Selsey Bill and The Hounds rMCZ 2014 Survey Report

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Authors: Nina Godsell and Clare Miller

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Matt Curtis	Cefas Marine Ecologist
Ben Green	Natural England/Environment Agency Marine Ecology Technical Specialist
Mike Young	Natural England Senior Marine Monitoring Specialist

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Figures

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MMT HI 1437 – Selsey Bill to Lee-On-Solent. Seabed Texture Sheet. PDF Chart. Interpreted by the Cefas habitat mapping team.

1. Introduction

The Marine and Coastal Access Act 2009 requires the UK Government to create a coherent network of Marine Conservation Zones (MCZs) in British waters. MCZs will exist alongside other Marine Protected Areas (MPAs), including Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Sites of Special Scientific Interest (SSSIs) and Ramsar sites to help conserve marine biodiversity, in particular, habitats and species of European and national importance.

Through Defra, and with written advice from the Statutory Nature Conservation Bodies* (SNCBs), four regional projects were established to identify potential MCZs within the UK EEZ. These projects were called Net Gain (North Sea), Balanced Seas (South East waters), Finding Sanctuary (South West waters) and the Irish Sea Conservation Zones (Irish Sea) (see http://jncc.defra.gov.uk/mczmap accessed 17 June 2014). They combined stakeholder consultation with existing scientific data to propose recommended MCZs and RAs (rMCZ & rRA) in their region that would contribute to the MCZ network. The four projects reported in September 2011, each producing a 'final recommendations' report, which contained Site Assessment Documents (SADs) for each of the rMCZs. These reports were reviewed by an independent science advisory panel who recommended that the scientific evidence base for some of the rMCZs should be strengthened before the SNCBs recommended them to the Environment Minister for formal designation.

Consequently, Defra commissioned Cefas to co-ordinate a programme of seabed surveys to provide additional data for specified rMCZs. The programme as a whole included acoustic and benthic sampling surveys, completed by a range of service providers from both the public and private sectors.

On 21st November 2013, the UK Government announced the designation of 27 MCZs in the first tranche. In addition, Defra commissioned further survey work (i.e. seabed and habitat mapping) to increase the quality and amount of evidence available for rMCZs being considered for designation in the future tranches. Survey priorities were agreed between Defra and the SNCBs based on information in the four regional project reports (Finding Sanctuary, Irish Seas Conservation Zones, Net Gain and Balanced Seas). As part of this process, the Environment Agency Marine Monitoring Service has been collaborating with Cefas and Natural England to carry out further benthic habitat characterisation surveys to bolster the scientific evidence base.

This Survey Report records the sampling conducted by the EA within the Selsey Bill and The Hounds rMCZ , to allow adequate verification and characterisation of the surface sediment and benthic communities within the site. The samples and associated metadata have been delivered to Cefas and will be analysed and interpreted in due course to produce a Site Report, which will be passed to the SNCBs for consideration when updating the SAD.

*Natural England and the Joint Nature Conservation Committee (JNCC)

1.1 Survey Aim and Objectives

Overall Survey Aim

To verify the presence of the subtidal features proposed for designation within the Selsey Bill and The Hounds rMCZ.

Objectives

- To provide information which will improve the evidence base for assessing the presence and extent of Broadscale Habitats and habitat Features of Conservation Importance (FOCI) within the rMCZ.

- Where possible, to confirm the presence of benthic Species of Conservation Importance (SOCI), within the confines of the survey approach and platform utilised. It should be noted that this is a secondary objective of the survey.

1.2 Selsey Bill and The Hounds rMCZ Survey Team

The Selsey Bill and The Hounds rMCZ was surveyed on the 25th September 2014 and 26th September 2014. The survey team comprised of four members of the EA's Marine Monitoring Service. The Briggs Marine coastal survey vessel 'Thames Guardian' (Figure 1, Annex 7.1) was used to conduct the survey work reported here.

Environment Agency Marine Monitoring Service Survey Officers	Mike Fraser Nick Jones Luke Martina Clare Miller

Figure 1. Coastal survey vessel 'Thames Guardian' operated by Briggs Marine

1.3 Site Description

The Selsey Bill and The Hounds rMCZ is located in the English Channel, to the east of the Solent and has been proposed within the Balanced Seas project area (Figure 2). The relatively small site encompasses both intertidal and subtidal habitat, with a total surface area of 12.90 km^2 (Balanced Seas, 2011). The inshore boundary is aligned with the Mean High Water (MHW) mark on the western side of Selsey Bill and includes part of the Bracklesham Bay SSSI geological feature. From the headland, the rMCZ boundary extends over 2.5 km offshore and has been drawn specifically to surround areas of unusual limestone outcrops and clay exposures (the Hounds, the Malt Owers, the Mixon, the Streets and the Grounds) (Balanced Seas, 2011). Detailed site information can be found in section 25.2 of the Balanced Seas Final Recommendations Report (2011).

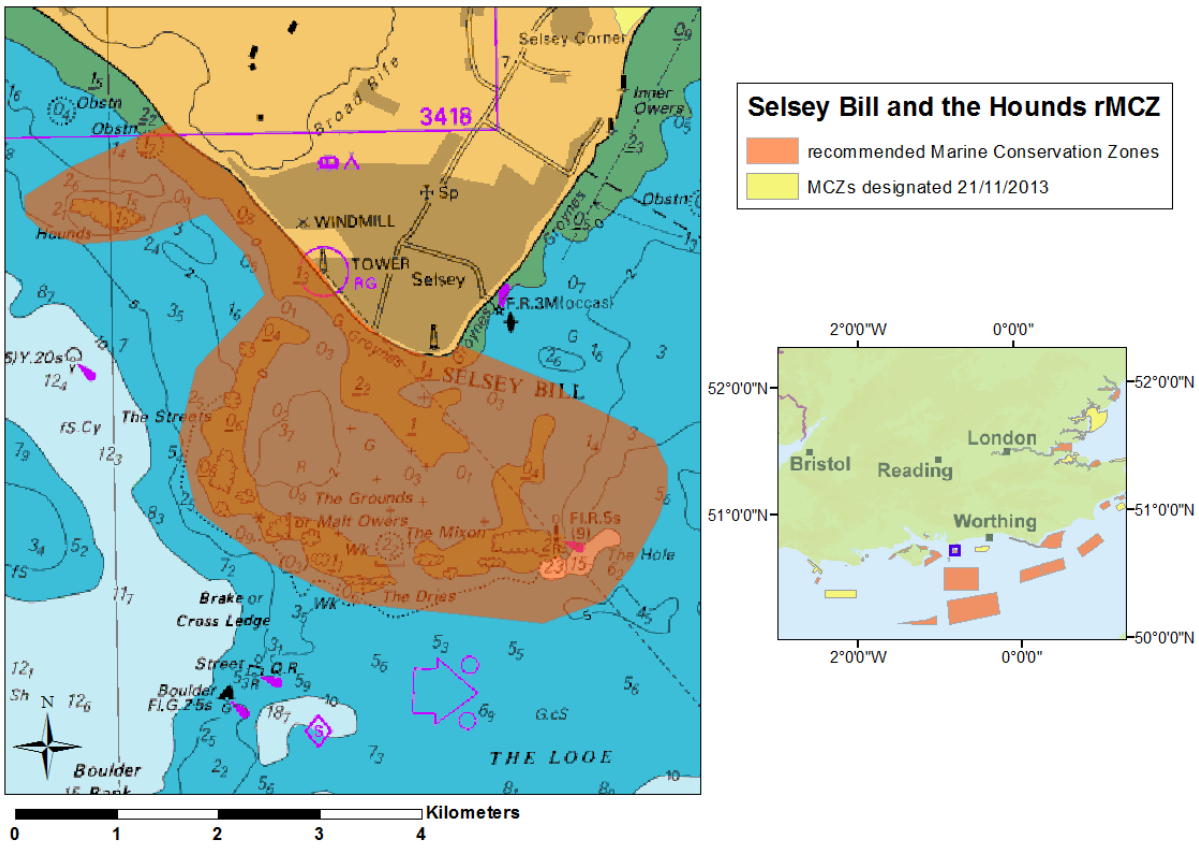


Figure 2. Location of the Selsey Bill and The Hounds recommended Marine Conservation Zone (rMCZ) in the context of other proposed rMCZs and designated MCZs off the south of England.

1.4 Geological and Biological Context

The Site Assessment Document (SAD) describes the subtidal benthic habitat within the Selsey Bill and The Hounds rMCZ as predominantly infralittoral rock with a thin veneer of overlying sediment (Balanced Seas, 2011).

The eastern section of the Bracklesham Bay SSSI geological feature extending to the MLW mark is included in the rMCZ where tidal erosion of the Earnley Clay Formation has exposed Eocene fossils along the beach (Balanced Seas, 2011). Unusual clay pedestal structures formed by the action of the sea have created a highly biodiverse benthic habitat.

The subtidal Broadscale Habitats (BSHs) and Features Of Conservation Importance (FOCI) proposed for designation within the Selsey Bill and The Hounds rMCZ are shown in Table 1. The remaining area (0.8 km^2) of the rMCZ contains the following features not proposed for designation: intertidal mixed sediments, native oyster beds and subtidal sands and gravels (Balanced Seas, 2011).

Table 1. Subtidal features proposed for designation by the regional project within the Selsey Bill and The Hounds rMCZ (Balanced Seas, 2011).

Feature type	Feature Name	EUNIS Level 4 from REC* data	Area/No. of records
Broadscale Habitats	A3.1 High energy infralittoral rock		2.33 km^2
	A5.2 Subtidal sand	A3.92 Moderate energy infralittoral rock and thin sands	4.98 km^2
		A3.A2 Low energy infralittoral rock and thin sandy sediment	
	A5.4 Subtidal mixed sediments	A3.94 Moderate energy infralittoral rock and thin mixed sediments	4.79 km^2
		A3.A4 Low energy infralittoral rock and thin mixed sediments	
Habitat FOCI	Peat and Clay exposures		7.39 km^2
Species FOCI	Short-snouted Seahorse *(Hippocampus hippocampus)*		No records
Geology	Bracklesham Bay		n/a

* Regional Environmental Characterisation

2. Survey Design and Methods

2.1 Survey Design and Planning Phase

Using ArcMap v.10, multibeam echosounder backscatter data covering approximately one third of the rMCZ was utilised by the Cefas habitat mapping team to plot sampling stations in the western end of the area. An equilateral triangular lattice gridding tool (developed by Cefas) was overlaid on UKHO (UK Hydrographic Office) Admiralty charts to guide the selection of appropriate locations within the remaining two thirds of the rMCZ. Due to the network of shallow rocky reef features, a number of points were relocated manually. Twenty-two target stations were chosen, representing the area accessible for sampling and number of sediment BSHs proposed for designation (Figure 3). Marine specialists from the Environment Agency Marine Monitoring Service and Natural England reviewed the plan, focussing on potential hazards and particular features of interest.

The following hazards were identified from the UKHO Admiralty charts within the Selsey Bill and The Hounds rMCZ: exposed rocky reef, wrecks and submerged rocks. To minimize risk, the small, shallow-draft, highly manoeuverable vessel 'Thames Guardian' was deemed the most suitable sampling platform to use for the survey. The vessel, equipped with a 0.1 m^2 Day Grab was used to target the sediment broadscale habitats. A full drop camera survey was ruled out, due to safety concerns over operating in an area with fast tidal flows in close proximity to exposed rocky reef. To capture some supporting habitat information at each station, a GoPro camera (Model: Hero 3+) was mounted on the Day grab frame and configured to record continuous video footage and take digital still images automatically at a pre-defined time interval.

A 'notification of an exempt activity form' was submitted to the Marine Management Organisation prior to the survey being carried out.

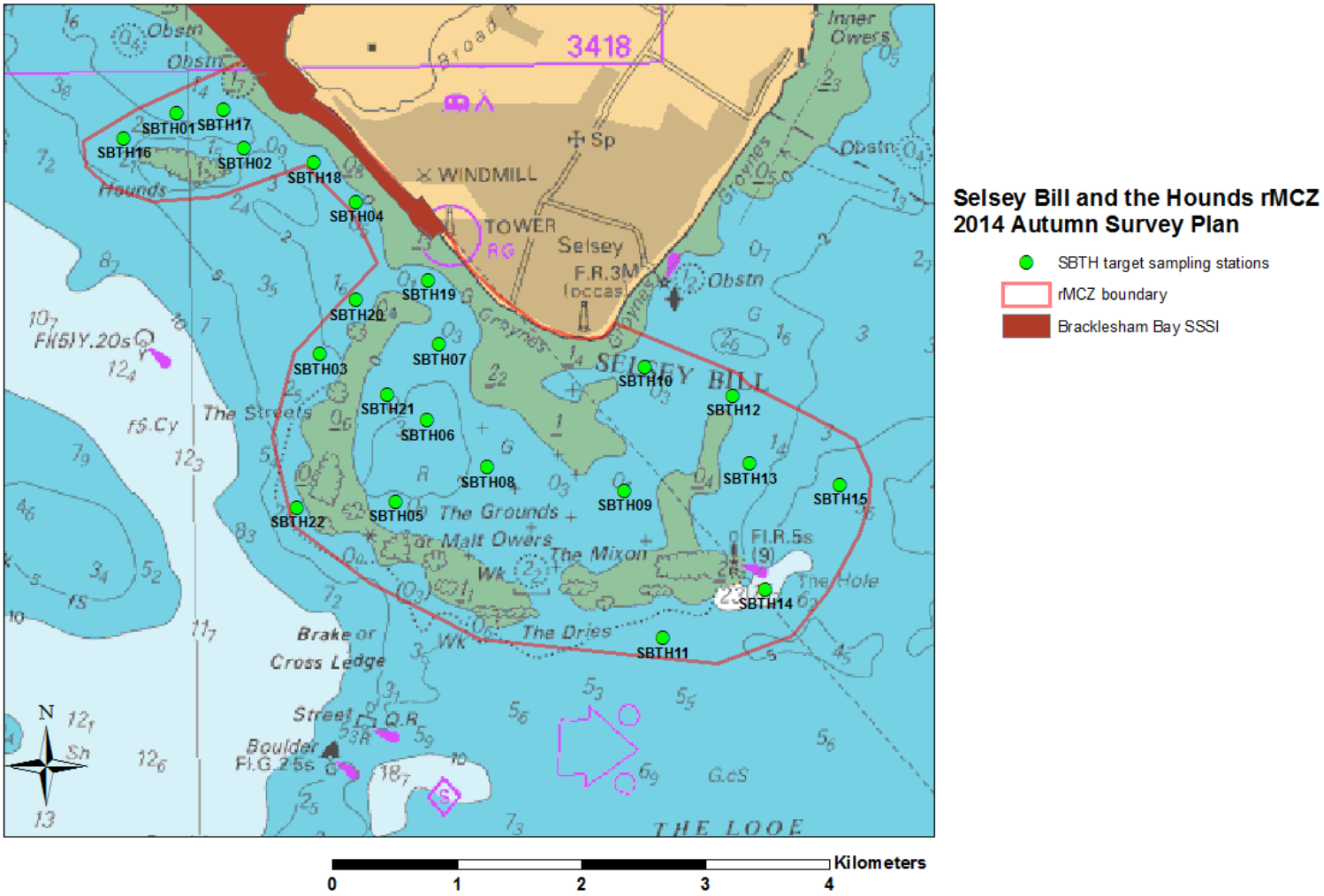


Figure 3. The Selsey Bill and The Hounds rMCZ 2014 habitat verification survey plan.

2.2 Sample Collection Methodology

A Day grab (Figure 4), with a surface sampling area of 0.1 m^2 was deployed from the stern gantry of the survey vessel to recover sediment from the seabed as described in Ware and Kenny (2011). Sampling positions were recorded (fixed) using Hydropro data acquisition software when the gear made contact with the seabed, and the mid-point of the vessel's stern gantry was used as the default offset for position fixing (see Annex 7.2.2 for further details). On recovery, a photograph was taken of the undisturbed surface and the depth of material within the grab was measured using a probe. A sample depth of 5 cm was required to qualify as a valid sample. The sample was inspected to measure the depth of the apparent Redox Potential Discontinuity (aRPD) or 'black layer', if present. A 100 ml sub-sample was then removed for Particle Size Analysis (PSA), using a 3 cm diameter core driven to the full depth of the grab. The remaining faunal sample was then processed by washing over a 1.0 mm sieve (Figure 4). The retained material was photographed and preserved in a buffered 8% formaldehyde solution for transfer ashore to a specialist laboratory for analysis. A minimum of three attempts was made at each station to obtain a valid grab sample before the station was abandoned. Samples were considered invalid where loss of sample occurred during recovery of the grab, due to large sediment particles preventing closure of the bucket. Samples of < 5 cm depth were ordinarily discarded. However, when it was found to be difficult to obtain a valid sample, then a sample with < 5 cm material was retained, at the discretion of the lead scientist.

Figure 4. Day Grab (left), and equipment for sieving benthic fauna samples (right)

A GoPro camera (Model: Hero 3+) was securely attached to a descending strut of the Day grab frame to trial video and digital still image data capture during each deployment. The camera was configured to take a still image every ten seconds and record continuous video footage. A small LED light source was mounted above the GoPro to illuminate the field of view.

2.3 Preliminary Habitat Assessment Methodology

Sediment descriptions were recorded for each sample collected. For consistency across all the rMCZ benthic habitat characterisation surveys, these were based on a pictorial field guide produced by Cefas marine sedimentologists, a modified Folk seabed sediment classification system (Long, 2006) (Figure 8) and the Wentworth Scale (Table 2).

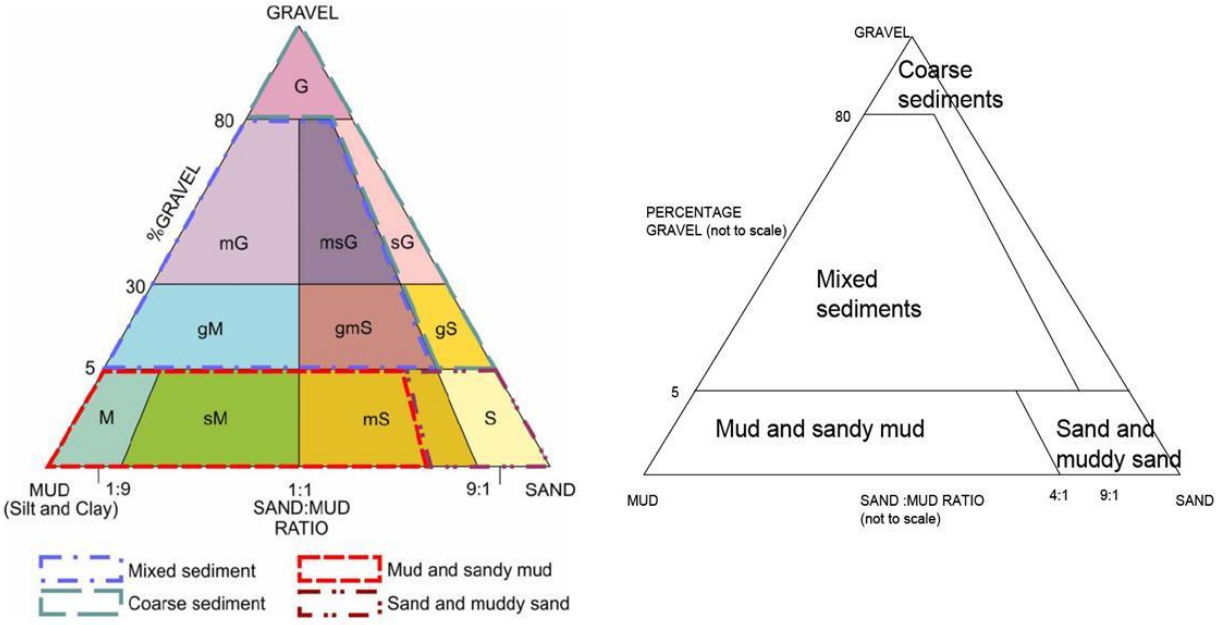


Figure 5. Simplified sediment classification of the Folk triangle for UK SeaMap (Long, 2006).

Table 2. Sediment grade terms and size limits (Wentworth, 1922).

Size	Grade Terms
> 256 mm	Boulder
64 - 256 mm	Cobble
4 - < 64 mm	Pebble

3. Survey Narrative

Following a team safety briefing, EA survey personnel aboard 'Thames Guardian' locked out of Sovereign Harbour Marina near Eastbourne at 06:05 UTC on Thursday the 25th September. During the two-and-a-half-hour passage west to the Selsey Bill and The Hounds rMCZ, sampling equipment was prepared and the GoPro camera securely attached to Day grab (DG) frame for testing. The Met Office forecast was favourable with force 4 to 5 south-westerly winds decreasing to force 3 later and with a slight sea state. The vessel arrived on station at 09:30 UTC to commence DG operations. With high water not until 11:40 UTC, the team started at station SBTH013 and worked on the flooding tide from east to west in amongst the shallow rocky reef features. The first five stations were discarded after three attempts at each. The material retrieved consisted predominantly of pebbles that prevented the grab jaws from closing and some macroalgae. The GoPro camera images revealed a coarse sublittoral habitat. To the west of the Selsey Bill headland, the sediment was found to contain finer sediment with a higher proportion of sand. Valid samples were collected for faunal and particle size analyses at SBTH005, 021 and 007 (PSA only from SBTH006). Three consecutive deployments at Station SBTH019 generated three empty grabs. Images of infralittoral rocky habitat were captured by the camera. From 11:36 UTC to 12:03 UTC the vessel continued west, running parallel with the shoreline and the Bracklesham Bay SSSI geological feature. Small quantities of clay were observed in samples collected at stations SBTH04 and 017. The lead scientist chose to retain some of the material in the grab at station SBTH002, immediately to the east of The Hounds limestone reef feature, as it was thought to contain *Sabellaria* sp. As the tide was now ebbing, the vessel relocated back to the eastern end of the rMCZ to try sampling at three stations (SBTH011, 014 and 015) in deeper water. As the team had discovered earlier in the day in this area, camera images revealed that the sediment was too coarse for the Day grab to be effective. Grab operations ceased at 13:28 UTC and the vessel transited west into the Solent to overnight in Portsmouth Harbour.

The team returned to the rMCZ the following day to sample the remaining five stations in the western half of the area on the flood tide. The first station attempted was SBTH022 at 09:27 UTC. Fishing gear was spotted as the vessel approached the target sampling coordinate, so the team relocated a short distance to the south-west. Images captured by the GoPro provided a glimpse of infralittoral rocky habitat and kelp; however the visibility underwater was moderate so confidence in the preliminary habitat assessment was low. Three grab attempts produced no valid samples. Sublittoral sand habitat was discovered at the final four stations (SBTH003, 020, 016 and 001). Valid samples for both faunal and particle size analyses were collected, except at station SBTH016 (PSA only) where the sample depth average across all three grab deployments was only 3.3 cm. The survey was completed at 10:19 UTC, after which 'Thames Guardian' returned to Haslar Marina for the staff to disembark with the samples and equipment.

The Selsey Bill and The Hounds rMCZ habitat verification survey took two 'on-task' days to complete. A detailed progress report for each survey day can be found in Annex 7.4.

4. Preliminary Results

4.1 Grab Samples

Valid grab samples for infaunal and particle size analyses were collected at seven Selsey Bill and The Hounds rMCZ stations using a Day grab (Figure 6). At three stations, the quantity of sediment collected (< 3 litres) was only sufficient for PSA. Twelve stations yielded insufficient sediment (< 0.5 litre) across all three grab deployments and were subsequently discarded. At SBTH02 (one of the discarded stations), the lead scientist chose to retain a small quantity of material for faunal analysis, to check for the presence of *Sabellaria* sp. The samples were photographed before and after the on-board processing phase; these images and supporting field notes are presented in Table 3. It should be emphasised that the assignments presented here are based only on preliminary field observations. Definitive classification of habitat features present is not possible prior to the results of the more detailed sample analyses carried out in the laboratory being available.

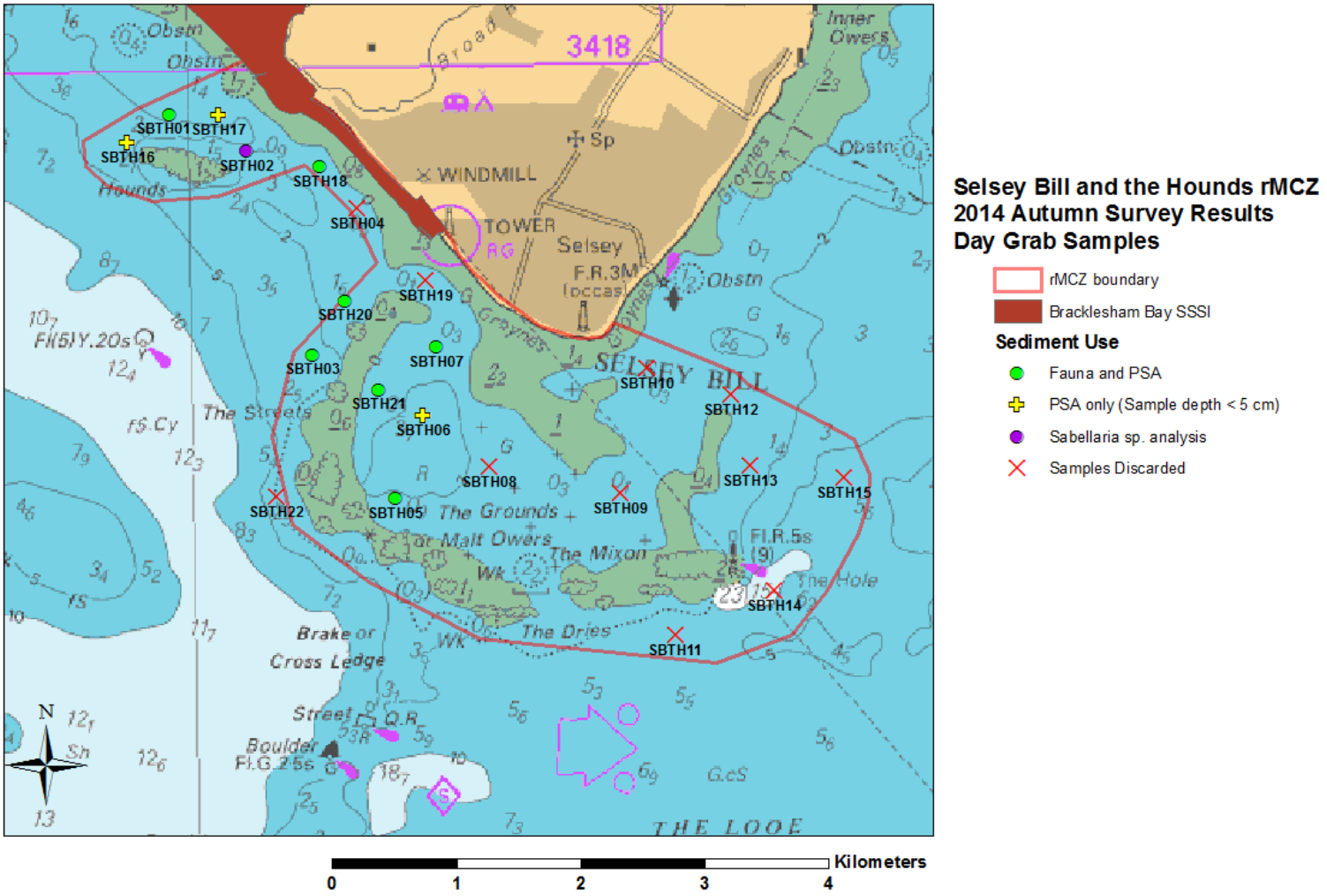
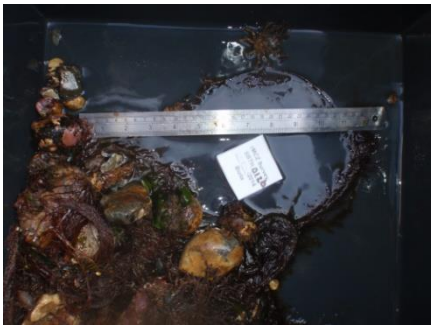


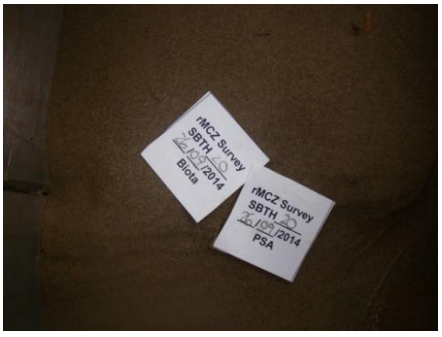
Figure 6. The Selsey Bill and The Hounds rMCZ 2014 habitat verification survey grab samples.

4.1.1 Grab Sample Photographs

Table 3. Day grab sample images captured during the Selsey Bill and The Hounds rMCZ 2014 habitat verification survey. Samples were photographed before and after sieving over a 1.0 mm mesh. Field notes include sediment descriptions and sample depths (50 ml was removed for particle size analysis after the initial photograph was taken).

Station Code + Field Notes	Sample prior to sieving	Sieved sample
SBTH01 Muddy sublittoral sand Sample depth = 6.0 cm		
SBTH02 Discarded *Sabellaria sp?* Unable to measure sample depth		Some material retained and submitted for analysis
SBTH03 Sublittoral sand Sample depth = 6.0 cm		

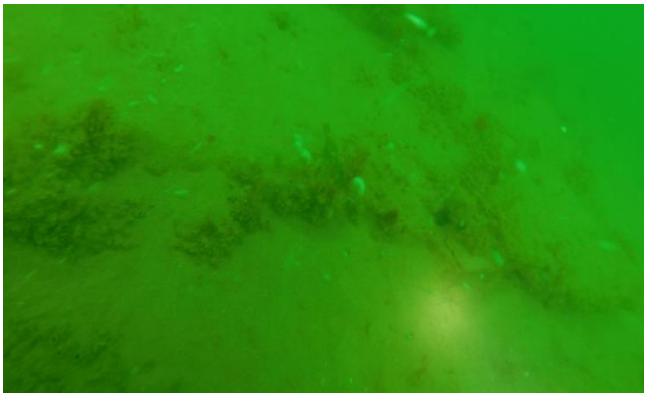
Station Code + Field Notes	Sample prior to sieving	Sieved sample
SBTH05 Coarse sublittoral sediment Sample depth = 6.0 cm		
SBTH06 Sublittoral sand Sample depth = 4.0 cm		PSA only
SBTH07 Coarse sublittoral sediment Sample depth = 10.0 cm		
SBTH12 Pebbles and macroalgae Discarded Unable to measure sample depth		
SBTH16 Sublittoral sand Sample depth = 3.0 cm		PSA only

Station Code + Field Notes	Sample prior to sieving	Sieved sample
SBTH17 Mixed sublittoral sediment Sample depth = 1.0 cm Clay present		PSA only
SBTH18 Coarse sublittoral sediment Sample depth = 6.0 cm		
SBTH20 Sublittoral sand Sample depth = 7.0 cm		
SBTH21 Sublittoral coarse sand Sample depth = 10.0 cm		

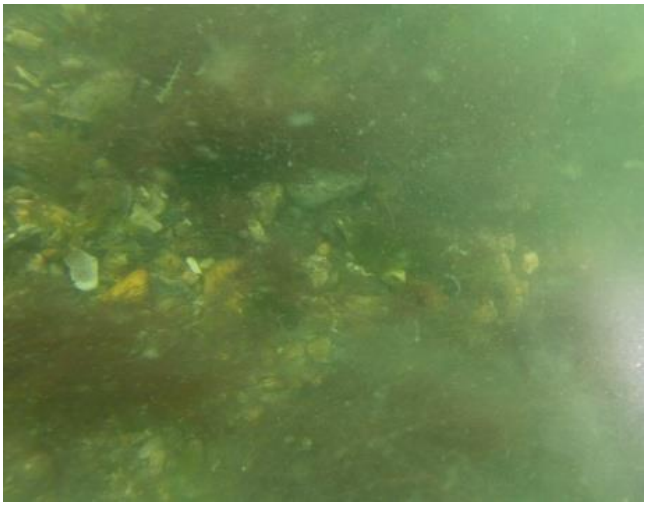
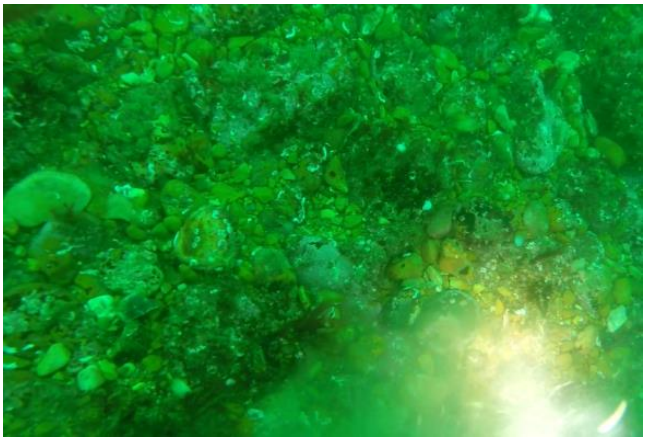
4.1.2 GoPro Camera Images

Images of the seabed were collected using a grab mounted GoPro camera to provide supporting habitat data at twenty stations within the Selsey Bill and The Hounds rMCZ. Throughout the survey, the underwater visibility encountered was good/moderate (please see Annex 7.3 for the visibility assessment scale).

Table 4. A selection of seabed images captured during the Selsey Bill and The Hounds rMCZ habitat verification survey using a Day grab mounted GoPro (Hero 3+) camera.

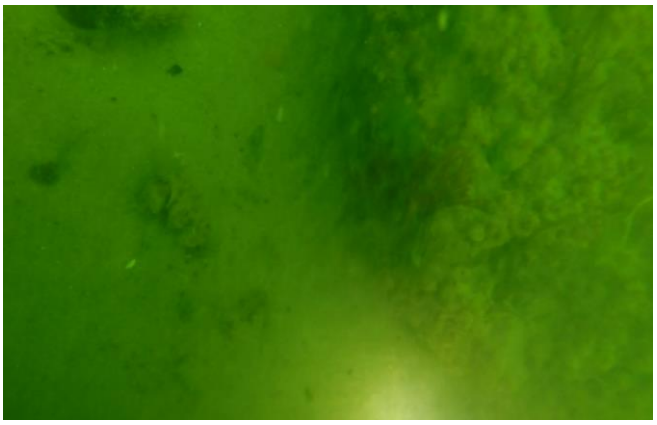
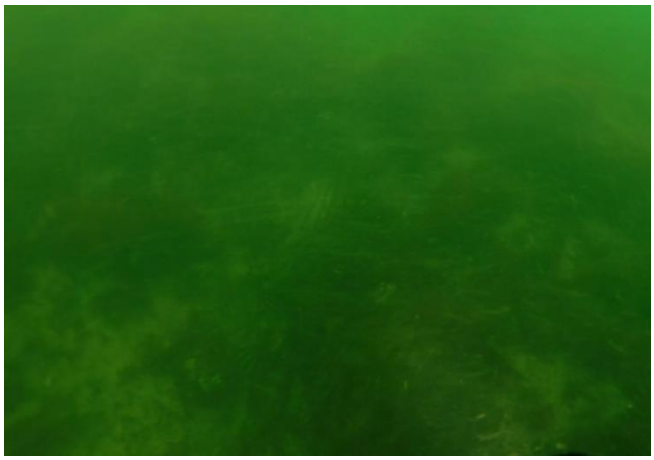
Video/Still Filename and Comments	Video Screen Grab/Digital Still Image
SBTH_2EYX70914_GT001	No clear video footage or digital still images of the seabed
SBTH_2EYX70914_GT002	No video or digital still images captured
SBTH_2EYX70914_GT003	No clear video footage or digital still images of the seabed
SBTH_2EYX70914_GT004_STN_11_A3 Video screen grab No valid Biota or PSA samples collected Potential solid clay beneath a thin layer of sublittoral sandy sediment – low confidence	
SBTH_2EYX70914_GT005_STN_6_A1_01 Digital still image	

Video/Still Filename and Comments	Video Screen Grab/Digital Still Image
SBTH_2EYX70914_GT006_STN_07_A3 Video screen grab	
SBTH_2EYX70914_GT007_STN_09_A1 Video screen grab	
SBTH_2EYX70914_GT008_STN_5_A3_01 Digital still image No valid Biota or PSA samples collected Coarse sublittoral sediment and macroalgae	

Video/Still Filename and Comments	Video Screen Grab/Digital Still Image
SBTH_2EYX70914_GT009_STN_4_A1_01 Digital still image No valid Biota or PSA samples collected Coarse sublittoral sediment and macroalgae	
SBTH_2EYX70914_GT010_STN_3_A1_02 Digital still image No valid Biota or PSA samples collected Coarse sublittoral sediment and macroalgae	
SBTH_2EYX70914_GT011_STN_17_A1 Video screen grab No valid Biota or PSA samples collected Coarse sublittoral sediment Deeper – less macroalgae	

Video/Still Filename and Comments	Video Screen Grab/Digital Still Image
SBTH_2EYX70914_GT012_STN_2_A3_02 Digital still image No valid Biota or PSA samples collected Coarse sublittoral sediment and macroalgae	
SBTH_2EYX70914_GT013_STN_1_A2_02 Digital still image No valid Biota or PSA samples collected Coarse sublittoral sediment and macroalgae	
SBTH_2EYX70914_GT014_STN_16_A1 Video screen grab No valid Biota or PSA samples collected Coarse sublittoral sediment Deeper – less macroalgae	

Video/Still Filename and Comments	Video Screen Grab/Digital Still Image
SBTH_2EYX70914_GT015_STN_15_A1_01 Digital still image No valid Biota or PSA samples collected Coarse sublittoral sediment Deeper – less macroalgae	
SBTH_2EYX70914_GT016_STN_21_A1 Video screen grab	
SBTH_2EYX70914_GT017	No video or digital still images captured
SBTH_2EYX70914_GT018_STN_12_A1 Video screen grab	

Video/Still Filename and Comments	Video Screen Grab/Digital Still Image
SBTH_2EYX70914_GT019_STN_10_A1 Video screen grab No valid Biota or PSA samples collected Infralittoral rock with patches of sublittoral sandy sediment.	
SBTH_2EYX70914_GT020	No clear video footage or digital still images of the seabed
SBTH_2EYX70914_GT021_STN_08_A1 Video screen grab	
SBTH_2EYX70914_GT022_STN_18_A1 Video screen grab Image 1 No valid Biota or PSA samples collected Infralittoral rock – low confidence	

Video/Still Filename and Comments	Video Screen Grab/Digital Still Image
SBTH_2EYX70914_GT022_STN_18_A1 Video screen grab Image 2 No valid Biota or PSA samples collected Kelp	

4.1.3 Preliminary Habitat Assessment Map

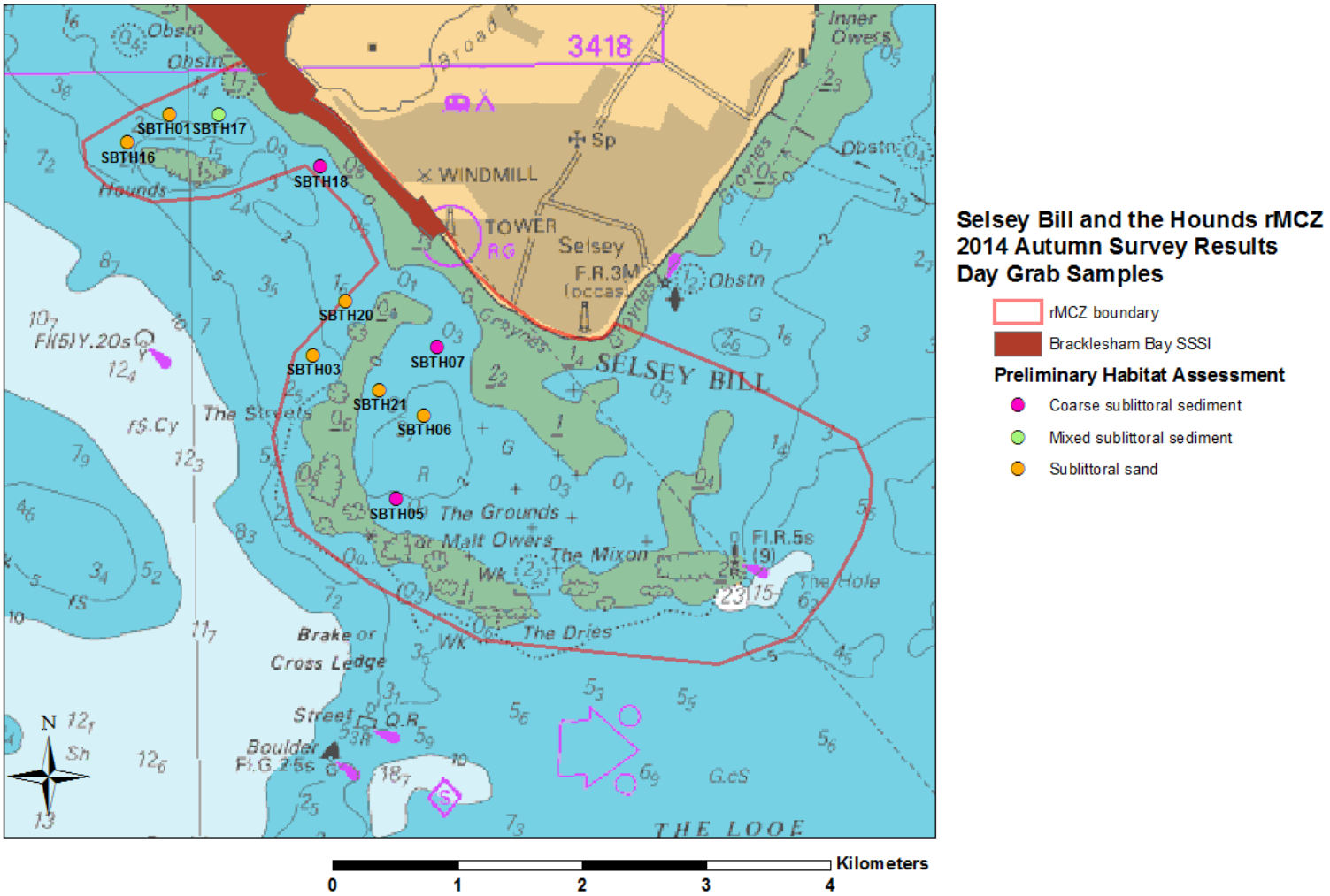


Figure 7. The Selsey Bill and The Hounds rMCZ 2014 grab survey preliminary habitat assessments.

4.2 Features of Conservation Importance

Part of the aim of the survey was to look for the habitat and species FOCI proposed for designation in the Selsey Bill and The Hounds rMCZ Site Assessment Document (Balanced Seas, 2011). Clay was observed in grab samples retrieved at two stations SBTH04 and 017, in the north-western inshore area of the rMCZ, close to the Bracklesham Bay SSSI geological feature. Sufficient material was collected at station SBTH017 for particle size analysis, however grab samples retrieved from SBTH004 contained only thin scrapes of sediment and were discarded. No Short-snouted Seahorses (Hippocampus hippocampus) were observed during the course of the survey.

Additionally, the residue from the biota sample collected at station SBTH018, also in close proximity to the SSSI, was examined by benthic fauna identification specialists in the Lab. They observed fragments of potential bivalve, foraminiferan and bryozoan fossils.

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6. General List of Abbreviations

BSH	Broadscale Habitat
Cefas	Centre for Environment, Fisheries and Aquaculture Science
CS	Camera Sledge
CSV	Coastal Survey Vessel
DC	Drop Video Camera
Defra	Department for Environment, Food and Rural Affairs
DG	Day grab
EA	Environment Agency
ENG	Ecological Network Guidance
FOCI	Features Of Conservation Importance
IFCA	Inshore Fisheries and Conservation Authority
MESH	Mapping European Seabed Habitats
MHM	Mini-Hamon grab
MHW	Mean High Water
MMS	Marine Monitoring Service
mSNCI	marine Sites of Nature Conservation Importance
PSA	Particle Size Analysis
REC	Regional Environmental Characterisation
rMCZ	recommended Marine Conservation Zone
rRA	recommended Reference Area
RSG	Regional Stakeholder Group
SAC	Special Area of Conservation
SAD	Site Assessment Document
SNCB	Statutory Nature Conservation Body
SOCI	Species Of Conservation Importance
SOP	Standard Operating Procedure
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
UKHO	United Kingdom Hydrographic Office
UTC	Coordinated Universal Time

7. Annexes

7.1 Coastal Survey Vessel General Information

Briggs Marine and Environmental Services Ltd.
Seaforth House, Seaforth Place, Burtisland, Fife, KY3 9AX.
Tel: +44(0)1592 872939
Email: marketing@briggsmarine.com
Website: www.briggsmarine.com

Thames Guardian

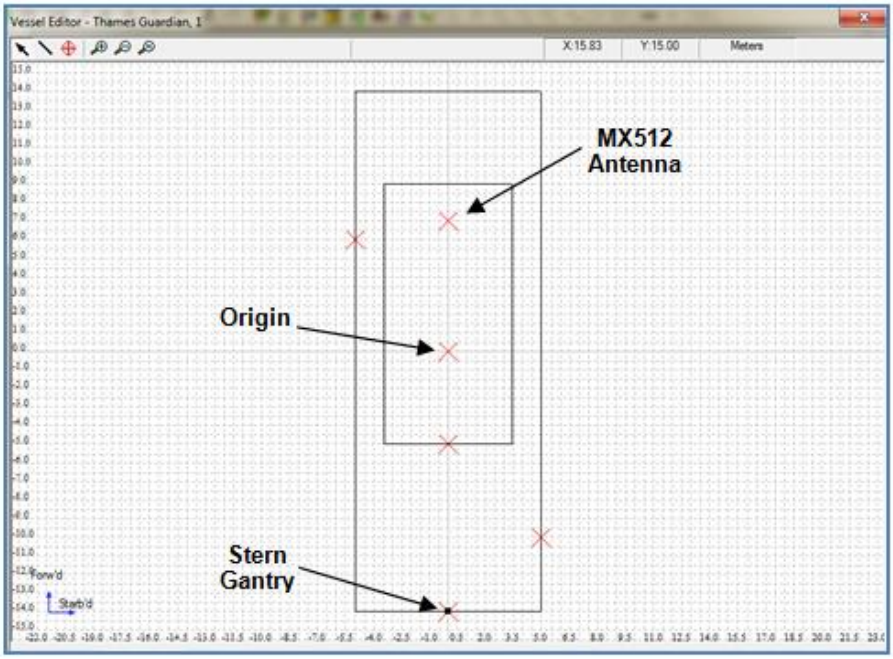
General Information
Length: 14.5 m
Beam: 4.7 m
Draft (light): 1.3 m
Displacement: 13 T
Category Cat 2 Workboat

Main Equipment
Main Engines: 2 x Yanmar type 6LYT-STE @420HP (each)
Crew: 2 (8 persons maximum)
Trials speed 25 knots /18 knots cruise
Deck Equipment: Pot Hauler 250kg A-frame including Winch, Data Winch and Instrument Davit.

7.2 Survey Navigation and Positioning

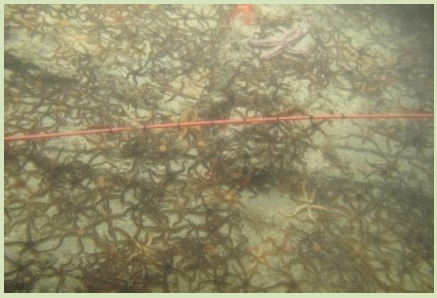
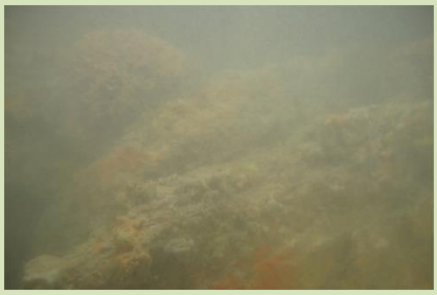
Navigational and survey equipment offsets on the Coastal Survey Vessel 'Thames Guardian' (Environment Agency Marine Monitoring Service).

NMEA Device	Make/Model	Offset Name	Offset (m)		
			X (Starb'd)	Y (Forw'd)	Z +ve (Up)
Gyrocompass	*Simrad Robertson RGC50*	*n/a*	*-*	*-*	*-*
Survey Echosounder	*Kongsberg EA400*	*n/a*	*-*	*-*	*-*
n/a	*n/a*	*Origin*	*0.0*	*0.0*	*0.0*
Survey GPS	*SIMRAD MX512 DGPS*	*MX510 Antenna*	*0.0*	*7.0*	*0.0*
n/a	*n/a*	*A-Frame (Stern Gantry)*	*0.0*	*-10.25*	*0.0*



Trimble® HYDROpro™ vessel editor screen showing survey equipment offsets from the origin (Environment Agency Marine Monitoring Service).

7.3 Underwater Visibility Scale

Example image	Scale	Definition
	Excellent	clear, sharp images - no suspended particulate matter
	Good	seabed features and epifauna clearly discernible
	Moderate	seabed features discernible - epifauna difficult to discern
	Poor	both seabed features and epifauna difficult to discern, low confidence in preliminary habitat assessment
	Very Poor	no seabed features or epifauna visible

7.4 Daily Progress Reports

DAILY LOG
STATUS REPORT
Environment Agency Marine Monitoring Service

Vessel: Thames Guardian	Project: rMCZ habitat verification surveys
Daily Progress Report No.2	Location: Selsey Bill and the Hounds rMCZ
Date: 25/09/2014	

To Company:	Person:	E-mail:
Cefas	Matt Curtis	Matthew.Curtis@cefas.co.uk
Natural England	Michael Young	Michael.Young@naturalengland.org.uk
EA	Luke Martina	Luke.Martina@environment–agency.gov.uk
EA	Nina Godsell	Nina.Godsel@environment-agency.gov.uk

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	2
Additional comments:		

Summary of operations 0000-2400

Time BST (start)	Time BST (end)	Type	Comments
06:30	07:00	Mobilisation	Travelled from hotel to vessel
07:00	10:30	Transit	From Eastbourne to SBTH rMCZ
10:30	14:30	Operational sampling	17 stations surveyed – 6 PSA's and 5 Biota samples
14:30	15:45	Transit	From SBTH to Haslar Marina
15:45	17:00	Other	Fixed samples, completed paperwork
17:00	17:30	Demobilisation	Travelled from vessel to hotel

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind			W – SW force 4-5 decreasing later to force 3 in west		
Sea state			Slight		
Swell					
Visibility			Moderate or good		

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob	01:00	08:00	
Offshore Calibrations			
Total Operation (Camera) Survey (TOSu)			
Total Operation (Grab) Sampling (TOSa)	04:00	04:00	
Equipment/Downtime			
Ship/Plant Downtime			
Waiting On Weather			
Transit	04:45	04:45	
Standby Port			
Demob	00:30	00:30	
Other	01:15	01:15	
Total:			

Overall Progress Groundtruthing Samples

Action	Sites Total	Sites Complete	Remaining Sites	Remarks
Day Grab	22	17	5	
Drop Camera	n/a			

Weather forecast for the next 24 hours

Westerley or southwesterly force 3 or 4, becoming variable force 3 or less. Sea state – slight or less.

Planned operation for the next 24 hours (00:00 to 24:00 on 26th September 2014)

Completed inner Selsey Bill and the Hounds rMCZ benthic survey sites (5 left in total) in addition with GoPro camera. Demobilised from vessel.

Agreed Changes to Scope/Survey operation priorities

No changes required

Comments

Staff on board

Survey Role	Company	Name
Scientist In Charge (SIC)	Environment Agency	Mike Fraser
Survey Team Member	Environment Agency	Clare Miller
Survey Team Member	Environment Agency	Nick Jones
Survey Team Member	Environment Agency	Luke Martina

DAILY LOG
STATUS REPORT
Environment Agency Marine Monitoring Service

Vessel: Thames Guardian	Project: rMCZ habitat verification surveys
Daily Progress Report No.3	Location: Selsey Bill and the Hounds rMCZ
Date: 26/09/2014	

To Company:	Person:	E-mail:
Cefas	Matt Curtis	Matthew.Curtis@cefas.co.uk
Natural England	Michael Young	Michael.Young@naturalengland.org.uk
EA	Luke Martina	Luke.Martina@environment–agency.gov.uk
EA	Nina Godsell	Nina.Godsel@environment-agency.gov.uk

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	2
Additional comments:		

Summary of operations 0000-2400

Time BST (start)	Time BST (end)	Type	Comments
08:00	08:30	Mobilisation	Travelled from hotel to vessel
08:30	10:30	Transit	From Haslar Marina to first station
10:30	11:30	Operational sampling	5 stations surveyed – 4 PSA's and 3 Biota samples
11:30	12:30	Transit	From SBTH to Haslar Marina
12:30	14:00	Other	Fixed samples, completed paperwork
14:00	19:30	Demobilisation	Travelled from vessel to Peterborough to submit samples

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind		W – SW force 3-4			
Sea state		Slight			
Swell					
Visibility		Moderate or good			

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob	00:30	08:30	
Offshore Calibrations			
Total Operation (Camera) Survey (TOSu)			
Total Operation (Grab) Sampling (TOSa)	01:00	05:00	
Equipment/Downtime			
Ship/Plant Downtime			
Waiting On Weather			
Transit	03:00	07:45	
Standby Port			
Demob	05:30	06:00	
Other	01:30	02:45	
Total:			

Overall Progress Groundtruthing Samples

Action	Sites Total	Sites Complete	Remaining Sites	Remarks
Day Grab	22	22		
Drop Camera	n/a			

Weather forecast for the next 24 hours

Survey completed

Planned operation for the next 24 hours (00:00 to 24:00 on 27th September 2014)

Agreed Changes to Scope/Survey operation priorities

No changes required

Comments

Staff on board

Survey Role	Company	Name
Scientist In Charge (SIC)	Environment Agency	Mike Fraser
Survey Team Member	Environment Agency	Clare Miller
Survey Team Member	Environment Agency	Nick Jones

7.5 Survey Metadata

Date	Time UTC	Station code	WGS84 Latitude DD.DDDDD	WGS84 Longitude DD.DDDDD	Cefas STN no.	Hpro fix no.	Water depth (m)	Sediment depth (cm)	Sediment use	Video/Stills recorded
25/09/2014	06:05:00	Locked out Eastbourne								
25/09/2014	09:32:35	SBTH13	50.73742	-0.84083	1	2818	4.42	0	Discarded	Yes
25/09/2014	09:38:29	SBTH13b	50.73939	-0.82941	1	2819	4.47	0	Discarded	Yes
25/09/2014	09:41:28	SBTH13c	50.73545	-0.8191	1	2820	4.9	0	Discarded	Yes
25/09/2014	09:47:19	SBTH12	50.72679	-0.80637	2	2821	4.25	0	Discarded	Yes
25/09/2014	09:50:51	SBTH12B	50.71858	-0.81122	2	2822	4.28	0	Discarded	Yes
25/09/2014	09:53:18	SBTH12C	50.71051	-0.82173	2	2823	4.85	0	Discarded	Yes
25/09/2014	09:57:59	SBTH10A	50.72037	-0.78161	3	2824	4.39	0	Discarded	Yes
25/09/2014	10:01:28	SBTH10B	50.72026	-0.78146	3	2825	4.29	0	Discarded	Yes
25/09/2014	10:03:59	Extra fix	50.72029	-0.78144	3	2826	4.41	0	N/A	N/A
25/09/2014	10:03:59	SBTH10C	50.72025	-0.78153	3	2827	4.34	0	Discarded	Yes
25/09/2014	10:10:24	SBTH09A	50.71116	-0.78457	4	2828	4.14	0	Discarded	Yes
25/09/2014	10:12:13	SBTH09B	50.71145	-0.78457	4	2829	4.15	0	Discarded	Yes
25/09/2014	10:14:50	SBTH09C	50.71125	-0.78477	4	2830	4.18	0	Discarded	Yes
25/09/2014	10:21:23	SBTH08A	50.71334	-0.79968	5	2831	5.02	0	Discarded	Yes
25/09/2014	10:23:38	SBTH08B	50.71326	-0.79973	5	2832	5.1	0	Discarded	Yes
25/09/2014	10:25:48	SBTH08C	50.71331	-0.79969	5	2833	5.18	0	Discarded	Yes
25/09/2014	10:31:02	SBTH05A	50.71111	-0.81037	6	2834	6.84	6.0	PSA and Biota	Yes
25/09/2014	10:39:27	SBTH06A	50.71682	-0.80718	7	2835	7.43	0	Discarded	Yes
25/09/2014	10:42:21	SBTH06B	50.71677	-0.80714	7	2836	7.49	0	Discarded	Yes
25/09/2014	10:45:31	SBTH06C	50.71681	-0.80695	7	2837	7.4	0	Discarded	Yes
25/09/2014	10:48:23	SBTH06D	50.71711	-0.80712	7	2838	7.63	4.0	PSA only	No
25/09/2014	11:01:34	SBTH21A	50.71898	-0.81218	8	2839	5.41	10	PSA and Biota	Yes

Date	Time UTC	Station code	WGS84 Latitude DD.DDDDD	WGS84 Longitude DD.DDDDD	Cefas STN no.	Hpro fix no.	Water depth (m)	Sediment depth (cm)	Sediment use	Video/Stills recorded
25/09/2014	11:08:55	SBTH07A	50.72219	-0.80572	9	2840	5.18	0	Discarded	Yes
25/09/2014	11:11:09	SBTH07B	50.72202	-0.80544	9	2841	5.16	10	PSA and Biota	No
25/09/2014	11:16:58	SBTH19A	50.72663	-0.80621	10	2842	4.9	0	Discarded	Yes
25/09/2014	11:19:05	SBTH19B	50.72673	-0.80655	10	2843	5.41	0	Discarded	No
25/09/2014	11:20:44	SBTH19C	50.72687	-0.8066	10	2844	4.8	0	Discarded	No
25/09/2014	11:26:03	SBTH04A	50.7322	-0.81433	11	2845	4.78	0	Discarded	Yes
25/09/2014	11:28:23	SBTH04B	50.73222	-0.81432	11	2846	4.7	0	Grab still primed	No
25/09/2014	11:29:40	SBTH04B	50.73241	-0.81434	11	2847	4.78	0	Discarded	Yes
25/09/2014	11:32:03	SBTH04C	50.73238	-0.81468	11	2848	5.22	0	Discarded	No
25/09/2014	11:36:33	SBTH18A	50.73524	-0.81846	12	2849	5.23	6.0	PSA and Biota	Yes
25/09/2014	11:42:52	SBTH02A	50.73657	-0.82651	13	2850	2.21	0	Discarded	No
25/09/2014	11:45:16	SBTH02B	50.73645	-0.82689	13	2851	6.05	0	*Sabellaria* sp.?	No
25/09/2014	11:48:43	SBTH02C	50.73635	-0.82703	13	2852	7.04	0	Discarded	No
25/09/2014	11:53:55	SBTH17A	50.73914	-0.82989	14	2853	6.71	1.0	PSA only	No
25/09/2014	12:00:19	SBTH17B	50.73937	-0.82972	14	2854	6.21	3.5	Discarded	No
25/09/2014	12:03:35	SBTH17C	50.73918	-0.82981	14	2855	6.55	3.5	Discarded	No
25/09/2014	12:48:29	SBTH15A	50.7121	-0.75921	15	2856	10.89	0	Discarded	Yes
25/09/2014	12:52:31	SBTH15B	50.71205	-0.75917	15	2857	11.09	0	Discarded	No
25/09/2014	12:55:37	SBTH15C	50.71188	-0.75903	15	2858	10.7	0	Discarded	No
25/09/2014	13:04:19	SBTH14A	50.70401	-0.76737	16	2859	12.48	0	Discarded	Yes
25/09/2014	13:08:35	SBTH14B	50.70393	-0.76772	16	2860	12.8	0	Discarded	No
25/09/2014	13:12:24	SBTH14C	50.70391	-0.7675	16	2861	12.24	0	Discarded	No
25/09/2014	13:17:21	SBTH11A	50.7009	-0.77871	17	2862	10.23	0	Discarded	Yes
25/09/2014	13:21:01	SBTH11B	50.70065	-0.77922	17	2863	9.46	0	Discarded	No
25/09/2014	13:25:19	SBTH11C	50.70037	-0.77972	17	2864	9.67	0	Grab Misfired	No
25/09/2014	13:28:41	SBTH11D	50.70024	-0.7802	17	2865	9.82	0	Discarded	No

Date	Time UTC	Station code	WGS84 Latitude DD.DDDDD	WGS84 Longitude DD.DDDDD	Cefas STN no.	Hpro fix no.	Water depth (m)	Sediment depth (cm)	Sediment use	Video/Stills recorded
25/09/2014	14:43:34	Alongside Gosport								
26/09/2014	07:25:29	Ropes off Haslar Marina								
26/09/2014	09:27:32	SBTH22A	50.71011	-0.82232	18	2866	4.14	0	Discarded	Yes
26/09/2014	09:38:25	SBTH22B	50.71112	-0.82395	18	2867	6.57	0	Discarded	No
26/09/2014	09:41:37	SBTH22C	50.71136	-0.82401	18	2868	6.32	0	Discarded	No
26/09/2014	09:49:09	SBTH03A	50.72159	-0.8196	19	2869	4.54	9.6	PSA and Biota	Yes
26/09/2014	09:56:45	SBTH20A	50.7255	-0.8158	20	2870	4.21	11.2	PSA and Biota	Yes
26/09/2014	10:06:27	SBTH16A	50.73695	-0.84063	21	2871	8.07	4.8	Discarded	Yes
26/09/2014	10:09:46	SBTH16B	50.73696	-0.84026	21	2872	7.91	6.4	Discarded	No
26/09/2014	10:12:22	SBTH16C	50.73719	-0.84038	21	2873	7.67	4.8	PSA only	No
26/09/2014	10:17:30	SBTH01A	50.7391	-0.83597	22	2874	5.83	0	Discarded	Yes
26/09/2014	10:19:06	SBTH01B	50.7392	-0.83549	22	2875	5.9	9.6	PSA and Biota	No
26/09/2014	11:29:17	Alongside Haslar Marina								

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