

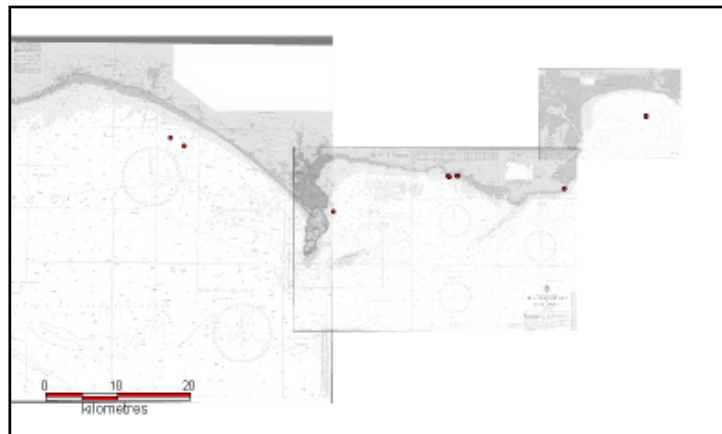


SEASEARCH 2004

Annual Report

Training

A well attended Seasearch Observer course was held at the Fine Foundation Marine Centre, Kimmeridge on 1 May. Sixteen divers took part, including two potential future Seasearch tutors. A days diving within the Purbeck Marine Wildlife Reserve was organised the following day for those on the course to put their skills into practice. A Seasearch Surveyor course on 26/27 June was less well attended, two out of the six people booked onto the course cancelled at the last minute.



2004 Seasearch dives

Seasearch dives and events

Seasearch diving in 2004 has been quite targeted - either forming part of a long-term study or aimed at a particular habitat or area of interest. The English Nature funded Worbarrow pink seafan project is into its second year and divers were able to relocate and re-photograph over twenty seafan colonies. All were healthy, in spite of reports of mortality of seafans around Lundy and in parts of the southwest. One fan was collected for propagation purposes and two were collected for display in a specially built aquarium in the Kimmeridge Marine Centre.

Ampelisca mats are beginning to attract a bit of interest, particularly in Poole Bay. Thanks to the efforts of Seasearch divers, this unusual habitat has been recognised as a feature of conservation interest in an extensive study commissioned by Poole Harbour Commissioners in relation to a proposal to dispose of large amounts of dredgings from Poole Harbour in Poole Bay. Seasearch divers also had an initial look at the West Bexington Cable Area - an ex-Naval hydrophone testing area in Lyme Bay. It had been suggested that seabed obstructions placed by the Navy might have created an untrawled area which might warrant further investigation. Local fishermen have since claimed that these obstructions were swept aside long ago.

Other Seasearch dives include a visit to Southbourne Rough, in Poole Bay. This area is currently the site of the most easterly record of the pink seafan, *Eunicella verrucosa*, in the UK. Unsolicited Seasearch forms are rather thin on the ground - only two for this year.

More details on these and the other projects can be found in the attached reports.

Seasearch data

Seasearch in Dorset has been going on since 1995, with most of the effort being concentrated in the Purbeck area. Data from over 400 Seasearch forms has been entered onto the Dorset Marine database, and in many cases, provides the only seabed information available. All records from 1995 to 2004 are now being written up into a comprehensive report and we are looking into the possibility of making the entire database accessible via the website.

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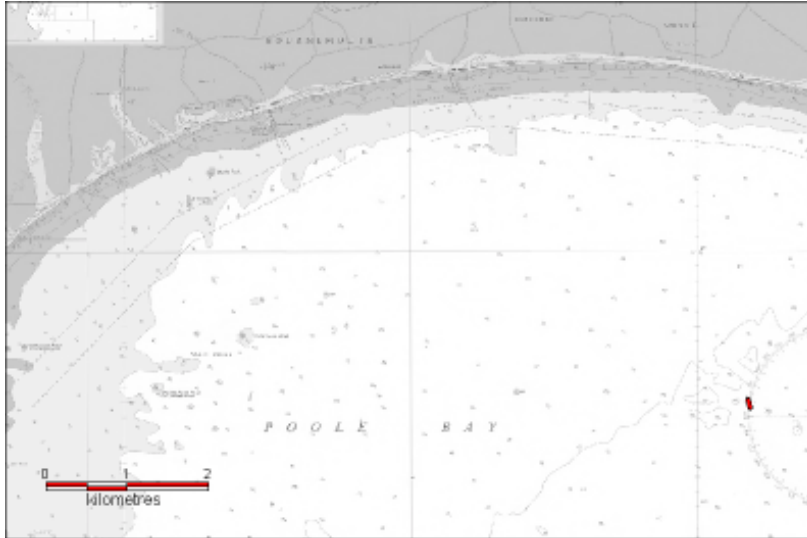
Dorset Wildlife Trust wishes to acknowledge the financial support of English Nature





Southbourne Rough

10 Aug 2004



Two RIBs set off from Swanage on a calm morning for a trip of approx. 6 miles out to Southbourne Rough. Much of this part of Poole Bay is sand but the presence of a potting boat when we reached the site betrayed the harder ground we were looking for. 4 pairs of divers spread out around the shot-line (see map). All found a muddy sand seabed with the brittlestar *Ophiura ophiura* common on the surface, many

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small hermit crabs, some in *Dentalium* shells and occasional bivalve siphons (unidentified, but in greater than finger-depth burrows). Several divers reported necklace shell egg-collars. Some of the hermit crabs were enclosed in the sponge, *Suberites ficus*.

The rougher ground consisted of boulders and small areas of bedrock, often with a bed of the slipper-limpet, *Crepidula fornicata*, alongside. Some of the smaller rocks appeared to be ironstone – very heavy for their size and mostly uncolonised apart from small slipper limpets. Several large native oysters were seen. Bryozoans, especially *Flustra foliacea*, formed the main cover on the rocks, with *Nemertesia antennina* and *Alcyonium digitatum* (this included some orange colonies – rare in Dorset). Most of the *Alcyonium* colonies were tightly closed. A cluster of cuttlefish eggs was seen attached to a clump of *Nemertesia*. Some large specimens of *S. ficus* were seen attached to the rocks.

The rocky areas were home to many small fish – pouting (*Trisopterus luscus*), black gobies (*Gobius niger*), young black bream, (*Spondylisoma cantharus*), goldsinny, (*Ctenolabrus rupestris*), corkwing wrasse, (*Crenilabrus melops*). A single red mullet, (*Mullus surmuletus*) was seen.



Ophiura ophiura



Black goby on Crepidula bed



Cuttlefish eggs among Flustra



Suberites sponge on sie of rock



West Bexington Cable Area

June 2004

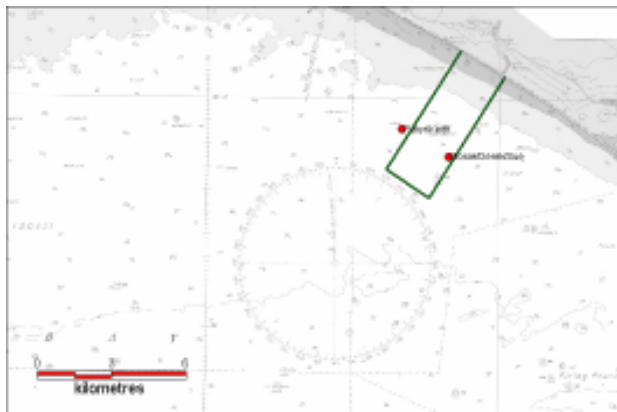
Background

An area of 3 square nautical miles near West Bexington is marked on the Admiralty Chart as a "Cable Area" with the warning – "Vessels are warned not to anchor, sweep or trawl in this area due to cables and obstructions"

This was used by the Navy from 1961 to test hydrophones. The Navy subsequently placed concrete blocks on the seabed to deter trawlers who were ignoring the notice.

Dorset Wildlife Trust is interested in

investigating this area to look for evidence that the area has been largely unfished for several decades. This might help support the argument that closed areas can benefit fisheries due to increased stock density inside the closed area.



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Dive 1 – Inside the cable area - 50° 38.719'N 2° 41.717'W

29m. Flat seabed of shelly silty sand with occasional pebbles/cobbles. Main marine life – queen scallops and small hermit crabs. Many of the scallops had an orange sponge on the upper valve. Other species include common starfish (*Asterias rubens*) and pelicans foot shell (*Aporrhais pespelecani*). The occasional pebbles had hydroids, barnacles and keelworms attached with a few colonies of deadmens fingers or small ross coral.



Dive 2 – Outside the cable area - 50° 39.306'N

2° 43.335'W

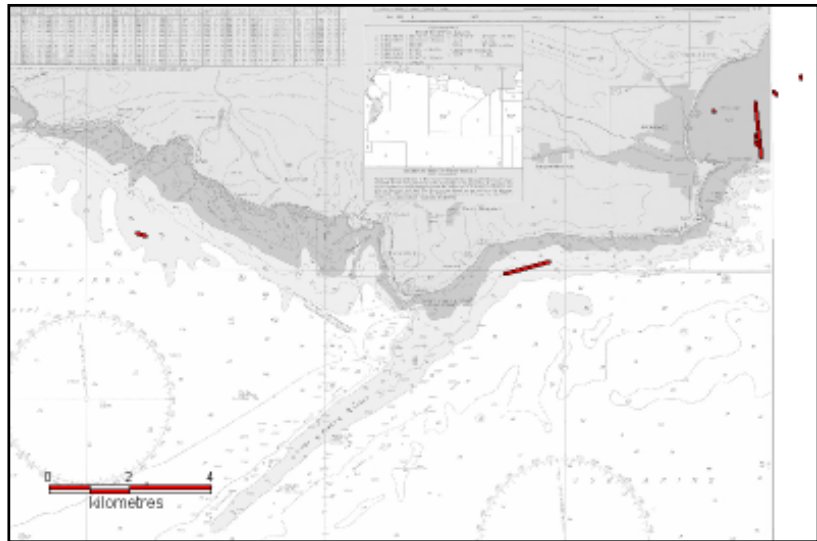
30m. Flat fine muddy sand with small mounds and burrows. Very occasional small pebbles. Coarser sand below the surface. Queen scallops and small hermit crabs in turret shells most common/visible life. Many burrows about 2cm wide, lined with clay-like material that remains intact when the sand is wafted away. Mounds were approx. 10cm in diameter and 2cm high. Mud-runner crab (*Goneplax rhomboides*) spotted in burrow. Single *Philine aperta*? recorded and a few pelicans foots shell, *Aporrhais pespelecani*. Necklace shell (*Polinices catenus*) collars were seen regularly. Pebbles usually had several queen scallops attached, some also with small ross coral colonies and *Serpula vermiformis*. Small razor shells (empty) were seen on the surface.



August 2004

Background

Several Seasearch records from Dorset, especially from around Swanage Bay, have reported the presence of *Ampelisca* "mats". These are often extensive areas of soft silt tubes constructed by large numbers of a small amphipod – the tubes and the underlying silt can be over 30cm deep.



Existing Seasearch records of *Ampelisca* mats

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The importance of such habitats is not well understood, either on a national or local scale. A similar habitat in Sandown Bay, Isle of Wight, was described as "important" in "*The marine biodiversity of South East England*".

Looking around the world, *Ampelisca* mats are considered as:-

- important in terms of secondary production
- a stage in the recovery of polluted harbours
- a sign of pollution/eutrophication
- important food for grey whales
- a potential marine pest

Seasearch studies

On 10 August 2004, Seasearchers dived several transects around the area of Evans Rock, Swanage Bay, recording the presence/absence of *Ampelisca* mats.

4 pairs of divers drifted across the seabed, their positions tracked by the RIBs on the surface.

The divers were asked to note down any times they encountered *Ampelisca* mats.

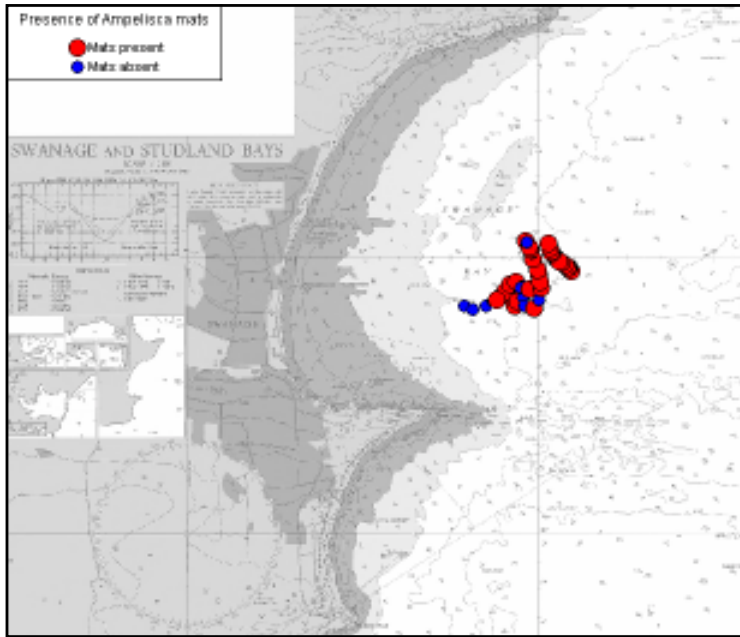
Samples of the mats were collected from two positions to identify the species involved.



Photograph of *Ampelisca* mat near Evans Rock



Eroding edge of *Ampelisca* mat, showing silt tubes



Results

All diver pairs encountered areas of *Ampelisca* mat. These seem to form extensive patches rather than a continuous cover, with the tubes often visible at the edges of the patches, possibly indicating erosion of the mats. Where the mats have eroded, the seabed is mostly dead maerl - often intact, fragile pieces, with shell pieces and *Crepidula*. Could these mats be smothering what would otherwise be a healthy maerl bed? If so, which habitat is the more important? At the northern end of one of the dives, some live maerl pieces were

recorded – this is approaching the area known to be an active maerl bed from earlier studies. Hermit crabs with *Suberites ficus* were often encountered over the *Ampelisca* mats and several Imperial anemones, *Aureliania heterocera*, were seen in the clear patches. Several ross coral colonies, *Pentapora foliacea*, were also seen on these dives. Large edible crabs, *Cancer pagurus*, were often seen half-buried in the mud.

The species involved was confirmed as *Ampelisca spinipes*, samples also contained the amphipod *Microdeutopus versiculatus*. The species collected from the Isle of Wight site was *Ampelisca brevicornis*.

Further studies

It seems likely that these mats cover a large area of Swanage Bay - Seasearch divers will revisit this area in the future but this habitat lends itself better to other survey methods, particularly towed video sled. This would provide a rapid assessment of the extent of the mats and would provide a baseline for assessing future changes.

Investigations into the ecology of these mats would also be welcomed - in relation to the maerl beds and also with reference to the disposal ground further north.



Edible crab, *Cancer pagurus*, dug into *Ampelisca* mud



Hermit crab with *Suberites* on *Ampelisca* mat



Peacock worm, *Sabella*, and *Crepidula* in clear area between *Ampelisca* patches



Dead maerl and shell pieces in area clear of *Ampelisca* tubes

Background

The project was set up in 2003 following the identification in 2001 of a reef within the Purbeck Marine Wildlife Reserve, supporting a good population of the pink seafan, *Eunicella verrucosa*. Apart from a few single fans found as far east as Southbourne, this is currently the most easterly known population of seafans. Dorset Wildlife Trust secured funding from English Nature to set up a three-year study into this population. The main aims of the project are to compare growth rates within this population with other studied populations, to ascertain the level of recruitment/mortality within the study sample and to monitor the overall health of the fans (following widespread mortality in other locations recently). The study site also provides an opportunity to observe any impacts of human activity (potting, angling etc) and is being used as an experimental propagation area.

The reef

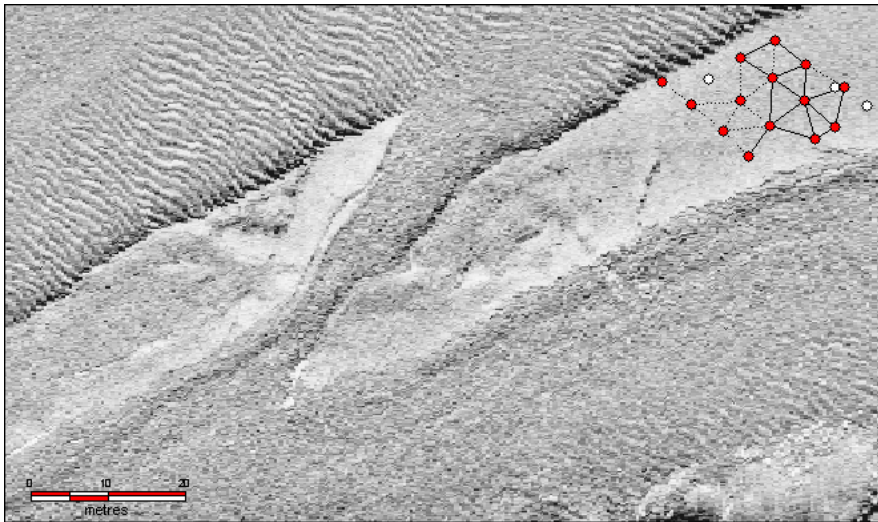


Fig.1 Sidescan image of reef with study area marked

The site chosen is part of a 15m wide reef sloping gently to the northwest. The reef rises from rippled shelly sand/gravel at a depth of around 23m (north side) to the top of the reef (south side) at about 19m, where a broken bouldery edge drops back to about 22m.

The study area

16 small lettered floats have been attached to the reef at approx 5m intervals to form a grid roughly 15m x 15m. The site has proved easy to locate underwater – a shot-line is deployed on a GPS mark to the north of the reef – divers descend the line and swim a few metres south to the reef. Even in less than 5m visibility, the site is usually found in less than five minutes.

Mapping/measurement

The datum points are used to map the position of fans within the study area – sections of measuring tape have been clipped between some of the points to facilitate this. Mapped fans can then be photographed against a scale – this can be repeated annually to record growth and the continued presence of the fans.

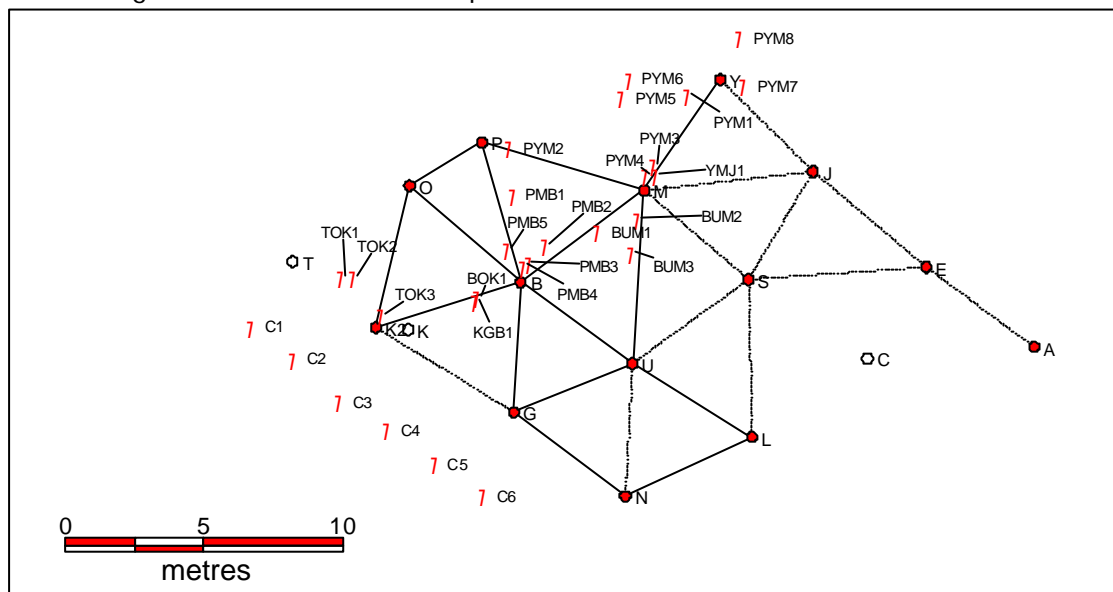


Fig.2 Diagram of study site showing position of fans mapped to date.

22 individual fans (out of an estimated 50) were mapped and photographed in 2003. These were all re-photographed in 2004 – all were healthy and all of the smaller fans showed measurable growth (larger, more complex fans are more difficult to compare year to year)

Several fans appear to be “bent”, the main axis of the fan growing at a shallow angle to the seabed before curving to the more usual vertical. These may have been damaged at some stage by something (e.g. a lobster pot) landing on them. This might warrant further study but suggests that the fans are fairly robust.

The mapped fans are checked for overall health and degree of fouling/infestation by other organisms. The nudibranch *Tritonia nilsodhneri* has been recorded at low frequencies on the fans in the study area but apart from this and the occasional entanglement of bits of drift algae, the fans are very healthy. The barnacle *Solidobalanus fallax*, recently reported as growing on live seafans, has settled heavily on the floats and lines but has not been reported on the fans.

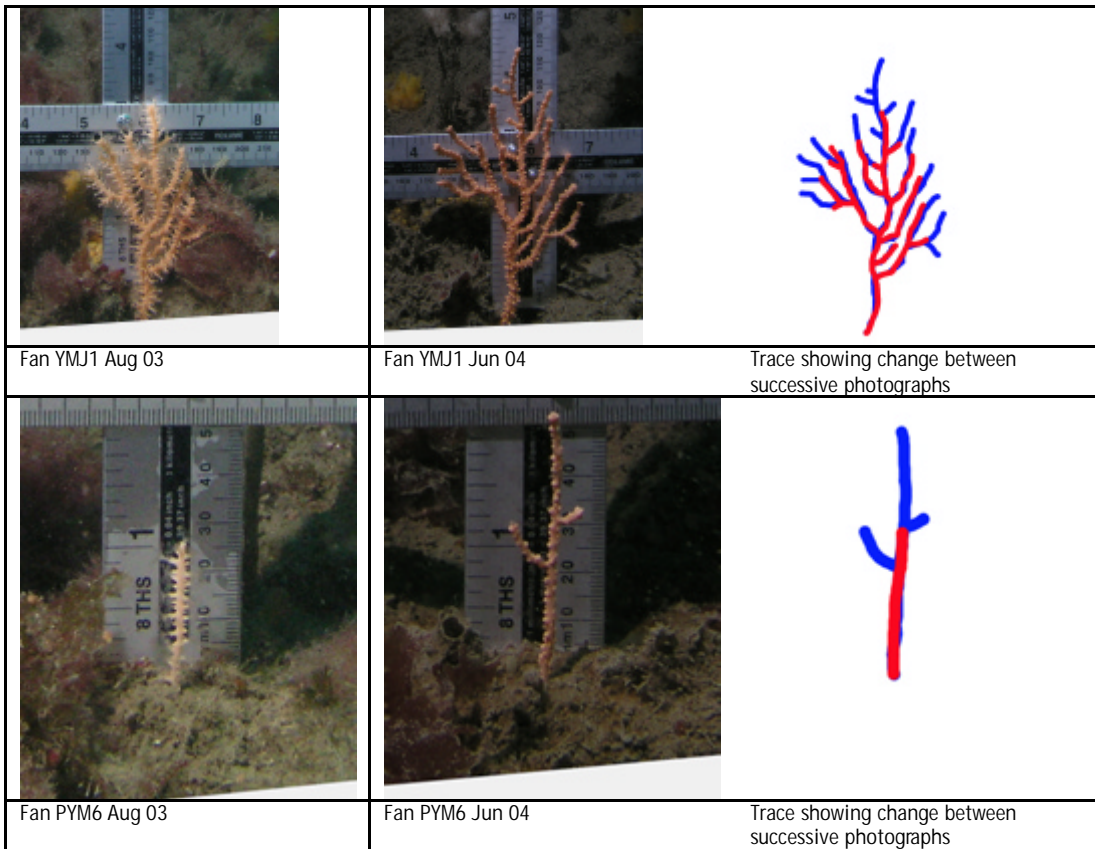
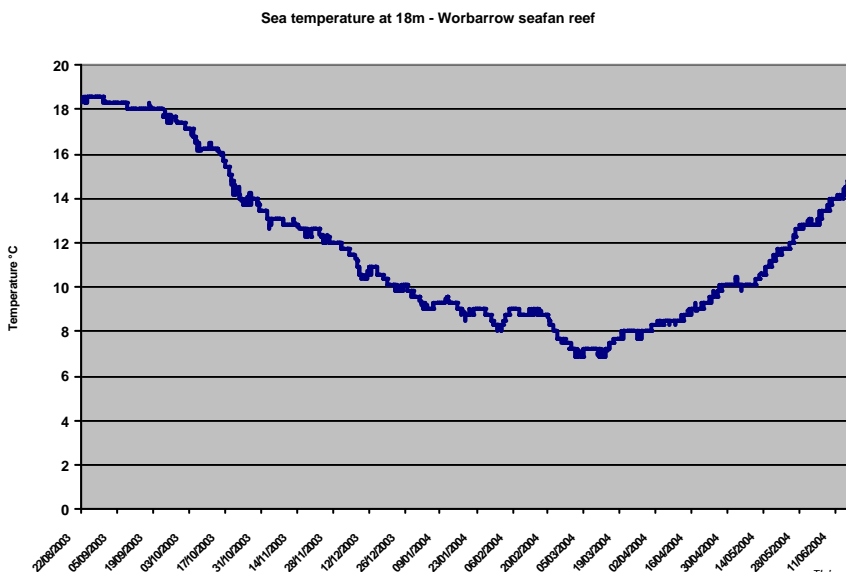


Fig. 3 Showing the growth apparent in two fans between August 2003 and June 2004

Seabed temperature

A Tinytalk temperature logger has been placed on the reef to record seabed temperature – there have been suggestions that high summer temperatures were responsible for the decline of seafans around Lundy and at other sites. Data from Aug 2003 to June 2004 are shown below.

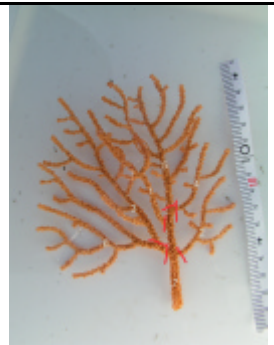



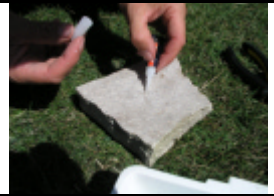


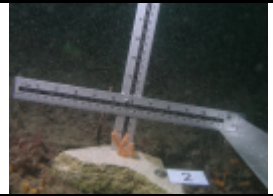


Display/propagation

Two fans were collected from the area adjacent to the study site for display in a custom built public aquarium display in the Fine Foundation Marine Centre, Kimmeridge Bay. The technique used to attach the collected fans to rocks for display purposes could also be used to attach clippings from a larger fan to rocks for propagation purposes, but this has not, to our knowledge, been tried with *E. verrucosa*.

A single fan was collected on 14 August 2004 and divided into seven sections. Each section was then stripped of coenenchyme at the lower end, revealing approx 1cm of the wood-like skeleton. Small holes were drilled into small pieces of flat rock using masonry drills. Each hole was filled with superglue gel and the bare end of a clipping held in the hole. The glue sets in a few seconds and the rock/clipping can be held underwater at this point as the curing glue gives off heat.

Each rock was labelled, stored briefly in seawater before being placed on the reef to the east of the study site (C1 to C6 in the Fig.2). *In situ* photographs of each clipping were taken.

			
The whole fan showing locations of cuts.	Fan cut into clippings	Detail of clipping 5 with coenenchyme removed at base	Rock prepared for fixing
			
Adding superglue gel	Fixing clipping into position	Placing in seawater	Clipping in place on the seabed

These clippings will be monitored over the next couple of years. If this is successful it would be possible to provide fans for aquarium displays without having to remove wild seafans. It also opens up the possibility of further ecological study into habitat requirements.

Bad weather has caused the cancellation of planned dives in September to check on the progress of the clippings and map out additional colonies.

The following divers have taken part in this project:

Rosie Peters, Robin Plowman, Chris Dunkerley, Keith Coombs, Sue White, Derek White, Darren Murray, Ian Alexander, Alan Ewart, Julie Hatcher, Steve Trehwella, Nick Reed, Dave Mitchell, Ian Clowes, Terry Heath, Colin Froud, Peter Tinsley