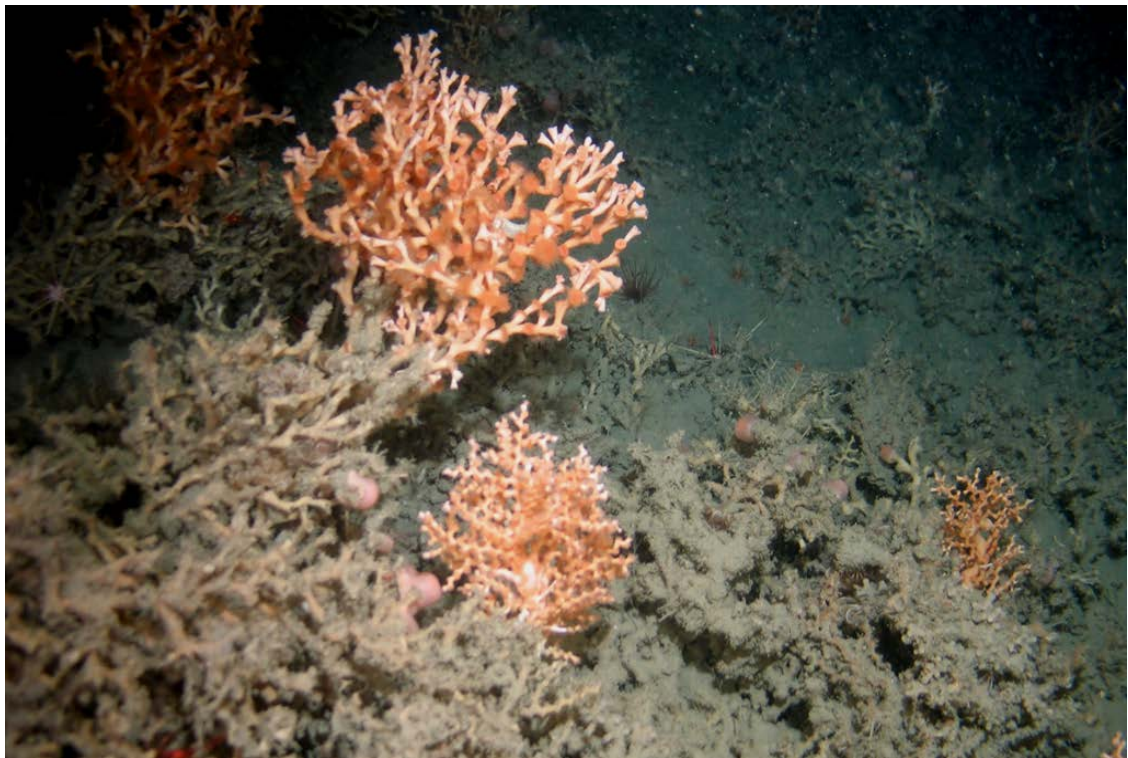


The Canyons Marine Conservation Zone

Site Summary Document

Designated: November 2013



Cold water coral, a delicate habitat found in deeper water © MESH Project

Version 4.0

Background

The UK Government and the Devolved Administrations are committed to establishing an ecologically coherent network of Marine Protected Areas (**MPAs**) in the UK seas to meet international commitments and European obligations. The Marine and Coastal Access Act (2009) (as amended), Marine (Scotland) Act (2010) and Marine (Northern Ireland) Act (2013) place a requirement on the UK Governments to create a network of MPAs that will comprise existing sites (European Marine Sites, SSSIs and Ramsar sites) together with new national designations. The Marine and Coastal Access Act makes provision for the designation of Marine Conservation Zones (**MCZs**) in the UK Marine Area apart from Scottish and Northern Irish inshore waters¹; MCZs will be called Marine Protected Areas in Scottish Offshore Waters. Together the network will protect the range and diversity of marine features found in UK waters (Section 123)².

The UK Government's Department of Food, Environment & Rural Affairs (Defra) commissioned the Joint Nature Conservation Committee (**JNCC**) and Natural England to identify and recommend MCZs in English nearshore waters, and UK offshore waters around England, Northern Ireland and Wales. Together with the existing MPAs, these recommended MCZs would enable the UK Government to meet its obligations towards achieving an MPA network.

JNCC and Natural England established four regional MCZ project groups³ who worked with stakeholders (sea users, regulators and interest groups) to identify MCZs. In September 2011 the Regional MCZ Projects submitted their recommendations to JNCC and Natural England⁴. These recommendations were reviewed by an independent Science Advisory Panel, and then further assessed by JNCC and Natural England who provided their formal scientific advice to Defra in July 2012. Defra reviewed the scientific advice alongside socio-economic information and undertook a public consultation on the recommended MCZs between December 2012 and March 2013. Defra put forward 31 of the original 127 recommendations for potential designation. After reviewing the responses to the public consultation, Defra designated 27 MCZs in November 2013.

The Canyons was recommended by the Finding Sanctuary Regional MCZ Project, and was one of the 31 sites proposed for designation as a MCZ in 2013. Following the public consultation, Defra confirmed its intention to progress the site and *The Canyons* MCZ was designated in November 2013.

Purpose of Document

The present document provides information about *The Canyons* MCZ, including basic information on its location, the site main characteristics and a description of the features protected under Section 117 of the Marine and Coastal Access Act 2009 (as amended)⁵.

The scientific information provided in this document was used by Defra to designate the MCZ⁶, for the purpose of conserving marine flora or fauna, marine habitats or types of marine habitat, and features of geological or geomorphological interest. This document does not provide *advice* on conservation management. JNCC will separately issue formal conservation advice to meet its obligation under Section 127 of the Marine and Coastal Management Act 2009 (as amended)⁷.

¹ The Marine (Scotland) Act and Marine (Northern Ireland) Act make provision for Marine Protected Areas in Scottish inshore waters and Marine Conservation Zones in Northern Irish inshore waters.

² Marine & Coastal Access Act 2009: <http://www.legislation.gov.uk/ukpga/2009/23/section/123>

³ MCZ regional project information: <http://jncc.defra.gov.uk/page-2409>

⁴ MCZ regional project recommendations: <http://jncc.defra.gov.uk/page-6228>

⁵ Marine & Coastal Access Act 2009: <http://www.legislation.gov.uk/ukpga/2009/23/section/117/>

⁶ Designation order: www.gov.uk/government/publications

⁷ <http://www.legislation.gov.uk/ukpga/2009/23/2010-01-12>

Version Control

Version	Date	Amendments made	Author(s)
V1.0	14/06/2013	Creation of document for The Canyons MCZ	NT
V 2.0	17/09/2013	Draft version submitted to JNCC MPA Sub Group for independent review	NT
V 3.0	14/10/2013	Final draft version	NT
V4.0	18/10/2013	Final published version	NT

This document is available for download from JNCC's website at: jncc.defra.gov.uk

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Anemone © MESH Project

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Flatfish, starfish and burrowing megafauna on sand © MESH Project

N.B. all images used were taken during the 2007 MESH survey of South West Approaches, and therefore may have been taken outside of the boundary of The Canyons MCZ. However these images are representative of the habitats found within The Canyons MCZ.

The Canyons MCZ: Site Summary Document

1. Site name

The Canyons MCZ

2. Site location

The coordinates for the site boundary are based on the WGS84 Datum.

A	B	C
48° 30' 0"N, 9° 48' 0"W	48° 30' 0"N, 9° 36' 0"W	48° 30' 0"N, 9° 33' 33.4"W
D	E	F
48° 10' 0"N, 9° 33' 37.11"W	48° 10' 0"N, 9° 48' 0.2"W	48° 20' 0"N, 9° 48' 0"W

The Canyons MCZ is located in the far south-west corner of the UK's continental shelf area. The site covers approximately 661 km² (calculated in ETRS89 LAEA) (see Map 1).

3. Site boundary

Finding Sanctuary regional project⁸ was responsible for the initial recommendations for The Canyons MCZ, which was then scrutinised via the Statutory Nature Conservation Bodies (SNCBs) and put through public consultation by Defra, between December 2012 and March 2013. The boundary was amended slightly to align with the UK Continental Shelf boundary. See Section 8 for further details.

It is important to note that the boundary depicts the MCZ designation itself. Any future management measures that may be required to deliver the conservation objectives will be determined by the appropriate Public Authorities in consultation with JNCC, and may have different delimitations within the MCZ site boundary.

4. Site bathymetry

Min depth: 100m Max depth: 2000m (approx) below chart datum.

The site lies at the edge of the continental shelf, dropping away steeply with canyon features dominating the western edge.

5. Biogeographic region

Charting Progress 2 regional sea 4: Western Channel and Celtic Sea region

OSPAR region: Region III: Celtic Waters

6. Designated Features of The Canyons MCZ

Feature	Feature Type	General Management Approach
A6 Deep-sea bed ⁹	Broad-Scale Habitat	Recover
HOCl_2 Cold-water coral reefs ¹⁰	Feature Of Conservation Importance	Recover

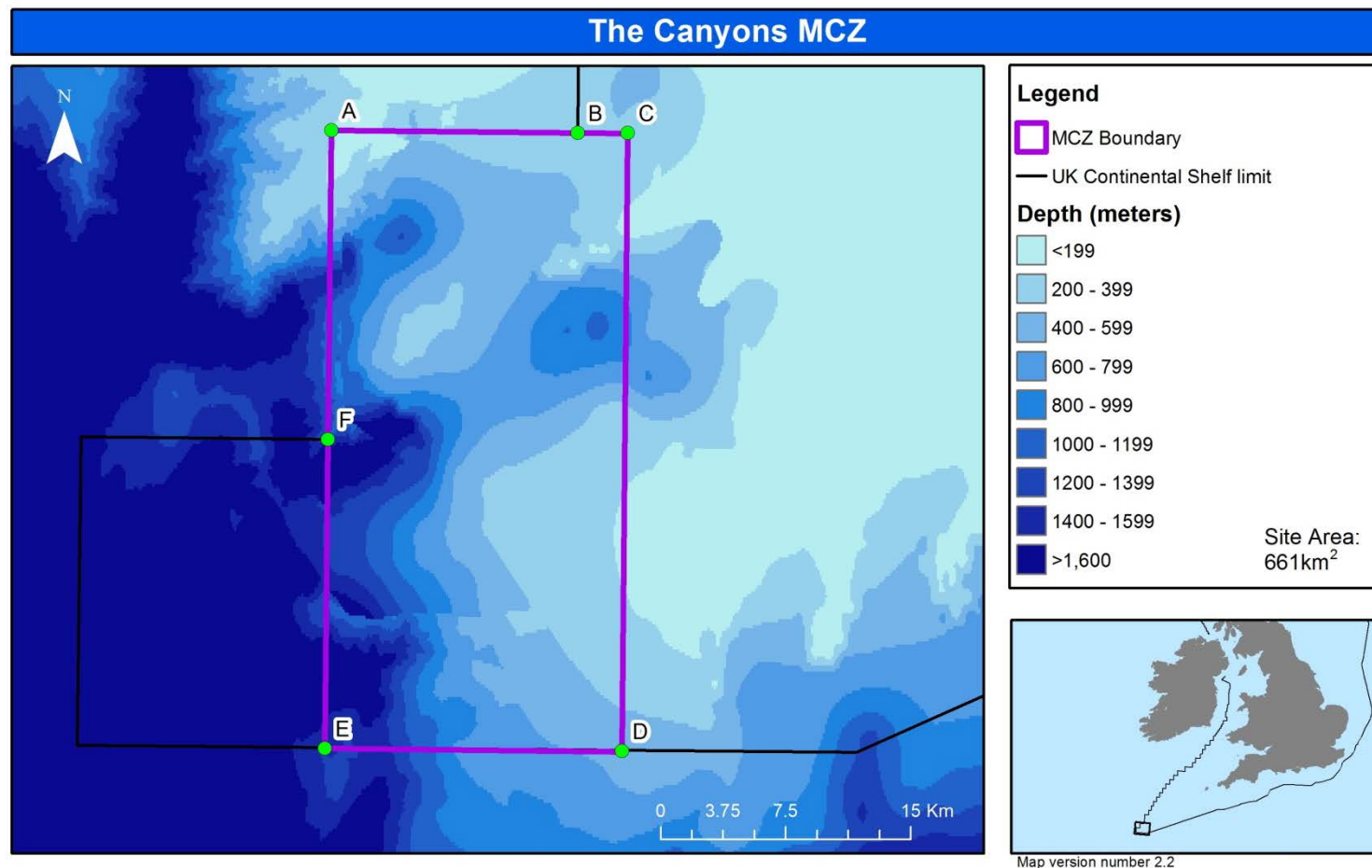
See Map 2 for further detail of the designated feature distribution.

⁸ Archived regional project webpage: <http://jncc.defra.gov.uk/page-6230-theme=default>

⁹ MCZ Features Catalogue: <http://jncc.defra.gov.uk/page-5806>

¹⁰ MCZ Features Catalogue: <http://jncc.defra.gov.uk/page-6012>

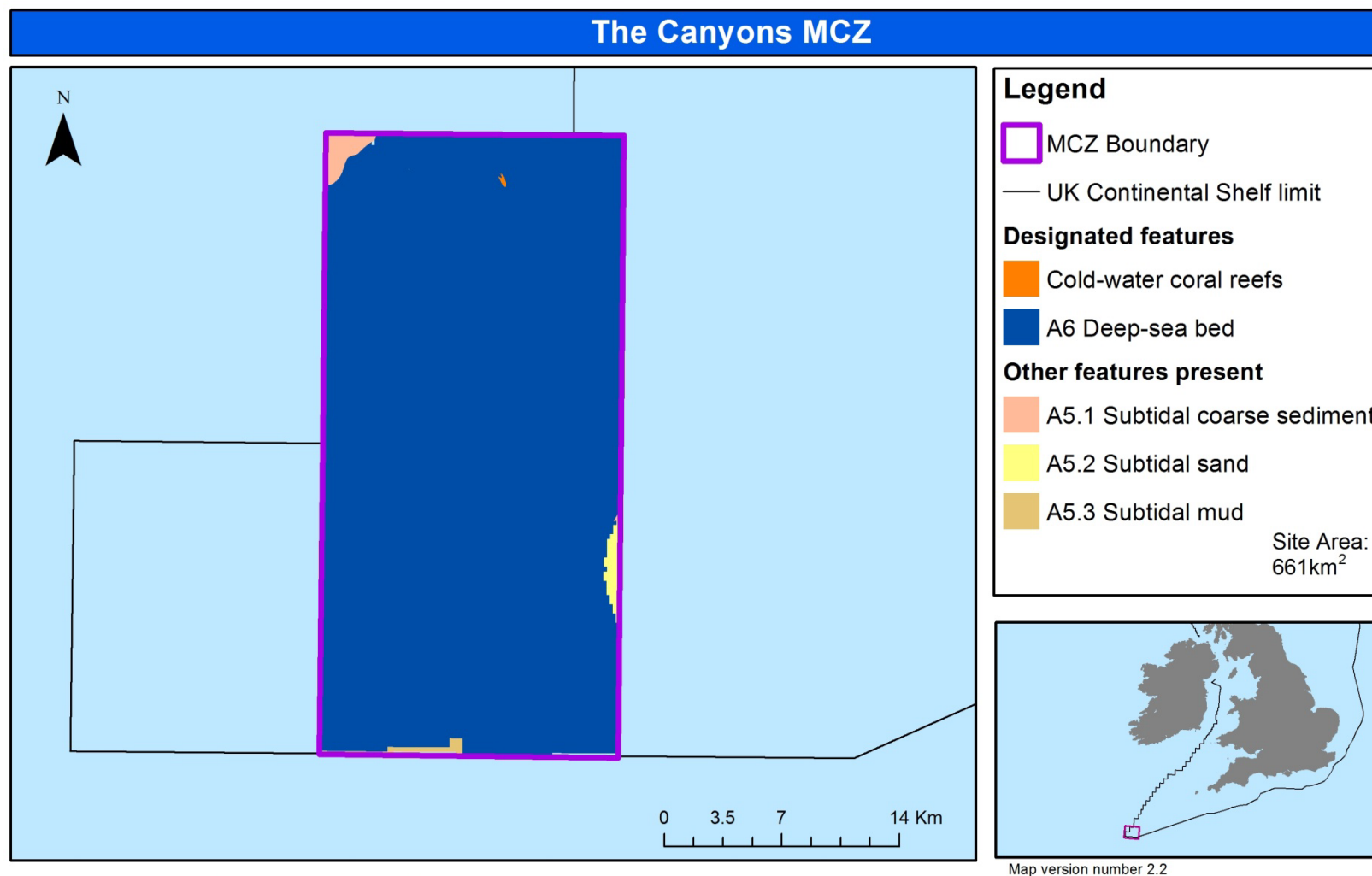
7. Site maps



Boundary coordinates: A) 48°30'0"N, 9°48'0"W B) 48°30'0"N, 9°36'0"W C) 48°30'0"N, 9°33'33.4"W D) 48°10'0"N, 9°33'37.11"W E) 48°10'0"N, 9°48'0.2"W F) 48°20'0"N, 9°48'0"W

Site map projected in UTM (Zone 31N, WGS84 datum). Bathymetry © British Crown Copyright 2011. This product has been derived in part from material obtained from the UK hydrographic Office with the permission of the Controller of Her Majesty's Stationery Office and UK Hydrographic Office (www.ukho.gov.uk). NOT TO BE USED FOR NAVIGATION. The exact limits of the UK Continental Shelf are set out in orders made under section 1(7) of the Continental Shelf Act 1964 (© Crown Copyright). Map copyright JNCC 2013.

Map 1: Location and Bathymetry of The Canyons MCZ



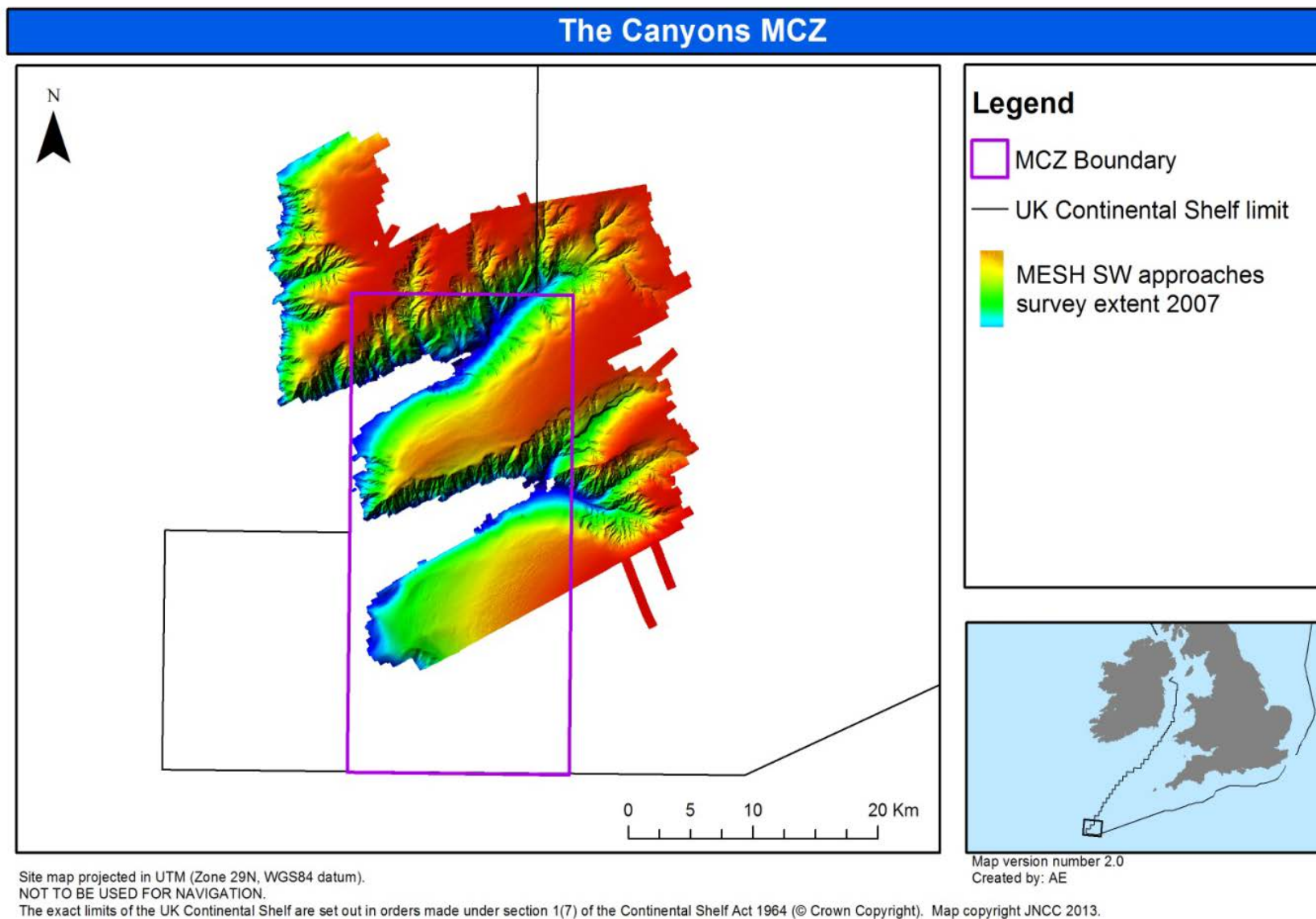
Site map projected in UTM (Zone 29N, WGS84 datum).

NOT TO BE USED FOR NAVIGATION.

The exact limits of the UK Continental Shelf are set out in orders made under section 1(7) of the Continental Shelf Act 1964 (© Crown Copyright).

Map copyright JNCC 2013.

Map 2: Designated Features of The Canyons MCZ



Map 3: Survey extent for the 2007 MESH South West Approaches survey

There has not yet been an MCZ verification survey for The Canyons, due to the availability of the 2007 Mapping European Seabed Habitats (MESH)¹¹ survey data and therefore low priority of the site for further survey work. The MESH survey covered a large proportion of The Canyons MCZ area and these data were considered within the selection process alongside UK SeaMap modelled data (McBreen, 2010).

8. Detailed site information

Site Description

This site is located in the far south-west corner of the UK's continental shelf area and is unique within the context of England's extensive, but largely shallow, seas due to the depth and features it contains. It is located on the continental shelf break, where the seabed drops steeply from the continental shelf to the oceanic abyssal plain (Davies *et al.*, 2008). The depth within the site ranges from 100m at the eastern edge of the site, to 2000m in the western section at the base of the canyons (see Map 1).

The boundaries were designed to encompass the steep part of the shelf break to cover areas of diverse seafloor habitat within the 'Deep sea' broad-scale habitat, including sub-marine canyons and deep-sea coral habitats, mapped from survey data collected through the MESH project. The site is rectangular in shape, in line with Ecological Network Guidance (ENG)¹² guidelines. The northern, north-western and southern boundary sections align with the UK Continental Shelf Limit (as defined under the Continental Shelf Act 1964¹³). The western and eastern boundary sections were drawn as straight north-south lines (see Map 1).

Within the site, there are two large canyons that indent the shelf break, adding to the topographic complexity of the seafloor; the Dangaard Canyon to the north and the Explorer Canyon below (Davies *et al.*, 2008) (see Map 3). There is a patch of live deep-water coral reef (*Lophelia pertusa*), located on the northernmost wall of the Dangaard Canyon. This is the only known example of living deep-water coral reef recorded within England's seas, with other patches occurring along the continental shelf break off Scotland and Ireland, but making it unique within English waters.

The data used to assess The Canyons MCZ was combined from a variety of sources and survey methods in order to build a full picture of the site. A survey by Duineveld *et al.* (2001) provided records of live *Lophelia pertusa* cold-water coral reef within the northern extent of the northernmost canyon contained within the site as well as extensive areas of *Lophelia pertusa* rubble on the ridges between the canyons, bedrock and a range of sediments varying from mud to coarse sediments, indicating that there may have been more-extensive reefs of *Lophelia* present in the past. Reefs of the coral *Lophelia pertusa*, typically support a range of other biota. *Lophelia* reefs are generally found in areas of elevated current. The coral provides a three dimensional structure and a variety of microhabitats that provide shelter and a surface of attachment for other species¹⁴.

Howell *et al.* (2010) collected biological data in June 2007, in the 'Area of Search' put forward as a possible Special Area of Conservation (SAC)¹⁵, which focused on the flanks of the canyon features. Habitats were classified from video analysis of The Canyons MCZ area, identifying the communities of deep-sea corals. 'Bedrock reef' and 'Biogenic reef' are listed as features on Annex I of the Habitats Directive and were observed within the area of the 2007 study.

¹¹ MESH Project: <http://www.searchmesh.net/>

¹² Ecological Network Guidance: http://jncc.defra.gov.uk/pdf/100608_ENG_v10.pdf

¹³ Continental Shelf Act 1964: <http://www.legislation.gov.uk/ukpga/1964/29/contents>

¹⁴ JNCC Habitat Classifications: <http://www.jncc.gov.uk>

¹⁵ Special Areas of Conservation: <http://jncc.defra.gov.uk/page-23>

During the period 2000–2006, Ellis *et al.* (2007) carried out beam trawl groundfish surveys off the south-west offshore area, including around The Canyons MCZ. Catches along the edge of the continental shelf (130–350 m deep) were characterised by large numbers of the anemone *Actinauge richardi*, with the hermit crab *Pagurus prideaux* dominating on coarse grounds in shallower waters.

Designated Features and Features of Conservation Importance

The Finding Sanctuary regional MCZ project proposed the site boundary for The Canyons MCZ to contain an area of continental shelf break covering a range of depths and the consequent features. The features include A6 Deep-sea bed habitats and HOCl_2 Cold water coral reef (see Map 2). The site area encompasses the top edge of the shelf break, and includes small areas of continental shelf broad-scale habitats along the eastern boundary, in addition to the deep sea broad-scale habitat beyond the shelf break. This captures as much of the range of water depths along the steep shelf slopes as possible, thereby incorporating the maximum variety of biodiversity within the site.



Seapens, starfish, anemones and feather stars on sand © MESH Project

9. Supporting documentation and reference material

The following table details the sources of information and reference material used to support the designation of The Canyons MCZ.

Data

Feature	Type of information	Source
Deep-sea bed	Ground-truthing sampling data points	JNCC/MESH Canyons Survey data points
	Habitat map (modelled)	UKSeaMap 2010
	Bathymetry	Astrium Bathymetry
	Habitat map from survey	JNCC/MESH Canyons Survey habitat map
Cold-water coral reefs	Ground-truthing sampling data points	JNCC/MESH Canyons Survey data points
	Habitat map from survey	JNCC/MESH Canyons Survey habitat map

Reports

The reports detailing the fundamental steps taken in order to reach the designation of The Canyons MCZ are listed below.

Date	Report	Link
2011	Regional Project MCZ Recommendations	http://jncc.defra.gov.uk/page-6230
2012	JNCC and NE Advice on Regional Project Recommendations	http://jncc.defra.gov.uk/page-6229
2012	JNCC and NE Amendments Report	http://jncc.defra.gov.uk/page-6229
2013	JNCC Advice on offshore MCZs proposed for designation in 2013	http://jncc.defra.gov.uk/page-6229

10. References

- Davies *et al.* (2008). Davies, J., Guinan, J., Howell, K., Stewart, H & Verling, E. 2008. *MESH South West Approaches Canyons Survey* (MESH Cruise 01-07-01) Final Report.
- Duineveld *et al.* (2001). Duineveld, G., Lavaleye, M., Berghuis, E & De Wilde, P. 2010. *Identifying deep-sea megafaunal epibenthic fauna in the Whittard Canyon and the adjacent continental slope (NE Atlantic)*. *Oceanologica Acta* 24: 69-83.
- Ellis *et al.* (2007). Ellis, J. R., Burt, G & Rogers, S. I. 2007. *Epifaunal sampling in the Celtic Sea. ICES ASC 2007. Theme Session A23.*
- Howell *et al.* (2010). Howell, K. L., Davies, J. S & Narayanaswamy, B. E. 2010. *Identifying deep-sea megafaunal epibenthic assemblages for use in habitat mapping and marine protected area network design*. *Journal of the Marine Biological Association of the United Kingdom* 90: 33-68.