

**RESEARCH VESSEL PROGRAMME**

**RV CEFAS ENDEAVOUR  
Survey: C END 12 - 2019**

**STAFF:**

Name	Role	Cabin	Part 1 or 2
Ben Hatton	SIC		Both
Richard Humphreys	2IC/Deckmaster		Both
Nicola Hampton	Deckmaster		1
Gary Burt			1
Georgia Robson			1
Matthew Eade			1
Francesco Pallottino	Student		Both
Luca Possenti	Student		Both
Louise Cox	2IC		2
Jim Ellis			2
Luke Aislabie			2
Samantha Barnett			2
Daniel Clarke			2

**DURATION:** 7 August to 5 September 2019

**LOCATION:** North Sea, ICES rectangles IV a, b and c – (Map Page 4)

**AIMS:**

**PRIMARY AIMS:**

1. To carry out a groundfish survey of the North Sea (Figure 1) as part of the ICES coordinated IBTS, using a hybrid GOV trawl in order to obtain information on:
  - a) Distribution, size composition and abundance of all fish species caught.
  - b) Age – length distribution of selected species.
  - c) Distribution of fish in relation to their environment.
  - d) Distribution of macrobenthos and anthropogenic debris.
  - e) Surface and bottom temperature and salinity data using ESM2 profiler/mini-CTD logger and Niskin Bottle.
  - f) Length weight & maturity information using individual fish measurements, in support of the EU Data Regulation.

## SECONDARY AIMS:

1. Tag and release specimens of starry smooth-hound *Mustelus asterias*, greater-spotted dogfish *Scyliorhinus stellaris*, spurdog *Squalus acanthias*, tope *Galeorhinus galeus*, common skate *Dipturus batis* species-complex, and blonde ray *Raja brachyura*, in support of the ICES Working Group for Elasmobranch Fishes work to inform on stock units for demersal elasmobranchs. (J Ellis – Cefas, Lowestoft)
2. To freeze any unusual fish species for subsequent identification / verification in the laboratory, including specimens of eelpout (*Zoarces*, *Lycodes* and *Lycenchelys*), sea scorpions (*Cottidae*, sub-area IVa only), and any unusual fish species, which may also be used in otolith research. (J Ellis – Cefas, Lowestoft)
3. To retain any dead specimens of tope (*Galeorhinus galeus*) and common skate (*Dipturus batis* species-complex) for biological studies. (J Ellis – Cefas, Lowestoft)
4. Retain any dead specimens of diadromous fish for the DiadES Interreg project (T Basic, Cefas, Lowestoft)
5. Collect fisheries acoustic continuously data at four operating frequencies (38 kHz, 120 kHz, 200 kHz and 333kHz), using the Simrad EK60 split beam sounder. The data will contribute to the existing 15-year time series of acoustic data in the North Sea and will be used as part of a time series monitoring changes in mackerel distribution and abundance. (J Van Der Kooij – Cefas, Lowestoft)
6. Cetacean observations will be recorded where possible and sent to the Sea Watch Foundation.
7. Identification, count, measure and weight all jellyfish caught in GOV trawl will allow the continuation of the North Sea August Jellyfish dataset started in 2012; As the dataset grows from year to year, this should allow the evaluation of changes in jellyfish community and biomass with time. S Pitois – Cefas, Lowestoft
8. Collect squid egg samples to map spawning grounds. This could be highly relevant in studying squid stock's structure. (V Laptikovksy – Cefas, Lowestoft)
9. Retain any specimens of *Loligo vulgaris* and all *ommastrephid* squids (*Illex*, *Todaropsis*, *Todarodes*) for maturity and age analysis, respectively. (V Laptikovksy – Cefas, Lowestoft)
10. To collect biological information from four-bearded rockling *Enchelyopus cimbrius*. Including length, weight & maturity information. (L Cox – Cefas, Lowestoft)
11. Collect chlorophyll samples to test for nutrients from the surface water collected once a day for the ASMIAC project. (N Greenwood – Cefas, Lowestoft)
12. Zooplankton plankton sampling using ringnets to collect samples from the Gabbard smart buoy site. (S Pitois – Cefas, Lowestoft).
13. Collect vitality assessment data to better inform on the discard survivability of starry smooth-hound (*M. asterias*) under EMFF project C7246 (PI Sophy Phillips/Chris Griffiths).

14. Collect suitable examples of benthic organisms from a select number of prime stations to test for Paralytic Shellfish Poisoning toxins. This is with a view to assessing ongoing presence and geographical extent of PSP following evidence of consumption from an unusual source on the East Anglian coastline.
15. Sample for dissolved oxygen as part of the OSPAR assessment for eutrophification.
16. Test the new hardware/software for the Marport Trawley sensor during an additional tow.

**PLAN:**

RV Cefas Endeavour will sail from Lowestoft at approximately 02:00 on 7 August 2019 and proceed to stations in the southernmost North Sea as detailed in Figure 1 and start the IBTS survey at prime station 1. The survey will then continue northwards until docking in Aberdeen, on the evening of 18 August (tbc) for a mid-survey Cefas staff change-over. The second half of the survey will sail from Aberdeen on the evening of the 19 (tbc) August. A crew change-over will commence in Peterhead 31 August and the survey will continue and dock in Lowestoft on 5 September 2019.

**GEAR:**

Associated gear list distributed separately.

B Hatton  
Scientist in Charge  
16<sup>th</sup> July 2019

**DISTRIBUTION:**

B Silburn	Cefas Marine Operations
T Basic	BODC
G Burt	POMS
S Pitois	MIST
J Ellis	
J Van Der Kooij	
S Painting	
V Laptikhovsky	
S Phillips	
N Greenwood	
I Holmes	



*LOCATION MAP: North Sea, ICES rectangles IV a, b and c*

