

**Dorset Seasearch:
Annual Summary Report 2021**



Dorset
Wildlife Trust



MARINE
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Organised Seasearch diving in Dorset got off to a blustery start at the end of May with six intrepid divers braving the predicted F5 winds and the spring *Phaeocystis* plankton bloom to dive out of Swanage. The lively weather meant our selected sites had to be tucked in under Ballard Cliff, out of the tide, or well into Swanage Bay. The aim of the dives was to obtain information on nesting black bream in the area in advance of a side scan survey by Cefas commissioned by Natural England to identify bream nests at selected locations around the Dorset coast. Bream nests were recorded at all four locations where tended nests had sheets of eggs in various stages of development. These data were subsequently included in a report to Natural England which reviewed the distribution of black bream nesting sites along the south coast from East Sussex west to Lyme Regis in Dorset.

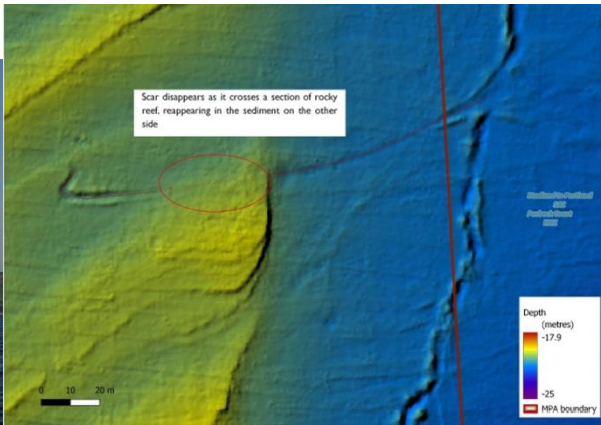
The Swanage dives were closely followed by a three day charter out of Portland arranged by Charlotte Bolton. Thankfully the wind had calmed down but the plankton bloom was still thick, limiting visibility at nearshore sites to a murky couple of meters or so. Despite this six locations were successfully surveyed with a notable record of Couch's Goby from reefs off Red Cliff (Holger Schuhmann). A few black bream nests were reported on rugged rocky reef in the northern sector of Lulworth Banks, again information included in the report to Natural England.



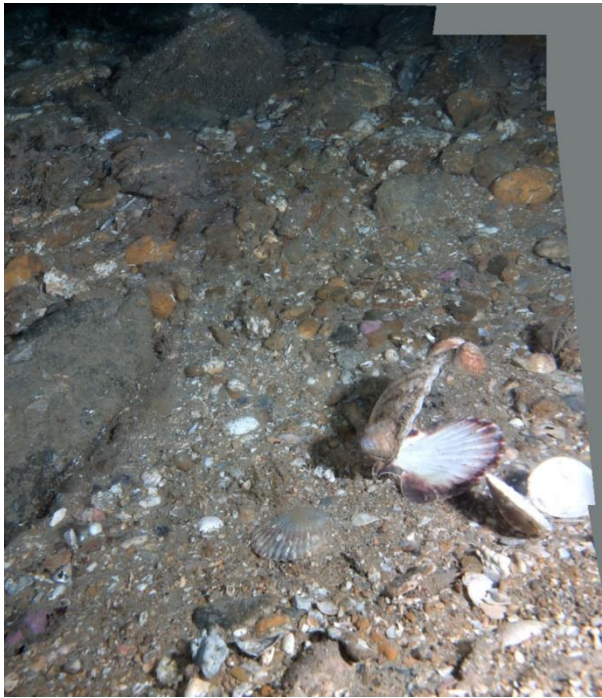
Left: Couch's goby ©Holger Schuhmann. Right: Undisturbed seabed adjacent to anchor scar ©Lin Baldock

Of particular interest was a dive to assess the impact of cruise ship anchoring on the seabed. Dorset Wildlife Trust¹ had reviewed the results of a multibeam survey targeting the anchor scars from these ships in Weymouth Bay in 2021 and a scar on the very edge of the Studland to Portland SAC designated for its rocky reefs was selected. The contrast was dramatic: surrounding, undisturbed seabed was a deep sandy sediment veneer with scattered embedded small boulders and cobbles supporting a varied fauna of hydroid/bryozoan turf, branching and cushion sponges, groups of queen scallops and small colonies of deadmen's fingers. It was quite obvious when we arrived at the "tick" of the scar (see map below). Level seabed about 5m wide of clean sand without any life evident extended 15m eastwards between two mounds of tumbled boulders and cobbles. These had virtually no life on them but had white crusts of either dead bryozoan colonies or dead encrusting coralline algae. There were broken and chipped scallops and other bivalve shells scattered around the site. On the micro-scale a small pink seafan was photographed with a cobble nudged up against it, this had clearly damaged the "skin" at the base of the seafan. It was calculated that the area of seabed impacted by four separate anchor scars ranged from 0.9ha to 2.7ha, hence the cumulative effect of numerous vessel anchor deployments over a period of 18 months or more can be imagined.

¹ <https://www.dorsetwildlifetrust.org.uk/sites/default/files/2021-06/ShipsReport2021.pdf>

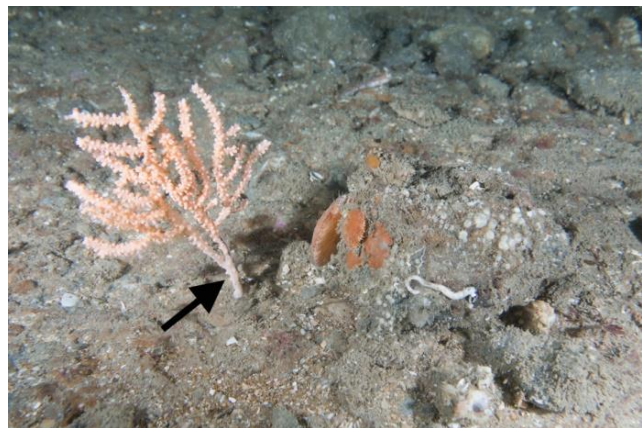
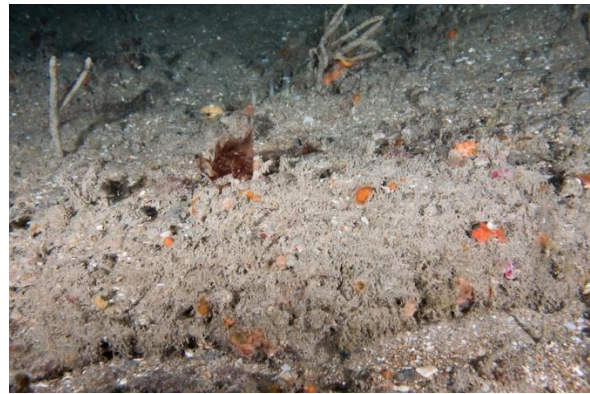


Left: cruise ship at anchor ©Lin Baldock Right: feature dived in May 2021 ©DWT



Left: Churned up rubble and newly dead bivalve shells – edge of anchor scar.

Below: undisturbed seabed with sponges, bryozoa and thick hydroid turf
©Lin Baldock



Left: a pink seafan part smothered by a small cobble. Right: showing damage at the base.
©Lin Baldock

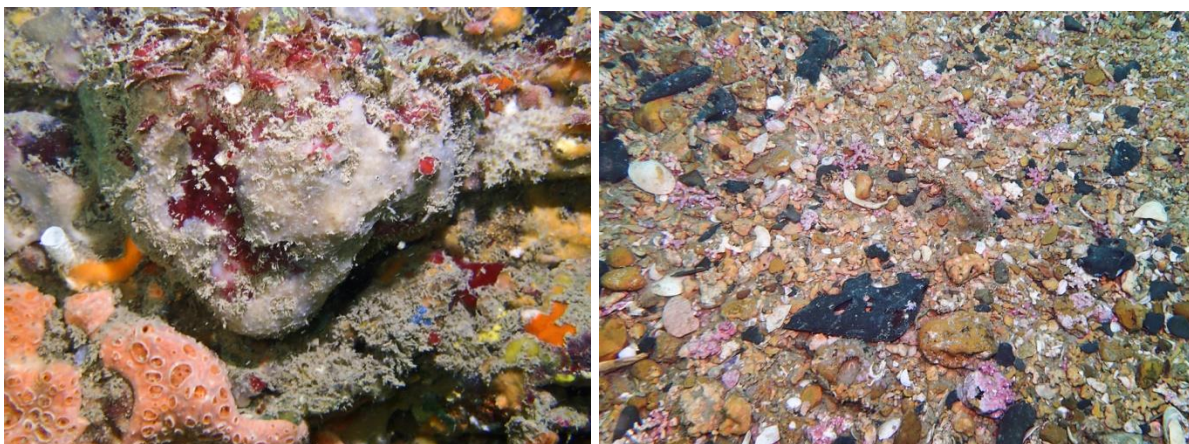
The cruise ships have now gone to anchor elsewhere but the seabed scars in both Weymouth Bay and Poole Bay at this scale are likely to remain evident for a long time. A follow-up seabed survey is going ahead in early 2022. The plan in 2022 is for Seasearchers to visit an anchor site in Poole Bay very close to *Sabellaria spinulosa* (ross worm) reef and follow changes over time.

To complement the organised Dorset Seasearch survey days, Charlotte Bolton chartered local boat Skin Deep to investigate some interesting sites which potentially fell just outside the guidelines for organised Seasearch surveys. Slack water times made for a luxurious mid-morning ropes-off which was widely appreciated. The reefs south of Stennis Ledges offshore from Chesil Cove have proved a happy hunting ground in the past, and did not disappoint this time either. A post-lunch “gap-filling dive” tucked in out of the tide south of Blacknor Point avoided the crowds on the James Fennell wreck slightly further north and produced another crawfish record from the northern-most buddy pair, whilst the others were treated to some classic West Portland fauna on enormous boulders.



Two colour forms of the red-spotted horseshoe worm (*Protula tubularia*) – Blacknor Point.
©Charlotte Bolton

Sunday saw us hunting for a fan shell on the Lulworth Banks following a chance sighting by Hugh Waite on a previous drift dive. Whilst unsuccessful in that primary goal, we did survey an interesting east-facing wall and adjacent seabed where a breeding variable blenny was photographed, the first evidence of breeding in this species east of Portland Bill. We were less happy to see potting damage to the reef fauna on the wall and plateau. The final dive of the weekend extended previous surveys in the vicinity of Bat’s Head, recording mobile sediment with a high proportion of live maerl within the Purbeck Coast MCZ which was designated for maerl beds among other features.



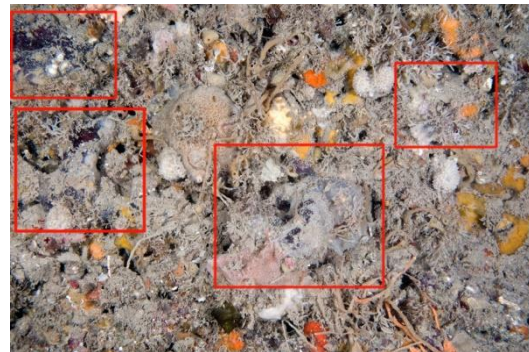
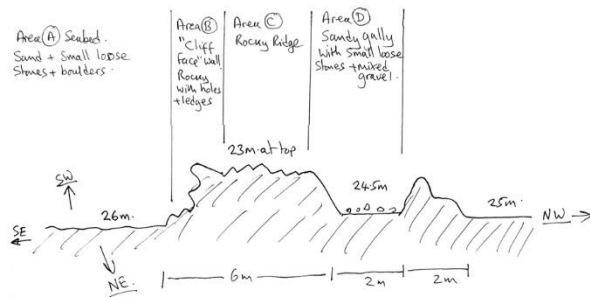
Left: diverse sponges – Hugh’s Wall. Right: maerl-rich gravel veneer Bat’s Head.
©Charlotte Bolton

Three days of diving in September were achieved from Lyme Regis targeting sites on Long Ledges just southwest of Sawtooth Ledges and new sites on reefs a little further east. This survey was partly funded by a Roger Bamber research grant awarded to Lin Baldock by the Porcupine Marine Natural History Society and sponges samples were also collected for the Darwin Tree of Life (DToL) project² which aims to gather genetic sequences for all organisms in Britain and Ireland. Seventeen sponge samples

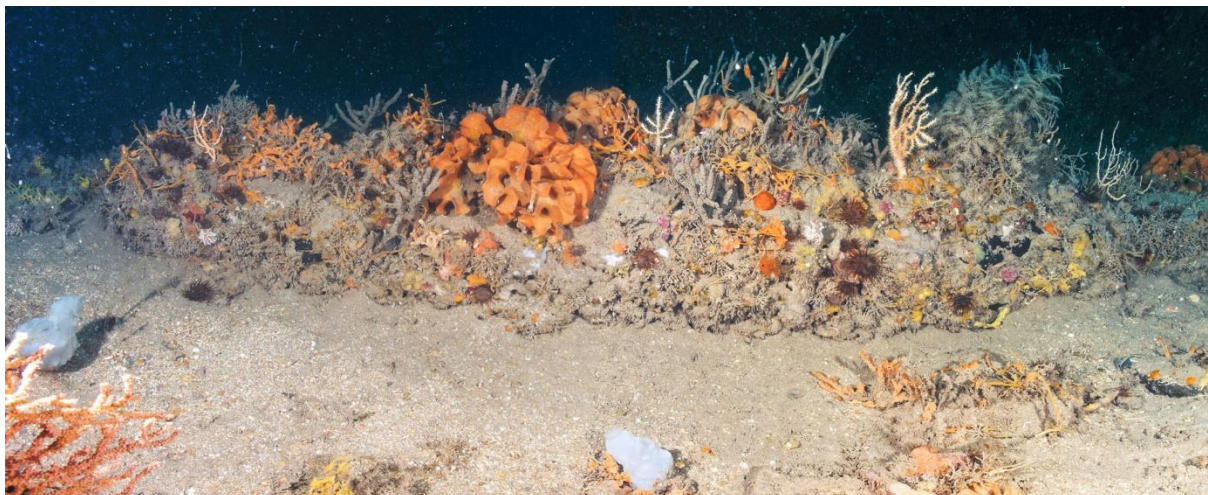
² <https://www.darwintreeoflife.org/>

were collected and delivered post haste to the nearest project centre at the Marine Biological Association in Plymouth. Unfortunately difficulty in getting reliable genetic sequences from sponges means the analysis of these collections is on hold. Samples of sponge crusts (always under recorded) were also collected from the site and these will be sent away for expert identification.

The Long Ledges site is of special interest because of the extraordinary sponge-based community on the rugged rock ledges. 3D imagery was collected by Matt Doggett and Hugh Waite, providing an excellent overview of the site³. Other divers contributed a variety of imagery and data for Seasearch forms, all helping to build our understanding of the habitat.



Left: Section across Long Ledges reef ©Ray Scott. Right: Detail of sponges on sponges on sponges. ©Lin Baldock



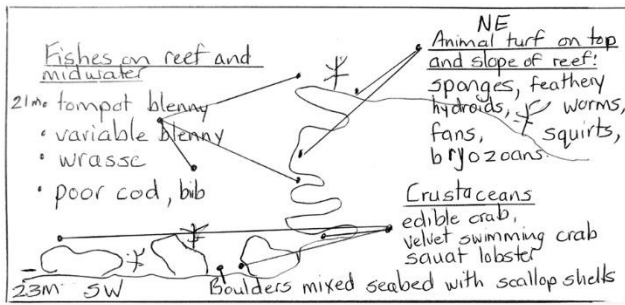
Panorama of the sponge dominated rock ledge. ©Richard Yorke

Other dive sites were selected to try and find other localities supporting the special sponge community but despite superficially similar rock type and exposure it was not found. One site did have an excellent example of the seafan, ross coral and branching sponge community (CR.HCR.XFa.ByErSp) and an additional bonus was the rediscovery of a deep overhang with large number of the rare sunset coral (*Leptopsammia pruvoti*), marks given to us by John Walker who skippered Seasearch dives for many years for us.



The rarely recorded sponge *Endectyon delaubenfelsi*. ©Lin Baldock

³ <https://skfb.ly/o7oAX> and <https://skfb.ly/orXw8>



East of Sawtooth

Left: reef profile ©Tina Scott. Right: seafan/branching sponge biotope on the northeast facing reef slope. ©Mike Markey

The final organised Seasearch dives were again out of Portland with reasonable weather and good underwater visibility seeing another four sites ticked off. There was subsidy for one day of diving from a Sea-Changers⁴ grant awarded to Dorset Wildlife Trust to detect change in fragile species such as sea fans and ross corals. Again, Matt Doggett collected imagery for 3D reconstruction of part of the reef where there were seafans and many ross coral colonies, the aim of this study being to repeat the collection of imagery in 2022 to monitor these species⁵. Interesting records included the first report of Stephen's goby (*Gobius gastevensi*) east of Portland Bill by Mike Markey and another site was established for the green seaweed *Flabellia petiolata* where it formed a dense sward on limestone rock. This seaweed is very common in the Mediterranean so the Dorset sites are the most northerly for the species by a long way.



Left: Steven's goby ©Mike Markey. Right: *Flabellia petiolata* "turf". ©Lin Baldock

Finally, a site very close to Portland Harbour was surveyed where Charlotte Bolton had seen substantial quantities of live maerl. The tide across this low mound made this a fast drift but established the presence of live maerl. A return to the site on slack water was finally achieved in December. It proved to be an island of high biological diversity surrounded by beds of slipper limpets.



© Charlotte Bolton

⁴ <https://www.sea-changers.org.uk/>

⁵ <https://sketchfab.com/3d-models/lulworth-banks-rocky-reef-4904065b5ac0455f85218530f3d8b4f3>



Portland Maerl Site

Left: colourful sponges –©Charlotte Bolton. Right: maerl rich gravel. ©Lin Baldock

A number of interesting records were included in the Dorset Seasearch 2021 dataset and a little more information on these is summarised below.

Cnidaria

Policeman's helmet anemone (*Mesacmaea mitchellii*) on the Lulworth Banks, the second Dorset record on the NBN east of Portland Bill from a total of 175 records in Britain.

Crawfish (*Palinurus elephas*)

Crawfish records continue to accumulate with large specimens reported from both wrecks and inshore reefs. Satisfyingly there have also been records from Lyme Bay reefs of smaller individuals again so it would appear that another cohort of juveniles is coming through.

Fan mussel (*Atrina fragilis*)

We have been aware of the possibility of there being live fan mussels somewhere on the Lulworth Banks for some years. Finally live specimens were reported this year. In July a large individual was brought to the surface by a diver. Photographs and measurements were taken and the animal returned. It should be noted that this is a protected species so should not be removed from its habitat – just take photographs and measurements *in situ* and please do report the sighting. Later in the year Hugh Waite found and photographed a much smaller specimen at a location a little further east on the edge of the Lulworth Banks. Several dives have since targeted sites in the vicinity in the hope of finding other individuals, but without success so far.



Left: Crawfish ©Tina Scott. Right: Variable Blenny with purple eggs ©Hugh Waite

Hugh Waite also reported a **curled octopus** *Elodone cirrhosa* on the same dive, the only report of an octopus received by Dorset Seasearch in 2021.

Craig Pinder sent in a photograph of a very small species of nudibranch – *Doris ocelligera*, found in Portland Harbour – another species on the easterly edge of its range in Dorset. This is a rare species with a south westerly distribution (only 52 records on the NBN) and only one other east of Portland Bill, again in Portland Harbour.

Echinoderms

Records of **sunstars** (*Crossaster papposus*) were again received from the wreck of the Betsy Anna as well as from a deeper site south of the wreck of the Kyarra, both sent in by Nick Reed. This species is encountered rarely but regularly in Dorset waters with one or two records most years. Feather stars (*Antedon bifida*) were found by Charlotte Bolton on the west side of Portland Bill. There are fewer than a dozen records for this species from Dorset.

Hugh Waite reported an **edible sea urchin** (*Echinus esculentus*) on the wreck of HMS Warrior II again a species with few Dorset records, it is much commoner west of Start Point in Devon. To most divers familiar with sites in Devon and Cornwall these species might not seem to be interesting but for Dorset being on the eastern edge of their range in the English Channel these records are noteworthy, please keep them coming in.

Sea squirts

More records came during the year for the large *Polycarpa* cf *mamillaris* (a species “not in the book”), all east of Portland Bill and a good population of the aptly named *Polycarpa violacea* was found on the foundations of one of the piles supporting the Ferry Bridge. Continuing the sea squirt theme there is now some suspicion that what we fondly thought of as *Dendrodoa grossularia* is possibly two species and we do now know that there are two species of *Distomus* in Dorset. There are plans for targeted collection of sea squirts from around Dorset for the DTOL project later in 2022.

Fish

As mentioned above **Steven’s Goby** (*Gobius gastevensi*) was recorded for the first time east of Portland Bill by Mike Markey and there have been five Dorset records of the Variable Blenny (*Parablennius pilicornis*) in 2021, with first breeding confirmed east of Portland Bill when Hugh Waite photographed a dark male fish guarding purple eggs among the folds of a ross coral colony.

Guillet’s goby (*Lebetus guilleti*) the smallest goby in Britain and Ireland was found a couple of times: one on huge waves of dead maerl gravel with fields of the rare sea cucumber *Neopentactyla mixta* south of Worbarrow Tout, the other on the site near Portland Harbour where live maerl was recorded. This fish may not be as rare as records suggest, its small size and cryptic behaviour making it difficult to spot.



Left: Sun fish ©Matt Doggett Right Guillet’s goby ©Lin Baldock
(Dorset’s largest and smallest bony fish)

Yarrell's Blenny (*Chirolophis ascanii*) was reported again by Hugh Waite from the wreck of HMS Warrior II.

Clive Webb photographed a male **Undulate Ray** (*Raja undulata*) on Lulworth Banks in May which proved to be “new” to the data set of ray images managed by the Undulate Ray Project⁶, most from near Kimmeridge. This fits with other evidence indicating that these fish have a small home range.

In June a small **Sunfish** (*Mola mola*) was reported by Martin Openshaw just on the edge of St Aldhelm's race and was photographed successfully by Matt Doggett – not using flash. We managed to keep in touch with the animal for a short while.

Seaweeds

The green seaweed *Flabellia petiolata* was recorded on five occasions from limestone reefs in Weymouth Bay. At one site off White Nothe it was forming a dense turf covering up to 10% of the seabed on level bedrock reef.

Peacock weed (*Padina pavonica*) was found just off Town Beach at Swanage. The species was last recorded from Swanage over 100 years ago. Thank you to Carl Sutton who mentioned to me that he had seen it while snorkelling over the shallow chalk reef at this site.

Some statistics

The dives detailed above and other Seasearch forms, both Observer and Surveyor, resulted in a total of 143 forms for Dorset for 2021, once reviewed and combined into single “events” where appropriate these produced 85 survey events in Marine Recorder, the database system used to collate all Seasearch records prior to them being uploaded to the National Biodiversity Network (NBN). In addition there were five crawfish forms submitted. This data set comprises over 4,330 individual records of species, species groups or categories such as “sponge crusts” in more than 150 “samples” (essentially habitats) representing 57 different biotopes all from contributions from over 40 divers (including their buddies). The map below shows the distribution of Dorset records for 2021.

Records from deeper sights were very welcome with reports from the wrecks of the SS Fluent (Mike Rushworth, 40m BCD), HMS Warrior II (Hugh Waite, 54m BCD) and four other dives at depths greater than 25m BCD. Official Seasearch dives are restricted to depths of less than 30m but information from deeper sites is of great interest. If you are visiting a deep wreck do include information on the adjacent seabed as well as from the wreck itself if you can. At the other end of the depth scale we can handle information from the intertidal and from snorkelers in the shallows as well as sightings from the boat as for example the sunfish reported by Martin Openshaw off St Aldhelm's Head.

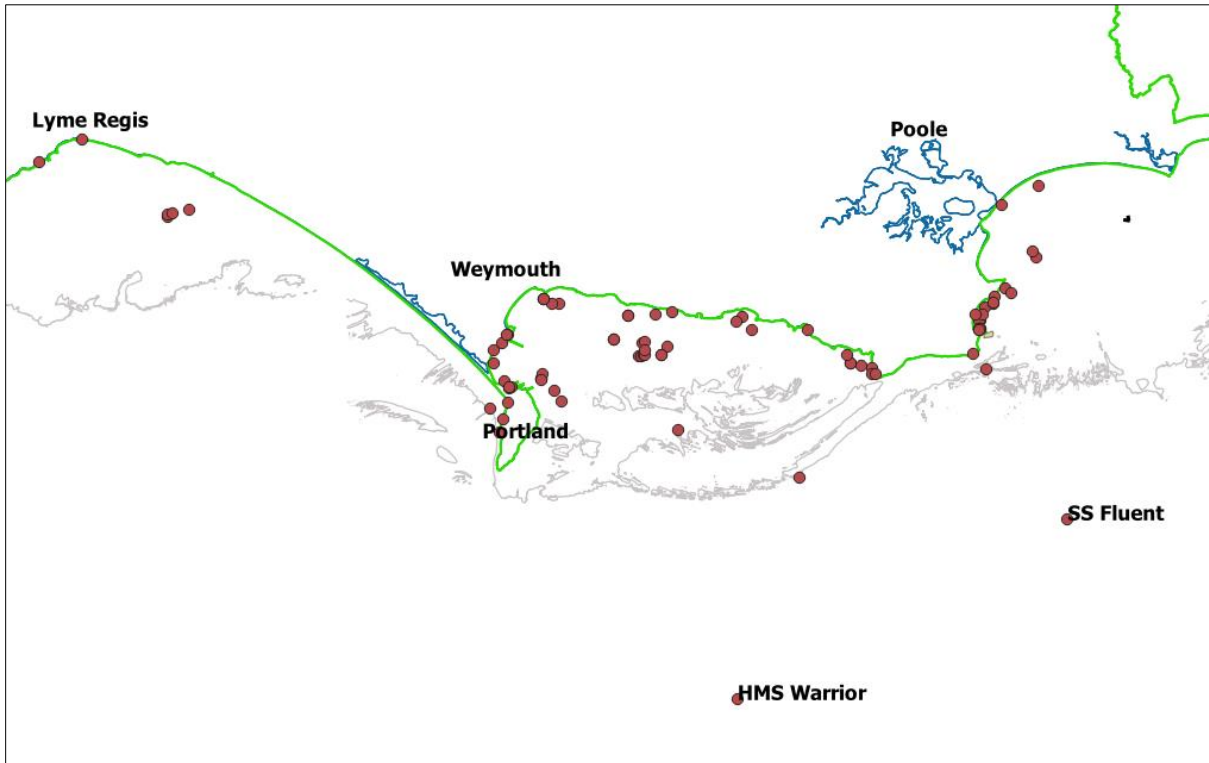
Outputs

A number of outputs were produced during 2021 using Dorset Seasearch data:

- Report: Plethora of Porifera a summary of the survey of sponge communities in Lyme Bay published in the Porcupine Marine Natural History Society Bulletin.
- Collection of sponge samples for the Darwin Tree of Life project. Seasearch are involved in the DToL project primarily as the “public engagement” partners of the Marine Biological Association. Seasearch has a very wide and diverse community of volunteers with interests in marine life, including professional marine biologists and “interested amateurs” who are nonetheless the de facto experts in various phyla. Further work on the project this coming season will increase the role of Seasearch within the project with the aim of identifying “tricky species or species aggregates” to be included in barcoding projects. In the meantime bar coding sponges remains problematic.

⁶ <http://undulateray.uk/>

- Data held in the Dorset Seasearch database on black bream, both nest sites and occurrences of juveniles, were used in a report to Natural England reviewing the present knowledge of black bream nesting in the English Channel. These data were also used to inform site selection for a targeted survey of bream nesting sites off the Dorset coast undertaken by Cefas in May 2021.
- Information on the dive on the anchor scar in Weymouth Bay was used to illustrate the impacts of the activity in a report by Dorset Wildlife Trust to Natural England.
- Seasearch data, including information from Dorset sites, are being used to design a more detailed classification of maerl biotopes in England. Dorset has some good examples of maerl-rich, mobile sediment veneers.
- Marine Recorder Snapshot for upload to the NBN 85 events, >4,330 individual taxon records.



Locations of Dorset Seasearch dives – 2021.
Contains OS data © Crown copyright and database right (2021)

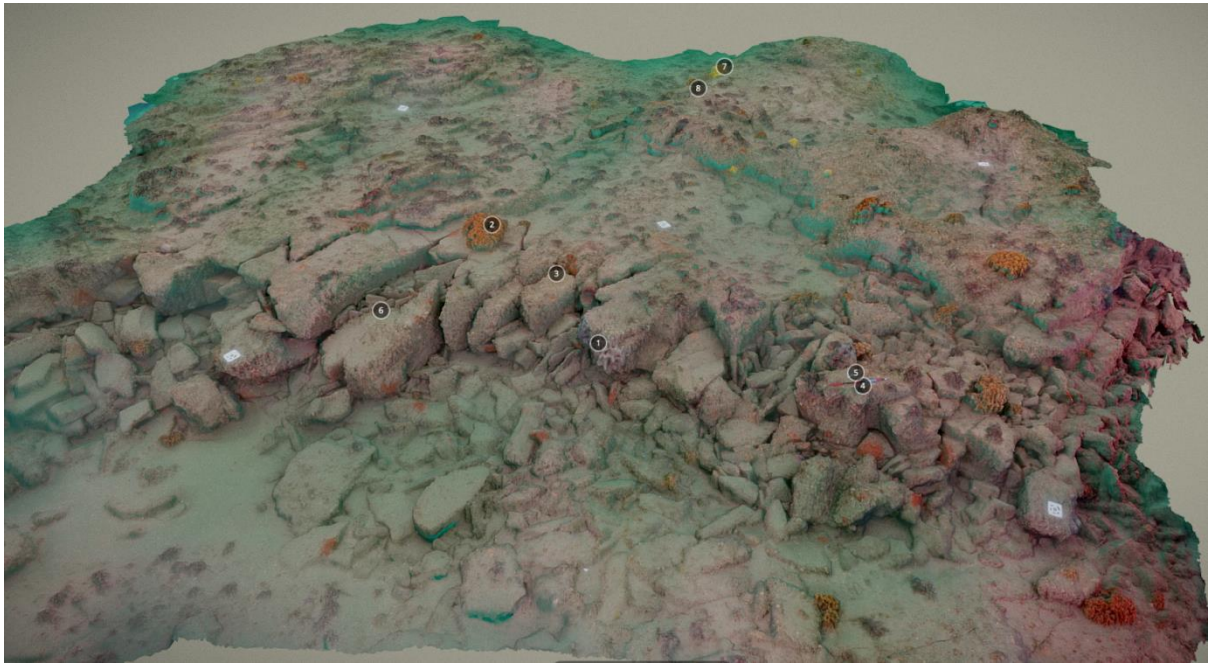


Left: fanshell (*Atrina fragilis*) Right: female or juvenile variable blenny (*Parablennius pilicornis*)

©Hugh Waite



Diverse sponge community with abundant trumpet anemones (*Aiptasia couchi*) on a Lyme Bay reef.
©Mike Markey



3D model of reef on the Lulworth Banks – to monitor colonies of ross coral (*Pentapora foliacea*) and pink seafans (*Eunicella verrucosa*). ©Matt Doggett

Acknowledgements

Divers and other record contributors:

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- Dorset Wildlife Trust through a Sea-Changers grant.
- Darwin Tree of Life (DToL) project
- Porcupine Marine Natural History Society Roger Bamber research grant to Lin Baldock
- Nick Owen made a donation to the Dorset Seasearch fund raised from a marine life talk to the WI.

Prepared by Lin Baldock
Dorset Seasearch Coordinator

