The Pink Sea Fan

The beautiful pink sea fan (*Eunicella verrucosa*) is in the Cnidaria group of animals (things with stings!), and therefore related to animals like jellyfish, sea anemones, hydroids, and sea pens. Sea fans are a type of coral and are characterised by an erect, fan-like arrangement of repeatedly dividing branches, usually orientated at right angles to the prevailing current.

Pink Sea Fan - Chris Bunney

The structure you see is actually a colony of individual organisms, called polyps. These filter-feeding animals are distributed over the branches, removing food particles from the water column by means of small hydrostatically controlled tentacles. A central skeleton of a hard horny substance called gorgonin, gives the animal rigidity and strength, supporting the colonial polyps.

Diver surveying - Seasearch BH

The sea fan attaches to a hard substrate (e.g. rock) by its broad base. *Eunicella verrucosa* has been found to grow up to 100cm in width, but is more usually around 30cm here in Cornwall. It varies from deep pink to white in colour with the polyps arranged in double rows towards the tips of the branches. It is usually found along exposed rocky coasts, at a depth greater than 10m (where it is not out competed for space by algae). It is a very slow growing, long lived species. Recolonisation is extremely slow, which makes the species vulnerable to physical damage, for example from fishing gear, or divers fins!.

The pink sea fan is a reasonably common Cornish species, but is nationally rare. It is protected under schedule 5 of the Wildlife Countryside Act of 1981, which protects it against killing, taking, injuring and sale. It is also a priority species of the UK Biodiversity Action Plan, due to its national rarity. So it is our job to find out where it lives in our waters and do our utmost to protect it.

During 2004 Seasearch, the pink sea fan has been recorded at "The Fields" (South of Dodman Point, South East Cornwall), Poltexas Reef (Newquay Bay) and on Bawden Rock (St Agnes). We intend to do more survey work on these delicate fans during 2005, but we need your help.

Sea Fan Anemone

There is a tiny species of anemone that is only found on pink sea fans. It is extremely rare, only occurring on about 1% of all fans. Why not take a closer look to see if you can spot one?

Previous sightings include Land's End, The Manacles and off Plymouth.

The Wreck of HMS Scylla

The Scylla is a 113m Leander class frigate, built in 1968. In 1970 and 1971 it was part of the Western fleet in the Mediterranean and Far Eastern fleet, respectively. Between 1972 and 1976 the ship played a key role in the Cod War as a Fisheries Protection Warship. It then went on to act as a naval escort for British Merchant Ships in the Persian Gulf. The Scylla was finally decommissioned in 1993.

HMS Scylla was sunk on the 27 March 2004 and now lies in 25m of water, 3/4 miles out from Whitsand Bay. It is Europe's first artificial reef, sunk with the aim of relieving diving pressure from surrounding historic wrecks, like the James Eagan Layne, a torpedoed WWII Liberty Ship which is sadly starting to break up.

Life on the Scylla is growing rapidly from the first covering of 'fuzz' which we saw in early summer shortly after the ship was sunk, to scallops, tube worms, sea squirts and many varieties of fish a few short months afterwards. Seasearch surveys of the wreck will build up a picture of the colonisation and succession occurring on the ship. We've produced a very simple tick sheet to tell us what species you see whilst on the wreck. Any help in monitoring the marine life here would be greatly appreciated.

Diver on Scylla - NMA

Eelgrass

There are three species of eelgrass found in the British Isles. They are not seaweed, but an underwater flowering plant. Flowers are small and occur at the base of the blade like leaf. Eelgrass occurs on sand/gravel/mud seabeds, in shallow water (less than 10m deep), that is sheltered from strong tides and currents. The plant is nationally scarce, with populations still recovering from a disease that affected numbers in the 1920s and 30s.

Eelgrass, or *Zostera*, increases rates of sedimentation and decreases coastal erosion because the roots and rhizomes of the plants hold the substrate, as plants do on land. They also act as vitally important spawning and nursery grounds for a host of fish species, including many commercially important groups. They are great habitats for seeing invertebrates, like cuttlefish, sea hares and crabs, offering individuals security and a source of food.

Although difficult to find, eelgrass meadows are a unique habitat that offers a different diving experience for the recreational diver, with many species not found in the usual rocky dive sites. If you dive on any eelgrass beds, or come across any new patches, please let us know as we are trying to build up a map of the abundance of this habitat in Cornwall.

Websites and Forms

More information on all aspects of Seasearch, including forthcoming training courses, specific survey dives that have been organised and downloadable forms can be found on the website at:
www.cornwallwildlifetrust.org.uk

Happy Diving!

Eelgrass - Paul Kay

These survey dives were conducted as part of the Cornwall Wildlife Trust's Seasearch programme. There were too many individual divers to mention by name but thanks to all involved and we hope you continue during 2005 and beyond.

This report was written by Jonathan Steele and Ruth Williams, CWT.

Seasearch is a volunteer underwater survey project for recreational divers to actively contribute to the conservation of the marine environment. Financial support for the project during 2004 and for the production of this report has been given by:

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Cornwall Seasearch Surveys 2004 Summary Report

Cuckoo wrasse - Ruth Williams

Diver in gulley - Paul Naylor

Rhizostoma - Paul Naylor

Spiny starfish - Paul Naylor

Top shell - Paul Naylor

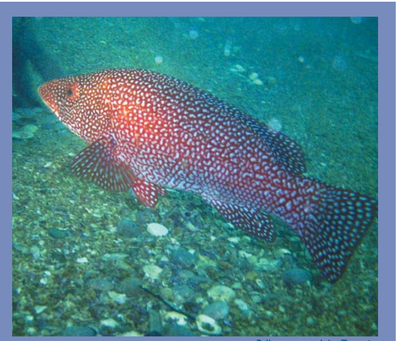
Divers on boat - Lisa Browning

St Agnes

Bawden Rock, off St. Agnes, is a rocky reef that descends to 28m. Species identified during a number of dives on this dramatic reef include a diverse range of algae and sedentary animals including the boring sponge (*Cliona celata*), dahlia anemone (*Urticina felina*), barnacles (*Cirripedia sp.*) and mussels (*Mytilus edulis*). There was also a substantial range of mobile organisms including different species of crustacean (crabs, lobsters and prawns), mollusc (such as cowries, nudibranchs and cuttlefish) and fish (dogfish, rays, wrasse, gobies, to name just a few).

North Cornwall

Poltexas Reef in Newquay Bay, consists of a reef wall from a depth of 25 metres up to a pinnacle at around 15 metres. The shore side of the reef is a gentle slope dropping back down to 25 metres over a distance of about 200 metres. The site has been shown to be another habitat boasting the presence of the protected pink sea fan. Densities of the species ranged from 10 per $5m^2$ on the north side of the reef to 2 per $5m^2$ on the south side, demonstrating the benefits of being orientated into nutrient rich open water for this filter feeding coral.
Other areas surveyed in North Cornwall include Lower Sharpnose Point (North of Bude) and Port Gaverne.



Ballan wrasse - John Tremain

Penzance and Lands End

A popular dive in this area is off the shore at Porthgwarra. The bottom topography consisted of large granite boulders with sandy channels in-between them. The solid substrate was covered with species of kelp (*Laminaria sp.*) and an array of red algae species. A rich diversity of invertebrates were noted within the survey area, including brittlestars, crabs and anemones.

Jewel anemones - Paul Naylor

A more remote survey dive was carried out at Wolf Rock, half way between Lands End and the Isles of Scilly. The site boasts an abundance of colourful animal turf, including many species of anemones (jewel, plumose and gem), and sponges as well as algae. There was also an observed wealth of wrasse, pollack and mobile invertebrates.

The local area offers a substantial number of great dive sites, from which the collection of Seasearch data for 2005 would be greatly appreciated.

South East Cornwall

South East Cornwall was the most comprehensively surveyed area during the year, with sites like "The Fields" and the new Scylla wreck being popular recorded dives. This is great as data was lacking for this area in 2003, so we now have a better insight into the species and seabed types found around these sites.

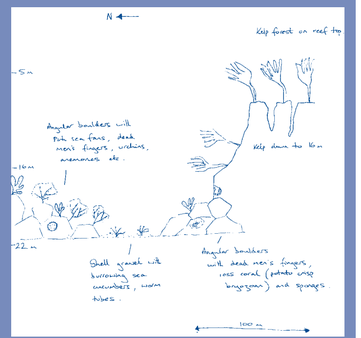
The majority of the dives were on rocky reefs, down as far as 30m in some cases, covered in animal turf and algae. Common species seen include dead-man's fingers (*Alcyonium digitatum*), Devonshire cup coral (*Caryophyllia smithii*), delicate hydroids and various kelps (*Laminaria sp.*) Nudibranchs (*Polycera sp.*and *Tritonia sp.*) were recorded near to Fowey, cuttlefish at "The Buckets" (wreck of the Kantoeng) and pink sea fans (*Eunicella verrucosa*) at "the Fields". Dolphins were also recorded at "The Fields"as an added bonus to the dive.

Areas surveyed in the South East of Cornwall include: "The Fields", Udder Rock, Porthpean Beach, Readymoney Cove, Cannis Rock, "The Buckets", the Wreck of the Scylla and Polkerris Beach.

The Lizard and Manacles

Drawna rocks, off Porthkerris, were investigated on various occasions, giving a complete picture of the topography and marine life of the rocks. There was a prolific amount of fish life; including the cuckoo wrasse (*Labrus mixtus*), red mullet (*Mullus surmuletus*) and rock cook (*Centrolabrus exoletus*). The large rock formations were colonised by a wide variety of invertebrates. Animals identified consisted of sea urchins, sea cucumbers, anemones and the distinctive Devonshire cup-coral (*Carophyllia smithii*). The rocks run parallel to the shore, with depth ranging from 7 to 16 metres.

Raglan Reef on the Manacles was also surveyed in 2004. The reef drops from roughly 5 metres below the surface down to 22 metres. The site does not have a huge amount of algal growth, making it an ideal habitat for sedentary animal colonisers. These include the nationally scarce pink sea fan as well as potato crisp bryozoan (*Pentapora foliacea*), anemones and elephant ear sponge (*Pachymatisma johnstonia*). Nudibranch eggs were also spotted on the dive.

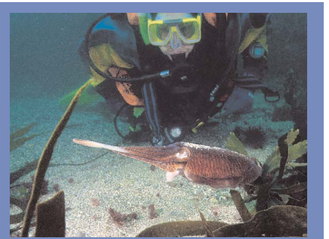


Raglan Reef, The Manacles

Falmouth

Diving in the Falmouth area has something for everyone.
It is excellent for marine life, has plenty of wrecks, rocky reefs with nooks and crannies and sandy expanses. For example, Castle Beach is an easily accessible shore dive which has both rocks and sand, along with the remains of a World War 1 U-boat.

Surveys in Falmouth during 2004 centred off Pendennis Point, a rocky headland at the entrance to the harbour and Fal Estuary. The Seasearch dives described a rocky reef leading to a sandy bottom with boulders. A substantial quantity of kelp and other algae species were recorded, as well as animal turf on the rocks and a range of fish, including the greater pipefish (*Syngnathus acus*). Cuttlefish were also seen on numerous occasions. Even though this site is well dived, we still need Seasearch records to enable us to monitor its condition and see any changes over the years.



Cuttlefish - Paul Naylor

Less Seasearch observation dives were carried out during 2004 than in 2003 and consequently we had fewer species recorded, only 118 in total compared to 218 the previous year. Most of the common species were the same, but there were fewer of the smaller, or less easily recognised species reported.

Sponges

The usual suspects were recorded in Seasearch 2004, including the boring sponge (*Cliona celata*) and the elephant ear sponge (*Pachymatisma johnstonia*). No rare sponges were identified.

Anemones, Corals, Hydroids and Jellyfish

A diverse range of anemone species were recorded. The most common sightings were of the jewel anemone (*Corynactis viridis*) and the unmistakable snakelocks anemone (*Anemonia sulcata*). Other species noted include the common elegant anemone (*Sagartia elegans*), which occurs in 5 different colour morphs.

Corals seen were the ubiquitous Devonshire cup coral (*Caryophyllia smithii*) and dead-man's fingers (*Alcyonium digitatum*). The nationally scarce pink sea fan (*Eunicella verrucosa*) was recorded in three sites in 2004; "The Fields" (South of Dodman Point, South East Cornwall), Poltexas Reef (Newquay Bay) and Bawden Rock (St Agnes).

Crustaceans

Crabs and lobsters were not found in high numbers in any of the sites surveyed. In comparison with 2003, where the spider crab (*Maja squinado*) was most frequently observed, the edible crab (*Cancer pagarus*) was the most surveyed crustacean in 2004. Far fewer different species were recorded too, 8 compared to last year's 17 different species.

Molluscs

Shells are often overlooked during surveys which was reflected by only 11 species being found compared to 2003's 33 species. However, cuttlefish were seen regularly and came out as one of the most frequently recorded molluscs.

Starfish, Sea Urchins and Sea Cucumbers

In 2003 the spiny starfish (*Marthasterias glacialis*) was noted at every dive site where a Seasearch survey took place. This year however, it has only been recorded on four occasions. The bloody henry species of starfish (*Henricia oculata*) was recorded on three occasions. There was an occasional sighting of a sea cucumber and urchins were spotted on only five dives.

Fishes

A wide variety of fish species were seen in 2004. Species like the visually distinct john dory (*Zeus faber*) and the thornback ray (*Raja clevata*) were noted at Bawden Rock, off St Agnes. Frequent examples include species of wrasse, pollack and blenny. There were also sightings of greater pipefish (*Syngnathus acus*) and the lesser-spotted dogfish (*Scyliorhinus caniculus*) on three separate occasions.

Snakelocks anemone - Paul Naylor

Table 1: Species recorded per Phylum and most common species found

Phylum	Common name	Number of species sighted	Common species
Algae	Seaweeds	21	Kelp
Porifera	Sponges	10	Boring sponge Orange encrusting sponge Elephant ear sponge
Cnidaria	Anemones, jellyfish, hydoids and corals	16	Dead men's fingers Snakelock's anemone Jewel anemone Devonshire cup coral
Annelida	Segmented worms	4	Keel worm
Crustacea	Crabs, lobsters, prawns and barnacles	8	Spider crab Edible crab Velvet swimming crab
Mollusca	Shells, sea slugs and cuttlefish	11	Cuttlefish Limpet Dog whelk
Bryozoa	Sea mats and sea firs	4	Sea mat
Echinodermata	Starfish, brittlestars, urchins and cucumbers	8	Spiny starfish Common starfish
Tunicates	Seasquirts	5	Baked bean seasquirt
Pisces	Fishes	31	Ballan wrasse Cuckoo wrasse Pollack
Total number of species:		**118**	