

Proposed Extension of the Poole Rocks Marine Conservation Zone



The Poole Rocks Marine Conservation Zone (MCZ) was designated in November 2013 (Ministerial Order, 2013) to cover an area of about 4km² including 0.22 km² of rocky reef in the west/central part of Poole Bay, Dorset. The designated features for the site are:

- **Moderate energy circalittoral rock (EUNIS code A4.2).** This classification was used in the original document proposing the rMCZ (Lieberknecht *et al.* 2011) based on evidence from a single *ad hoc* deployment of a camera by the Southern IFCA. The authors admitted at the time that there were no data for the area indicating rocky reef but did concede that “*it might be appropriate to add a conservation objective for infralittoral rock*”.
- **Subtidal mixed sediments (EUNIS code A5.4)**
- **Couch’s Goby (*Gobius couchi*).**
- **Native Oyster (*Ostrea edulis*).**

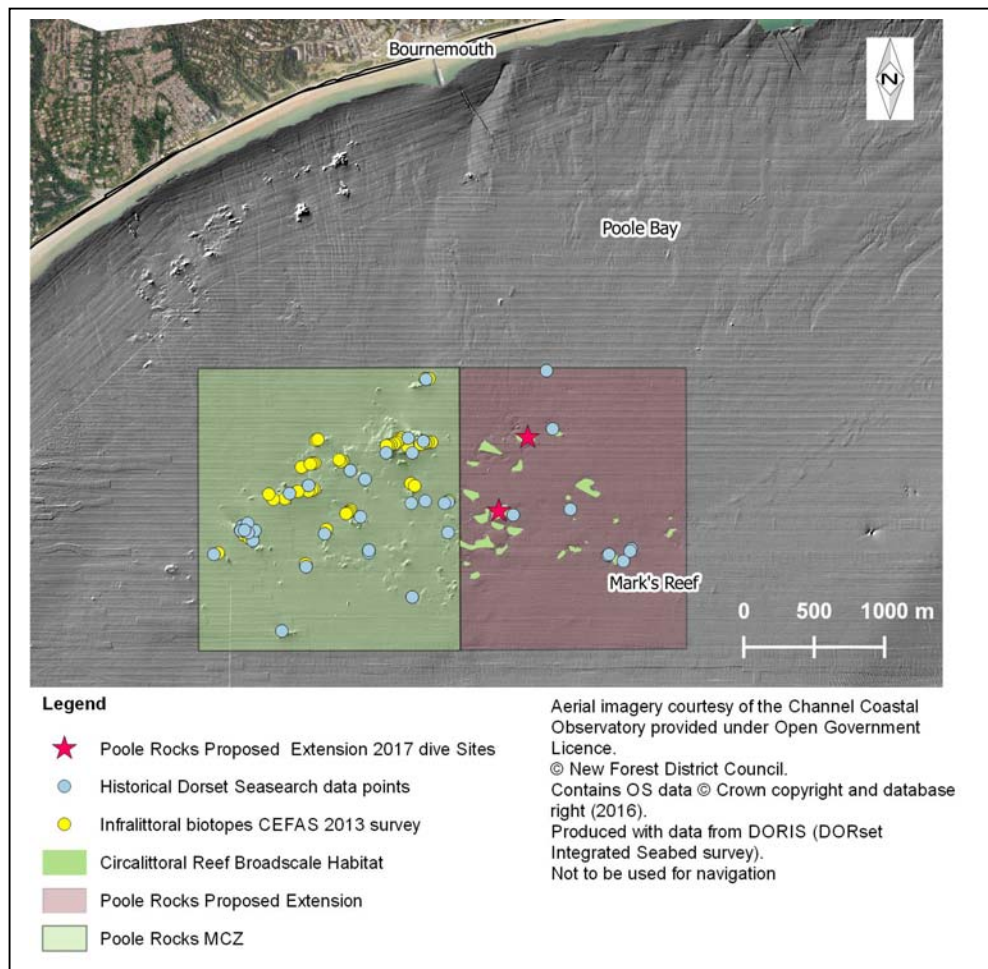
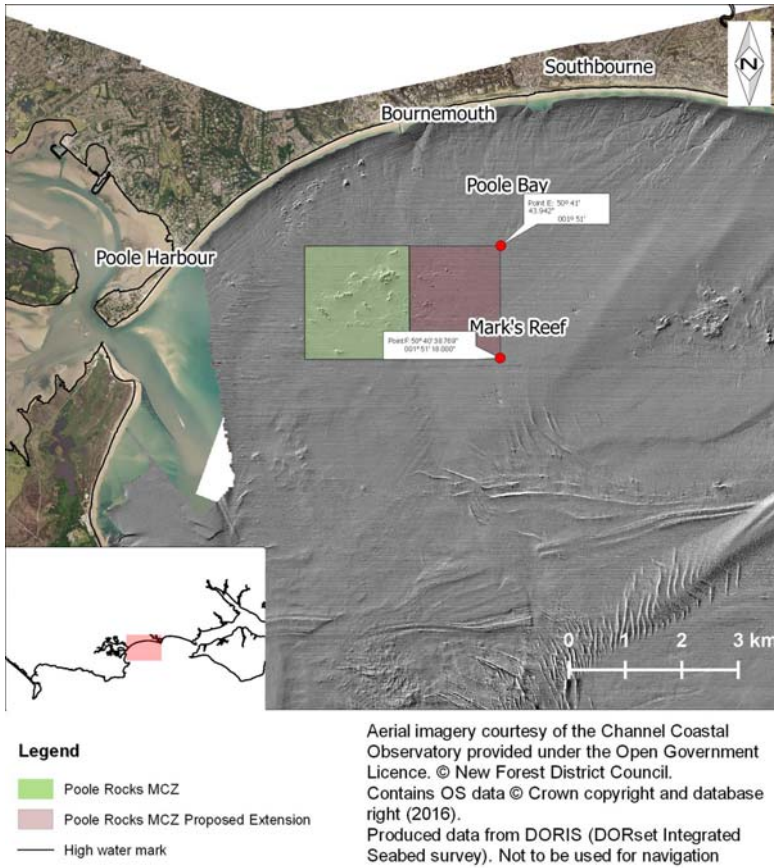
The MCZ supports diverse reef communities within the largely sedimentary Poole Bay in a depth range of 9-15m below chart datum (bcd). This web link provides a good impression of the site and the biodiversity of the patch reefs (<http://poolerocksmcz.uk/>).

A relatively detailed survey of the MCZ was undertaken in July 2013 (Colenutt & Evans, 2015) the final report being published too late for the information to be used for designation purposes. This survey used multibeam echosounder bathymetry and backscatter data collected by the Marine and Coastguard Agency (MCA) in 2011 and 2012 to target groundtruthing data collection using benthic grabs for soft sediment together with drop video and still imagery to include areas of rocky reef. This study concluded that the majority of the rock outcrops shallower than about 12m bcd were dominated by foliose algae and classified this broadscale habitat as moderate energy infralittoral rock (EUNIS code A3.2).

Colenutt & Evans demonstrated rocky reef occurred outside the current MCZ, predominantly to the east and suggested that “*the new evidence provided could be utilised (alongside additional targeted groundtruthing data) to inform considerations in relation to potential site boundary revisions to incorporate the rock features outside the current site boundary*”. The Seasearch dives described in this report provide these “*targeted groundtruthing data*”.

Review of bathymetric data collected by the MCA for Poole Bay indicates a series of about 24 low lying rocky outcrops to the east of the currently designated MCZ and one to the west. These comprise a small area of rocky reef (0.1km²) supporting biological communities which are typical for the area.





A series of dives arranged by Dorset Seasearch targeted two of these reefs which were surveyed in July 2017. Several other locations had been dived previously over a period of years (1995-2015). This report summarises the findings of the 2017 dive surveys and based on this information together with historical data we recommend an extension to the Poole Rocks MCZ to include these additional reef features designated as high energy circalittoral rock (EUNIS code: A4.1).

Reef PRE_07

This small patch reef dived on 15th July 2017 extended 70m northwest/southeast and 30m east/west at about 14m bcd. The reef comprised heavily silted bedrock and small boulders supporting a dense turf of foliose bryozoa (*Chartella papyracea* and *Flustra foliacea*) and a range of cushion sponges including *Hymeniadidon perlevis* and *Dysidia fragilis* both of which were frequent. A dense turf of molgulid sea squirts had developed on large areas of rock. In places the bedrock and boulders were up to 1m high with small swim throughs and deep overhangs providing cover for fish such as Goldsinny (*Ctenolabrus rupestris*), Black gobies (*Gobius niger*), shoals of pout (*Trisopterus luscus*) and the occasional conger (*Conger conger*). To the south of the shot beyond the main reef isolated boulders up to 1m high with overhangs supported a greater diversity of life compared with the silty, upward facing rock of the main reef (Fig. 4).

Inevitably because of the proximity to the port of Poole a number of non-native species were recorded: the Slipper Limpet (*Crepidula fornicata*) and two sea squirts *Styela clava* and *Botrylloides diegensis*. It should be noted that the very great majority of algae seen was drift and not attached within the habitat. Huge quantities of unattached seaweed typically drift around Poole Bay at this time of year.

The low rocky outcrops were surrounded by mixed sediment of muddy sand or sandy mud with shell gravel. The sediment habitat showed evidence of considerable bioturbation with burrows, mounds and emerging polychaete tubes indicating a diverse infauna.

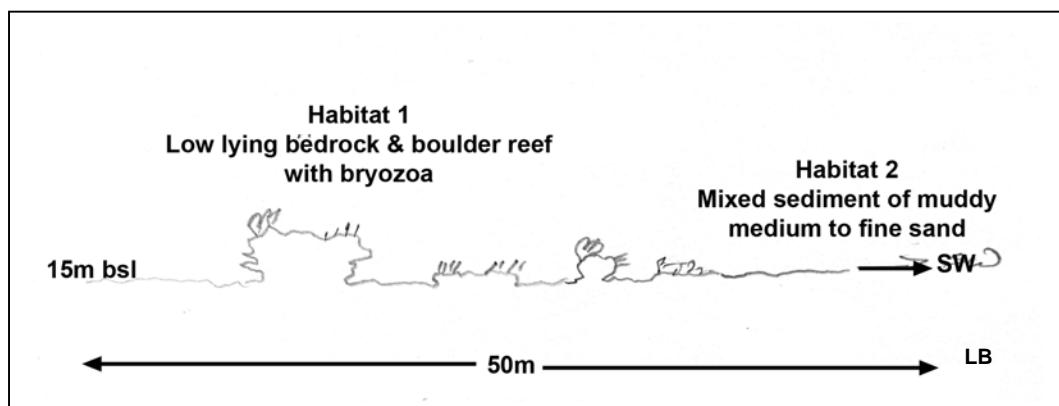


Figure 3 Sketch of Reef PRE_07 to the southwest of the shot

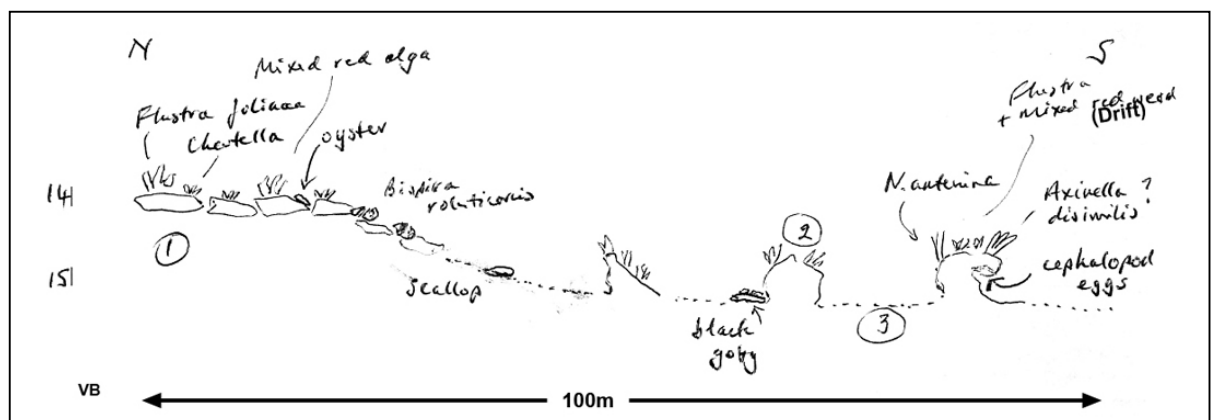


Figure 4 Sketch of Reef PRE_07 to the south of the shot

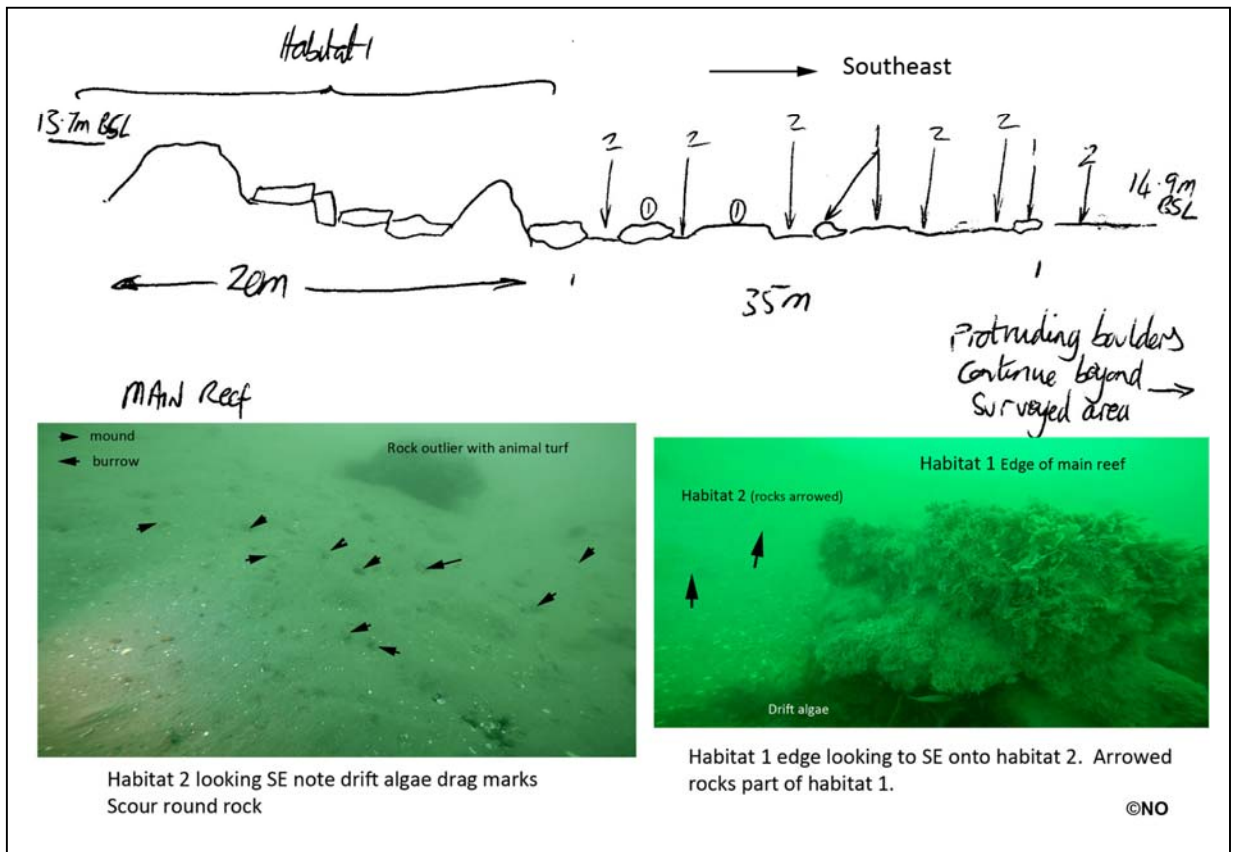
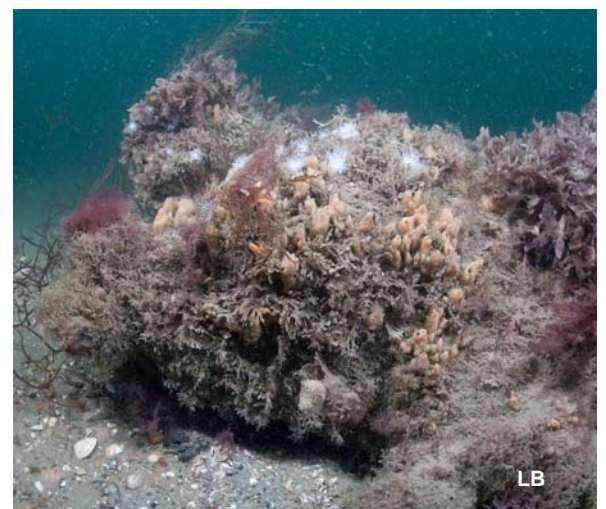


Figure 5 Sketch of Reef PRE_07 to the southeast of the shot



Above (left and right) Epifauna Reef PRE_07 (Habitat 1) showing a diversity of sponges, foliose bryozoa and anemones on silty bedrock and boulders



Left: Reef PRE_07 bioturbated mixed sediment surrounding rock outcrops



Typical fauna Reef PRE_07

Top:: the sponge *Hymeniacidon perlevis* and *Flustra foliacea* on silty rock

Bottom left turf of molgulid sea squirts

Bottom right the sponges *H. perlevis* and *Dysidea fragilis*



Reef PR_07 non native tunicates

Left: Leathery Sea Squirt *Styela clava*

Above: *Botrylloides diegensis*

Reef PRE_06

This small patch reef (70m x 30m) at depths of about 12-14m bcd was dived on 29th July 2017 with divers moving in allocated directions from the shot in order to investigate the variability and extent of the reef. East from the shot the reef was more rugged consisting of a jumble of silty, tilted bedrock with dense foliose bryozoa (*Chartella papyracea* and *Flustra foliacea*) and cushion sponges (*Hymeniacion perlevis*, *Dysidea fragilis*) with a turf of molgulid sea squirts beneath. Deep fissures and overhangs among the bedrock layers provided swim-throughs and cover for numerous fish such as wrasse (Goldsinny - *Ctenolabrus rupestris*, Cuckoo wrasse - *Labrus mixtus*, Ballan Wrasse - *Labrus bergylta*), large Conger eel (*Conger conger*) and shoals of Pout (*Trisopterus luscus*). The overhangs also supported the uncommon Southern Cup coral (*Caryophyllia inornata*) for which Poole Bay is a stronghold and unusually for these patch reefs groups of Jewel Anemones (*Corynactis viridis*). The reef had a flatter, less rugged aspect to the west of the shot comprising large, silty, boulders dominated by the same epifauna of bryozoa, sponges and molgulid turf.

Patches of mixed sediment of moderately firm, fine, muddy sand with broken shell separated the boulders and occurred in patches within the reef complex. Similar bioturbated mixed sediment is typical of much of Poole Bay surrounded the rocky reef.

Again non-native species were recorded on this reef: the Slipper Limpet (*Crepidula fornicata*) was reported as rare on the mixed sediment and both non-native sea squirts were present: *Styela clava* and *Botrylloides diegensis*. The native Oyster (*Ostrea edulis*) was also there on this reef.

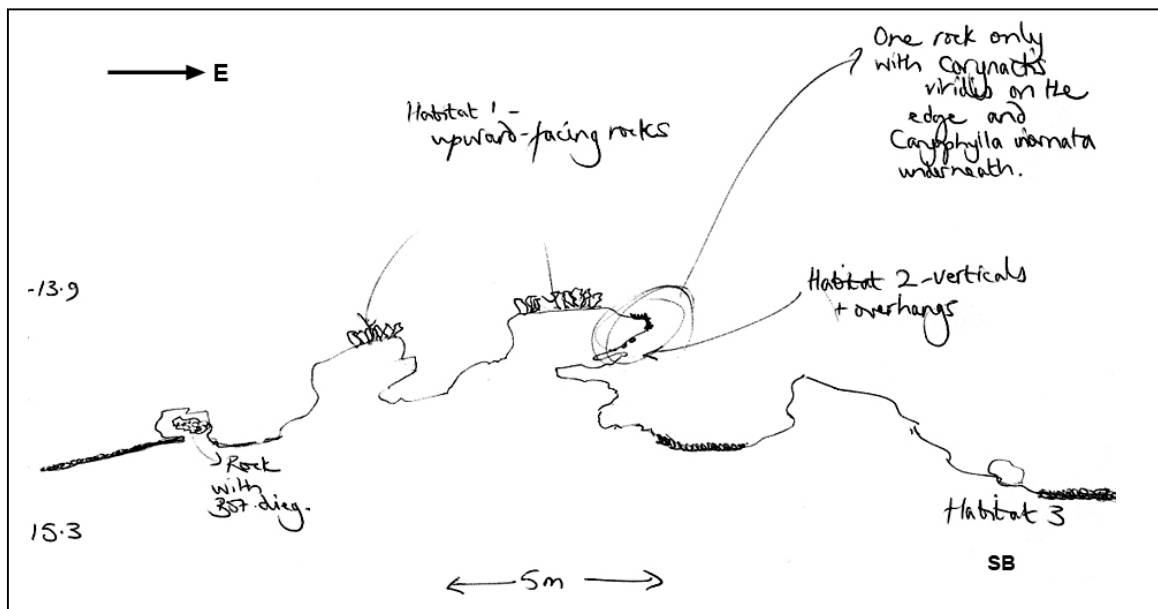


Figure 6 Profile of Reef PRE_06 east of the shot location

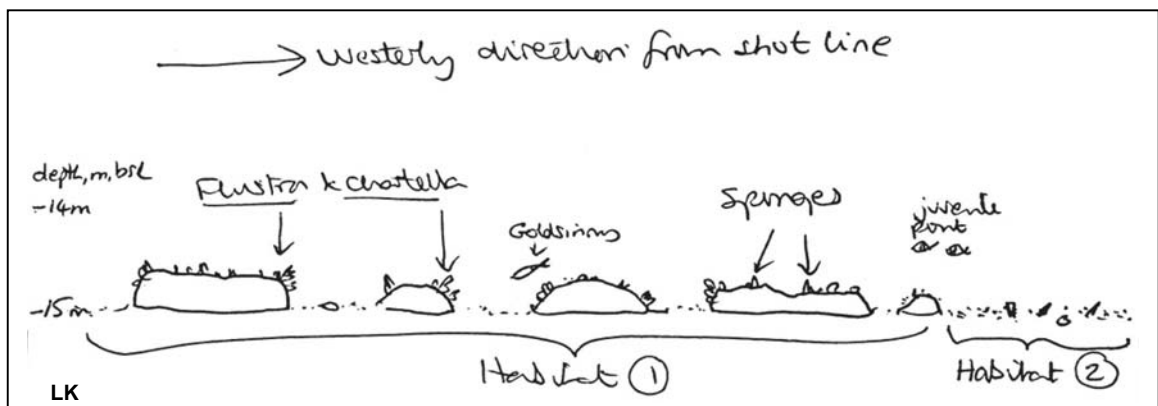


Figure 7 Profile of Reef PRE_06 west of the shot location



Reef PRE_06 Typical mixed sediment habitat occurring between rock outcrops and on the surrounding seabed.
Left: numerous polychaete tubes
Right: Tubes of the amphipod *Ampelisca* in soft sediment



Reef PRE_06 Left: Native Oyster (*Ostrea edulis*), Right: Tunicate turf (*Molgula* sp)



**Reef PRE_06 Overhang
Left: Jewel anemones (*Corynactis viridis*) Right: Southern Cup Coral (*Caryophyllia inornata*)**

Habitats and Species in the Proposed Extension

The predominant circalittoral habitats represented at the two sites surveyed in 2017 were high energy biotopes in contrast to the moderate energy infralittoral biotopes identified by Colenutt & Evans (2015) on the slightly shallower reefs in the Poole Rocks MCZ. Historical Seasearch data collected since 1995 similarly recorded moderate energy seaweed dominated infralittoral biotopes at sites generally shallower (<12m bcd) than the reefs in the proposed extension (>12m bcd). To have both moderate and high energy rock biotopes in apparently very similar, adjacent locations subject to the same hydrological and meteorological conditions would seem counter intuitive. However, since the biotope classification attempts to describe the biological communities, the species component of these communities are equally valid in determining the allocated biotope. Hence the deeper circalittoral communities in the proposed extension have been classified as high energy based on their species composition. Natural England indicated that a third party has proposed that highly mobile species should be included in future designations namely for nesting Black Bream (*Spondylus cantharus*). Black Bream nests have been regularly recorded around the Poole Rocks patch reefs.

The current survey of the two patch reefs recorded the following biotopes as present over an area greater than 25m².

Circalittoral Rock

CR.HCR.XFa Mixed faunal turf communities

CR.HCR.XFa.Mol *Molgula manhattensis* with a hydroid and bryozoan turf on tide-swept moderately wave-exposed circalittoral rock (in part). Generally now not considered to be *M. manhattensis*, *Molgula* taxonomy is difficult and identification is best left at the generic level.

Circalittoral sediment

SS.SMx.CMx Circalittoral mixed sediment

SS.SSA.CMuSa Circalittoral muddy sand

Two circalittoral sediment biotopes are recognised to account for the patchy nature of the sediment around and among these small reefs.

It should be noted that three locations are known within Poole Bay for individual pink seafans (*Eunicella verrucosa*). Currently these locations are not included within the MCZ but would be covered by the proposed extension.

Conclusions

We consider that the patch reefs within the proposed extension to the Poole Rocks MCZ support communities comparable with those in the MCZ while increasing the area of reef habitat by half as much again giving a total between the two sites of over 0.3km². We recommend that the MCZ is extended east by just over 1.5km. At the very least the designated features for the Poole Rocks MCZ should be updated to include the following:

- **Moderate energy infralittoral rock** (EUNIS code A3.2)
- **High energy circalittoral rock** (EUNIS code: A4.1)
- **Highly mobile species** (nesting Black Bream *Spondyllosoma cantharus*).

The coordinates for the proposed extension to the Poole Rocks MCZ are as follows (B and C are common to the original MCZ as designated in the document Poole Rocks MCZ Map Boundary):

Point	Latitude (OSGB36)	Longitude (OSGB36)
B	50° 41' 43.942"N	001° 52' 22.266"W
C	50° 40' 38.769"N	001° 52' 22.096"W
E	50° 41' 43.942"N	001° 51'18.000"W
F	50° 40' 38.769"N	001° 51'18.000"W

Acknowledgements

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