

2022 RESEARCH VESSEL PROGRAMME

RV CEFAS ENDEAVOUR

Survey: CEND 4 - 2022

STAFF:

Name	Role	Name	Role
Ian Holmes	SIC	Ian Holmes	SIC
Ben Hatton	2IC	Ben Hatton	2IC
Tom Woods	Sampler	Tom Woods	Sampler
Georgina Eastley	Deckmaster	Georgina Eastley	Deckmaster
Matt Eade	Sampler	Matt Eade	Sampler
Hayden Close	Sampler	Hayden Close	Sampler
Gary Burt	Sampler	Louise Straker Cox	Sampler
Bryan Goodsir Thompson	MarTech	Mary Brown	Sampler
<i>Nicola Hampton</i>	<i>Covid-reserve</i>	Georgia Robson	Sampler
		Charlotte Jennings	Deckmaster
		Ramon Benedet	Sampler
		James Lamb	Sampler

DURATION: 5 – 31 March 2022 (27 days at sea)

LOCATION: Celtic Sea, Southwestern Approaches (ICES Division VII f, g, h), Western English Channel (ICES Divisions VIle)

AIMS:

PRIMARY:

- 1) To carry out a beam trawl survey of the Celtic Sea, Southwestern Approaches and 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.
- Distribution and classification of anthropogenic debris.

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

- 2) Carry out field testing of the new Gulf VII high speed plankton sampler and test associated electronics and software. Gear to be deployed when time and weather permits at the discretion of the SIC. Ideally, multiple deployment will be conducted to allow full review and testing of equipment.

SECONDARY:

- 3) To collect fisheries acoustic data at three operating frequencies (38, 120 & 200 kHz) and multibeam data continuously throughout the survey.
- 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) To record details of surface sightings of any marine mammals, sea turtles and large pelagic fish, and record observations on jellyfish aggregations.
- 7) Collect water samples for caesium & tritium analysis under SLA22 (T Bailey – Cefas, Lowestoft).
- 8) To collect biological samples and information for Lesser weever, *Echiichthys vipera* as part of a Cefas study on species growth and biology. (S Barnett – Cefas, Lowestoft).
- 9) To collect King Scallop *Pecten maximus* shell height/weight information along with the collection of shell (flat side) for subsequent ageing and growth studies (A Lawler – Cefas, Lowestoft).
- 10) To collect specimens of Northern squid *Loligo forbesi*, Pink cuttlefish *Sepia orbignyana* and Elegant cuttlefish *Sepia elegans* to further Cefas studies (V Laptikhovsky – Cefas, Lowestoft).
- 11) To recover the lost Cefas beam trawl (from 2021) located off the French Coast north of Brest.
- 12) To collect phytoplankton information and images using the flow cytometer (V Creach – Cefas, Lowestoft)

OPPORTUNISTIC:

- 13) To tag and release specimens of various commercially exploited skates (Rajidae) and other select elasmobranchs.
- 14) Collect specimens of selected species for ID purposes as well as length-weight measurements where still required.
- 15) 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.

- 16) Collect a vertical ring net sample at the west Gabbard SmartBuoy, contributing to the Lifeform project (Defra) as part of the UK monitoring network for zooplankton.
- 17) Collect tub gurnard *Trigla lucerna* morphometric photographs following SOP provided. (Rui Vieira, Cefas, Lowestoft).
- 18) Collect selected benthic specimens for chemical toxicity programme, following SOP provided). (Ioanna Katsiadaki, Cefas, Weymouth).

PLAN:

Three staff will join the vessel in Lowestoft on 4 March to check gear and set-up the EDC with the remaining staff to join on to 5 March at 0830hr prior to sailing. All staff will undergo covid testing using lateral flow tests prior to boarding. Sailing will take place on the AM tide on 5 March at around 1125hr GMT.

A shake-down tow will be carried out off the east coast at a known clear towing location to fully test all survey sampling gear, equipment and software systems. Following this, the vessel head to the west Gabbard smart-buoy location and undertaken the routine ring-net plankton sample before transiting to the western Channel to begin survey operations. At each sampling location, survey operations will involve the deployment of two 4m beam trawls, with a CTD profile and surface and bottom water samples taken twice a day. Upon completion of 81 sampling locations in this area, a further 50 sampling locations in the Celtic Sea and the South-West approaches will be sampled. At an appropriate time, operations will divert to the recovery of a Cefas beam trawl lost off the French coast in 2021. Further field testing of the new Gulf VII high speed plankton sampler will also take place within the first 2 weeks of the survey.

A mid-survey break will occur at Falmouth around day 14 of the survey (18 March) where a change of scientific staff will take place as well as a replenishment of ships fresh food supplies. Upon completion of the entire survey, the Cefas Endeavour will dock late on 31 March 2022 in Falmouth in order that the following MPA survey can mob for their survey close to their survey area. 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
1 March 2022
(Version 4)

INITIALLED: B Hatton

DISTRIBUTION:

Survey personnel +	Cornwall IFCA
P Falconer (Portfolio Lead)	Crown Estate
D Pettengell (Project Manager)	Welsh Government (WG)
Cefas Fisheries/MPA Survey SICs/2ICs	States of Jersey
G Burt (Data Steward)	Bailiwick of Guernsey
T Bailey/A Lawler/S Barnett/V Laptikhovsky/ Rui Vieira/Ioanna Katsiadaki	FCO (for France & Ireland)
Southern IFCA	Marine Management Organisation (MMO)
Devon and Severn IFCA	AW Ship Management
Isles of Scilly IFCA	Master/First Officer (Cefas Endeavour)

