

**CENTRE FOR ENVIRONMENT, FISHERIES AND AQUACULTURE
SCIENCE
LOWESTOFT LABORATORY, LOWESTOFT, SUFFOLK NR33 0HT**

2014 RESEARCH VESSEL PROGRAMME

PROGRAMME: RV CEFAS ENDEAVOUR: SURVEY 17

STAFF:

Part A

Fishing:

S McCully (SIC)

B Hatton (2IC)

R Humphreys

M Eade

L Cox

L Mann

Part B

R Ayers (SIC)

B Hatton (2IC)

R Humphreys

M Eade

C Firmin

S Davies

Plus:

E Capuzzo

P Bouch

J Fox

C Sguotti

G Anastasi

JNCC Observer

E Capuzzo

R Beckett

J Fox

L Rutterford

G Anastasi

JNCC Observer

DURATION: 7 August – 3 September

LOCATION: North Sea

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 CTD rosette and Niskin Bottle.
 - f) Length weight & maturity information using individual fish measurements, in support of the EU Data Regulation.
2. Total alkalinity and dissolved inorganic carbon analysis of seawater by filtration at every station.
3. Carry out water sampling for Caesium/Tritium for an internal Cefas contract (SLA21).

SECONDARY AIMS:

4. 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.
5. 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), *Sebastes* spp., and any unusual fish species, which may also be used in otolith research.
6. To freeze samples of smooth-hound (*Mustelus* spp.) for biological studies.
7. Record litter caught in the trawl in support of Defra projects.
8. Retain all dead species of diadromous fish for study by Cefas scientists.
9. Collect plankton biodiversity samples from selected stations for pigment and analytical flow cytometry analysis, in support of the EU project, HIGHROC. *If* time and conditions allow, additional profiles to be completed with the ESM2 logger.
10. Collect Ferrybox measurements and water samples of *Karenia mikimotoi* (a red tide species) blooms, for supporting PML satellite algorithm validation for detection of harmful algal blooms.
11. To develop capabilities using the new litter/ plankton passive sampler system and collect zooplankton samples for size spectra analysis in support of DEVOTES.
12. Collecting, preserving and analysing samples of seawater in order to determine the spatial-temporal variability of Transparent Exopolymer Particles (TEP) and DOM in the North Sea. Incubation experiments will be conducted for TEP detection.
13. Collect continuous fisheries acoustic data at three operating frequencies (38 kHz, 120 kHz and 200 kHz), using the Simrad EK60 split beam sounder. The data will contribute to the existing 13 year time series of acoustic data in the North Sea and will be used as part of the Defra funded project Poseidon to extract information on mackerel distribution and abundance.
14. Retain and freeze whole specimens of Mackerel, herring, sardines/pilchards, sprats, sea bass, dogfish, halibut, turbot and blue whiting (where above minimum landing sizes if applicable) for testing tissue samples for contaminants, in support of the EU Marine Strategy Framework Directive, descriptor 9 (relating to levels of contaminants in fish and shellfish for human consumption).
15. To retain empty skate and ray egg cases with corresponding positional information for subsequent identification by the Shark Trust.

16. Collect, enumerate and process (weight and umbrella lengths) jellyfish caught in the GOV trawl.
17. To update the distribution and relative density maps of medusae in the North Sea.
18. Seabird and cetacean observations will be carried out in suitable conditions by an ESAS accredited observer, using standard ESAS methods. The data will be incorporated into the JNCC administered ESAS database, contributing to the dataset used for marine planning by UK government, statutory nature conservation bodies, and the offshore energy industry.

PLAN:

RV Cefas Endeavour will sail from Lowestoft at 07:00 on 7 August and fish the stations detailed in Figure 1. Cefas Endeavour will proceed to stations in the southernmost North Sea and start the IBTS survey. The survey will then continue northwards until docking in Aberdeen the morning of the 21 August for a mid-cruise break to allow personnel changes, and if required to have the Scanmar sensors calibrated. The second half of the survey will sail from Aberdeen around midday on the 22 August and the survey will continue and dock in Lowestoft on 3 September.

GEAR:

List distributed separately and marked to relevant individuals for action. Naomi Greenwood for aim 2, Trevor Bailey for aim 3, Sophy McCully for aims 4, 6 and 15, Manuel Nicolaus for aim 7, Elisa Capuzzo for aims 9, 10 and 11, Gianfranco Anastasi for aim 12, Jeroen Van Der Kooij for aim 13, Robin Law for aim 14, and Chris Lynam for aims 16 and 17.

S McCully
 Scientist in Charge
 30 June 2014

DISTRIBUTION:

Basic list +	
S McCully	R Ayers
R Humphreys	B Hatton
M Eade	L Cox
L Mann	S Davies
C Firmin	E Capuzzo
P Bouch	R Beckett
C Sguotti	C Lynam
G Anastasi	L Rutterford
E Hunter	N Greenwood
J Van Der Kooij	J Ellis
T Maes	M Nicolaus
R Forster	R Law
M Lewis	J Fox
B Harley	

Inshore Fisheries and Conservation Authorities (IFCA's): East, North-east, Northumberland, Essex and Kent.

Figure 1: Fishing station of IBTS North Sea Groundfish Survey

