

Seasearch records of maerl in the Bailiwick of Guernsey

Dr. Charlotte Bolton, National Seasearch Coordinator, Marine Conservation Society

'Maerl' is a generic term used to describe unattached coralline algae. In fully marine conditions the dominant maerl is typically *Phymatolithon calcareum* but since it is practically impossible to identify to species level while underwater and adds little value to a Seasearch record, Seasearch volunteers are encouraged to use the non-taxonomic term 'maerl' for their sightings.

Live maerl thalli (pieces) are pink but even dead maerl gravel supports a diverse assemblage of marine life due to the complexity of the substrate formed by the three-dimensional thalli. The high biodiversity associated with maerl is well-known (see *e.g.* Birkett et al., 1998¹).

As an alga, maerl requires light to photosynthesise and as such is sensitive to smothering from suspended sediment in the water (for further details and a habitat sensitivity assessment, consult the MarLIN website at https://www.marlin.ac.uk/habitats/detail/255/maerl_beds).

Maerl is very slow-growing and while individual thalli may live for more than one hundred years, maerl beds may be thousands of years old. This makes maerl beds a crucial store for carbon sequestration ('blue carbon') on geological timescales (see *e.g.* the 2014 Scottish Natural Heritage report² which quantified the scale of these natural assets; maerl and cold-water coral reefs were estimated to represent a standing stock of 0.5MtC with primary productivity from maerl deposits sequestering an additional 407 g C m⁻² yr⁻¹). Without knowing the extent of maerl beds within the Bailiwick, no reliable estimate can be made of the resource.

The current evidence regarding the recovery of maerl suggests that if maerl is removed, fragmented or killed then it has almost no ability to recover (Hall-Spencer, 2009³). Translocation is therefore not a viable option.

Seasearch volunteers have recorded and documented maerl in Cornwall - in the Fal estuary, which contains the best example of a live maerl bed in England, and around the Manacles on the Lizard Peninsula; both of these are Marine Protected Areas and include maerl as a feature of conservation importance. Seasearch data is recognised as a robust and trustworthy source, and currently represents the second-largest and most up-to-date marine dataset on the National Biodiversity Network Atlas (nbnatlas.org). Records collected by Jersey Seasearch have also contributed hugely to

¹ Birkett, D.A., Maggs, C.A. & Dring, M.J., 1998. "Maerl. an overview of dynamic and sensitivity characteristics for conservation management of marine SACs." Natura 2000 report prepared by Scottish Association of Marine Science (SAMS) for the UK Marine SACs Project., Scottish Association for Marine Science. (UK Marine SACs Project, vol V.). Available from: <http://www.ukmarinesac.org.uk/publications.htm>

² SNH Commissioned Report No. 761 "Assessment of carbon budgets and potential blue carbon stores in Scotland's coastal and marine environment"
<https://www.nature.scot/sites/default/files/Publication%202014%20-%20SNH%20Commissioned%20Report%20761%20-%20Assessment%20of%20carbon%20budgets%20and%20potential%20blue%20carbon%20stores%20in%20Scotland%27s%20coastal%20and%20marine%20environment.pdf>

³ Hall-Spencer, J., 2009.

http://www.academia.edu/download/31416675/Port_of_Falmouth_Development_Initiative_final.pdf

recent (2017) legislation there, with areas around Les Écréhous and Les Minquiers closed to bottom-towed fishing gear that physically abrades the seabed (see *e.g.* <https://www.gov.je/News/2017/pages/Ecrehousprotection.aspx>).

Seasearch records for maerl in the Bailiwick of Guernsey are sparse, with only five records during the period 2011-2019. These all have an abundance of Rare (on the SACFORN scale, developed as part of the JNCC's Marine Nature Conservation Review, see *e.g.* <https://mhc.jncc.gov.uk/media/1009/sacfor.pdf>) apart from the 2019 observations in the vicinity of the Vivian beacon within 250m of the proposed works. Such proximity would make direct damage (physical and through sedimentation effects) to the maerl highly likely. Video footage shows a dense covering of live maerl; detailed underwater ground-truthing to establish the associated biological community has not yet been undertaken. Further investigation of the area of the 2019 observations would enable the extent and diversity of the maerl bed to be established.

The small number of records of maerl should not be taken as a true picture of its abundance in the Bailiwick; it is very likely to be under-recorded given the preference of divers for reefs and wrecks. In the absence of such data the precautionary principle should be applied to prevent unsustainable damage to this non-renewable and highly-biodiverse habitat.

Seasearch records for maerl around the main island of Guernsey (2011-19).

