Blackwater, Colne, Crouch and Roach MCZ

Seasearch Site Surveys 2012

This report summarises the results of subtidal surveys carried out in the recommended Marine Conservation Zone by Seasearch volunteers during August 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. The Mill Point recommended Reference Area is one which has been agreed on by the Essex Wildlife trust and local oyster fishermen and is not officially recognised by the MCZ process.

Blackwater estuary, showing sites surveyed by Seasearch in 2012

Physical Features of the Area

The recommended Marine Conservation Zone covers the estuaries between Clacton to the North and Southend to the South.

View from Abbott's Hall Farm rReference Area

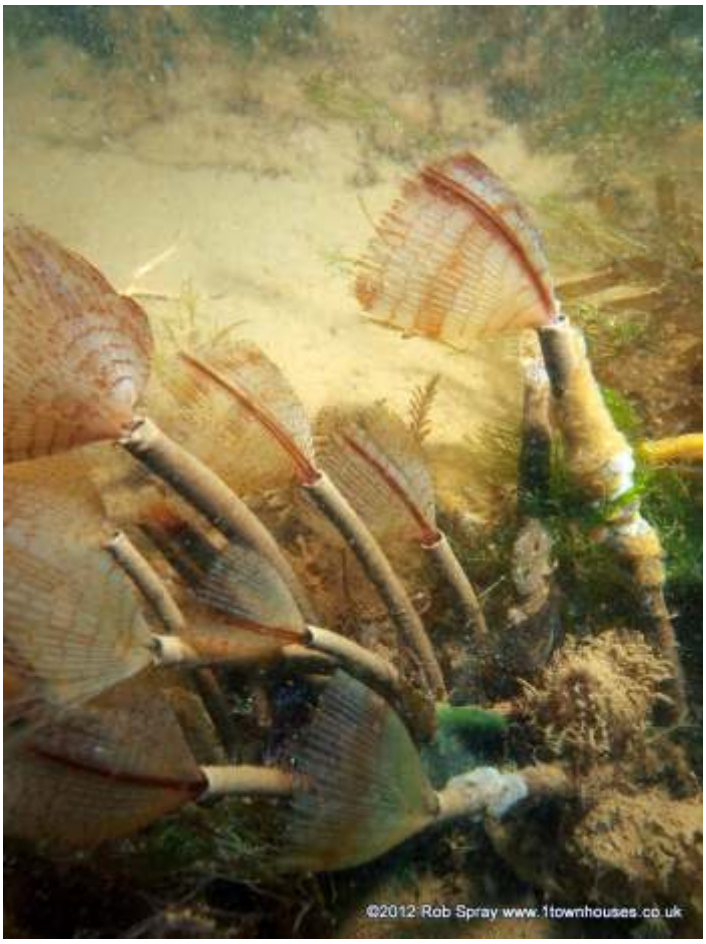
As would be expected, the main seabed types are mud, sand and gravel, much of which is managed to promote the growth of farmed oysters.

Features of the Marine Life

The most notable resident in the area is the invasive Slipper limpet. This animal exists in long chains of individuals which carpet the seabed and would displace the valuable oysters if not removed by fishermen. In the proposed Reference Area, they are the main anchoring point for large numbers of other species, which would not get a foothold in the mobile sediment.

Numerous sea squirts, such as the invasives Leathery sea squirts and Corella eumota and native Ascidiella aspersa coat all hard surfaces.

Vast numbers of Peacock fanworms collect nutritious particles from the water; they are much slower to react to divers overhead than those in less turbid water.



Peacock fanworms anchored into Slipper limpet chains

Helter skelter and Squirrel tail hydroids give the appearance of bleached seaweeds wafting in the current – the turbid water means that there is very little true algae.

Finger bryozoans roll around on the sediment between large Dahlia anemones anchored to rocks beneath the surface.

Shore crabs and common prawns are the most numerous crustaceans.


Shore crab

Helter skelter hydroid with some tiny bits of green algae and white colonial squirts.


Dahlia anemone (above) and Sand brittlestar (below)

Sand goby

Typical mixed community anchored into Slipper limpet chain – mixed squirts, hydroids, sponge, algae and a piece of finger bryozoan peeping in from the left

This group includes Leathery sea squirts and tiny Perophora squirts.

Human uses and impacts

Oyster farming has a large impact on the seabed, with fishermen removing Slipper limpets, crushing them to fine gravel and returning them. This gives a veneer of gravel over the mobile sediment, which the oysters seem to like. Not many other species settle into these areas.

The whole estuary (and the others surrounding it) is very popular for boat mooring, with all the associated pollution and seabed disturbance. Vast amounts of floating food packaging collects around the oyster rafts, almost certainly coming from the pleasure boats.

Top view of oyster raft – this one is surprisingly clear of litter

Invasive species, such as leathery sea squirts and Slipper limpets arrive by a variety of means, such as ballast from container ships, within new stocks of oysters and on the hull of yachts, all mediated by humans.

Divers examining mooring rope for invasive squirts

The reference area is very close to Bradwell power station which has pumped out vast amounts of pollution and will again during the decommissioning process.

Benefits of Protection

The much improved biodiversity in the reference area compared to an area of boat moorings suggests what could be achieved by protection, though the invasive species are already well settled into the area and new ones arrive all the time.

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 has been drawn to coincide with the boundary of the existing no trawl zone. The proposed MCZ extends from the intertidal zone to the three nautical mile limit, although intertidal habitats are not currently proposed for protection within the MCZ.

The features proposed for designation are:

Broad scale habitats	A1.1	High energy intertidal rock
	A1.3	Low energy intertidal rock
	A2.2	Intertidal sand and muddy sand
	A2.3	Intertidal mud
	A2.4	Intertidal mixed sediments
	A4.2	Moderate energy circalittoral rock
	A5.5	Subtidal macrophyte-dominated sediment
	A5.6	Subtidal biogenic reefs
Habitat FOCI		Blue mussel beds
		Esturine rocky habitats
		Intertidal underboulder communities
		Native oyster beds
		Rossworm (*Sabellaria spinulosa*) reef
		Seagrass beds
		Seapens and burrowing megafauna
		Sheltered muddy gravels
Species FOCI		Native oyster (*Ostrea edulis*)
Species FOCI		Lagoon sea slug (Tenellia adspersa)

Features within the area but NOT proposed for designation are:

Broad scale habitats	A5.1	Subtidal coarse sediment
	A5.2	Subtidal sand
	A5.3	Subtidal mud
	A5.4	Subtidal mixed sediments
	A2.4	Intertidal mixed sediments

Habitat FOCI Subtidal sands and gravels

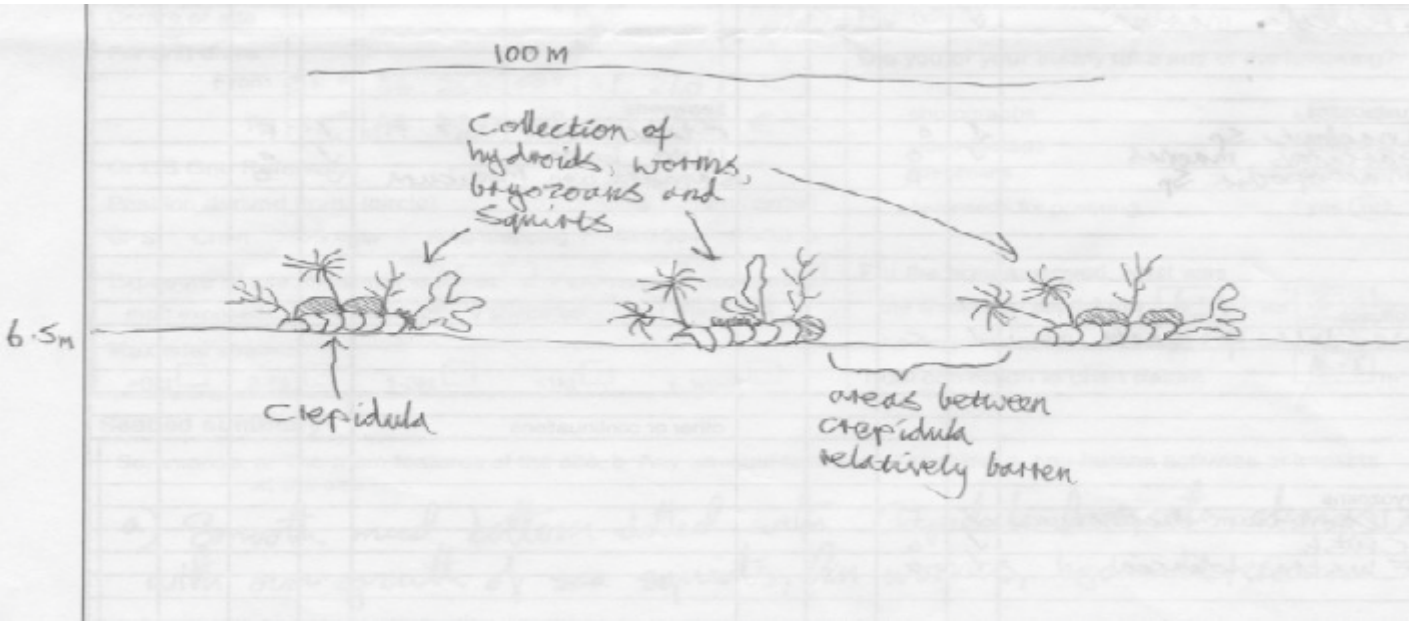
Survey details

Dive 1 11th August 2012 06.55am. Slackwater dive from small boat. Habitat, species and photographic record. Surveyors Simon Parker, Jon Chamberlain and Sarah Bowen. Position 51 44.253N 00 51.228E. Survey form numbers EA12/107, 113, 122,

Dive 2 11th August 2012 07.39am. Drift dive from small boat. Habitat, species and video record. Position from 51 44.264N 00 51.260E to 51 44.319N 00 51.426E. Survey form number EA12/053

Dive 3 11th August 2012 10.44am. Slackwater dive from small boat. Habitat, species and photographic record. Surveyors Sarah Bowen and Jon Chamberlain. Position 51 46.645N 00 52.883E. Survey form numbers EA12/108, 114

Habitat sketch



Biotopes recorded

Mill Point reference	SS.SMx.SMxVs.CreMed	Slipper limpets on mixed sediment in very sheltered sites with variable salinity
Salcot channel moorings	SS.SMx.SMxVs.CreMed	Slipper limpets on mixed sediment in very sheltered sites with variable salinity
Salcot channel moorings	CR.FCR.FouFa.Aasp	Sheltered artificial substrata such as discarded fishing nets or scrap metal on muddy sediment plains often with high numbers of the sea squirt Ascidiella aspersa.

Species List

Scientific name	Common name	Abundance dive 1	Abundance dive 2	Abundance dive 3	Notes
Porifera	Sponges				
Halichondria panicea	Breadcrumb sponge	O	F	O	
Scypha ciliata	Vase sponge		O		
Cnidaria	Hydroids and anemones				
Tubularia larynx	Oaten pipes			O-F	
Plumularia setacea	Feathery hydroid	O	O	O-C	
Hydralmania falcata	Helter skelter hydroid	F-C	C	C	

Scientific name	Common name	Abundance dive 1	Abundance dive 2	Abundance dive 3	Notes
Sertularia cupressina	Squirrel tail hydroid	C	O	O	
Urticina felina	Dahlia anemone	O	O		
Sagartia troglodytes	Anemone	O	R		
Annelida	Segmented worms				
Sabella pavonina	Peacock fanworm	A	C		
Arenicola marina	Lugworm		O		
Crustacea	Barnacles, crabs, shrimp and lobsters				
Carcinus maenas	Shore crab	C	O	O	
Palaemon serratus	Common prawn			O-F	
Inachus sp	Sponge spider crab		O		
Macropodia sp	Long legged spider crab	R	R		
Crangon crangon	Brown shrimp	R			
Mollusca	Molluscs				
Crepidula fornicata	Slipper limpet	O-C	C	F	Invasive
Crassostrea gigas	Oyster			F-A	
Bryozoa	Sea mats and sea mosses				
Flustra foliacea	Hornwrack	F	O	O	
Scrupocellaria scruposa	Bryozoan			O	
Bowerbankia citrina			O		
Alcyonidium diaphanum		O	F		
Anguinella palmata	Bryozoan	C			
Bugula turbinata	Spiral bryozoan	O			
Bugula plumosa	Spiral bryozoan	O			
Bryozoan crust	crusts	O	O		
Echinoderms	Starfish, urchins and brittlestars				
Ophiura ophiura	Sand brittlestar	O	O		
Ophiura albida	Sand brittlestar		O		
Ophiura sp.I	Brittlestar in sand		O		
Ophiothrix fragilis	Common brittlestar	O			
Tunicata	Sea squirts				
Polycarpa scuba	Sea squirt		O	O	
Ciona intestinalis	Yellow ringed squirt			O	
Styela clava	Leathery sea squirt	O-F	O	O	Invasive
Ascidiella aspersa	Sea squirt	O		F	
Perophora listeri	Sea squirt	O-F	F		
Diplosoma spongiforme	Sponge sea squirt	F-C	C		
Ascidia scabra	Sea squirt		F		
Didemnid sp	Sea squirt	C	C		
Clavelina lepadiformis	Lightbulb sea squirt	O			
Pisces	Fishes				
Pomatoschistus sp	Sand goby		O		
Pomatoschistus pictus	Painted goby	O			
Algae	Seaweeds				
Ceramium sp	Pincer weed	O		O	
Cladophora sp	Green alga	O	F		
Ulva linza	Gut weed	O	O		
Sargassum muticum	Japanese wire weed	O	O		Invasive
Bryopsis sp	Green alga	O			
Dictyota dichotoma	Brown algae	R			

Acknowledgements

This report has been written by Dawn Watson based on Seasearch Survey records made by Dawn Watson, Jon Chamberlain, Sarah Bowen and Simon Parker. All photographs in this report were taken by Rob Spray within the Blackwater estuary dMCZ.

Seasearch would like to thank the volunteer divers for their records, and Sarah Allison from the Essex Wildlife Trust for all her help with organising and supporting dives.

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