

RESEARCH VESSEL PROGRAMME

**RV CEFAS ENDEAVOUR
Survey: CEND 01 - 2019**

STAFF:

Name	Role	Cabin	Shift
Daniel Wood	SIC	SIC	06:00 – 18:00
Claire Mason	DM	B1	06:00 – 18:00
Alison Pettafor	MBES	C2	06:00 – 18:00
John Sperry	MBES	C4	06:00 – 18:00
Stefan Bolam ¹	Day Shift Lead	C1	12:00 – 24:00
Sara Stones	Night Shift Lead	B2	24:00 – 12:00
Rebecca Faulkner	Day Shift Lead (2 nd Leg)	C6	12:00 – 24:00
David Clare	Benthic Lead	C7	12:00 – 24:00
Marc Whybrow	MIST	D3	12:00 – 24:00
James Albrecht	Survey scientist	C5	12:00 – 24:00
Jon Hawes	Video lead	C8	12:00 – 24:00
Ross Bullimore	SL Trainee	C3	24:00 – 12:00
Jessica Taylor ¹	Survey scientist	D4	24:00 – 12:00
Rogan Harmer ¹	Survey scientist	D5	24:00 – 12:00
Samuel Roslyn ¹	Survey scientist	D6	24:00 – 12:00
Andrew Bodle	MIST	D2	24:00 – 12:00
Martin Clifffen ²	Survey scientist	C1	12:00 – 24:00
Joey O'Conner ²	Survey scientist	D4	24:00 – 12:00
Oliver Twigge ²	Survey scientist	D5	24:00 – 12:00
Malgorzata Wilczynska ²	Survey scientist	D6	24:00 – 12:00

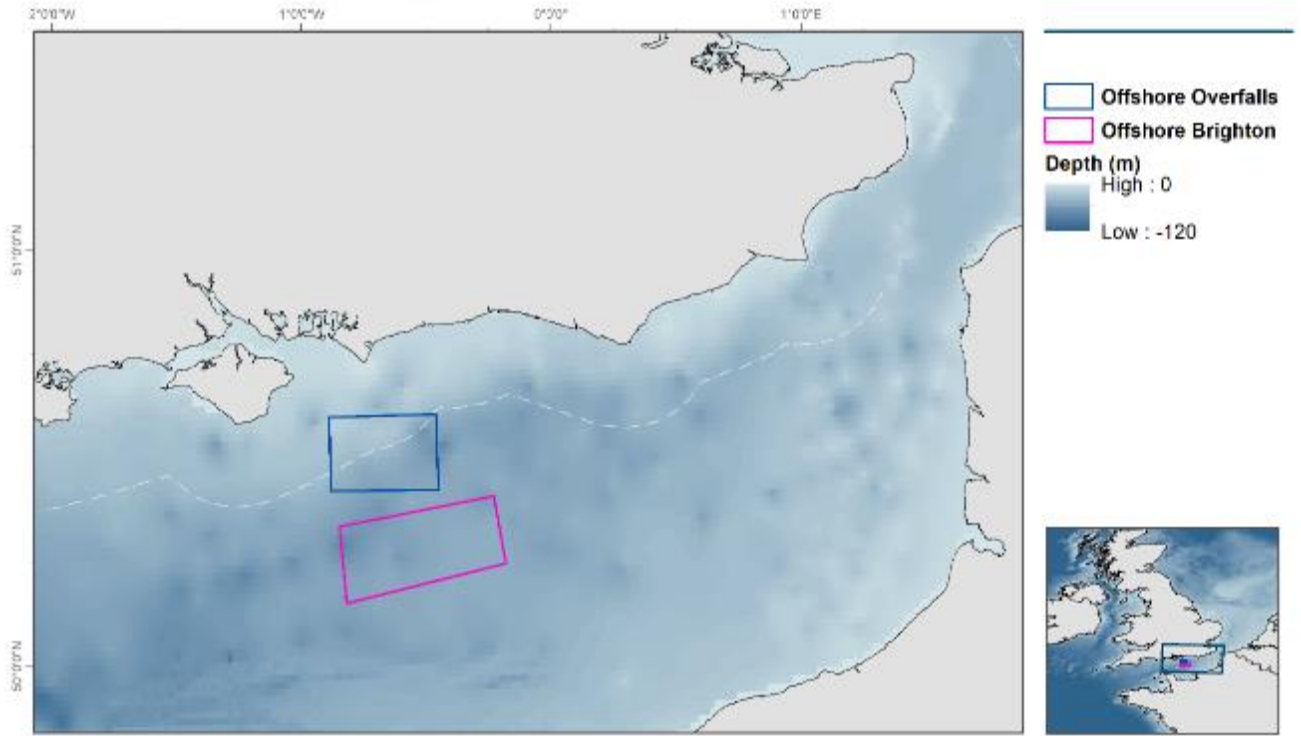
¹ First half of survey only, ² second half of survey only.

DURATION: 3 January – 25 January 2019



LOCATION:

CEND0119 - Offshore Overfalls and Offshore Brighton MCZs



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Cefas 23 November 2018



Figure 1. Location of Offshore Overfalls MCZ and Offshore Brighton MCZ.

Table 1. Coordinates for the two MCZs.

Offshore Overfalls		Offshore Brighton	
50:30:19N	0:43:19W	50:30:19N	0:43:19W
50:30:19N	0:43:19W	50:30:19N	0:43:19W
50:30:19N	0:43:19W	50:30:19N	0:43:19W
50:30:19N	0:43:19W	50:30:19N	0:43:19W
50:30:19N	0:43:19W	50:30:19N	0:43:19W

Plus, an additional sampling station at 51°57'. 311 N, 002°6'. 311 E (TBC).

AIMS:

Offshore Overfalls

1. The highest priority work is to complete the MBES survey and camera survey of the sedimentary habitats. These will provide information to help inform where grab samples are most likely to be successful and because these habitats are protected features of the site.
2. The second priority at Offshore Overfalls is to complete the grab survey in the area suitable for collecting these samples.
3. The third priority at Offshore Overfalls is to complete the camera survey of the rock habitats at the site. This is a lower priority than the other work because the rock habitats are not a protected feature of the site.

Offshore Brighton

1. The highest priority work is to complete the camera survey of the sedimentary and rock habitats. This is because this will provide information to help inform where grab samples are most likely to be successful and because these habitats are protected features of the site.
2. The second priority at Offshore Brighton is to complete the grab survey in the area suitable for collecting these samples.

PLAN:

The majority of the gear will be mobilised as part of CEND2018 and left onboard for this survey. Additional kit (sea kit) will be mobilised on 2/3 January 2019. Inductions will take place for approximately 12 staff at a time to be agreed on 3 January. The Cefas Endeavour will leave Lowestoft port on 3 January 2019 on the evening high water tide (TBC). The vessel will transit to the West Gabbard II smart buoy site and collect plankton samples. The vessel will then continue its transit to the survey site. If it is not possible to carry out the plankton sampling on the outward journey then a second attempt will be made on the return journey. The survey will pause 15-16 January to allow a crew and scientific staff change to take place. The proposed port for the crew change is Shoreham (TBC). A second set of inductions will be needed for 4 staff prior to sailing. The fieldwork will recommence until the end of survey when the vessel will return to Lowestoft Port on 24 January at 23:50. Scientific staff will remain onboard until 25 January to aid demobilisation of kit and samples in the morning.

The survey objective priorities for Offshore Overfalls and Offshore Brighton are shown in Table 2 and

Table 3 respectively. Site and sampling order will be determined during the survey based on priority and gear suitability for the prevailing weather conditions. Assuming favourable weather

conditions, the first activity will be to calibrate the MBES on at a known nearby wreck site (location details to be provided nearer survey date). Following calibration, the MBES survey of part of Offshore Overfalls will be carried out. The grab and camera sampling operations will then be undertaken, ideally in order of priority, but again in accordance with weather conditions.

In addition: if time permits, additional data may be collected to allow comparison of the power of Grab and Camera sampling by increasing the replication of drop camera tows at the Hamon grab stations (assuming the Hamon grab stations result in successful sediment samples). Where invalid 'mini' Hamon grab samples are collected (e.g. sample volume <5 L), an eDNA sub-sample may be collected to aid in development of a molecular library of infaunal taxa. These samples will be collected and preserved in Industrial Methylated Spirits and will be made available to potential collaborators as required.

Table 2. Prioritised survey objectives for Offshore Overfalls (OOVR)

Survey objective	Gear	Feature	#
Collect bathymetry and backscatter data from the area of OOVR with no existing acoustic data	MBES	not feature specific	1
Collect video and stills from mixed and coarse areas of the site	Drop Camera (with ESM2)	Subtidal coarse sediment and subtidal mixed substrate	1
Collect video and stills from Sand areas of the site	Drop Camera (with ESM2)	Subtidal sand	1
Collect PSA and infauna samples form areas deemed suitable for grabbing, based on acoustic and imagery data	0.1 m ² Hamon grab	Subtidal coarse sediment, subtidal mixed substrate and subtidal sand (grabbable area)	2
Collect video and stills from Rock areas of the site	Drop Camera (with ESM2)	Circalittoral rock	3
Increase the replication of drop camera tows at the Hamon grab stations (assuming time permits, AND the HG stations result in successful sediment samples)	Drop Camera (with ESM2)		4
eDNA samples from Invalid 'mini' Hamon grab deployments.	0.1 m ² Hamon grab	Subtidal coarse sediment, subtidal mixed substrate and subtidal sand (grabbable area)	5

Table 3. Prioritised survey objectives for OBRG

Survey objective	Gear	Feature	#
Collect video and stills from mixed and coarse areas of the site	Drop Camera (with ESM2)	Subtidal coarse sediment and subtidal mixed substrate	1
Collect video and stills from Rock areas of the site	Drop Camera (with ESM2)	circalittoral rock	1
Take replicate samples from those stations highlighted for sediment sampling and subsequently deemed suitable based on the video from CEND0119	0.1 m ² Hamon grab	Subtidal coarse sediment and subtidal mixed substrate	2
Increase the replication of drop camera tows at the Hamon grab stations (assuming time permits, AND the HG stations result in successful sediment samples)	Drop Camera (with ESM2)	Subtidal coarse sediment and subtidal mixed substrate	3
eDNA samples from Invalid 'mini' Hamon grab deployments	0.1 m ² Hamon grab	Subtidal coarse sediment and subtidal mixed substrate	4

GEAR:

Multibeam Echosounder (MBES), mini Hamon grab (HG), drop camera (DC), plankton net.
Please see gear list and chemical transfer list for full details.

Daniel Wood
Scientist in Charge
26/11/2018

DISTRIBUTION:

POMS
RV Cefas Endeavour Master
MIST team
Survey Scientists
BODC