



Entrances of Milford Haven Seasearch 2005 & 2006



Marine
Conservation
Society



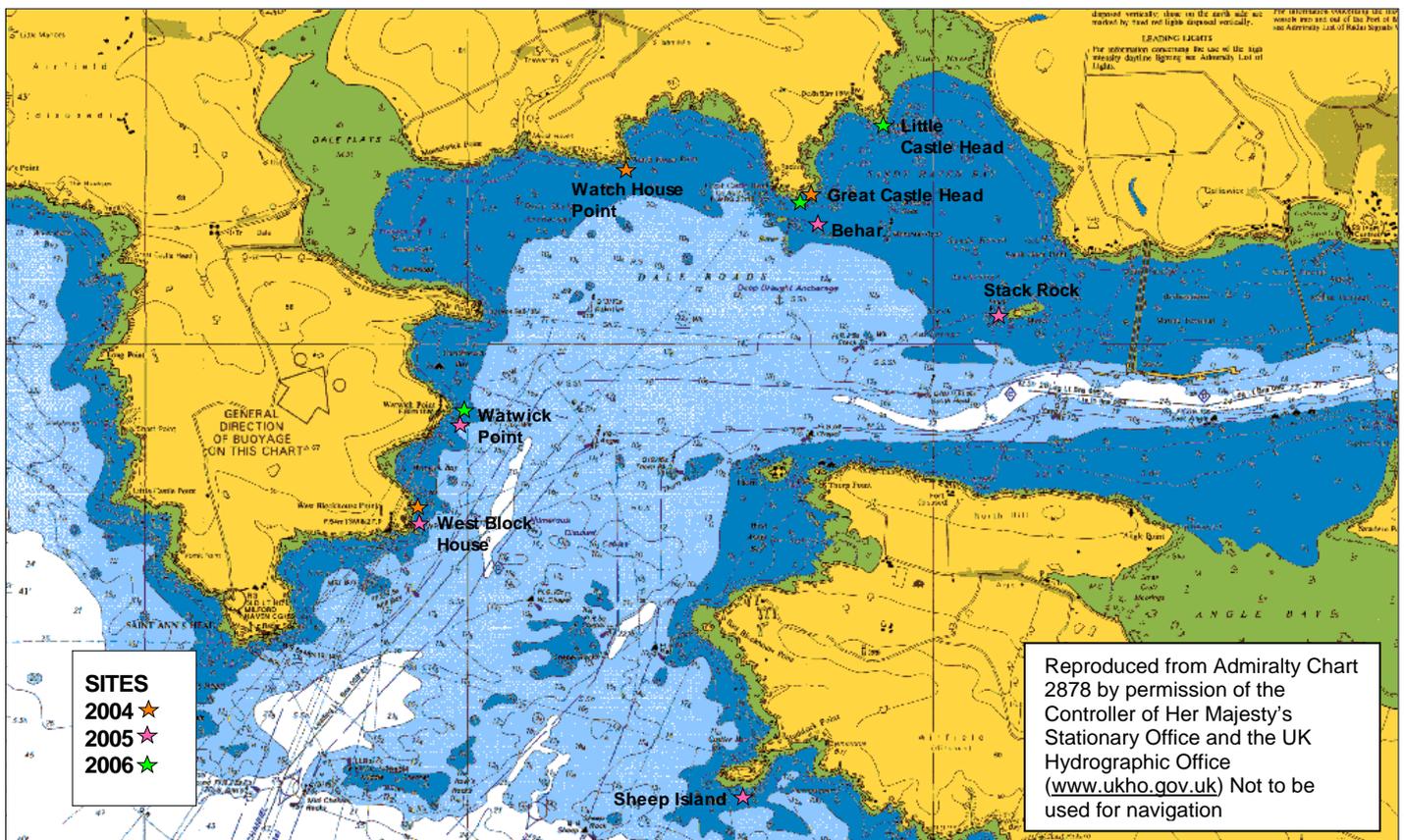
The **Milford Haven waterway** is a ria-estuary, an uncommon estuary type restricted in the UK to SW England & Wales. The Milford Haven waterway is the only example of its kind in Wales and the largest ria-estuary complex in the UK. The waterway is encompassed within the Pembrokeshire Marine SAC - a designation that recognises its unique and diverse marine species and habitats as being of European importance.

This is historically one of the best studied areas of sea around the UK; marine biological research work has been focused throughout the area since the production of the Dale Fort *Marine Flora and Fauna* in 1966. The presence of the Field Studies Council's Oil Pollution Research Council through 1967-1999 helped ensure that Pembrokeshire firmly remained one of the prime sites for marine scientific research. Today the Milford Haven Waterway Environmental Surveillance Group and various visiting universities, colleges and others including Seasearch continue to study the waterway's marine environment.

The natural deep water harbour of the Milford Haven ria also provide opportunities for many diverse human activities; it is the reason why the port and its maritime industries can exist here. Milford Haven is the biggest port in Wales and the fifth busiest port in the UK. The presence of 2 oil refineries , 1 oil storage unit, and the Port of Pembroke Dock with its ro-ro Irish Ferry and MoD activity all result in a considerable amount of shipping; 9981 movements were recorded in 2004. The current development of 2 LNG (liquid natural gas) terminals and potentially 2 power stations and a biodiesel facility will increase shipping movements and usage of the port considerably. The waterway is also an important resource for the fishing industry and popular with recreational users. With its plethora of moorings and two existing marinas at Neyland and Milford (and proposed new marina development at Pembroke Dock), it acts as a gateway for many boat users to the rest of the Pembrokeshire coast.

Although the waterway has been well studied relative to other marine areas, the co-existence of its extremely varied species and habitats, combined with the diversity and intensity of human activity provide an important arena for monitoring potential impacts and change.

Seasearch dives were organised during the summers of 2005 and 2006 by Kate Lock, the following chart shows the location of the surveyed sites and additionally those completed in 2004.



Sheep Island

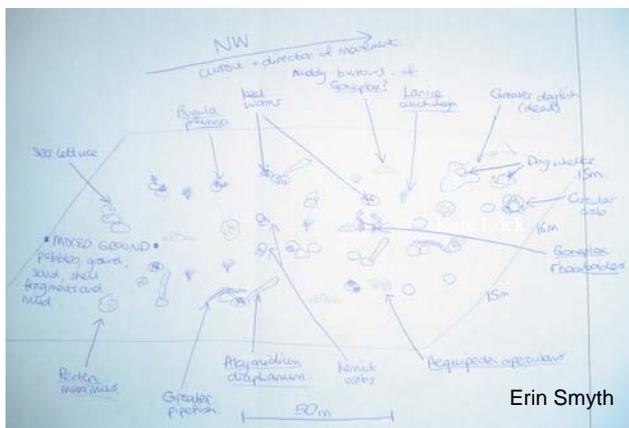
Dives were completed on the south side of the island. A field of large boulders were found, covered in a thick kelp forest down to 13m bsl, and below this a carpet of dense red algae to 16m bsl. The red algae was dominated by an abundance of red fringe weed *Calliblepharis ciliata*. Amongst the algae were small patches of sponges including the brain sponge *Axinella damicornis*. Very few fish were recorded but crustaceans included common lobster *Homarus gammarus*, spiny squat lobster *Galathea strigosa* and an abundance of common prawn *Palaemon serratus*.



Kate Lock

Watwick Point

A rocky reef plateau at 9m bsl with open gullies and small overhangs covered in bryozoan and red algae turf, silt cover was moderate. Large shoals of bib *Trisopterus luscus* were found swimming around the reef also common were corkwing, goldsinny and ballan wrasse. A baby catshark was seen - only 30cm in length. The massive sponges: elephants hide sponge *Pachymatisma johnstoni* and boring sponge *Cliona celata* were both present and the potato crisp bryozoan *Pentapora foliacea* was frequently recorded.



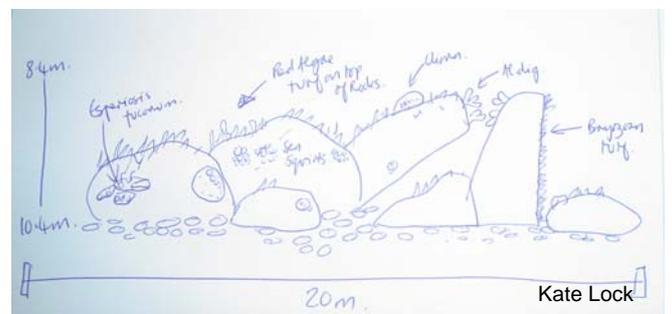
Erin Smyth

A research project studying the potato crisp bryozoan *Pentapora foliacea* was completed during the dives; this project is described in the Gateholm Island Seasearch 2006 report.

The edges of the reef drop down to 13m bsl and a flat plain of mixed ground - cobbles, pebbles, gravel and sandy patches are found with king scallop *Pecten maximus*. This mixed ground area was diverse in life as shown in the sketch.

Great Castle Head

Near shore a rocky reef with large boulders around 1-2m in height was found between 8-10m bsl. An abundance of red algae turf was found on the rock tops whilst the sides were smothered in dense turf of sea squirts and sponges. Between the rocky outcrops and away from the reef a mix of cobbles and pebbles dominated.



Kate Lock



Kate Lock

Little Castle Head

The habitat was very similar to that at Great Castle Head except that the reef tops were covered in a thick kelp forest with a dense turf of red algae, sea squirts and sponges between and below the kelp. Cobbles and coarse sand was found between the reef outcrops and further offshore.

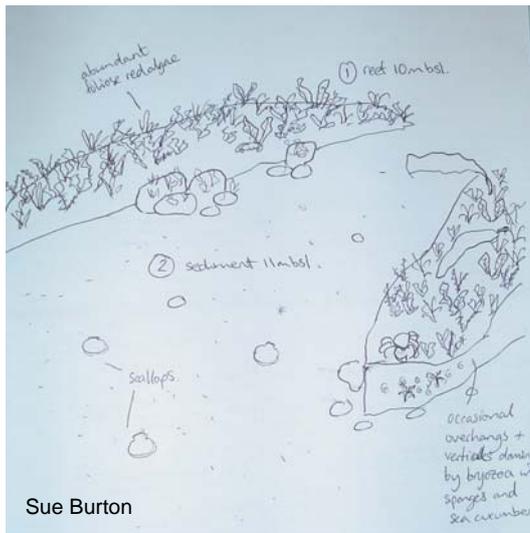


Keith Hiscock

Behar wreck

This dive was completed for Seasearch Observer training organised by Vicki Howe. The wreck is located between Little Castle and Great Castle Head. The wreck is broken up but provides an artificial reef for marine life. Deadman's fingers

Alcyonium digitatum were found attached to the wreck along with the shredded carrot sponge *Amphilectus fucorum*. Ballan and goldsinny wrasse, edible crab *Cancer pagurus* and common lobster *Homarus gammarus* were all found sheltering in the wreckage.



Stack Rocks

This island is located in the centre of the Milford waterway entrance close to the busy shipping channel. A fort is sited on the island and the rocks are a favourite haul out for Atlantic grey seal *Halichoreus grypus*. Outcrops of low-lying rocky reef were found dominated by luxuriant red algal turf and short vertical faces with bryozoans and sea squirts. The alien species leathery seasquirt *Styela clava* was frequently recorded. Crabs favoured the habitat with seven species being found, territorial fish included dragonets, tompot blenny and scorpion fish. The reef was surrounded by sediment of fine sand and shell with burrowing anemones including the daisy anemone *Cereus pedunculatus*, and king scallops *Pecten maximus*.

The table on the right shows how many species were recorded in each group, some of the species of interest and some of the most frequently recorded.



Phylum	No of. species	Common Species and species of interest
Porifera (Sponges)	12	Shredded carrot sponge <i>Amphilectus fucorum</i> Yellow staghorn sponge <i>Axinella disimilis</i> Brain sponge <i>Axinella damicornis</i>
Cnidaria (Anemones, Corals Hydroids)	10	Squirrel tail hydroid <i>Sertularia argentea</i> White stripe anemone <i>Actinotoe sphyrodeta</i> Devonshire cup coral <i>Caryophyllia smithii</i> Dahlia anemone <i>Urticina felina</i>
Annelida (Segmented worms)	6	Sand mason worm <i>Lanice conchilegea</i> Horseshoe worm <i>Phoronis hippocrepia</i>
Crustacea (Crabs, lobster, barnacles)	12	Common Prawn <i>Palaemon serratus</i> Lobster <i>Homarus gammarus</i> Angular crab <i>Goneplax rhomboides</i>
Mollusca (Shells, sea slugs)	16	Nudibranch <i>Tritonia lineata</i> King scallop <i>Pecten maximus</i>
Bryozoa (Sea mats)	13	Potato crisp bryozoan <i>Pentapora foliacea</i> Finger bryozoan <i>Alcyidium diaphanum</i>
Echinodermata (Starfish, sea urchins)	6	Spiny starfish <i>Marthasterias glacialis</i> White crevice sea cucumber <i>Pawsonia saxicola</i>
Tunicata (Sea squirts)	9	Orange sea squirt <i>Stolonica socialis</i> Sponge sea squirt <i>Diplossoma spongiforme</i> Leathery sea squirt <i>Styela clava</i>
Piscies (Fishes)	13	Ballan wrasse <i>Labrus bergyllta</i> Bib <i>Trisopterus luscus</i> Greater pipe fish <i>Syngnathus acus</i>
Algae (Seaweeds)	21	Kelp - Cuvie <i>Laminaria hyperborea</i> Sea beech <i>Delessaria sanguinea</i> Red fringe weed <i>Calliblepharis ciliata</i>
TOTAL SPECIES		110

Divers taking part in the surveys were: Andrew Powell, Glyn Powell, Stephen Bound, Kerry Lewis, Linda Crawford, Pam Evans, Sue Burton, Kirsten Ramsey, Ross Bullimore, Andrew Spencer, Clive Ellis, , Rob Jones, Kate Lock, Sheena Davies, Leon Hopkins, Rob Gibbs, Scott Tompsett, Rebecca Gaille, Annette Lister, Ian Williams, Joanne Porter, Keith Hiscock, Simon Ward, Erin Smyth, Chiara Lombardi, Dale Rostron. **BEHAR** team led by Vicki Howe: Chris Morgan, Patricia & Antony Worlock, Philip Rees, Pat Smith, Richard Newing, Mark Evans, Richard Whitcombe Andy O'Neil
Report prepared by Kate Lock and Sue Burton. Photos by Kate Lock, Leon Hopkins and Keith Hiscock.
Full survey results and species list available on the JNCC NBN Gateway.

Seasearch is a volunteer underwater survey project for recreational divers who wish to contribute to conserving the marine environment.

Financial support for the project during 2005 and 2006 has been given by:

