Falmouth Geophysical Survey and Benthic Habitat Mapping

Allwright.D, Chaplin.E, Clemence.C, Ernst.H, House.L, Parker.M, Staplehurst.J, Starr.A, & Ward.S

Metadata

Date: 24-06-2015

Time : 11:45 UTC

Location: Between
33278.7 N 183628.8 E
and 33362.4 N 183336.8 E

Cloud Cover: 7/8

HW: 10:08 UTC

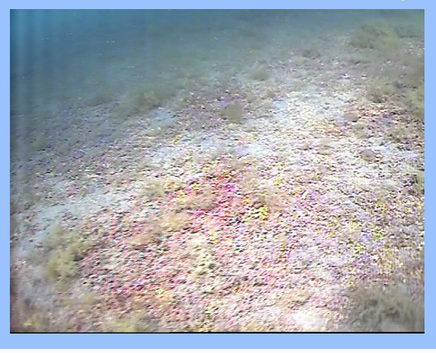
LW: 16:36 UTC

Maerl Beds

Maerl is a rare, protected type of red seaweed that forms hard, chalky skeletons in nodules or branches. It is very slow forming, with a growth rate of only 1mm a year; making the current maerl beds extremely old.

Many different species live on or within the networks of maerl, making this a very important habitat for marine life, including providing a successful nursery ground for fish and shellfish.

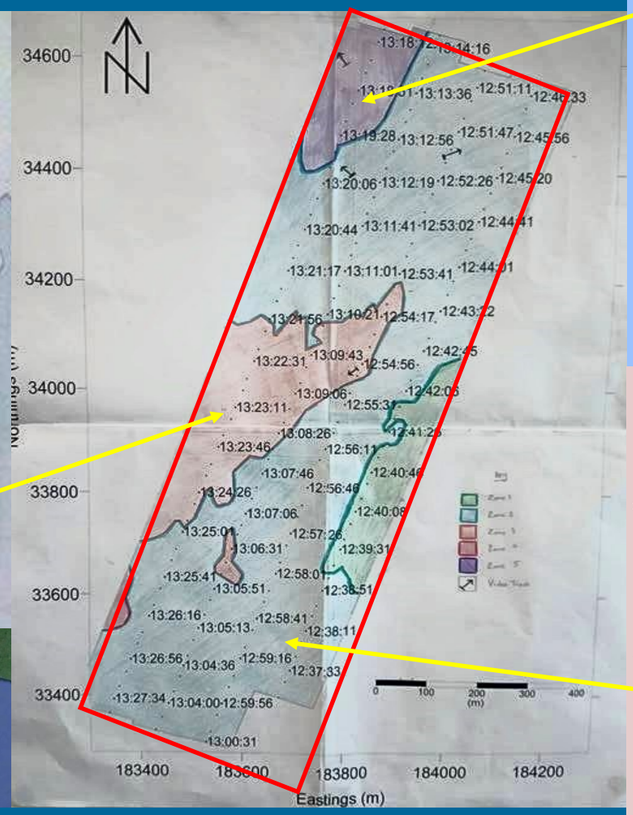
The maerl beds in the transect area consist mainly of two separate species, *Lithothamnion corallioides* and *Phymatolithon corrallidioides*



Background

The Fal estuary is a flooded river valley home to a diverse range of habitats. On 24/06/2015 , Group 10 conducted a habitat mapping survey which included carrying out a sidescan sonar and video ground-truthing. Our primary location for sampling was between St. Mawes point and the Carrick Roads in Falmouth estuary. The aim of this survey was to establish the distinct habitat zones within this area. Zone 1 was a suspected eelgrass bed but was unable to be sampled directly due to shallow water.

Side scan sonar uses acoustics to create an 'image' of the sea floor by measuring the strength of the returning sound pulse. It is a useful tool in habitat mapping, as it allows for identification of different bed types and therefore different habitats by analysing the side scan image.



1) Cochrane, G. R. & Lafferty, K. D., 2002. Use of acoustic classification of sidescan sonar data for mapping benthic habitat in the Northern Channel Islands, California. Continental Shelf Research, 22(1), pp. 683-690.

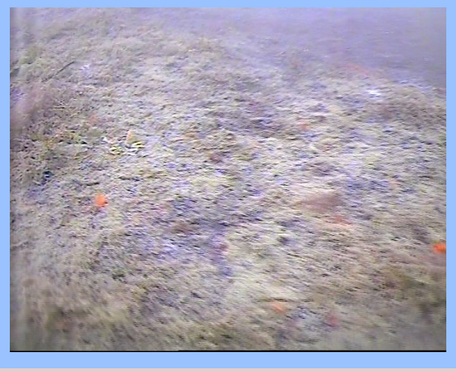
2) National Oceanic and Atmospheric Administration, 2008. Side Scan Sonar. [Online]
Available at: http://oceanservice.noaa.gov/…/seafl…/how_sidescansonar.html
[Accessed 29 June 2015].

3) Blunden, G; Campbell, S.A; Smith, J.R; Guiry, M.D; Hession, C.C and Griffin R.L (1997)C hemical and physical characterization of calcified red algal deposits known as maerl. *Journal of Applied Phycology* 9 11-17.

5) Kamenos, N.A; Moore, P.G, and Hall-Spencer J.M (2004) Nursery-area function of maerl grounds for juvenile queen scallops *Aequipecten opercularis* and other invertebrates. *Journal of Marine Ecology Progress Series* 274, 183-189.

Rocky Reef Outcrops

Along with the mudbanks were small rocky outcrops, colonised by algae (*Petolonia fascia, Cladophora spp.,* and *Chorda filum*) as well as sponges *(Hymeniacidon sanguinea)*, which have stabilised the habitat and provide shelter for other species. These include flatfish such as plaice (*Pleuronectes platessa);* sand goby *(Pomatoschistus platessa)*; the two spot goby *(Globiosulus flavens*). Auger shell (*Turritella communis*) was also present.



Mudbanks

From the deployed underwater camera, the fine sediment appeared to be made up of a combination of mud and fine sand. This region had a low abundance and low diversity of fauna due to low oxygen concentrations and high concentrations of hydrogen sulphide. It is however home to fauna such as large numbers of auger shell (*Turritella communis*), along with several specimens of the annelid *Myxicola infundibulum,* and the green shore crab (*Carcinus maenas*).

UNIVERSITY OF Southampton

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