



FS17: Broad Bench to Kimmeridge Bay rMCZ (Purbeck Marine Wildlife Reserve (PMWR))

Seasearch Site Surveys 2013

This report summarises the results of surveys carried out during 2013 by Seasearch divers, those taking part in the Dorset Wildlife Trust **Kimmeridge Bioblitz** (both subtidal and intertidal surveys) and the intertidal **Welly Zone** (Shoresearch) program in the environs of the Broad Bench to Kimmeridge Bay rMCZ. This rMCZ was put forward for designation in the original process but is currently on hold due to the small area of the site. The rMCZ (in its original form) covers intertidal wavecut platforms to the west of Kimmeridge Bay, containing rockpools and large boulders with unusual species reflecting the tidal regime (double-low tides with spring low water occurring in the middle of the day, exposing the shore to high levels of desiccation and light). Many of these species are at the extremes of their biogeographical range. Extending the rMCZ to the boundaries of the PMWR would address many of the original concerns raised during the consultation regarding viability for both habitats and species.

The aim of the surveys was to add detailed records of both habitats and species found in the surrounding area. Particular attention was paid to those FOCI identified in the Ecological Guidance on the designation of MCZs.

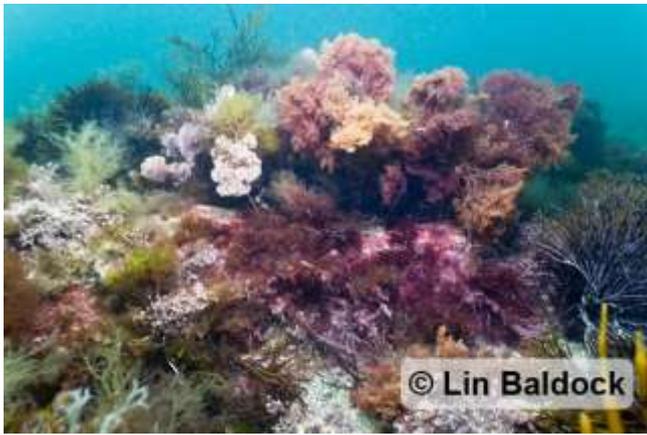
Physical Features of the Area

The Broad Bench to Kimmeridge Bay rMCZ is an intertidal site of *ca.* 0.1km² extending eastwards from the exposed headland of Broad Bench along Charnel and into Kimmeridge Bay. Rocky ledges extend in parallel lines away from the cliffs either side of Kimmeridge Bay. Deeper chalk reefs are found further offshore; subtidal chalk is more usually found on the south-east and east coasts of the UK and is unusual in this region.

Features of the Marine Life

Within Kimmeridge Bay, the tidal regime and geology mean that much of the Bay is like a giant rockpool, albeit not completely cutoff from the sea. The shallow waters provide the perfect habitat for many species of seaweed more commonly found further south, even as far as the Mediterranean, stalked jellyfish growing upon the algae, interesting rockpool-dwelling fish and under-boulder communities. The latter is a newly-designated protected habitat on the UK BAP list (see <http://jncc.defra.gov.uk/page-6021> for further information).

The deeper reefs are densely covered with short animal turf (dominated by encrusting and cushion sponges, bryozoans and hydroids). Uncommon and/or protected species such as the pink sea fans (*Eunicella verrucosa*) are found on the deeper reefs, while the seagrass beds (also a UK BAP and MCZ broad-scale habitat) in Worbarrow Bay are afforded some protection by the chalk reef across the mouth of the bay. Directly out from the Broad Bench headland to the south of Kimmeridge Bay lie brittlestar (*Ophiothrix fragilis*) beds covering the seabed in a dense layer.



Mixed seaweeds in the shallows of Kimmeridge Bay



Bushy rainbow wrack (*Cystoseira tamariscifolia*)



Stalked jellyfish (*Haliclystus auricula*) on algae



Haliclystus auricula



Rocky reef habitat with faunal turf of sponges, hydroids/bryozoans, tunicates and foliose red algae.



The trumpet anemone (*Aiptasia mutabilis*) is a nationally scarce species.



The reefs provide the perfect habitat for commercially-important species such as edible crab (*Cancer pagurus*) and common lobster (*Homarus gammarus*).



Looking SW from the cliffs at the back of Kimmeridge Bay, the rocky ledges are clearly visible.



The area known as the Flats contains extensive rockpools and is exposed to the atmosphere for a large proportion of the day during low spring tides. Many unusual species of fish and algae are found here at the extremes of their range.



The peacock's tail brown algae (*Padina pavonica*) is common in the Mediterranean but is at the northern limit of its range here on the south coast. It is a UK BAP species and is nationally scarce.



Human Uses

Kimmeridge Bay has an easily-accessible public slipway, one of the very few along the Purbeck coast, which is popular for launching recreational watercraft (RIBs, small boats, PWC, kayaks etc.) and small fishing vessels. There is

a snorkel trail within the shallow area of the Bay and it is very popular for shore diving. The intertidal parts of the Broad Bench to Kimmeridge Bay rMCZ and the surrounding area covered by this report are within the Purbeck Marine Wildlife Reserve which has no statutory protection, although the rocky reefs within the Studland to Portland cSAC are now protected from bottom towed fishing gear (see <http://www.southern-ifca.gov.uk/wp-content/uploads/2014/01/BYELAW-Bottom-Towed-Fishing-Gear-Byelaw-For-Website.pdf> for more details).

Benefits of Protection

The rocky reef habitat is characterised by high species diversity and the surrounding sediments provide an important nursery ground. Local potting, hand-collecting of shellfish and angling activities (commercial and recreational) would all indirectly benefit from an increased population in this area. Protection of the ecosystem and associated marine life in this area may lead to an increase in recreational activities (diving, snorkelling, kayaking), scientific research (the PMWR is already a focus for subtidal and intertidal survey work) and public engagement through the work of the DWT Fine Foundation Marine Centre. The accessibility of Kimmeridge Bay makes it an ideal place for educational work showcasing the benefits of MPAs.

Acknowledgements

This report has been compiled by Charlotte Bolton of the Dorset Wildlife Trust based on survey dives made by Lin Baldock, Jane Bell, Joanne Burbidge, Jeremy Goodall, Antony Hayes, Kathryn Dawson Hayes, Andy Marsh, Mark Ninnim, Christine Roberts, Chris Stevens, Jayne Szekely, Peter Szekely and Steve Trehwella, and intertidal Bioblitz and Welly Zone records from Melinda Fisher, Emma Godden, Julie Hatcher, Peter Smith and the Kimmeridge volunteer wardens. Copyright on photos is as credited. Seasearch would like to thank all the volunteers for their records.

Report published by Dorset Wildlife Trust (www.dorsetwildlifetrust.org.uk) for Seasearch (www.seasearch.org.uk).

Technical Appendix

This Appendix contains more detailed information about the surveys undertaken and records made. It includes:

- dive details
- biotope list
- species list

The data has been entered into the Marine Recorder database and is available in Snapshot format on request.

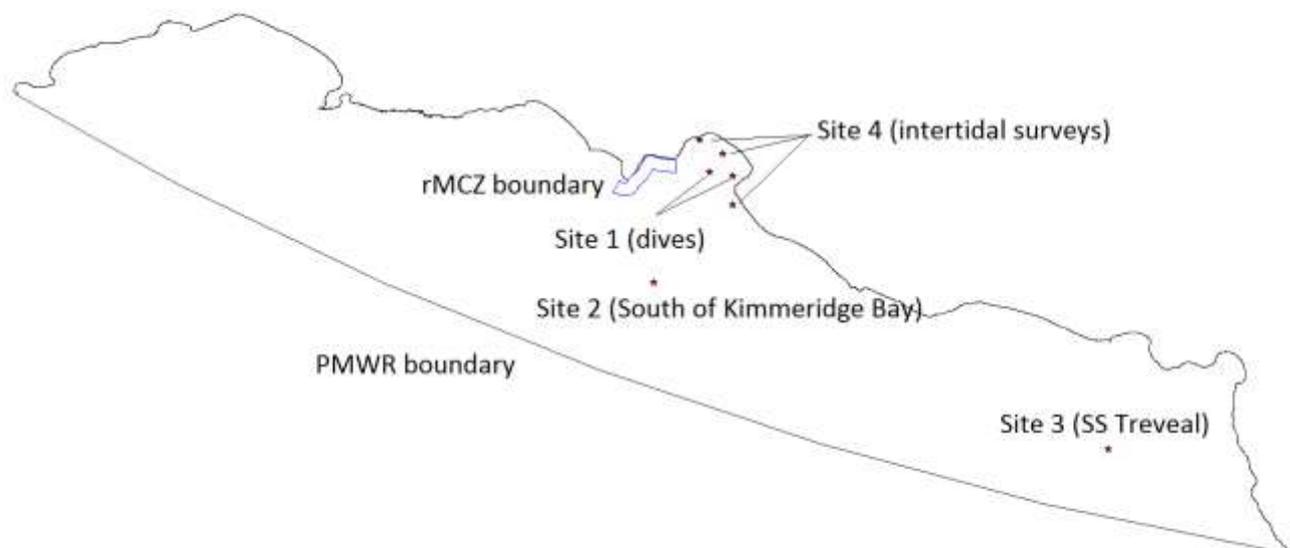
Designated/proposed features:

Broad Scale Habitats/Habitat FOCI: subtidal chalk (HOCl_20), intertidal underboulder communities (HOCl_10), fragile sponge and anthozoan communities on subtidal rocky habitats (HOCl_7)

Species FOCI: *Padina pavonica* (SOCl_24), *Haliclystus auricula* (SOCl_14)

Survey details (sites indicated on diagram below):

Date	Site Name/Position	Surveyor(s) (or Verifier(s))	Form(s)	Marine Recorder survey event reference
Subtidal surveys				
06/05/2013	Kimmeridge Bay SY 908 788	Steve Trehwella	WZ13/006	MRLRC0080000038B
08/06/2013	Kimmeridge Bay 50.61, -2.13	Lin Baldock, Kathryn Dawson Hayes, Andy Marsh, Christine Roberts	KB13/001	MRLRC00800000391
08/06/2013	South of Kimmeridge Bay 50.60, -2.13	Jane Bell, Jeremy Goodall, Jayne Szekely, Peter Szekely	KB13/001	MRLRC00800000391
09/06/2013	Wreck of SS Treveal 50.59, -2.08	Chris Stevens, Antony Hayes	NT13/033	MRBAL00100000029
09/06/2013	Kimmeridge Bay SY 908 788	Julie Hatcher	WZ13/009	MRLRC0080000038E
20/07/2013	Kimmeridge Bay	Mark Ninnim	DT13/060	MRBAL0010000006F
Intertidal surveys				
13/03/2013	Kimmeridge Bay: Stink Corner SY 90954 78906	Julie Hatcher	WZ13/004	MRLRC00800000389
11/04/2013	Kimmeridge Bay SY 909 788	Julie Hatcher	WZ13/007	MRLRC0080000038C
10/05/2013	Kimmeridge Bay: Hen Cliff SY 909 784	Julie Hatcher, Charlotte Bolton	WZ13/008	MRLRC0080000038D
25/05/2013	Kimmeridge Bay	Charlotte Bolton	WZ13/011	MRLRC00800000390
08/06/2013	Kimmeridge Bay: Flats, Washing Ledge, Yellow Ledge SY 907 792; SY 904 791; SY 907 785	Samantha Chaffey, Julie Hatcher, Jenny Mallinson, Sarah Sherran, Peter Smith		MRLRC00800000397
08/06/2013	Kimmeridge Bay: Washing Ledge SY 90753 79139	Melinda Fisher	WZ13/012	MRLRC00800000392
08/06/2013	Kimmeridge Bay: The Flats SY 905 791	Emma Godden	WZ13/013	MRLRC00800000393
26/07/2013	Kimmeridge Bay: The Flats SY 905 791	Emma Godden	WZ13/014	MRLRC00800000394
09/08/2013	Kimmeridge Bay: The Flats SY 905 791	Melinda Fisher	WZ13/015	MRLRC00800000395
09/08/2013	Kimmeridge Bay: Washing Ledge SY 907 792	Emma Godden	WZ13/016	MRLRC00800000396



Sites of the intertidal and subtidal surveys listed in the table above.

Sublittoral Habitats/Biotopes recorded

Description	MNCR 04.05 Biotope Code†	Location*
Infralittoral mixed sediment	SS.SMx.IMx	1
Kelp and red seaweeds (moderate energy infralittoral rock)	IR.MIR.KR	1
<i>Laminaria hyperborea</i> and foliose red seaweeds on moderately exposed infralittoral rock	IR.MIR.KR.Lhyp	3
Mixed faunal turf communities	CR.HCR.XFa	2
Sponges and anemones on vertical circalittoral bedrock	CR.HCR.XFa.SpAnVt	2

† The Marine Habitat Classification for Britain & Ireland (v04.05): jncc.defra.gov.uk/marinehabitatclassification

* Sites are labelled as follows; 1 = Kimmeridge Bay; 2 = South of Kimmeridge Bay; 3 = SS Treveal

Species List

* Sites are labelled as follows; 1 = Kimmeridge Bay (shallows); 2 = South of Kimmeridge Bay (rocky ledges); 3 = SS Treveal; 4 = Kimmeridge Bay (intertidal)

1. Porifera (sponges)

Scientific name	Common name	Site*	Notes
<i>Cliona celata</i>	Boring sponge	2	
<i>Dysidea fragilis</i>	Goosebump sponge	2	
<i>Grantia compressa</i>		1	
<i>Halichondria panicea</i>	Breadcrumb sponge	2	
<i>Haliclona simulans</i>		1	
<i>Hemimycale columella</i>	Crater sponge	2	
<i>Leucosolenia</i> sp.		2	
<i>Pachymatisma johnstonia</i>		2	
<i>Polymastia penicillus</i>	Chimney sponge	2	

Scientific name	Common name	Site*	Notes
<i>Polymastia boletiformis</i>	Yellow hedgehog sponge	2	
<i>Scypha ciliata</i>	Purse sponge	1,2,4	
Porifera indet. crusts	Encrusting sponges	1	

2. Cnidaria (anemones, hydroids, corals)

Scientific name	Common name	Site*	Notes
<i>Actinia equina</i>	Beadlet anemone	1,4	
<i>Actinothoe sphyrodeta</i>		3	
<i>Aiptasia mutabilis</i>	Trumpet anemone	2	Nationally scarce
<i>Anemonia viridis</i>	Snakelocks anemone	1,2,4	
<i>Aulactinia verrucosa</i>	Gem anemone	1,4	
<i>Gymnangium montagui</i>	Indian feathers hydroid	2	
<i>Halecium halecinum</i>		2	
<i>Halicystus auricular</i>	Stalked jellyfish	1	BAP, MCZ FOCI
<i>Hydrallmania falcate</i>	Helter-skelter hydroid	2	
<i>Nemertesia antennina</i>	Antenna hydroid	2	
<i>Nemertesia ramosa</i>	Branched antenna hydroid	2	
<i>Sagartia elegans</i> var. <i>venusta</i>	Elegant anemone	2	
<i>Sertularella</i> sp.		2	

3. Annelida (segmented worms)

Scientific name	Common name	Site*	Notes
<i>Bispira volutacornis</i>	Double-spiral worm	1	
<i>Eulalia viridis</i>	Greenleaf worm	4	
cf. <i>Filograna/Salmacina</i>	Coral worm	2	
Sabellidae		2	
<i>Spirorbis spirorbis</i>		4	
Terebellidae		2	

4. Crustacea (crabs, lobsters, barnacles)

Scientific name	Common name	Site*	Notes
<i>Atylus swammerdamei</i>		4 (plankton trap)	
<i>Cancer pagurus</i>	Edible/brown crab	1,2	
<i>Carcinus maenas</i>	Shore crab		
Cirripedia indet.		4	
<i>Homarus gammurus</i>	Common lobster	1,2	
<i>Idotea</i> sp.		1	
<i>Idotea baltica</i>		4	
<i>Idotea emarginata</i>		4	
<i>Idotea neglecta</i>		4	
<i>Inachus</i> sp.	Sponge spider crab	2	
Isopoda		4	
<i>Maja squinado</i>	Spiny spider crab	1,2	
<i>Necora puber</i>	Velvet swimming crab	1	
<i>Neomysis integer</i>		4 (plankton trap)	
<i>Palaemon serratus</i>	Common prawn	4	
<i>Pagurus</i> sp.	Hermit crab	4	

5. Mollusca (snails, bivalves, nudibranchs)

Scientific name	Common name	Site*	Notes
<i>Aeolidiella alderi</i>		4	

Scientific name	Common name	Site*	Notes
<i>Archidoris pseudoargus</i> (eggs)	Sea lemon	2	
<i>Calliostoma zizyphinum</i>	Painted topshell	2	
<i>Gastrochaena dubia</i>		2	
<i>Gibbula cineraria</i>	Grey topshell	1	
<i>Gibbula umbilicalis</i>	Flat topshell	4	
<i>Hinia reticulata</i> (<i>Nassarius reticulatus</i>)	Netted dog whelk	1, 2	
<i>Janolus cristatus</i>	Crystal nudibranch	2	
<i>Littorina</i> sp.	Periwinkles	4	
<i>Littorina obtusata/mariae</i>		4	
<i>Nucella lapillus</i>	Dog whelk	4	OSPAR
<i>Osilinus lineatus</i>	Toothed topshell	4	
<i>Patella</i> sp.	Limpets	4	
<i>Patella depressa</i>		4	
<i>Polycera faeroensis</i>		2	
<i>Rissoa</i> sp.		1	

6. Bryozoa (sea mats/mosses)

Scientific name	Common name	Site*	Notes
<i>Bugula</i> sp.	Spiral bryozoans	2	
<i>Crisia</i> sp.	White clawed sea moss	2	
<i>Flustra foliacea</i>	Hornwrack	2	
<i>Membranipora membranacea</i>		1	
<i>Pentapora foliacea</i>	Ross coral, potato crisp bryozoan	2	

7. Echinodermata (starfish, sea cucumbers)

Scientific name	Common name	Site*	Notes
<i>cf. Aslia/Pawsonia</i>	Crevice sea cucumber	2	
<i>Asterias rubens</i>	Common starfish	2	
<i>Asterina gibbosa</i>	Cushion star	4	
<i>Henricia</i> sp.	Bloody henry	2	

8. Tunicata (sea squirts)

Scientific name	Common name	Site*	Notes
<i>Aplidium punctum</i>		2	
<i>Botryllus schlosseri</i>	Star sea squirt	2,4	
Didemnidae		2	
<i>Lissoclinum perforatum</i>		1,2	
<i>Stolonica stolonialis</i>		3	

9. Pisces (fish)

Scientific name	Common name	Site*	Notes
<i>Ammodytes tobianus</i>	Sand eel		
<i>Callionymus reticulatus</i>	Reticulated dragonet	1	
<i>Centrolabrus exoletus</i>	Rock cook	2	
<i>Crenilabrus melops</i>	Corkwing wrasse	1,2	
<i>Ctenolabrus rupestris</i>	Goldsinny	2	
<i>Gobiusculus flavescens</i>	Two-spot goby	1	
<i>Labrus bergylta</i>	Ballan wrasse	1	
<i>Labrus mixtus</i>	Cuckoo wrasse	2,3	

Scientific name	Common name	Site*	Notes
<i>Lipophrys pholis</i>	Shanny, common blenny	4	
<i>Parablennius gattorugine</i>	Tompot blenny	2	
<i>Pomatoschistus pictus</i>		1	
<i>Raja clavata</i> (eggcase)	Thornback ray	4	OSPAR
<i>Raja montagui</i> (eggcase)		4	OSPAR
<i>Scylliorhinus canicula</i> (eggcase)		2	

10. Algae (seaweeds)

Scientific name	Common name	Site*	Notes
Rhodophyceae	Red seaweeds	3	
<i>Asparagopsis armata</i> (falkenbergia stage)	Harpoon weed	1,2	
<i>Bonnemaisonia hamifera</i>		1	
<i>Calliblepharis jubata</i>		1	
<i>Ceramium</i> sp.		1,4	
<i>Chondria dasyphylla</i>		1	
<i>Chondrus crispus</i>	Carrageen	1	
<i>Chylocladia verticillata</i>		1	
<i>Cryptopleura ramosa</i>		1	
<i>Cystoclonium purpureum</i>		1	
Corallinaceae indet.	Calcified red seaweeds	2,3,4	
<i>Corallina officinalis</i>	Common coral weed	1,4	
<i>Delessaria sanguinea</i>		2	
<i>Dumontia contorta</i>		1	
<i>Furcellaria lumbricalis</i>		1	
<i>Gastroclonium ovatum</i>		1	
<i>Griffithsia corallinoides</i>		2	
<i>Halopithys incurvus</i>		1,4	
<i>Heterosiphonia plumosa</i>		1,2	
<i>Jania rubens</i>	Slender-beaded coral weed	1,4	
<i>Mesophyllum lichenoides</i>	Pink plates	1	
<i>Nemalion helminthoides</i>		4	
<i>Osmundea</i> sp.		4	
<i>Osmundea hybrida</i>		4	
<i>Osmundea pinnatifada</i>		4	
<i>Plocamium cartilagineum</i>	Red comb weed	1,2,4	
<i>Polyides rotundus</i>		1	
<i>Polysiphonia lanosa</i>		4	
Rhodophycota indet.	Non-calcareous crusts		
<i>Sphaerococcus coronopifolius</i>		1	
<i>Spyridia filamentosa</i>		1	
<i>Ascophyllum nodosum</i>		4	
<i>Asperococcus</i> sp.		4	
<i>Bifurcaria bifurcata</i>		4	
<i>Colpomenia peregrina</i>		1,4	
<i>Chorda filum</i>		1,4	
<i>Cladostephus spongiosus</i>		1	
<i>Cystoseira nodicaulis</i>		1	
<i>Cystoseira tamariscifolia</i>		1	
<i>Dictyopteris membranacea</i>		2	

Scientific name	Common name	Site*	Notes
<i>Fucus serratus</i>		1,4	
<i>Fucus vesiculosus</i>		4	
<i>Halidrys siliquosa</i>		1,2	
<i>Himanthalia elongata</i>		2	
<i>Laminaria</i> sp.		3	
<i>Laminaria digitata</i>		1,2	
<i>Laminaria hyperborea</i>		2	
<i>Leathesia difformis</i>		4	
<i>Padina pavonica</i>		4	
<i>Petalonia</i> sp.		1	
<i>Saccharina latissima</i>		1,4	
<i>Saccorhiza polyschides</i>		1,4	
<i>Sargassum muticum</i>		1,4	
<i>Scytosiphon lomentaria</i>		4	
<i>Stypocaulon scoparia</i>		4	
<i>Bryopsis plumosa</i>		1	
<i>Chaetomorpha linum</i>		1,4	
<i>Cladophora</i> sp.		4	
<i>Cladophora rupestris</i>		1,4	
<i>Codium</i> sp.		4	
<i>Derbesia marina</i>		4	
<i>Enteromorpha</i> sp.		4	
<i>Ulva lactuca</i>		1,4	

Dorset Wildlife Trust (DWT), Brooklands Farm, Forston, Dorchester, Dorset, DT2 7AA; Tel: 01305 264620; Fax: 01305 251120. Registered Charity No. 200222. For more information about DWT, our work and the Seasearch project, please visit www.dorsetwildlifetrust.org.uk or email seasearch@dorsetwildlifetrust.org.uk

Seasearch is a partnership between the Marine Conservation Society (MCS), The Wildlife Trusts, statutory nature conservation bodies and others, co-ordinated nationally by MCS and co-ordinated and delivered locally in England by Wildlife Trust and MCS local co-ordinators. For more information on Seasearch and to see all of the partners involved nationally, please visit www.seasearch.org.uk or email info@seasearch.org.uk

DWT would like to acknowledge the support and funding received for Dorset Seasearch from the Marine Conservation Society and from the Interreg IVa / ERDF fund under the auspices of the PANACHE project.

