**2020 RESEARCH VESSEL PROGRAMME**

**RV CEFAS ENDEAVOUR**
**Survey: C END 4/20**

**STAFF:**

| Name | Role |
|---|---|
| I Holmes | SIC |
| J Smith | 2IC |
| G Eastley | Deckmaster |
| M Eade | Deckmaster |
| R Bullimore | Benthic sampler |
| S Barnett | Sampler |
| R Harmer | Sampler |
| D Clarke | Sampler |
| R Benedet | Sampler |
| N Almeida | Sampler |

**DURATION:** 12th – 25th June 2020 (14 days at sea)

**LOCATION:** Western English Channel (ICES Division VIIe) – ECOS survey

**AIMS:**

**PRIMARY:**

1) To carry out a beam trawl survey of the Western Channel, deploying standardised 4m beam trawls (x2) and water column profiler. Station selection will be based on a fully random stratified approach with gears deployed at each station where appropriate.

   Catches from the trawls will be processed to obtain information on:
   - Distribution, size composition and relative abundance of fish, cephalopods, and benthic invertebrates.
   - Biological parameters of selected species.

The data obtained from processing the trawl catches is collected in support of the EU Data Collection Framework (DCF) and will be submitted to ICES working groups and will also support other Cefas biological studies.



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**SECONDARY:**

2) To collect fisheries acoustic data at three operating frequencies (38, 120 & 200 kHz) and multibeam data continuously throughout the survey.

3) Collect information on:
   a. Distribution of macrobenthos
   b. Distribution and classification of anthropogenic debris.
   c. Distribution of fish in relation to their environment.

4) To collect full depth, conductivity, temperature, and depth profiles at each trawl station alongside surface and near-bottom water samples.

5) To continuously log sub-surface (3m) salinity, temperature, fluorometry and other environmental data using the 'Ferrybox'.

6) Collect water samples for caesium & tritium analysis under SLA22 (T Bailey – Cefas Lowestoft).

7) Collect specimens of common cuttlefish *Sepia officinalis* for use in Cefas cephalopod maturity training courses (V Laptikhovsky – Cefas Lowestoft).

8) Collect surface underway chlorophyll samples for SLA25 (N Greenwood – Cefas Lowestoft)

9) Collect skeletons of selected gadoid species for reference collection to assist in identification of archaeological vertebrae. (Rachel Blevis, University of Cambridge).

**OPPORTUNISTIC:**

10) To record details of surface sightings of any marine mammals, sea turtles and large pelagic fish, and record observations on jellyfish aggregations.

11) To tag and release specimens of various commercially exploited skates (Rajidae) and other select elasmobranches.

12) Collect specimens of selected species for ID purposes as well as length-weight measurements where still required.

13) All diadromous species (including allis shad *Alosa alosa*, twaite shad *Alosa fallax* and lampreys (*Petromyzontidae*)) found dead on capture are to be frozen and returned to the lab for analyses, marking samples with the survey, station and date to support DiadES project.



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14) Collect a vertical ring net sample at the west Gabbard smart buoy, contributing to the Lifeform project (Defra) as part of the UK monitoring network for zooplankton.

15) To collect genetic samples from anglerfish *Lophius piscatorius*, black-bellied anglerfish *Lophius budegassa* and hake *Merluccius Merluccius* in support of the GECKA project.

16) Collect vertical ring net samples at locations previously known from samples collected on CEND 4/17 and CEND 4/19 for having clusters of seabass eggs and larvae. (H Lloyd-Hartley - Cefas, Lowestoft)

**PLAN:**

Staff will join the vessel in Lowestoft on 9 June and following testing for the COVID-19 virus on the quayside, staff will self-isolate in allocated cabins for a period of around 48 hours awaiting the test results. Following a set of negative test result, scientific staff will begin the task of preparing for the survey including gear checks and EDC set up. All staff will be required to remain on-board for this time and will stay aboard until the survey has been completed.

Cefas Endeavour will likely sail on 12 June, although there is the possibility that this may be delayed (3 days max) whilst awaiting deliveries of necessary additional PPE for the survey. The survey days at sea will be a maximum of 14 days to deliver the western Channel element of the ECOS survey (only).

Staff will split into 2 teams to deliver the survey aims, making full use of each working day and taking full advantage of the longer daylight hours encountered in June. This will minimise the numbers of staff working at any given time whilst maximising the amount of work that can be achieved. A shake-down tow will be carried out off the Suffolk coast to fully test all survey sampling gear, equipment, and software systems. Survey work will commence on the first ECOS survey sampling location in the western Channel upon arrival.

Following this, the vessel will fully engage in the western Channel survey operations completing valid tows using two 4m beam trawls at each location with a CTD profile and surface and bottom water samples taken twice a day. Upon completion of 81 sampling locations in this area, Cefas Endeavour will return to Lowestoft, docking on 26 April in Lowestoft and unloading of equipment will likely be carried out the same day.

**GEAR:**

The gear requirements for this survey will be available on the associated gear list.

Ian Holmes
Scientist in Charge
27 May 2020

**INITIALLED:** B Hatton/M Whybrow



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**DISTRIBUTION:**

| | |
|---|---|
| Survey personnel + | Crown Estate |
| P Falconer (PL) | States of Jersey |
| D Pettengell (PM) | Bailiwick of Guernsey |
| Cefas Fisheries/MPA Survey SICs/2ICs | FCO (for France) |
| G Burt (Data Steward) | Marine Management Organisation (MMO) |
| S Kupschus | AW Ship Management |
| T Bailey | Master/First Officer (Cefas Endeavour) |
| Southern IFCA | BODC |
| Devon and Severn IFCA | |
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