

**Seasearch survey of Drake's Island eelgrass
Summary Report
19 June 2012**



On 19th June a group of 10 volunteer divers undertook an evening survey dive on the *Zostera marina* bed to the north of Drake's Island in Plymouth Sound. The divers were all experienced Seasearchers with some also being professional marine biologists and underwater photographers.

All depths have been adjusted to below chart datum (bcd) for coherence.

The divers were dropped in pairs from west to east north of the jetty area (see map) at approximately 1.9 - 2.9m bcd and directed to head south.

- Pair 1 (most westerly) in at 50° 21.459n, 004° 09.216w
- Pair 5 (most easterly) in at 50° 21.433n, 004° 09.068w

For simplicity and to match the Seasearch Survey form the survey area has been divided up into two habitats, the northern boundary (habitat 2, the deepest) and the southern thicker eelgrass bed (habitat 1, the shallowest) and these are reflected on the species list.

Northern edge, habitat 2 - Mixed coarse sediment

Where the divers were dropped results were varied, some pairs descending almost immediately on to eelgrass which appeared to go deeper and other pairs on to mixed coarse sand with coal particles and no eelgrass but all encountered eelgrass within a few metres going south. In other words the



northern boundary of the eelgrass meanders but appears to be between 1.9-3.9m bcd and possibly extends deeper in places. The seabed here and extending north was coarse rippled sand with coal particles.

Coarse sediment with coal particles and *Amphiura brachiata*

Zostera marina bed, habitat 1 - Coarse sand with superabundant *Zostera marina*

Going south all divers encountered eelgrass and it became thicker and forest like in places. The sediment was coarse sand. In general the eelgrass appeared healthy, clean and green with blades up to 1.5m long, the longer old leaves having much epiphytic growth. Flowering shoots were present at density of about 1 per 10 square m at the deeper start of the dive (2.9m bcd) with fewer shallower but seeds had been formed and dispersed - empty husks could be seen on the stems.



Sparse eelgrass towards northern edge

Towards the jetty (southern edge of survey site) one diver reported the eelgrass was forest thick.

In the shallower areas, especially to the east end of the survey area there were a particularly high number of free floating seaweeds amongst the eelgrass.



Superabundant *Zostera marina*

Throughout the bed bare patches of sediment were also encountered starting at 1.9m bcd m and in places up to 3m wide with many dead rhizomes in the underlying sediment showing that seagrass was once there but the above ground parts had died off. However, some of these bare patches

showed new shoots coming through patches of barren sand.

The eelgrass appeared to peter out about +0.1m relative to chart datum.

Density counts

These were carried out by one diver - counting shoots in 0.1 m² squares

- 1.9m bcd - dense and long (approx 10 shoots per 0.1m²)
- 1.3m bcd - very dense (13-15 shoots /0.1m²) and long including developing seeds

Samples

Hydroids were collected from the eelgrass leaves, initially thought to be *Laomedea angulata* but on subsequent inspection they appeared to be a slightly skinny *Obelia geniculata*, ('allowed' according to the Linnaean Society key)

The encrusting bryozoan collected from the leaves was *Electra pilosa*.

Obelia geniculata also occurred on *Sargassum muticum* collected.



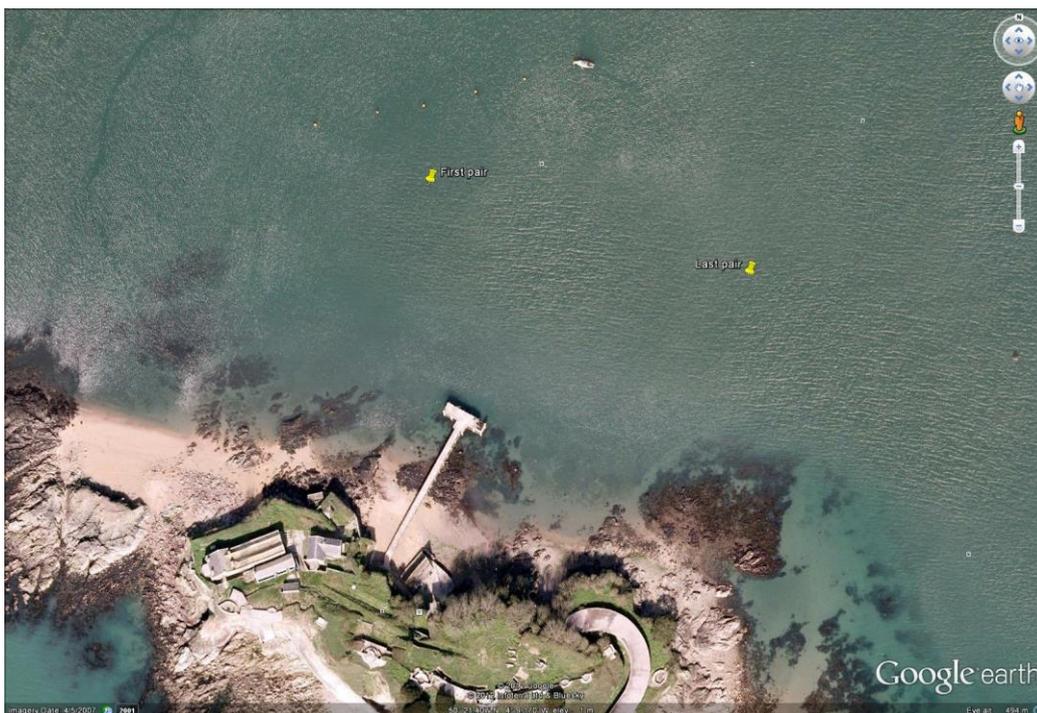
Epiphytic growth on grass blades

Remarks

Although it was good to see that there was lots of seagrass at the site, what we saw did not appear to be as dense overall as has been seen there in the past by some of the divers (though that was in a different part of the bed and in August).

With regard to the high density of flowering (a global review out recently showed flowering to be an indicator of disturbance) it could be a warning sign that things aren't quite right. Some of this is likely a result of the huge storms we have been having and the amount of detached algae which have accumulated completely covering sparse eelgrass at c. 0.8m bcd.

Good news was that a number of true new seedlings were recorded in places (this is not common in seagrass beds).



Entry positions of first and last dive pairs

Species list collated from all divers.

| Species | photo | Hab 1 | Hab 2 | Notes |
|--------------------------------|-------|-------|-------|--|
| Sponges | | | | |
| None | | | | |
| Cnidarians | | | | |
| <i>Cerianthus lloydii</i> | | O | O | |
| <i>Anemonia viridis</i> | | R | | |
| <i>Sagartia troglodytes</i> | | R | | |
| <i>Urticina felina</i> | | R | | |
| <i>Peachia cylindrica</i> | Yes | R | | |
| <i>Obelia geniculata</i> | | F | | |
| ? <i>Laomedea angulata</i> ? | Yes | P | | Sample taken was Obelia but L angulata may still have been present |
| Worms | | | | |
| <i>Arenicola marina</i> | Yes | | O | |
| <i>Pomatoceros sp</i> | | O | | |
| <i>Sabella pavonina</i> | | O | | |
| <i>Myxicola infundibulum</i> | | R | | |
| <i>Lanice conchilega</i> | | R | | |
| ? <i>Nicolea zostericola</i> ? | | R | | |
| <i>Terebellidae indet</i> | Yes | O | | |
| <i>Spirorbis spirorbis</i> | | R | | |
| Crustacea | | | | |
| <i>Maja squinado</i> | | O | | |
| <i>Pagurus bernhardus</i> | | F | | |
| Mysidacea | | O | | |
| Molluscs | | | | |
| <i>Lutraria lutraria</i> | | | R | One living, many dead |
| <i>Facelina bostoniensis</i> | Yes | R | | |
| <i>Coryphella lineate</i> | Yes | R | | |
| <i>Coryphella browni</i> | | R | | |
| <i>Acanthus pilosa</i> | | R | | |
| <i>Polycera faeroensis</i> | | R | | |
| <i>Gibbula cineraria</i> | Yes | O | | |
| <i>Gibbula spp</i> | | O | | |
| <i>Sepia officinalis</i> | Yes | R | | Mating pair |
| <i>Pecten maximus</i> | | O | R | |
| <i>Hinia reticularis</i> | Yes | F | F | Plus eggs on eelgrass |
| <i>Ensis sp</i> | | F | O | |
| <i>Buccinum undatum</i> | Yes | F | | |
| <i>Lacuna vincta</i> | | R | | Plus eggs |
| <i>Sipisula sp</i> | | P | | |
| Bryozoans | | | | |
| <i>Bryozoa indet</i> | | F | | On eelgrass leaves |
| <i>Electra pilosa</i> | Yes | O | | On tips of eelgrass |
| <i>Cellepora hyaline</i> | Yes | P | | |
| <i>Flustrellidra hispida</i> | Yes | P | | |
| Echinoderms | | | | |
| <i>Marthasterias glacialis</i> | | R | | |
| <i>Asterias rubens</i> | | R | | |
| <i>Ophiura ophiura</i> | | R | | |
| <i>Asterina gibbosa</i> | | R | | |
| <i>Amphiura brachiata</i> | Yes | | F | |

| | | | | |
|---------------------------------------|-----|---|---|---------------------|
| <i>Echinocardium cordatum</i> | | | R | |
| Sea squirts | | | | |
| <i>Styela clava</i> | | R | | |
| Fishes | | | | |
| <i>Dicentrachus labrax</i> | | R | | |
| <i>Ammodytes tobianus</i> | | R | | |
| <i>Ammodytes sp</i> | | R | | |
| <i>Entelurus aequoreus</i> | | R | | |
| ? <i>Gaidropsaurus mediterraneus?</i> | | R | | |
| <i>Labrus bergylta</i> | | | O | |
| <i>Pomatoschistus microps</i> | Yes | | F | |
| <i>Pomatoschistus pictus</i> | Yes | | O | |
| <i>Pomatoschistus spp</i> | | C | O | |
| <i>Centrolabrus exoletus</i> | | O | | |
| <i>Callynymus lura</i> | Yes | O | R | |
| <i>Gobius flavescens</i> | | C | | Shoals of juveniles |
| <i>Syngnathus acus</i> | Yes | R | | |
| <i>Platichthys flesus</i> | | R | | |
| <i>Trisopterus luscus</i> | | R | | |
| <i>Crenilabrus melops</i> | | R | | |
| Seaweeds | | | | |
| <i>Laminaria spp</i> | | O | | |
| <i>Calliblepharis ciliata</i> | | R | | |
| <i>Sargassum muticum</i> | | O | | |
| <i>Dictyota dichotoma</i> | | R | | |
| <i>Dumontia contorta</i> | Yes | F | | |
| <i>Chorda filum</i> | | O | | |
| <i>Halidrys siliquosa</i> | | R | | |
| <i>Lithos sp</i> | | O | | On tips of eelgrass |
| Plants | | | | |
| <i>Zostera marina</i> | Yes | S | R | |

Seasearch is a project for volunteer sports divers who have an interest in what they're seeing under water, want to learn more and want to help protect the marine environment around the coasts of Britain and Ireland.

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Photos Paul Aldersley, Allen Murray, Sally Sharrock

Survey divers were Roy Restell, Richard Dean, Allen Murray, Sarah Dashfield, Keith Hiscock, Paul Aldersley, Sally Sharrock, Dominic Flint, Angela Gall and Emma Jackson.