

## RESEARCH VESSEL SURVEY REPORT

### RV CEFAS ENDEAVOUR Survey: C END 7 - 2017.

**STAFF:**

Name	Role	Cabin	Shift
Dave Pearce		C2	Not specified
Neil Needham		C3	
Tom Hull		C4	
Eric Fitton		C1	
Jake Davies		B2	
Sophie Hare		C8	
Andrew Bodle		C6	
Elisa Capuzzo	SIC	B1	
Tobias Boehme		C7	
Pip Simpson		C5	

**DURATION:** 13<sup>th</sup> – 16<sup>th</sup> May 2017

**MOBILISE:** Lowestoft Cefas Quay

**DEMOBILISE:** Lowestoft Cefas Quay

**OPERATION AREAS:** Southern North Sea

**AIMS:**

1. Service SmartBuoys at Dowsing, Warp and West Gabbard (SLA25G)
2. FerryBox service and maintenance

**CRUISE PLAN (All times in GMT):**

Induction and a toolbox talk with master and crew were carried out in the afternoon of the 13 May (at 14:00 and 15:30 respectively) before sailing. A Health & Safety toolbox talk on chemicals on board and work in the laboratory was also carried out in the garage by the SIC at 16:30 and attended by the scientific team. The RV Cefas Endeavour sailed at 21:30 (GMT) on 13 May 2017, and proceeded directly to the Dowsing SmartBuoy.

On arrival at the Dowsing SmartBuoy (14/5/2017) a CTD/Rosette was carried out (at 05:34), followed by the recovery of the SmartBuoy and its tether; recovery operations were completed by 07:03. The new Dowsing SmartBuoy (and its tether) was then deployed at location 53° 31.8038N 001° 03.3897E at 07:38. A post deployment CTD/Rosette with sample collection (oxygen, salinity, chlorophyll, and suspended solids) was completed (at 07:54). The Cefas Endeavour headed south towards Lowestoft, where Tobias Boehme was picked up in Lowestoft Harbour by one of the Cefas Endeavour working boat, at 14:30. The Cefas Endeavour then headed south towards the Warp SmartBuoy. Weather conditions were generally good throughout the day with slight swell and sea height < 1 m.

The operations at the Warp SmartBuoy on the 15/5/2017 started at 06:00 with a CTD/Rosette profile, followed by recovery of the SmartBuoy at 06:56. Once the deployment of the new SmartBuoy was completed at 07:14 (51° 31.9993N 001° 02.9043E), the Cefas Endeavour proceeded towards the West Gabbard2. Sea and weather conditions were good throughout the deployment with slight swell and 15 kn wind. At arrival at West Gabbard2, a CTD/Rosette profile with samples collection was carried out (13:00). The SmartBuoy was retrieved at 13:27 and the new Buoy was deployed at 13:56 (51° 57.2106N 002° 06.6110E), followed by a CTD/Rosette profile. The weather conditions were good although the wind and swell had slightly increased (18 kn and 0.5 m respectively). A MiniLander fitted with ADCP and acoustic modems and a second SmartBuoy with acoustic modem receiver/ESMx telemetry were then deployed at 15:45 (51° 57.2742N 002° 06.5562E). A zooplankton net sample (200 µm) was also collected at the WestGabbard2 SmartBuoy (16:53).

The Cefas Endeavour remained stationary in the proximity of the West Gabbard2 SmartBuoy during the night for hourly collection of surface samples (chlorophyll and suspended solids), until returning to Lowestoft for the 11:30 tide on the 16 May. Hourly sample collection started at 19:00 on the 15/5/2017 and proceeded until 06:00 of the following morning (16/5/2017). CTD/Rosette profiles were carried out at 21:00 and at 7:00.

FerryBox maintenance and update was carried out during the survey.

Samples for analysis of inorganic nutrients, chlorophyll concentration, suspended particulate matter, and salinity were collected at the surface and above the bottom using the Rosette, before the recovery and after the deployment of each SmartBuoy. The samples will be analysed at the Cefas Laboratory in Lowestoft and used for validation of the sensors on the SmartBuoys and Ferrybox. Samples for analysis of dissolved oxygen concentration were processed on board using a microWinkler analyser.

Profiles of temperature, salinity, dissolved oxygen, fluorescence, backscatter and Photosynthetically Available Radiation (PAR) were also collected at the SmartBuoy sites using the CTD/Rosette and will be QA'ed back at the laboratory.

Concluding, the aims of this survey (service of Dowsing, Warp and West Gabbard Smartbuoys and Ferrybox maintenance) were met successfully.

Elisa Capuzzo  
Scientist in Charge  
16<sup>th</sup> May 2017

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