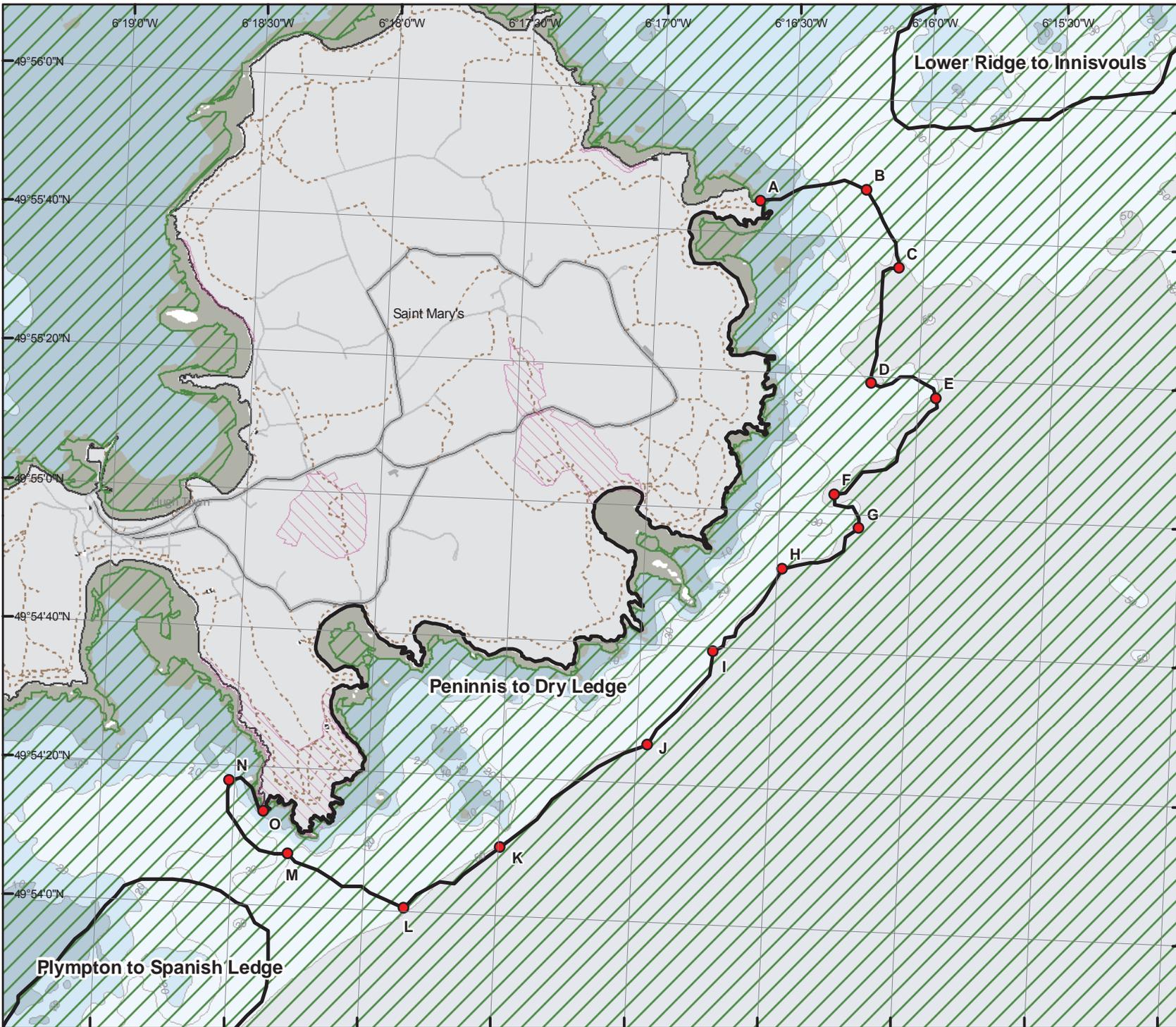
Saint Mary's

Peninnis to Dry Ledge

Hanjague to Deep Ledge

Lower Ridge to Innisvouls

Higher Town



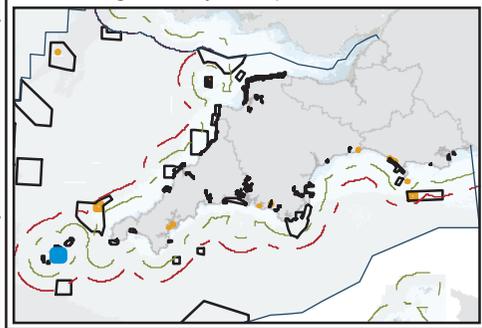
Lat/Long Co-ordinates (WGS84)

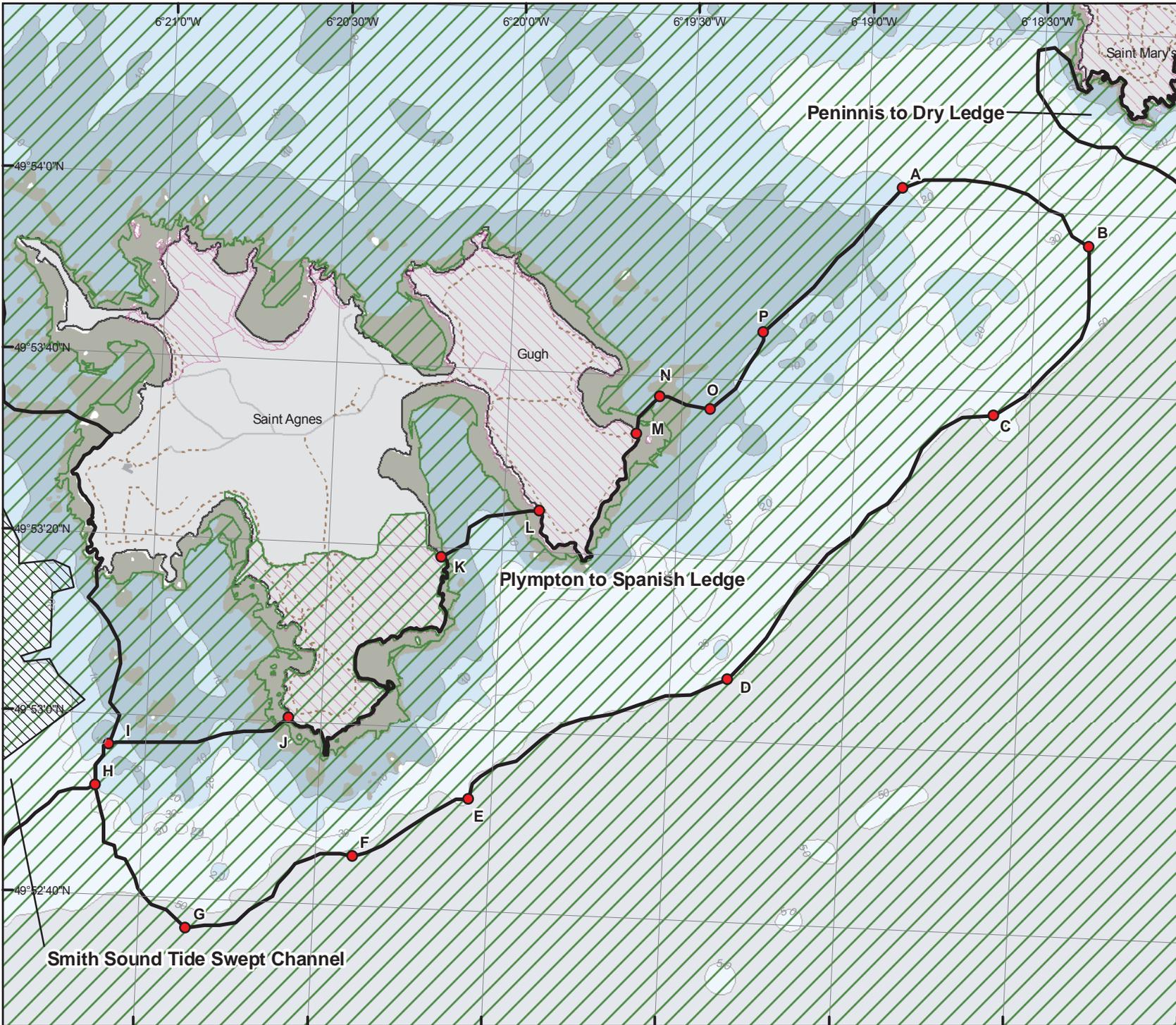
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B	49.9297	-6.2703	49° 55' 46" N	6° 16' 13" W
C	49.9266	-6.2681	49° 55' 35" N	6° 16' 5" W
D	49.9220	-6.2695	49° 55' 19" N	6° 16' 10" W
E	49.9215	-6.2654	49° 55' 17" N	6° 15' 55" W
F	49.9175	-6.2715	49° 55' 2" N	6° 16' 17" W
G	49.9162	-6.2699	49° 54' 58" N	6° 16' 11" W
H	49.9144	-6.2746	49° 54' 51" N	6° 16' 28" W
I	49.9110	-6.2787	49° 54' 39" N	6° 16' 43" W
J	49.9071	-6.2825	49° 54' 25" N	6° 16' 57" W
K	49.9028	-6.2914	49° 54' 9" N	6° 17' 29" W
L	49.9002	-6.2973	49° 54' 0" N	6° 17' 50" W
M	49.9021	-6.3047	49° 54' 7" N	6° 18' 16" W
N	49.9050	-6.3085	49° 54' 17" N	6° 18' 30" W
O	49.9038	-6.3063	49° 54' 13" N	6° 18' 22" W

Map Legend

- Recommended MCZ (rMCZ)
- Existing MPAs**
- SAC
- SSSI (not part of MPA network)

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





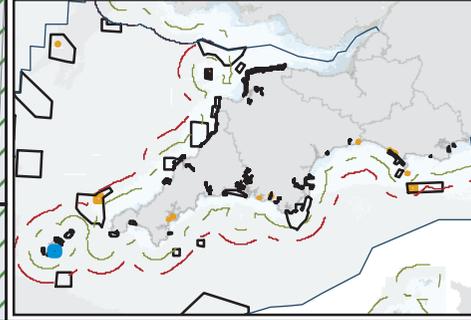
Lat/Long Co-ordinates (WGS84)

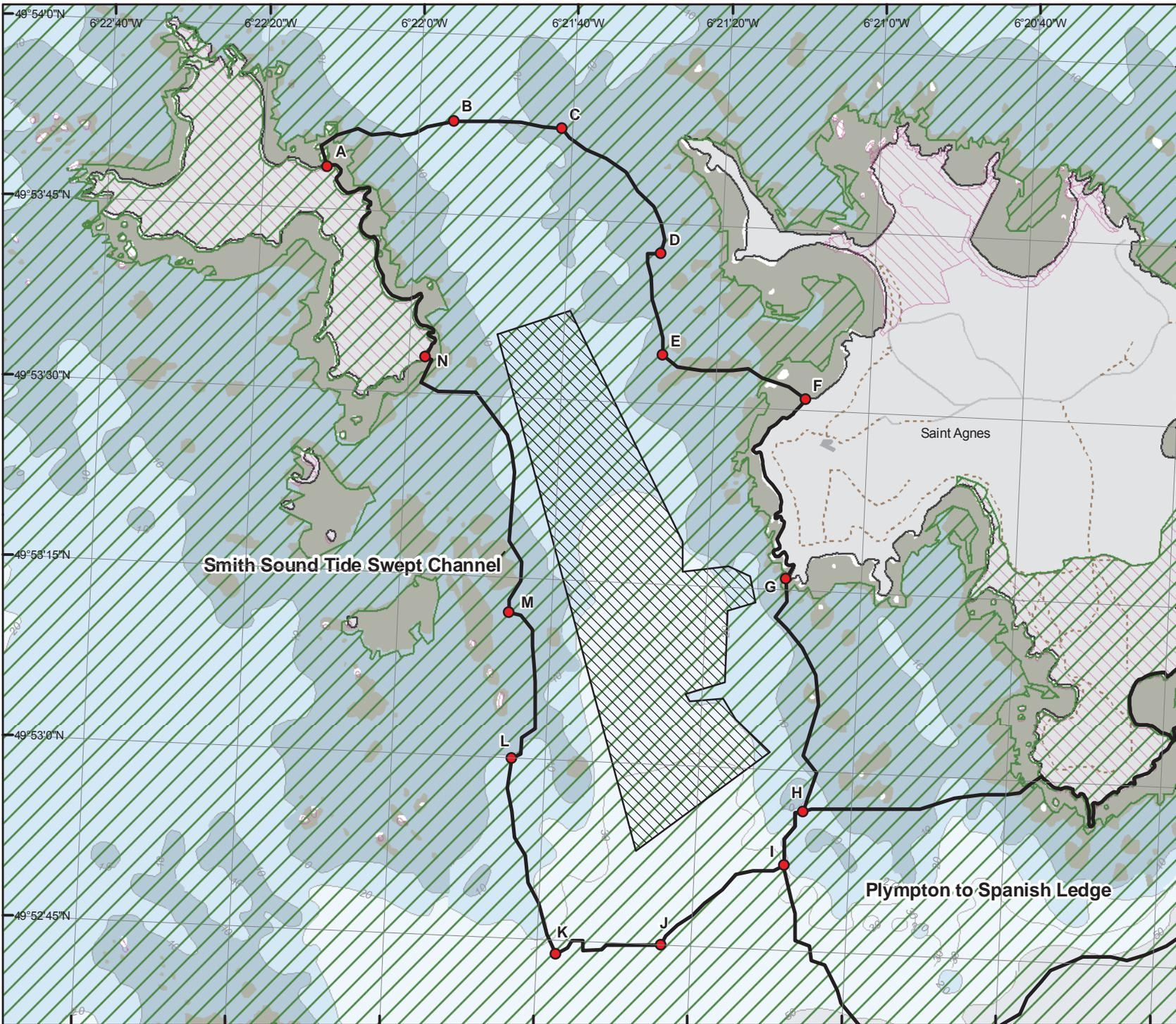
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B	49.8990	-6.3057	49° 53' 56" N	6° 18' 20" W
C	49.8937	-6.3099	49° 53' 37" N	6° 18' 35" W
D	49.8852	-6.3221	49° 53' 6" N	6° 19' 19" W
E	49.8812	-6.3343	49° 52' 52" N	6° 20' 3" W
F	49.8793	-6.3397	49° 52' 45" N	6° 20' 22" W
G	49.8769	-6.3476	49° 52' 36" N	6° 20' 51" W
H	49.8811	-6.3522	49° 52' 52" N	6° 21' 7" W
I	49.8824	-6.3516	49° 52' 56" N	6° 21' 5" W
J	49.8835	-6.3431	49° 53' 0" N	6° 20' 35" W
K	49.8886	-6.3361	49° 53' 18" N	6° 20' 9" W
L	49.8902	-6.3315	49° 53' 24" N	6° 19' 53" W
M	49.8927	-6.3270	49° 53' 33" N	6° 19' 37" W
N	49.8938	-6.3260	49° 53' 37" N	6° 19' 33" W
O	49.8935	-6.3235	49° 53' 36" N	6° 19' 24" W
P	49.8959	-6.3211	49° 53' 45" N	6° 19' 16" W

Map Legend

- Recommended MCZ (rMCZ)
- Zone within a rMCZ
- Existing MPAs**
- SAC
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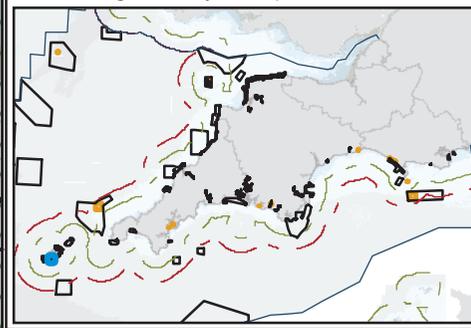
Lat/Long Co-ordinates (WGS84)

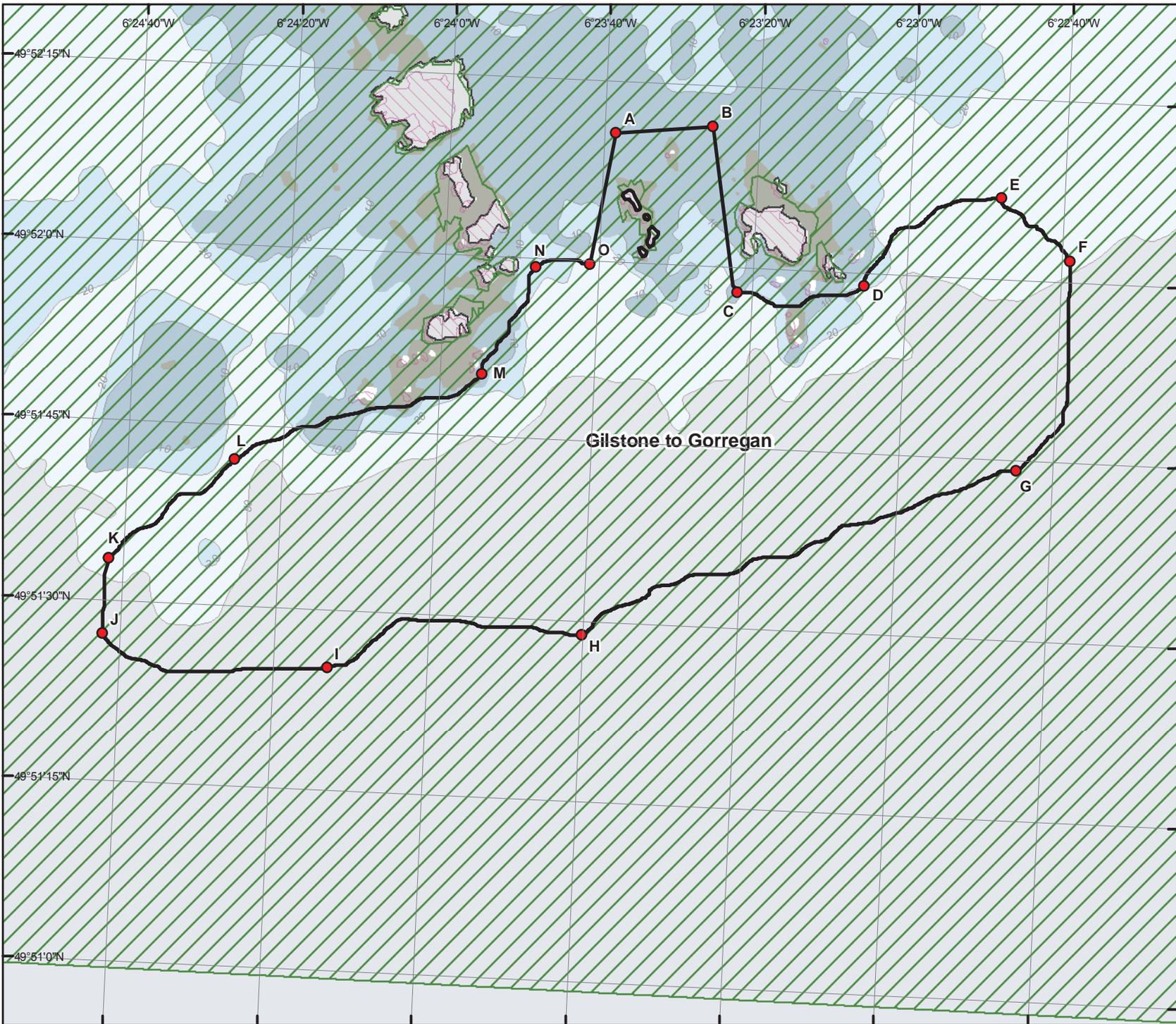
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B	49.8980	-6.3653	49° 53' 52" N	6° 21' 55" W
C	49.8979	-6.3614	49° 53' 52" N	6° 21' 41" W
D	49.8951	-6.3576	49° 53' 42" N	6° 21' 27" W
E	49.8928	-6.3574	49° 53' 34" N	6° 21' 26" W
F	49.8919	-6.3522	49° 53' 30" N	6° 21' 7" W
G	49.8877	-6.3526	49° 53' 15" N	6° 21' 9" W
H	49.8824	-6.3516	49° 52' 56" N	6° 21' 5" W
I	49.8811	-6.3522	49° 52' 52" N	6° 21' 7" W
J	49.8792	-6.3565	49° 52' 44" N	6° 21' 23" W
K	49.8788	-6.3603	49° 52' 43" N	6° 21' 37" W
L	49.8833	-6.3622	49° 52' 59" N	6° 21' 43" W
M	49.8867	-6.3625	49° 53' 12" N	6° 21' 45" W
N	49.8925	-6.3660	49° 53' 32" N	6° 21' 57" W

Map Legend

- Recommended MCZ (rMCZ)
- Zone within a rMCZ
- Existing MPAs**
- SAC
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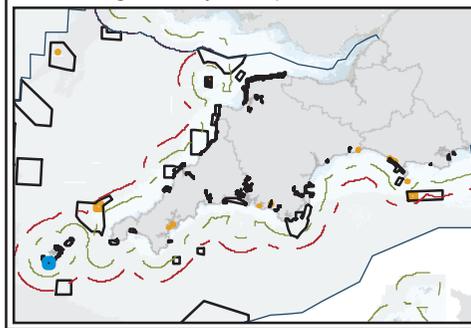
Lat/Long Co-ordinates (WGS84)

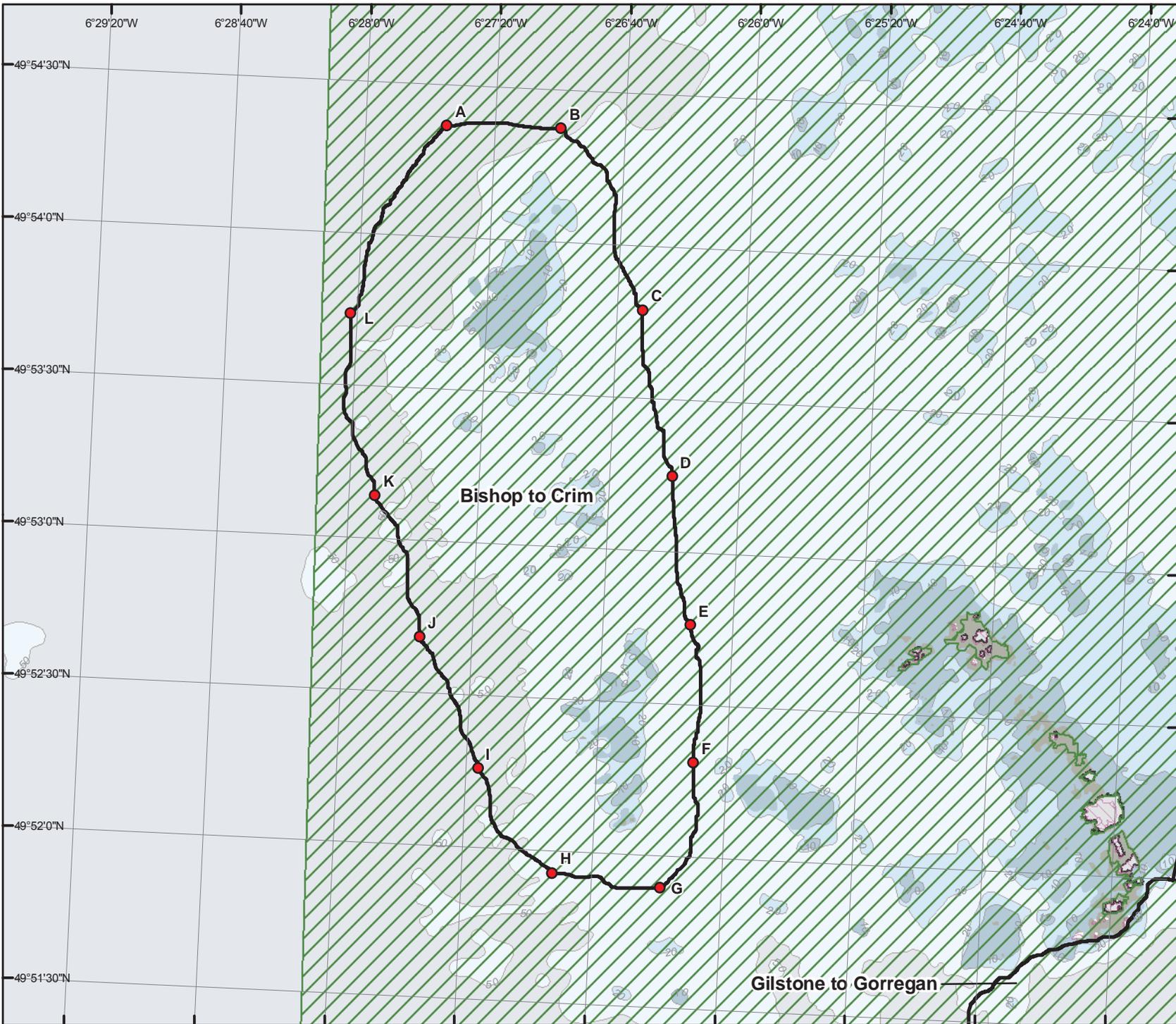
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B	49.8699	-6.3904	49° 52' 11" N	6° 23' 25" W
C	49.8661	-6.3893	49° 51' 57" N	6° 23' 21" W
D	49.8664	-6.3847	49° 51' 58" N	6° 23' 5" W
E	49.8685	-6.3799	49° 52' 6" N	6° 22' 47" W
F	49.8672	-6.3774	49° 52' 1" N	6° 22' 38" W
G	49.8623	-6.3790	49° 51' 44" N	6° 22' 44" W
H	49.8580	-6.3944	49° 51' 28" N	6° 23' 39" W
I	49.8570	-6.4035	49° 51' 25" N	6° 24' 12" W
J	49.8575	-6.4116	49° 51' 27" N	6° 24' 41" W
K	49.8593	-6.4115	49° 51' 33" N	6° 24' 41" W
L	49.8617	-6.4071	49° 51' 42" N	6° 24' 25" W
M	49.8639	-6.3984	49° 51' 50" N	6° 23' 54" W
N	49.8665	-6.3966	49° 51' 59" N	6° 23' 47" W
O	49.8666	-6.3947	49° 51' 59" N	6° 23' 40" W

Map Legend

- Recommended MCZ (rMCZ)
- Existing MPAs
- SAC
- SSSI (not part of MPA network)

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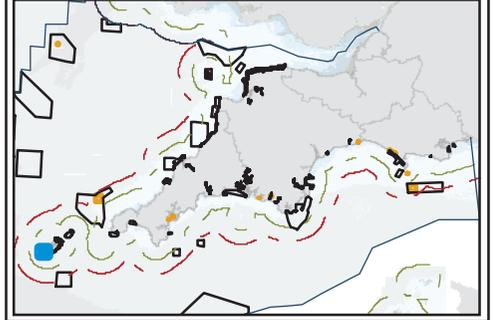
Lat/Long Co-ordinates (WGS84)

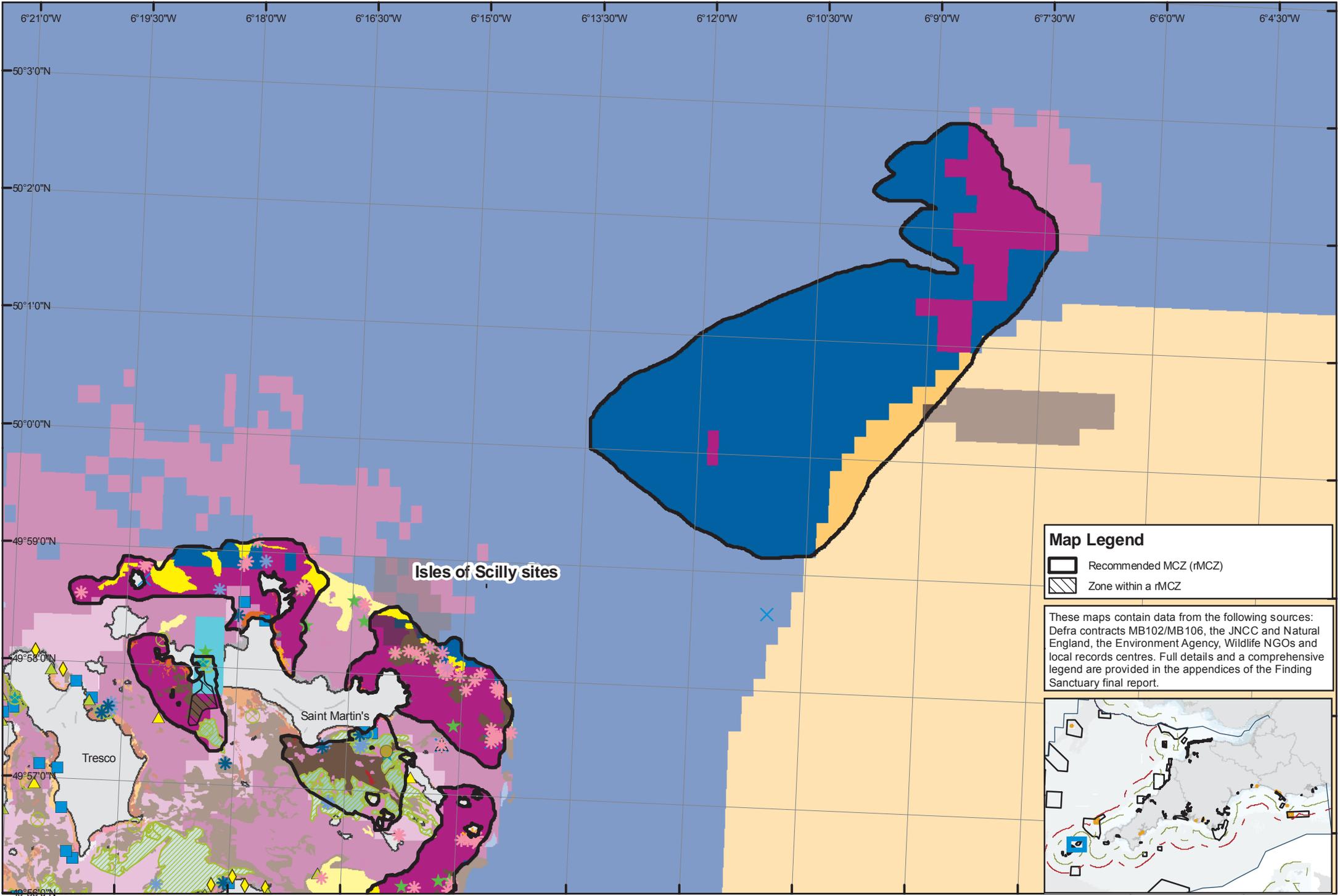
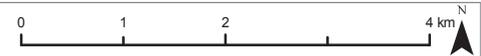
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B	49.9062	-6.4498	49° 54' 22" N	6° 26' 59" W
C	49.8965	-6.4421	49° 53' 47" N	6° 26' 31" W
D	49.8874	-6.4390	49° 53' 14" N	6° 26' 20" W
E	49.8794	-6.4368	49° 52' 45" N	6° 26' 12" W
F	49.8718	-6.4361	49° 52' 18" N	6° 26' 9" W
G	49.8649	-6.4384	49° 51' 53" N	6° 26' 18" W
H	49.8654	-6.4477	49° 51' 55" N	6° 26' 51" W
I	49.8710	-6.4544	49° 52' 15" N	6° 27' 15" W
J	49.8780	-6.4599	49° 52' 40" N	6° 27' 35" W
K	49.8856	-6.4643	49° 53' 8" N	6° 27' 51" W

Map Legend

- Recommended MCZ (rMCZ)
- Existing MPAs**
- SAC
- SSSI (not part of MPA network)

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Isles of Scilly sites

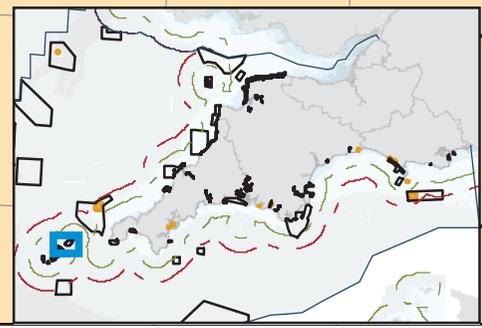
Tresco

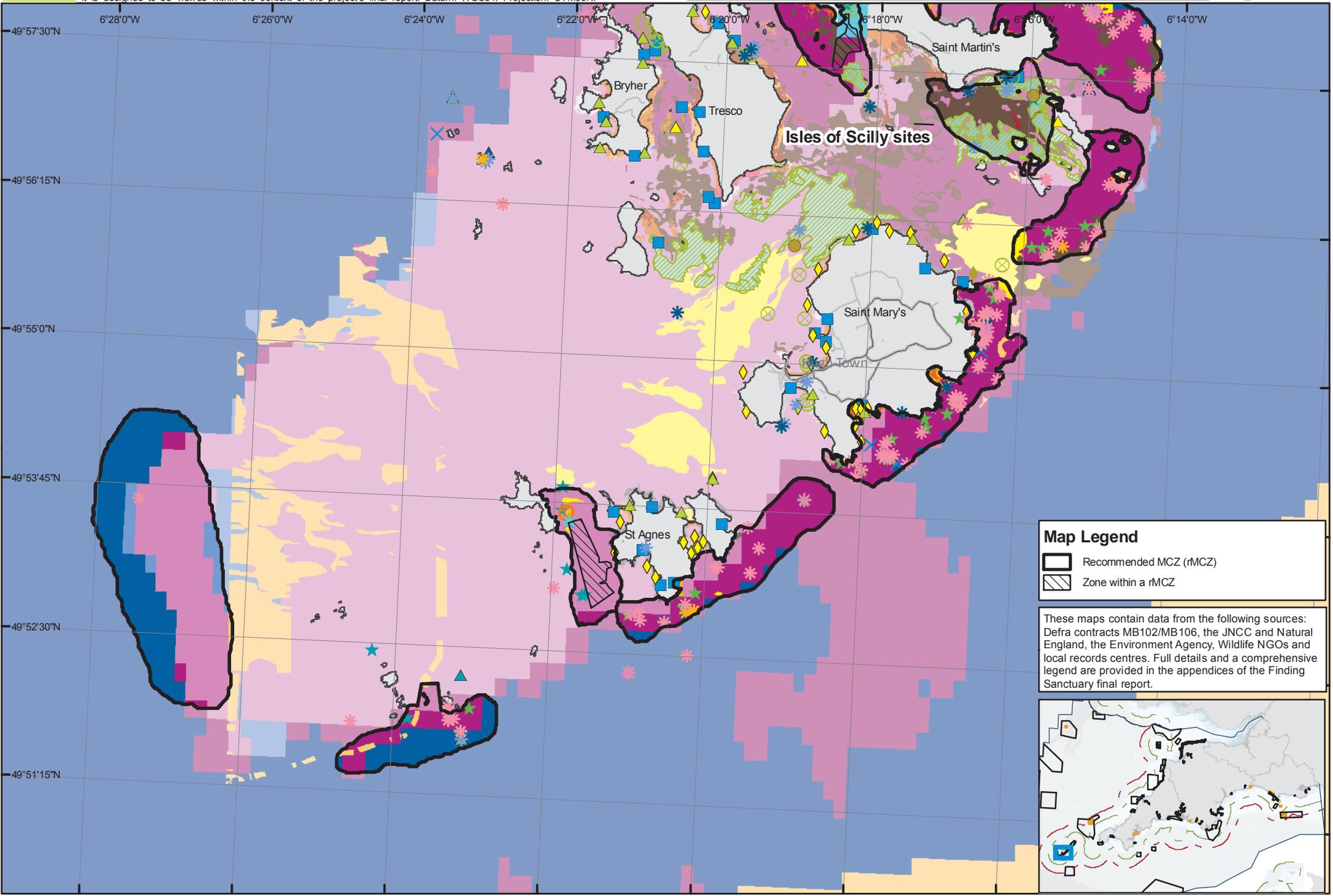
Saint Martin's

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.

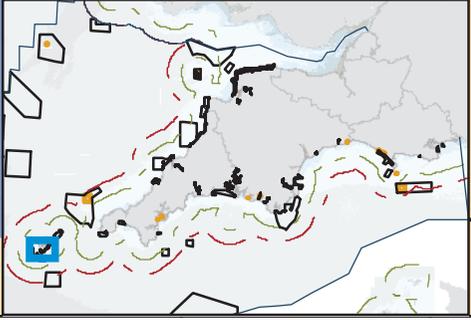


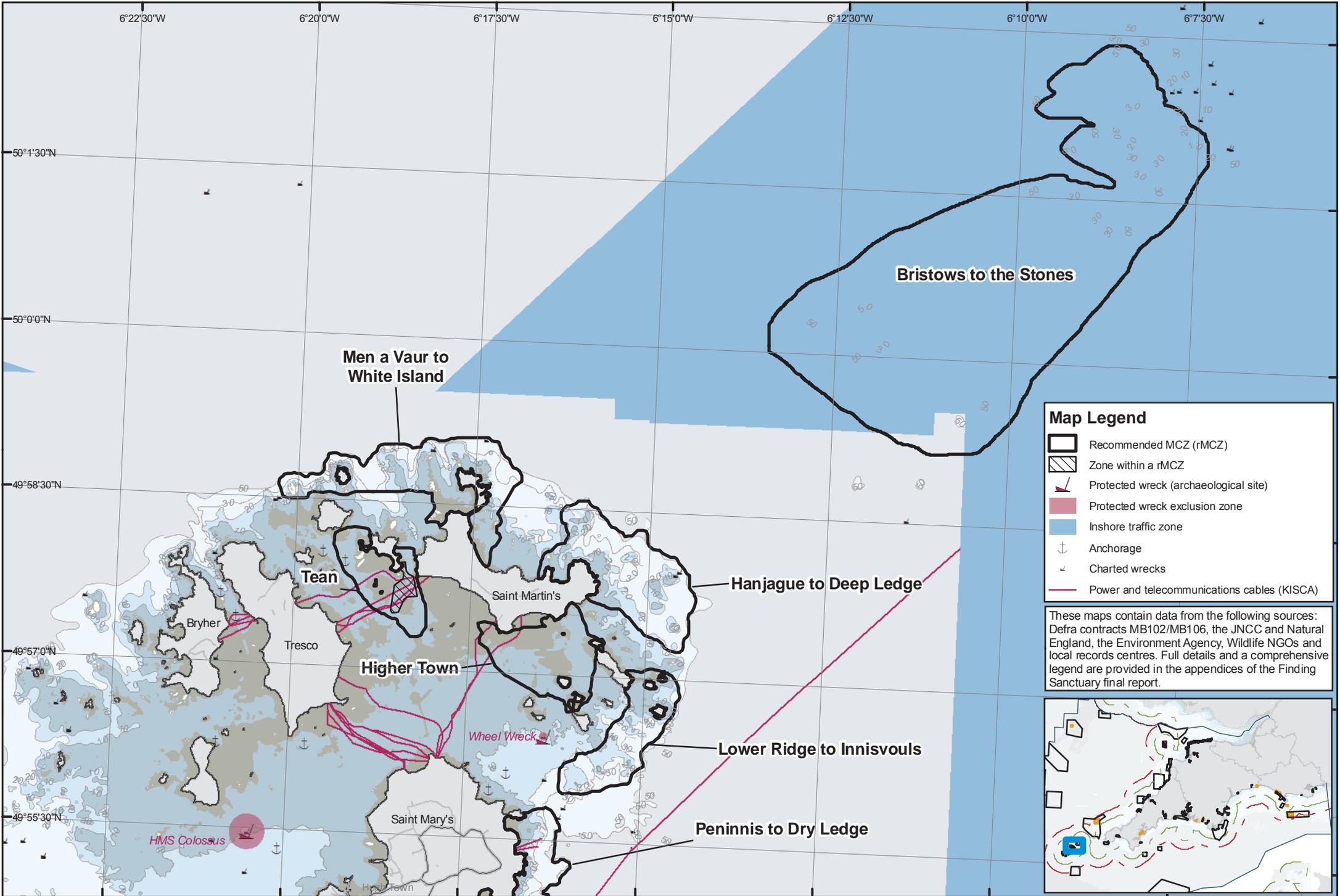


Map Legend

- Recommended MCZ (rMCZ)
- Zone within a rMCZ

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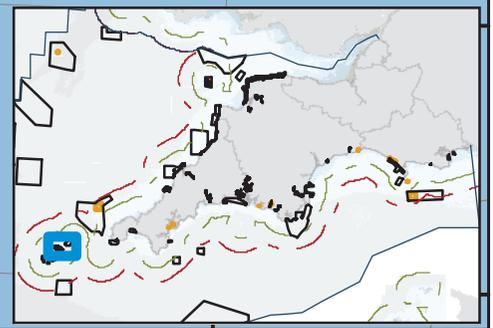


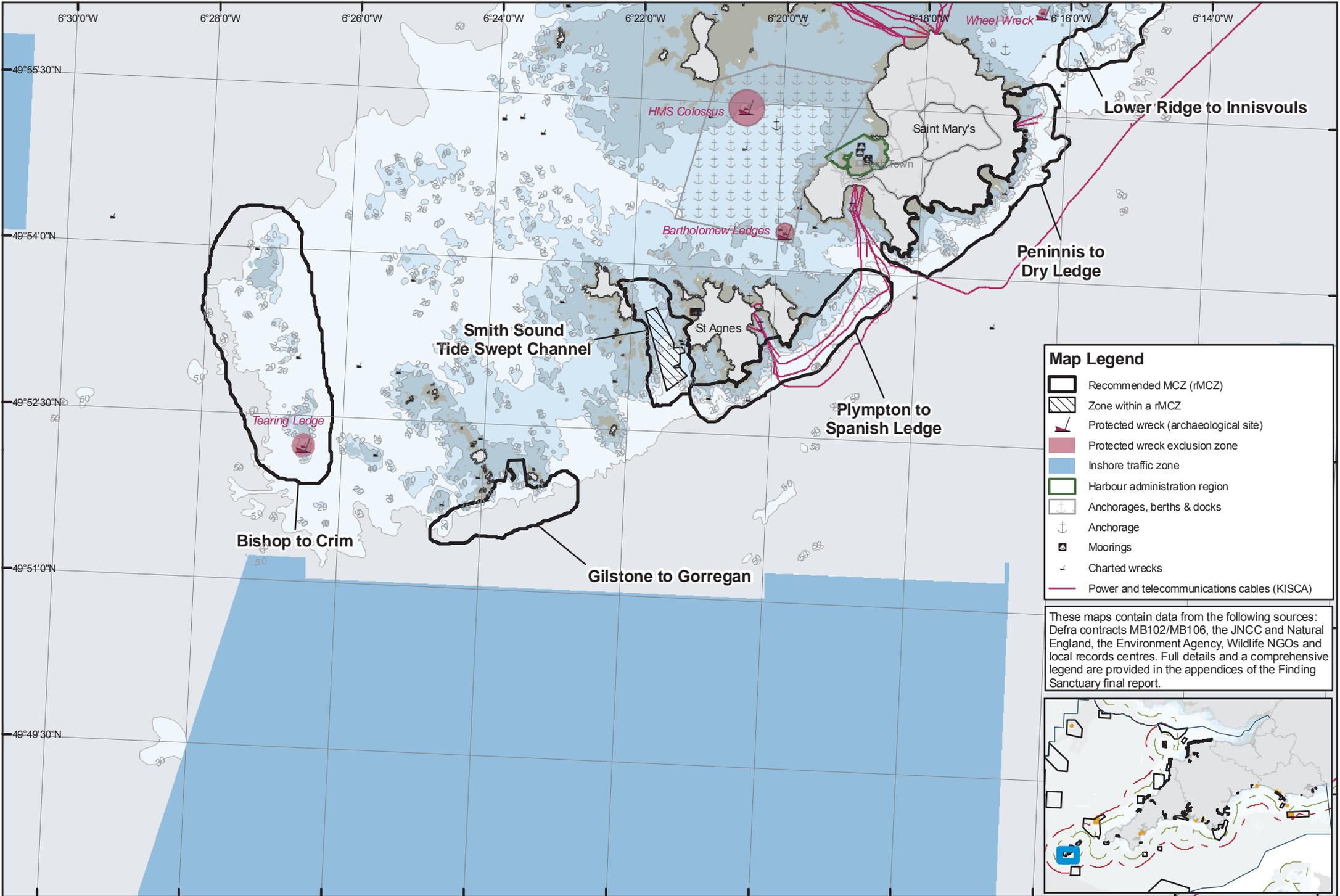


Map Legend

- Recommended MCZ (rMCZ)
- Zone within a rMCZ
- Protected wreck (archaeological site)
- Protected wreck exclusion zone
- Inshore traffic zone
- Anchorage
- Charted wrecks
- Power and telecommunications cables (KISCA)

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Map Legend

- Recommended MCZ (rMCZ)
- Zone within a rMCZ
- Protected wreck (archaeological site)
- Protected wreck exclusion zone
- Inshore traffic zone
- Harbour administration region
- Anchorages, berths & docks
- Anchorage
- Moorings
- Charted wrecks
- Power and telecommunications cables (KISCA)

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