

The south Pembrokeshire coast has impressive limestone cliffs 30-40m in height with many interesting geological features: stacks, caves and the famous arch, Green Bridge of Wales. The Castle Martin range is a Ministry of Defence firing range, therefore during the week all boating activity including pot fishing is restricted and access is often only possible at weekends.

Seasearch diving had previously targeted sites close to Stackpole and sites around Linney Head, Crow Rock and St Govans Head. The plan in 2009 was therefore to dive further sites between Linney Head and St Govans Head. The diving was organised by Kate Lock over two weekends with assistance from Vicky Swales and Ross Bullimore. Dives were completed at Brimstone Rocks, Green Bridge of Wales, Mewsford Point, the Castle and on the north side of St Govans Head.

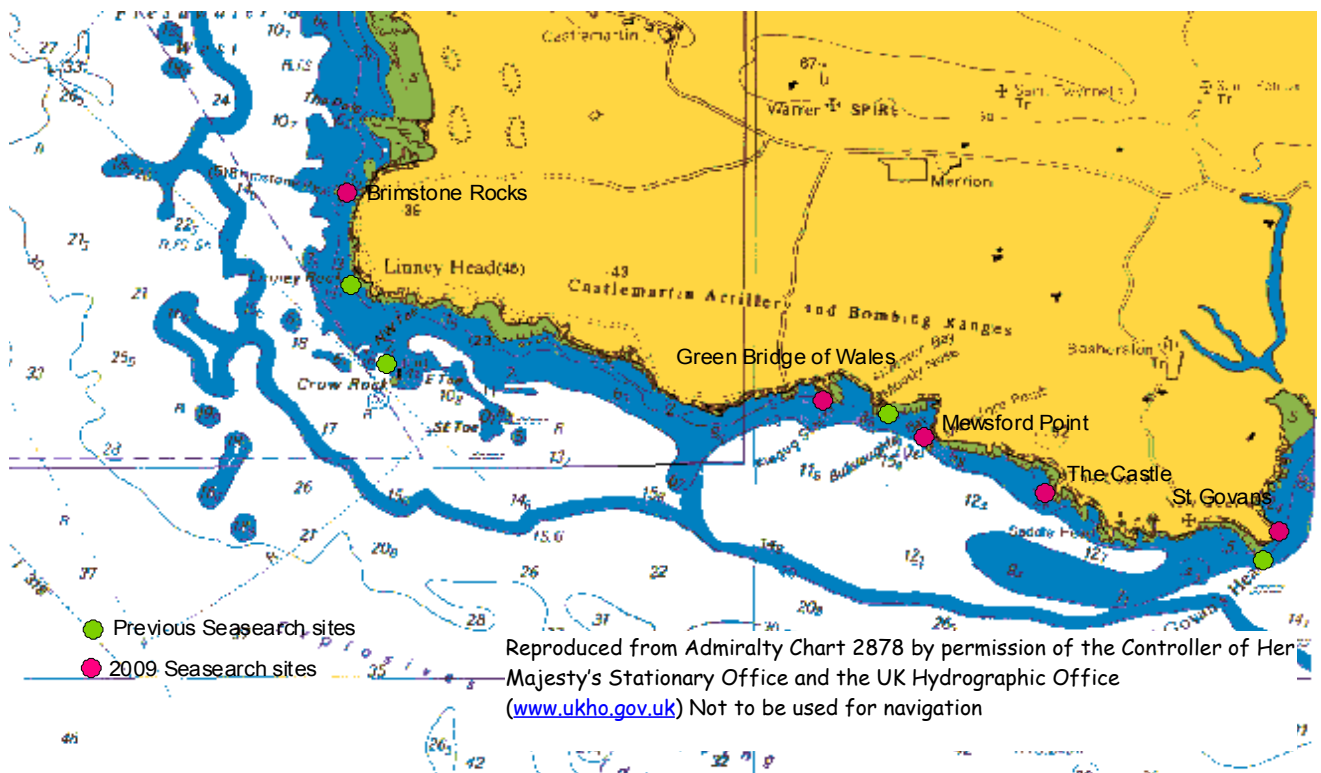


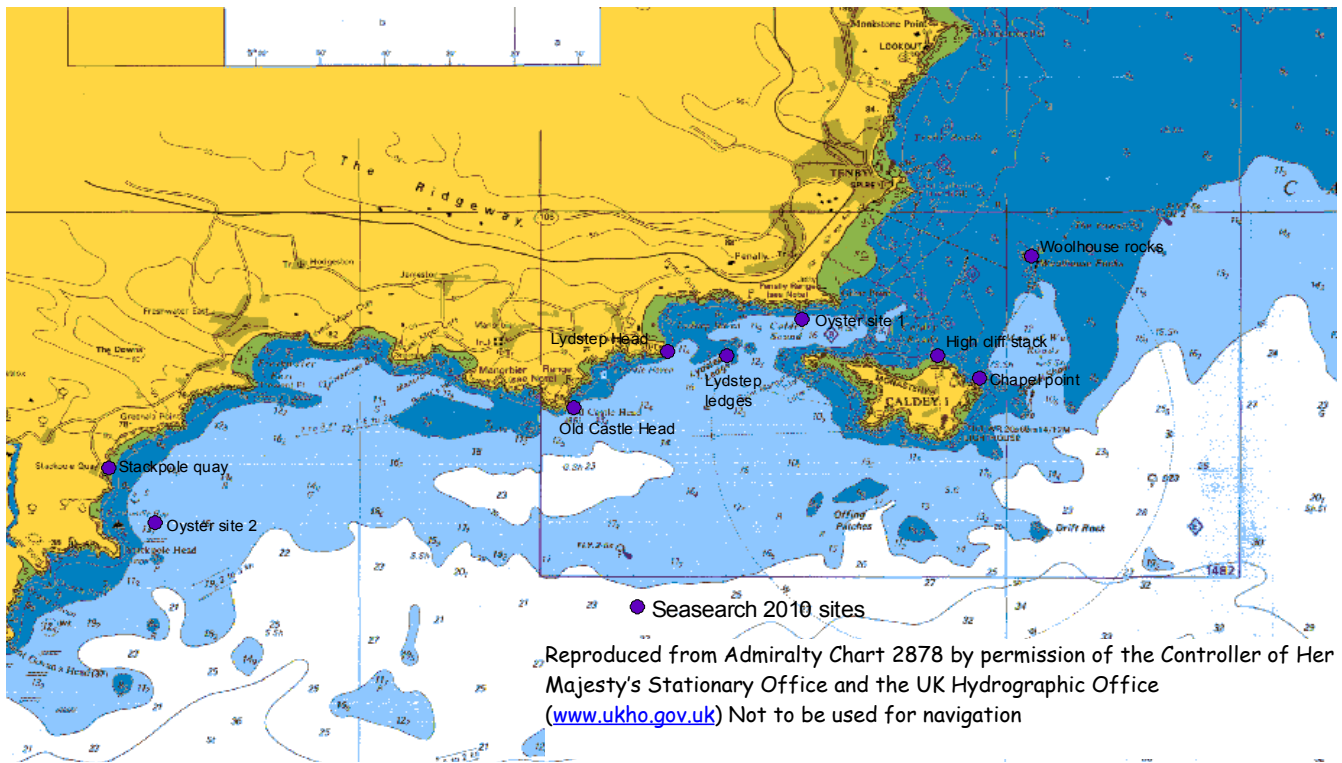
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During 2010 two weekends diving were organised operating from Stackpole Quay. Sites were explored along the mainland coast below the impressive limestone cliffs and caves of Lystep Head and the sandstone cliffs of Manobier. Offshore reefs included Lystep ledges and Woolhouse rocks and two shallow sites were dived on the north side of Caldey Island. Two dives were also completed to assist with a Biodiversity Action Plan species project investigating historical records of the native oyster, *Ostrea edulis* sites in the area, descriptions for these sites are in the Seasearch Wales 2010 summary report.



DK





Brimstone rocks

Limestone cliffs located north of Linney Head, below the water a steep rocky reef with shelves and sandy gullies were found from 12 to 14m. Lush red seaweed meadows were found interspersed with a rich number of sponges including an abundance of the shredded carrot sponge *Amphilectus fucorum*, deadman's fingers *Alcyonium digitatum* and bryozoans. Large numbers of the finger bryozoan *Alcyonidium diaphanum* were found in some areas, some with the white hedgehog sea slug *Acanthodoris pilosa* and eggs. Below overhangs territorial fish and crustaceans were found including a common lobster *Homarus gammarus* eating a moon jellyfish *Aurelia aurita*.



Green Bridge of Wales

Parallel ridges of bedrock separated by gullies of sand, shell debris, cobbles and pebbles. The rocks were dominantly covered in kelp forest of *Laminaria hyperborea* with a rich red algae under storey including an abundance of red hook weed *Acrosorium venulosum*. Short vertical sides of rock were covered in a mix of sponge and ascidian turf. Scraps of metal wreckage were found spread over a wide area with some of it colonised by algae, sponges, hydroids and bryozoans. The site was not a diverse one with fewer crustaceans and fish compared to the other sites dived in the area.

Mewsford Point

Low lying limestone reef with a network of gullies with low walls and sandy patches. The tops of the reef were covered in a lush thick growth of red algae with rainbow weed *Drachiella spectabilis* sea beech *Delesseria sanguinea*, red comb weed *Plocamium cartilagineum* and fine veined crinkle weed *Cryptopleura ramosa* all recorded as abundant. The vertical faces were dominated in a dense covering of bryozoans, sponges, anenomes and ascidians. Very large areas of elephant hide sponge *Pachymatisma johnstonia* were found and under ledges the black tar sponge *Dercitus bucklandi*. Sheets of the horseshoe worm *Phoronis hippocrepia* were found on the rocks and overhangs and crevices provided home to large numbers of crustaceans and territorial fish. The diverse range of animal turf in turn provided good feeding grounds for a diverse number of nudibranchs including *Coryphella lineata* and frequent records of crystal sea slug *Janolus cristatus*.



The Castle

The seabed and habitat was very similar to that found at Mewsford Point with horizontal rocks covered in red algae and steep vertical gullies. A very diverse range of species were recorded with 10 species of ascidians. Notable bryozoan records were the potato crisp bryozoan *Pentapora foliacea*, orange pumice bryozoan *Cellepora pumicosa* and horn wrack *Flustra foliacea*. On the vertical wall deadmans fingers *Alcyonium digitatum* and sandaled anemone *Actinothoe sphyrodeta* were both common. Nudibranchs galore were found the most notable being *Thecacera pennigera*, *Aeigres punctilucens* and *Favorinus blianus* which feeds on other nudibranch eggs. A wide range of fish and crustacean species were found including the conger eel *Conger conger*. In the water column a large barrel jellyfish *Rhizostoma octopus* was spotted.



St Govans Head and Seahare rock

The site was on the north side of St Govans Head, a gently sloping rock platform with thick kelp forest of furbelows *Saccorhiza polyschides*.

A thick under storey of red algae was found with large clumps of red rags *Dilsea carnosa*. Impressive were the dense aggregations of mating sea hares *Aplysia punctata* that formed long chains on the weeds. Deeper were rocks thickly covered in common mussels *Mytilus edulis*, sponges, ascidians and anenomes. In one area a dense aggregation of spiny spider crabs *Maja squinado* numbering more than 100 animals was found, some fighting, others mating. At the interface of rock and sand seabed large numbers of dahlia anenomes *Urticina felina* were recorded. On the sand flat fish including a plaice *Pleuronectes platessa* and numerous hermit crabs *Paguridae* were seen.



Old Castle Head, Mannobier



Gentle sloping outcrops of rocky reef between 12 to 14m were found interspersed with rippled sand. The rocks were thickly carpeted in a combination of seaweed and animal turf. A diverse number of animal species were recorded, with ascidian, sponge and anthozoan communities dominating the rocks. The most common were orange sea grapes *Stolonica socialis*, deadman's fingers *Alcyonium digitatum* and the golf ball sponge *Tethya citrina*, notable too were the large numbers of the orange pumice bryozoan *Cellepora pumicosa* patches. Many reef fish were recorded the most notable was a single record of the grey triggerfish *Balistes carolinensis*.

Lydstep Head

A Limestone rocky reef with steep walls was found down to 14m. On the horizontal surfaces was extensive common mussel beds *Mytilus edulis* with an abundance of common starfish *Asterias rubens*, mixed with kelp park and red algae communities. Locally common too were daisy anenomes *Cerastoderma pedunculatus*. On the vertical walls was a thick covering of sea squirts, anenomes and bryozoans interspersed with sponges. Steep sided gullies and caves up to 8m high and narrowing to 2m width were explored, a super abundance of the spiny spider crab *Maja squinado* were found forming in some cases a 'moving wall' of 2-3 animals thick. The seabed below these congregations was thick in the crab's casts. Below the reef was a sandy seabed, both common starfish *A. rubens* and dahlia anemone *U. felina* were found but this habitat was not fully surveyed. Monofilament angling line, weights and hooks were found at this site and collected by the divers.



Lystep Ledges



This is an area of extensive rocky reef offshore from Lydstep Head. The main characteristics of the site were the incredible sculptured limestone rock formations, networks of maze like gullies with steep vertical faces. At the top of the walls was a thick blanket of common mussels *M.edulis* heavily grazed by common starfish *A.rubens*. The walls were densely with sponges with shredded carrot sponge *Amphilectus fucorum*, breadcrumb sponge *Halichondria panicea* and mermaid *Haliclona oculata* dominating. Deadman's fingers *A.digitatum* were abundant and small pockets of ascidians and hydroids peppered the rocks. Twelve species of nudibranch were recorded including the Christmas tree sea slug *Dendronotus frondosus* and *Joruna tormentosa*, notable too were the enormous sea lemon *Archidoris pseudoargus* and the

aggregations of *Onchidoris bilamellata* found feeding on barnacles in some of the shallow areas.

Typical of limestone were the carved out pits and holes which provide homes for large numbers of crustaceans and fish species. A shoal of six Grey triggerfish *B. carolinensis* were recorded and starry smoothhound *Mustelus mustelus*, were found patrolling the gullies.

Caldey Island

Two sites were surveyed off Caldey Island, High Cliff Stack and Chapel Point. Both sites were very shallow with a deepest depth of 9m reached. At High Cliff Stack a shallow gently sloping sandy seabed was found with some rocky outcrops. The rocks were carpeted in common mussels *M. edulis* along with green and brown seaweeds. The sand was fine to muddy in patches, the anemone *Sargartiogeton undatus* were common in places and the green crab *Carcinus maenas* and hermit crab *Pagarus berhardus* frequent. A highlight was a juvenile anglerfish *Lophius piscatorius* and a moon snail *Euspira* sp. both spotted on the sand.



At Chapel Point 'ribs' of rock extended out from the shore with sandy gullies between. The tops of the outcrops were covered in kelp and mixed weeds with an under storey of common mussels *M.edulis* with large groups of fat common starfish *Asterias rubens*. The sites of the rocks were dominated with ascidians, bryozoans and an abundance of dahlia and elegant anemones, *Urticina felina* and *Sagartia elegans*. Nudibranchs were dominated by massive congregations of *Onchidoris bilamellata*, the grey nudibranch *Aeolidia papilosa* and *Cadlina laevis* were both recorded along with frequent sightings of sea hare *Aplysia punctata*. Wave surge prevailed at the site and scour was observed at the base of the rocks.

Woolhouse Rock

This site is a shallow offshore reef north of Caldey Island. It is a low lying rock reef which breaks on the water surface as a series of pinnacles. The main reef runs north south but the gullies that extend off either side of it run in a west east direction. The reef was densely carpeted in common mussel beds *M.edulis* along with an abundance of common starfish *A.rubens*, dahlia and daisy anemones *U.felina* and *C.pedunculatus*. The gully sides were 2m high and typical with limestone deep ledges and holes were carved into the rock. The faces were densely smothered with sponges and ascidians, with peppering of deadman's fingers *A.digitatum* and plumose anemones *Metridium senile*. Locally common too were expanses of the horseshoe worm *Phoronis hippocrepia*. The ledges were crammed with common prawn *Palaemon serratus*, numerous crab species and common lobster *Homarus gammarus*, lurking too in a deep cleft were three grey triggerfish *B.carolinensis*.



Seasearch is a volunteer underwater survey project for recreational divers who wish to contribute to conserving the marine environment. All Seasearch data is entered into the Marine Recorder database and available on the JNCC National Biodiversity Gateway.

Seasearch forms were completed by: Ross Bullimore, Blaise Bullimore, Ken Evan, Sarah Bowen, David Kipling, Erin Smyth, Winter Doto, Carolyn Waddell, Simon Jones, Steve Bounds, Louise Bebb, Lucy Philips, Rich West, Emily Williams, Sarah Drake, Vicky Swales, Tomos Parker, Phil Hodgson, Roger Scott, Morag Gordon, Brian Pentland, Jenny Linnel, Paula Young, Mandy Knott, Annie Wilgar, Chloe Inns, Nigel Hilburd, Dave Bell.

Report prepared by Kate Lock. Photos: David Kipling (DK) elephant hind sponge community, crystal sea slug, spiny spider crabs, close up of sea squirts and sponges, moon snail, plumose anenome and spider crab, double spiral tube worms with velvet swimming crab and scorpion fish. Blaise Bullimore (BB), underwater scenery, grey trigger fish, common starfish on common mussel bed and anenome, sponge and seasquirt community. Simon Jones (SJ), leopard spotted goby and barrel jellyfish. Ross Bullimore (RB), juvenile angler fish. Rich West (RW) The green bridge of Wales. Boat Support: Andy Truelove and Paul Dilly.



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