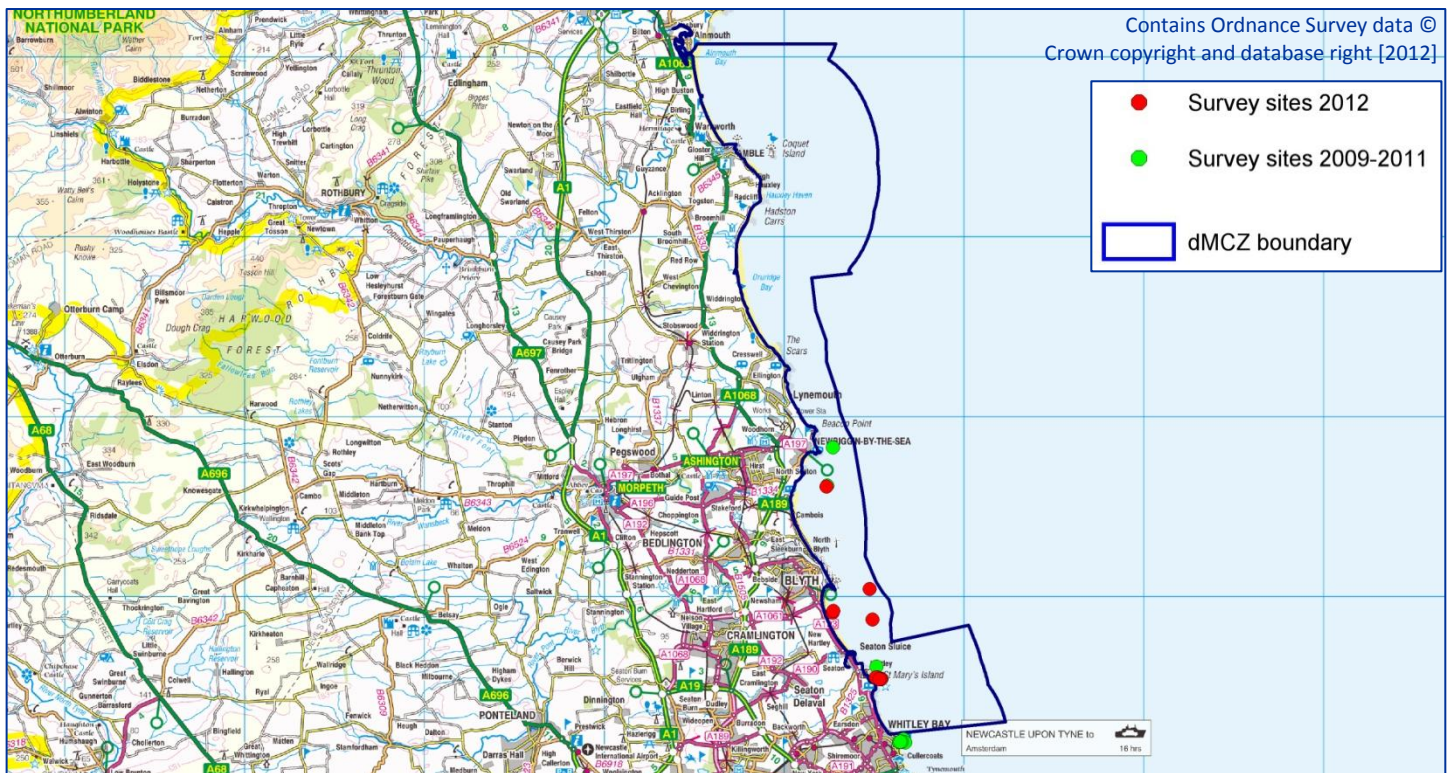


Coquet to St Mary's recommended MCZ

Seasearch Site Surveys 2012

This report summarises the results of the subtidal surveys carried out in the recommended Marine Conservation Zone by Seasearch volunteers between July and September 2012. The aim of the surveys was to add detail of the habitats and species found within the area to support the designation process and inform management.



Boundary of rMCZ NG13 Coquet to St Mary's Island, showing sites surveyed by Seasearch in 2012 and previous years

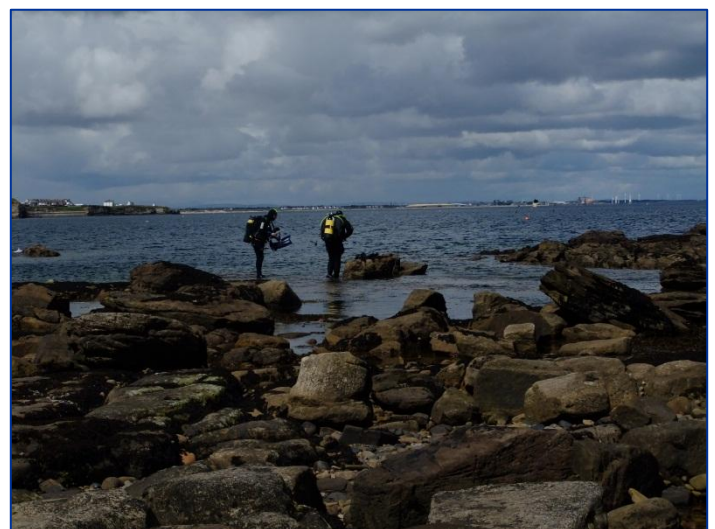
Physical Features of the Area

The recommended Marine Conservation Zone is located off the Northumberland coast and covers an area from Whitley Bay in the south to Alnmouth in the north. The rMCZ also includes St Mary's island and Coquet Island.

The rMCZ depth ranges from 10 metres above the mean low water mark to about 30 metres below sea level. The sea bed within the rMCZ is a mosaic of intertidal and subtidal rock and sediment features, including diverse intertidal under-boulder communities and estuarine rocky habitats of conservation importance.

Sightings of marine mammals within the rMCZ include harbour porpoise, grey seals, minke, orca and humpback whales.

St Mary's Island is an existing voluntary marine reserve to protect the rocky reef habitat which supports large numbers of edible crabs and lobsters. It is also one of the very few areas within the rMCZ where shore diving can take place.



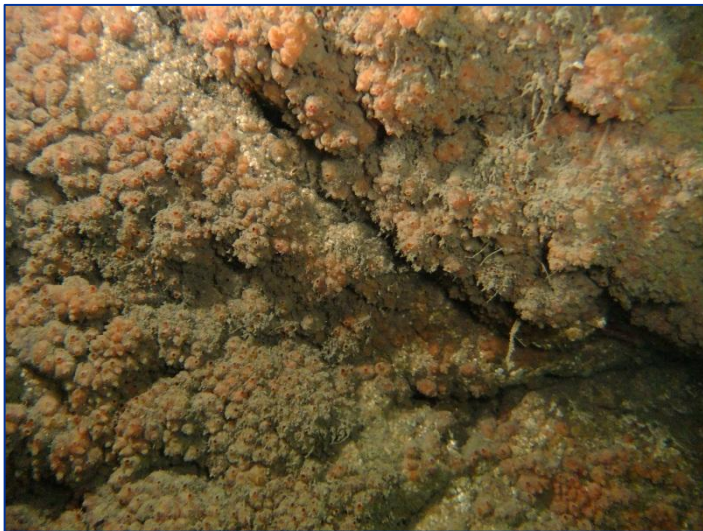
Shore diving at St Mary's Island.

Within this rMCZ there are a total of 9 Sites of Special Scientific Interest (SSSI) including the Northumberland Shore SSSI and Cresswell and Newbiggin Shore SSSI.

These sites have been designated for their geological features and also support important seabird populations. In addition to this, the rMCZ contains a number of internationally important sites, including the Northumberland Coast Ramsar Site and the Northumberland Coast Special Protection Area.

Features of the Marine Life

The extensive reef systems within the rMCZ provide habitat for sessile species such as anemones, soft corals, sea squirts, hydroids and bryozoans, and attract a large number of mobile species such as fishes, molluscs, starfish, crabs and lobsters. In sediment areas, shipwrecks create wildlife-rich habitats comparable to those provided by the natural rock reefs.



Gooseberry sea squirts densely growing on wave swept rocks at St Mary's Island.

During one of the Seasearch dives an arctic cushion star *Hippasteria phrygiana* was photographed amongst boulders and gravel at 21m depth. This species (shown below) is common in Greenland, Iceland and Scandinavia but is rarely reported in our waters. This is the first known record made for the English coast!



The Arctic cushion star in the rMCZ near Blyth

Although the reefs are covered in silt, many colourful species can be seen, such as the common sunstar. The

one shown below is in the process of eating a meal, by inverting its stomach!



Common sunstar having a large meal on the seabed near Blyth



A lobster hiding between kelp stipes on a shallow reef.

Where kelp is present, the feet or holdfasts of the kelp provide cover for a large number of species including lobsters and fish, such as the butter fish.



A butterflyfish swimming between kelp stipes at St Mary's Island

Diverse seaweeds were recorded attached to kelp stipes and on the rocks below the kelp canopy along with sessile animals. This algal and faunal turf provides food for

grazing species such as sea urchin and starfish. Where these species were found in large numbers, the reef was fairly bare, with keel worms being the only species still clinging on!



Some areas are highly grazed by Echinoderms such as starfish and sea urchins.

The turf covering the reefs and wrecks within the rMCZ provides habitat for a number of different species of very pretty nudibranchs, or sea slugs.



The crystal sea slug on bryozoan turf in the rMCZ



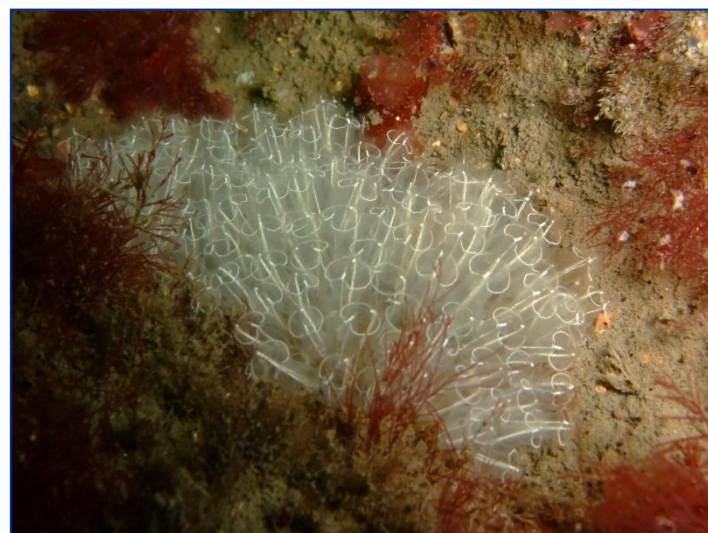
Sea slug (*Facelina auriculata*) on red seaweed in the rMCZ.

Human uses and impacts

The uses of the rMCZ area include commercial fishing, potting for crabs and lobsters, diving, recreational boating and sea angling from both the shore and from boats.

Lead sinkers, lures, line and hooks were commonly found at all the sites surveyed, but especially where wrecks are present. Fishing debris was found on all the wrecks surveyed, but the wreck of the Pandora, near Blyth harbour, was particularly heavily covered in monofilament fishing line, ropes and nets. Several crabs were found dead, tangled up in the fishing line.

During the dives within the rMCZ some interesting litter was found, including a gas cooker, a sink and many remnants of plastic bags. An active sewerage outlet and associated sanitary products was recorded at Molly Reef near Newbiggin Bay.



Lightbulb sea squirts amongst red seaweeds in the rMCZ

The section of the Northumbrian coast which is encompassed by the rMCZ is important for the economy of the region and supports many recreational activities. Boat clubs, dive clubs and fishing clubs are numerous in the area, and bird watchers are often seen looking at the cliff-based nesting areas, the high and low tide roosts, and out to sea at the migrating birds.

Benefits of Protection

St Mary's Island is already a voluntary marine reserve, and Coquet Island is European Special Protection Area, an RSPB managed reserve and a haul out and breeding area for grey seals, which are protected under the EC Habitats Directive. Protecting the seabed around these islands would help to sustain important foraging areas for birds and seals.

The subtidal broad scale habitats proposed for protection within the site are all deemed vulnerable to abrasion, penetration and removal of target or non-target species, so management of activities that cause these impacts would be beneficial to marine biodiversity.

Technical Appendix

This appendix contains more detailed information about the surveys undertaken and records made. It includes:

- Dive details
- Habitat sketches
- Biotope list
- Species list

The data have been entered into Marine Recorder and are available as an MS Access 'snapshot' file on request from Seasearch. Data from surveys up to 2011 are publicly available on the NBN Gateway.

Current Proposal

The recommended MCZ boundary extends from Alnmouth to Whitley Bay and covers both intertidal and subtidal habitats. A large area of moderate energy circalittoral rock was removed from the central portion of the proposed MCZ due to economic concerns, as it was said to be heavily fished by a range of gear types.

The features proposed for designation are:

Broad scale habitats	A1.2	Moderate energy intertidal rock
	A1.3	Low energy intertidal rock
	A2.1	Intertidal coarse sediments
	A2.2	Intertidal sand and muddy sand
	A2.3	Intertidal mud
	A2.4	Intertidal mixed sediments
	A3.1	High energy infralittoral rock
	A3.2	Moderate energy infralittoral rock
	A4.2	Moderate energy circalittoral rock
	A5.1	Subtidal coarse sediment
	A5.2	Subtidal sand
	A5.3	Subtidal mud
	A5.4	Subtidal mixed sediment

Habitat FOCI Intertidal underboulder communities

Features within the area but NOT proposed for designation are:

Habitat FOCI Subtidal sands and gravels
 Sheltered muddy gravels
 Estuarine rocky habitat

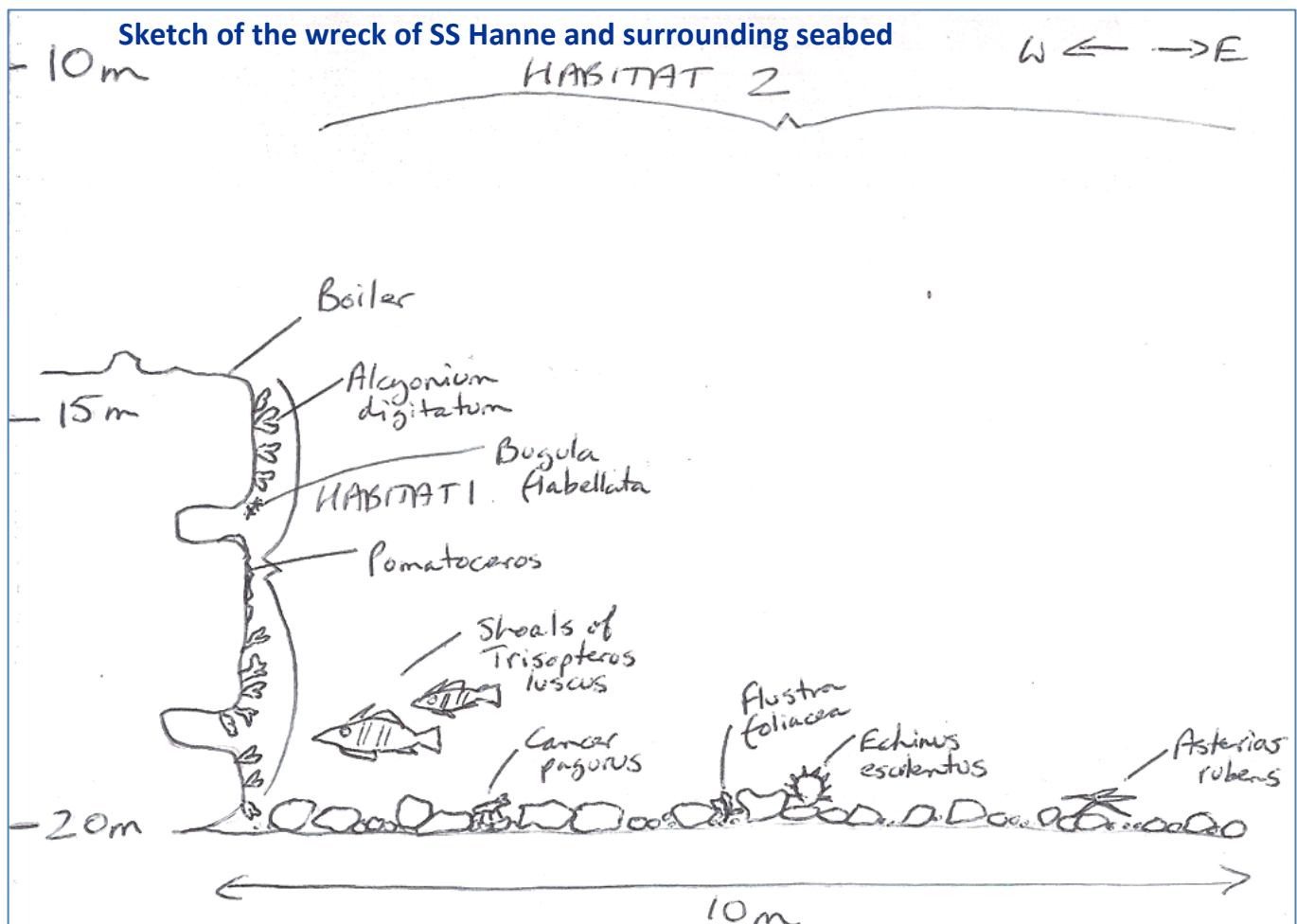
Species FOCI Ocean quahog

Survey details

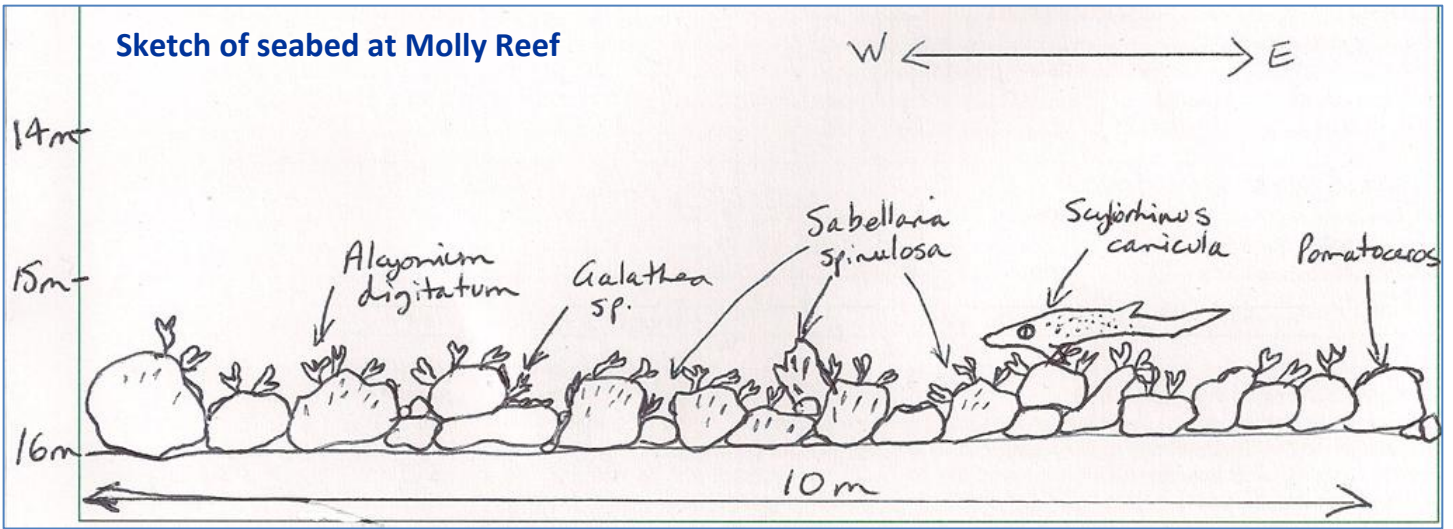
Date	Site	Position	Surveyors and Observers	Seasearch form numbers
15/07/2012	Molly Reef	55° 10.094n, 01° 29.621w	Spencer Cook, Barry Devlin, Nic Faulks, Will MacLennan, Lee McKitten, Steve Mustow, Chris Newton, Michelle Simpson	NE12/037 (S) NE12/039 (O) NE12/048 (S) NE12/060 (O) NE12/061 (O) NE12/075 (S) NE12/076 (S) NE12/109 (S)

15/07/2012	SS Hanne wreck and surrounding seabed	55° 07.012n, 01° 27.410w	Spencer Cook, Barry Devlin, Nic Faulks, Lee McKitten, Steve Mustow, Chris Newton, Michelle Simpson	NE12/038 (S) NE12/047 (S) NE12/058 (O) NE12/059 (O) NE12/073 (O) NE12/074 (S) NE12/110 (S)
29/07/2012	St Mary's Island (north side)	55° 04.309n, 01° 26.924w	Nic Faulks, Paula Lightfoot, Steve Mustow, Simon Smith	NE12/052 (S) NE12/067 (S) NE12/111 (S) NE12/113 (O)
29/07/2012	St Mary's Island (wreck of the Janet Clark)	55° 04.346n, 01° 26.793w	Steve Mustow	NE12/112 (S)
29/07/2012	St Mary's Island (Cormorant Creek)	55° 04.305n, 01° 26.862w	Nic Faulks, Paula Lightfoot	NE12/051 (S) NE12/068 (S)
16/09/2012	Pandora wreck and surrounding seabed	55° 06.094n, 01° 27.259w	June Coomber, Nic Faulks, Chris Newton	NE12/156 (S) NE12/159 (S) NE12/179 (O)
16/09/2012	Muristan wreck and surrounding seabed	55° 06.360n, 01° 29.310w	Derek Dawson, Steve Mustow, Chris Newton	NE12/157 (S) NE12/158 (S) NE12/178 (O)

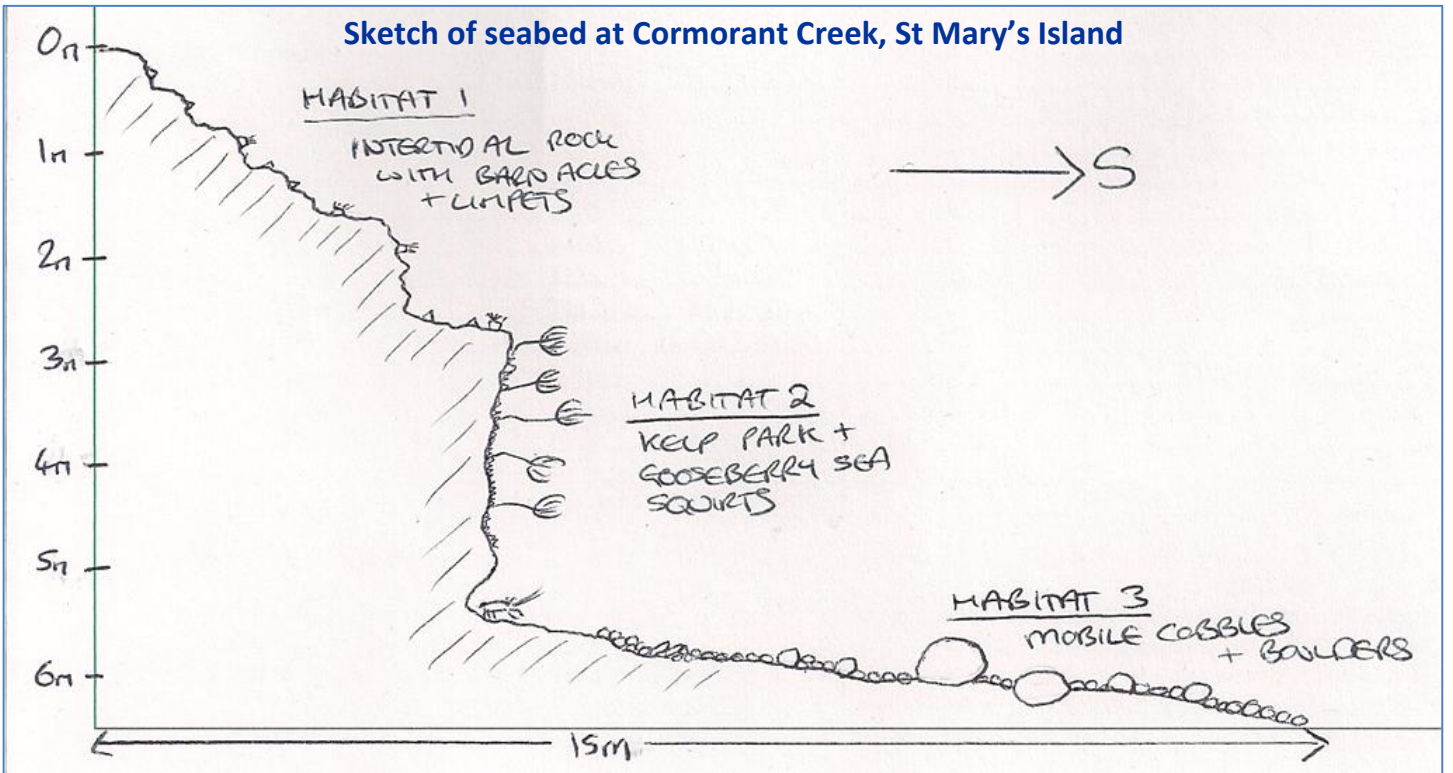
Habitat sketches



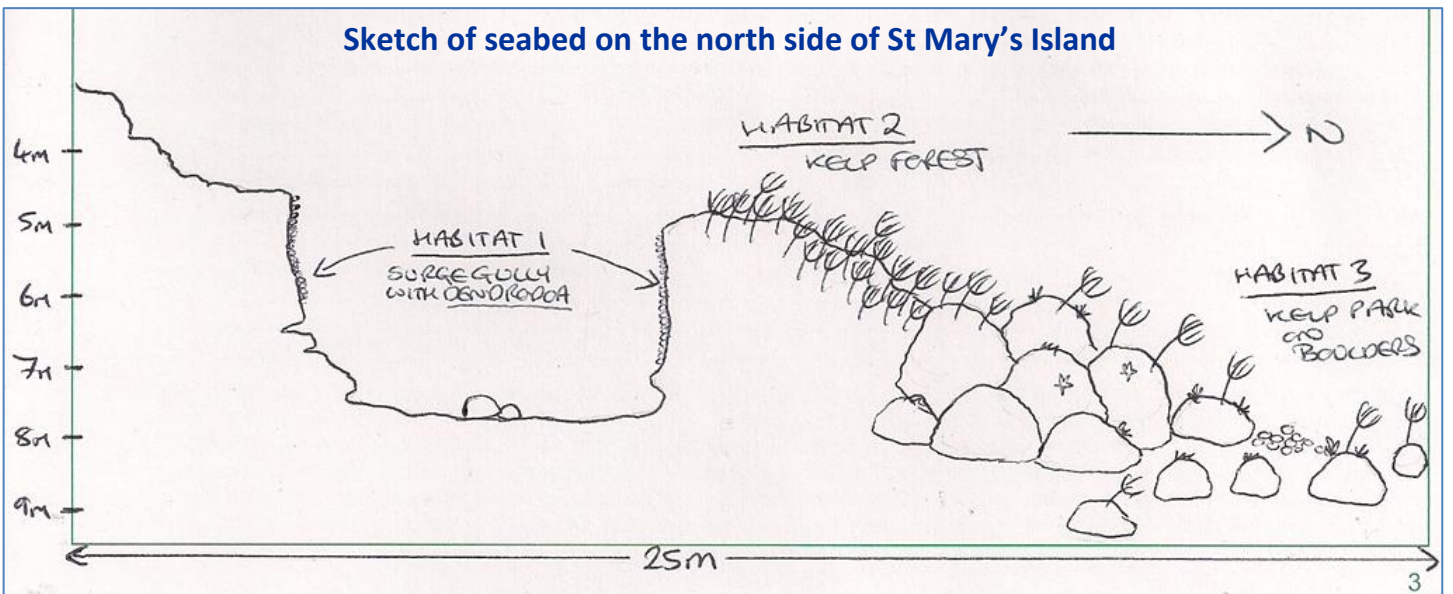
Sketch of seabed at Molly Reef



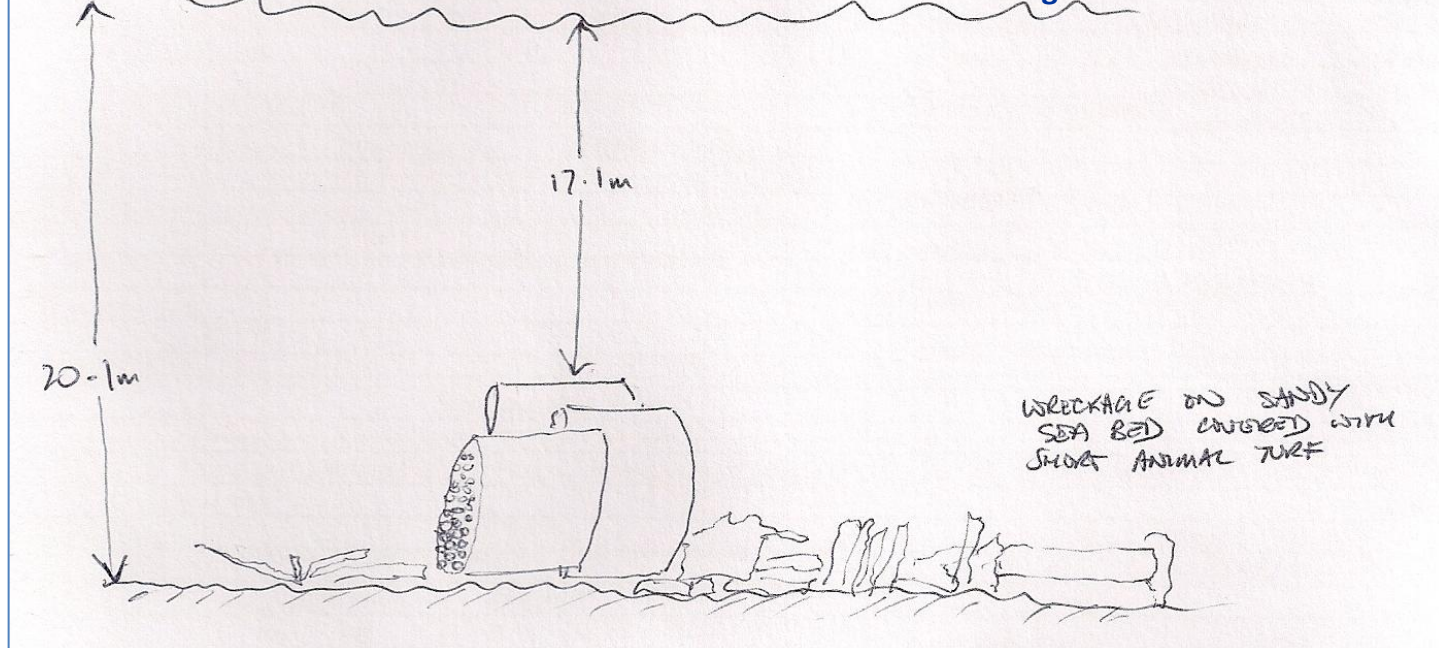
Sketch of seabed at Cormorant Creek, St Mary's Island



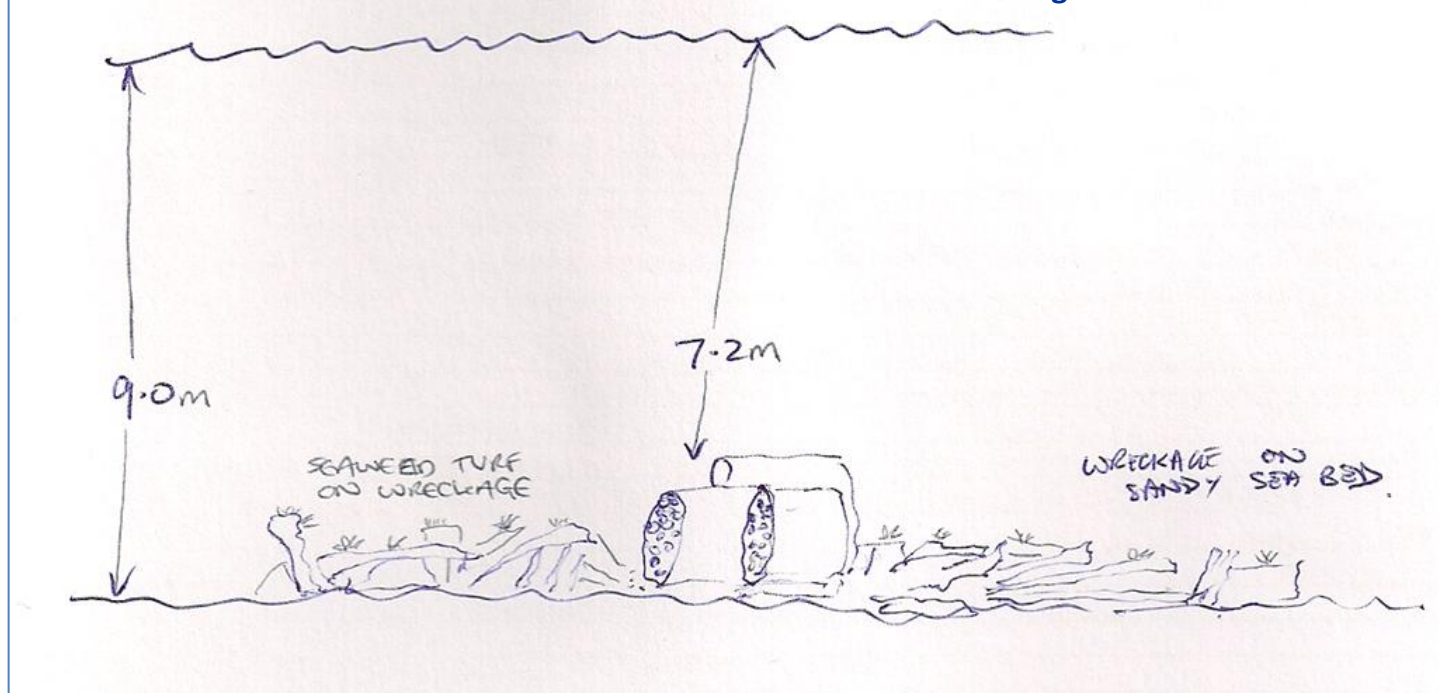
Sketch of seabed on the north side of St Mary's Island



Sketch of the wreck of the Pandora and surrounding seabed



Sketch of the wreck of the Muristan and surrounding seabed



Biotopes recorded

IR.FIR.SG.CrSpAsDenB	Crustose sponges and colonial ascidians with <i>Dendrodoa grossularia</i> or barnacles on wave-surged infralittoral rock	St Mary's Island (north side and Cormorant Creek)
IR.MIR.KR.Lhyp.Ft	<i>Laminaria hyperborea</i> forest and foliose red seaweeds on moderately exposed lower infralittoral rock	St Mary's Island (north side)
IR.MIR.KR.Lhyp.Pk	<i>Laminaria hyperborea</i> park and foliose red seaweeds on moderately exposed lower infralittoral rock	St Mary's Island (north side and wreck of Janet Clark)
IR.HIR.KFaR.FoR	Foliose red seaweeds on exposed lower infralittoral rock	St Mary's Island (north side)
CR.FCR.FouFa.AdigMsen	<i>Alcyonium digitatum</i> and <i>Metridium senile</i> on moderately wave-exposed circalittoral steel wrecks	Wreck of the SS Hanne Wreck of the Pandora Wreck of the Muristan

CR.MCR.EcCr.FaAlCr.Adig	<i>Alcyonium digitatum</i> , <i>Pomatoceros triqueter</i> , algal and bryozoan crusts on wave-exposed circalittoral rock	Wreck of the SS Hanne and surrounding sea bed
CR.MCR.CSab.Sspi	<i>Sabellaria spinulosa</i> encrusted circalittoral rock	Molly Reef
SS.SSa	Sublittoral sands and muddy sands	Molly Reef Wreck of the Muristan and surrounding seabed
SS.SCS.CCS	Circalittoral coarse sediment	Wreck of the Pandora and surrounding seabed
SS.SCS.CCS.PomB	<i>Pomatoceros triqueter</i> with barnacles and bryozoan crusts on unstable circalittoral cobbles and pebbles	Wreck of the SS Hanne and surrounding seabed

Species List

Scientific name	Common name	SS Hanne wreck and seabed	Pandora wreck and seabed	Muristan wreck and seabed	Molly Reef	St Mary's Island
-----------------	-------------	---------------------------	--------------------------	---------------------------	------------	------------------

Porifera

Sponges

<i>Clathrina coriacea</i>	White lace sponge					R
<i>Scypha ciliata</i>	Vase sponge					R
<i>Grantia compressa</i>	Purse sponge					R
<i>Suberites ficus</i>	Sea orange			R	O	
<i>Cliona celata</i>	Boring sponge					R-O
<i>Halichondria panicea</i>	Breadcrumb sponge			C		O-F
<i>Hymeniacedon kitchingi</i> (?)	Finger sponge		R			
<i>Haliclona oculata</i>	Mermaid's glove		R		R	
<i>Aplysilla sulfurea</i>	Sulphur sponge					R
<i>Dysidea fragilis</i>	Goosebump sponge					R
<i>Porifera indet crusts</i>	Unidentified sponge crusts		O	R		

Cnidaria

Anemones, jellyfish and corals

<i>Cyanea capillata</i>	Lion's mane jellyfish	R				
<i>Cyanea lamarckii</i>	Lion's mane jellyfish					R
<i>Hydrozoa</i>	Hydroid turf (indet spp)	O-F	F	O	C	O-C
<i>Corymorpha nutans</i>	Nodding hydroid		R			
<i>Tubularia indivisa</i>	Oaten pipe hydroids	R	O	R-O		R
<i>Garveia nutans</i>	Orange branching hydroid			C		
<i>Abietinaria abietina</i>	Herringbone hydroids				R	
<i>Hydrallmania falcata</i>	Helter skelter hydroid	O			O	
<i>Sertularia argentea/cupressina</i>	Squirrel's tail hydroid	F			O	
<i>Thuiaria thuja</i>	Bottle brush hydroid	F-C			O-C	
<i>Nemertesia antennina</i>	Antenna hydroid				O	
<i>Obelia geniculata</i>	Kelp fir			F		
<i>Alcyonium digitatum</i>	Dead men's fingers	F-C	O-F	F	O-C	R
<i>Actinia equina</i>	Beadlet anemone					F
<i>Urticina eques</i>	Horseman anemone		R	R	O	
<i>Urticina felina</i>	Dahlia anemone	R	O	C	R-O	O-F
<i>Metridium senile</i>	Plumose anemone	F	R-O	R-O	R	
<i>Caryophyllia smithii</i>	Devonshire cup coral	R	R			

Scientific name	Common name	SS Hanne wreck and seabed	Pandora wreck and seabed	Muristan wreck and seabed	Molly Reef	St Mary's Island
-----------------	-------------	---------------------------	--------------------------	---------------------------	------------	------------------

Annelida **Segmented worms**

<i>Arenicola</i>	Lug worm					R
<i>Sabellaria spinulosa</i>	Ross worm	C	O	F	F-C	F-C
<i>Lanice conchilega</i>	Sandmason worm	R				
<i>Sabella pavonina</i>	Peacock fan worm	O	O	R		
<i>Pomatoceros</i>	Keel worm	C-A	C-A	F-C	C-A	O-C
<i>Spirorbis</i>	Spiral worm				O	O-C

Crustacea **Crabs, shrimp and lobsters**

<i>Semibalanus balanoides</i>	Acorn barnacle					C-A
<i>Balanus balanus</i>	Acorn barnacle	A	O	O-F	O	
<i>Palaemon serratus</i>	Common prawn					
<i>Pandalus montagui</i>	Humpbacked prawn	O	O-F	O-F	O-F	O-F
<i>Homarus gammarus</i>	Common lobster	R-O	R-O	O-C	O	F-C
<i>Paguridae</i>	Hermit crabs	O	O	F-C	F	F-C
<i>Galatheididae</i>	Squat lobster indet sp.	C		R	C	
<i>Galathea nexa</i>	Small squat lobster	R	R	R	O	O-C
<i>Galathea squamifera</i>	Brown squat lobster			O		O
<i>Galathea strigosa</i>	Spiny squat lobster	R		R		R-O
<i>Munida rugosa</i>	Long clawed squat lobster		R			
<i>Inachus</i>	Sponge spider crab		O	O	R	
<i>Macropodia</i>	Spider crab			R	R	
<i>Corystes cassivelaunus</i>	Masked crab				R	
<i>Cancer pagurus</i>	Edible crab	O	R-O	O-C	O-F	F
<i>Liocarcinus depurator</i>	Harbour crab				R	
<i>Necora puber</i>	Velvet swimming crab	O	O	O-C	R-O	O-F
<i>Carcinus maenas</i>	Shore crab					R

Mollusca **Molluscs**

<i>Polyplacophora</i>	Chiton (indet species)	R				
<i>Gibbula cineraria</i>	Grey topshell					O-C
<i>Calliostoma zizyphinum</i>	Painted topshell					R-O
<i>Tectura virginea</i>	White tortoiseshell limpet					O
<i>Patella vulgata</i>	Common limpet					F
<i>Helcion pellucidum</i>	Blue rayed limpet					O-F
<i>Littorina littorea</i>	Edible winkle					C
<i>Littorina obtusata</i>	Flat winkle					R
<i>Trivia</i>	Cowry (indet species)		R	R	O	
<i>Trivia monacha</i>	Spotted cowry					R
<i>Buccinum undatum</i>	Common whelk	R		O	R	R
<i>Goniodoris nodosa</i>	White sea slug			O		
<i>Onchidoris bilamellata</i>	Rough mantled sea slug			O		
<i>Acanthodoris pilosa</i>	Fluffy sea slug			O		
<i>Aegires punctilucens</i>	Blue spotted sea slug					R
<i>Polycera quadrilineata</i>	Yellow lined polycera		R	O		O-F
<i>Limacia clavigera</i>	Orange clubbed sea slug	R		O	R-O	O-F
<i>Archidoris pseudoargus</i>	Sea lemon				R	O

Scientific name	Common name	SS Hanne wreck and seabed	Pandora wreck and seabed	Muristan wreck and seabed	Molly Reef	St Mary's Island
<i>Jorunna tomentosa</i>	Velvet sea slug				R	
<i>Janolus cristatus</i>	Crystal sea slug	R			F	R
<i>Facelina auriculata</i>	Iridescent sea slug					R
<i>Mytilus edulis</i>	Edible mussels			R		
<i>Modiolus modiolus</i>	Horse mussels				R	
<i>Aequipecten opercularis</i>	Queen scallop	R				
<i>Anomia ephippium</i>	Saddle oyster				F	C
<i>Pododesmus patelliformis</i>	Ribbed saddle oyster					O
<i>Arctica islandica</i> (empty shells)	Ocean quahog				O	
<i>Alloteuthis subulata</i> (eggs)	Squid				O	

Bryozoa

Sea mats and sea mosses

<i>Crisia</i>	White claw sea moss		O			
<i>Alcyonidium diaphanum</i>	Finger bryozoan				O-F	
<i>Membranipora membranacea</i>	Sea mat	O		O		O-F
<i>Electra pilosa</i>	Frosty sea mat			O		O-C
<i>Flustra foliacea</i>	Hornwrack	O	R-F	R-O	O-F	
<i>Securiflustra securifrons</i>	Square end hornwrack		O	O	R	
<i>Bugula flabellata</i>	Fan bryozoan	O		R		
<i>Bugula plumosa</i>	Christmas tree bryozoan		O	O		
<i>Scrupocellaria</i>	Lacy tuft bryozoan					O
<i>Bryozoa indet crusts</i>	Encrusting bryozoan (indet species)	F			O-F	O-F

Echinodermata

Starfish, brittle stars and urchins

<i>Astropecten irregularis</i>	Sandstar		F		R	
<i>Hippasteria phrygiana</i>	Arctic cushion star	R				
<i>Crossaster papposus</i>	Sunstar	O	R		C	
<i>Henricia</i>	Henry starfish	R	R	R		O-F
<i>Asterias rubens</i>	Common starfish	O	O-C	F-C	F-C	O-F
<i>Ophiothrix fragilis</i>	Common brittle star	O		O	O-C	O
<i>Ophiopholis aculeata</i>	Crevice brittle star			O		
<i>Ophiura albida</i>	Serpents table brittle star	O-F			R	
<i>Echinus esculentus</i>	Common sea urchin	F	R-O	O-C	F-C	O-F
<i>Echinocardium cordatum</i>	Heart urchin				F	

Tunicata

Sea squirts

<i>Clavelina lepadiformis</i>	Light bulb sea squirts			R		
<i>Sidnyum turbinatum</i>	White cluster sea squirts					O
<i>Ciona intestinalis</i>	Yellow ringed sea squirt				R	R
<i>Dendrodoa grossularia</i>	Gooseberry sea squirts					C-A
<i>Botryllus schlosseri</i>	Flower sea squirt			R		R-O
<i>Botrylloides leachi</i>	Colonial sea squirt					R

Scientific name	Common name	SS Hanne wreck and seabed	Pandora wreck and seabed	Muristan wreck and seabed	Molly Reef	St Mary's Island
-----------------	-------------	---------------------------	--------------------------	---------------------------	------------	------------------

Pisces	Fishes					
<i>Scyliorhinus canicula</i>	Lesser spotted catshark				R	
<i>Gadus morhua</i>	Cod				R	
<i>Gaidropsarus mediterraneus</i>	Shore rockling					R
<i>Pollachius pollachius</i>	Pollack	R	O	R		R-O
<i>Trisopterus luscus</i>	Bib	R-O	C	R		
<i>Trisopterus minutus</i>	Poor cod	O	R			
<i>Cottidae</i>	Sea scorpion			R		
<i>Myoxocephalus scorpius</i>	Short spined sea scorpion			R		R
<i>Taurulus bubalis</i>	Long spined sea scorpion				R	O-F
<i>Agonus cataphractus</i>	Pogge				R	R
<i>Liparis sp</i>	Sea snail					R
<i>Labrus bergylta</i>	Ballan wrasse		R			R-O
<i>Lipophrys pholis</i>	Shanny					R
<i>Chirolophis ascanii</i>	Yarrell's blenny	R				
<i>Zoarces viviparus</i>	Viviparous blenny					R
<i>Pholis gunnellus</i>	Butterfish	R	R		R	R-O
<i>Callionymus lyra</i>	Dragonet		R	R	O	R
<i>Gobiusculus flavescens</i>	Two-spot goby					C
<i>Pomatoschistus</i>	Goby		O	C		O
<i>Pomatoschistus pictus</i>	Painted goby	O				
<i>Thorogobius ephippiatus</i>	Leopard spotted goby	R	O			F
<i>Scomber scombrus</i>	Mackerel	R			R	
<i>Zeugopterus punctatus</i>	Topknot					R
<i>Limanda limanda</i>	Dab				R	
<i>Pleuronectes platessa</i>	Plaice			R	R	

Algae	Seaweeds					
<i>Rhodophycota</i>	Red seaweed (indet species)			C		O-F
<i>Palmaria palmata</i>	Dulse					O-C
<i>Corallina officinalis</i>	Coral weed					O
<i>Dilsea carnosa</i>	Red rags					R-O
<i>Chondrus crispus</i>	Carragheen					O-C
<i>Polyides rotundus</i>	Discoid forked weed					R
<i>Plocamium</i>	Cock's comb					R
<i>Ptilota gunneri</i>	Feather winged weed					F
<i>Delesseria sanguinea</i>	Sea beech			R-O		O-F
<i>Membranoptera alata</i>	Winged weed					O
<i>Phycodrys rubens</i>	Sea oak					O
<i>Osmundea pinnatifida</i>	Pepper dulse					F
<i>Polysiphonia</i>	Many siphoned weed					F
<i>Dictyota dichotoma</i>	Brown fan weed					O
<i>Desmarestia aculeata</i>	Landlady's wig					O
<i>Laminaria digitata</i>	Oar weed					O-C
<i>Laminaria hyperborea</i>	Forest kelp					O-C

Scientific name	Common name	SS Hanne wreck and seabed	Pandora wreck and seabed	Muristan wreck and seabed	Molly Reef	St Mary's Island
<i>Saccharina latissima</i>	Sugar kelp					R
<i>Fucus serratus</i>	Toothed wrack			R		R-O
<i>Himanthalia elongata</i>	Thong weed					R
<i>Chlorophycota</i>	Green seaweed (indet species)			R		
<i>Enteromorpha linza</i>	Green ribbon weed			R		
<i>Ulva lactuca</i>	Sea lettuce			R		R
<i>Cladophora</i>	Branched green weed					R
<i>Bryopsis</i>	Sea fern					R
<i>Encrusting algae indet.</i>	Pink encrusting algae	C	C	R	R	O-C

Acknowledgements

This report has been written by Nic Faulks based on Seasearch Survey records made by Spencer Cook, Nic Faulks, Paula Lightfoot, Steve Mustow, Chris Newton and Michelle Simpson, and Observation records made by June Coomber, Derek Dawson, Barry Devlin, Will MacLennan, Lee McKitten and Simon Smith. Sketches by Paula Lightfoot, Steve Mustow and Chris Newton. All photographs in this report were taken by Nic Faulks within the Coquet to St Mary's rMCZ.

Seasearch would like to thank the volunteer divers for their records, and Allan Lopez, skipper of Spellbinder II, for taking us to the sites.



Report published by Marine Conservation Society for Seasearch www.seasearch.org.uk