

**CENTRE FOR ENVIRONMENT, FISHERIES & AQUACULTURE SCIENCE  
LOWESTOFT LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND**

**2008 RESEARCH VESSEL PROGRAMME / REPORT**

PROGRAMME:      RV Cefas ENDEAVOUR      CRUISE :      17/08

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DURATION:      Left Lowestoft                      1100h 18 September.  
   Arrived Lowestoft                      1900h 25 September.

LOCALITY:      North Sea (English NE Coast)

AIMS:

1. To conduct a standard underwater TV survey of *Nephrops* burrow densities on the Farn Deeps grounds, 55° 35' - 54° 45' N and 1° 30' - 0° 40' W, and to evaluate *Nephrops* abundance for comparison with previous years.
2. To collect concurrent video data, using a second camera, which will be directly comparable with that collected from other *Nephrops* grounds.
3. To characterise sediment features at and between TV survey stations using a remote acoustic seabed discrimination system (swathe bathymetry and QTC).

NARRATIVE:

CEFAS ENDEAVOUR sailed from Lowestoft at around high tide at 1100h local time on 18 September.

In fine weather the ENDEAVOUR made good progress up to the Farn Deeps. We were at our first station at the North Eastern corner of the grid at first light on the 19 September. The first station, at 0615h, was relatively shallow and was to be used to fine-tune the sledge and camera set up. Although the station had to be abandoned because of poor visibility we were still able to sort out some of the tuning. Electronic interference from the cabling to the second camera was fixed but it was also apparent that due to the size of the new sledge it was not going to be possible to provide sufficient light for both cameras. It was decided to postpone the second aim of collecting data from two cameras until the first aim was complete. We moved west to another station but it was not until we had moved on to a fourth station, at 1200h, that there was sufficient clarity to record our first transect. We then worked round the clock picking our way from one station to another zigzagging southwards down the survey grid.

For the first three days of the survey the weather was flat calm. It deteriorated for 36 hours of strong North Easterly winds and large swell that did eventually fine away.

Despite the change in weather the survey continued uninterrupted except for minor adjustments to our route to avoid fishing activity.

The survey grid was completed at 2245h on the 23 September at the southern end of the grid. The priority was then given to repeating 12 stations where video recordings had been poor because of the weather or fishing vessel activity. It was decided to start at the most Northerly of these stations. The 4 hour steam provided sufficient time to remount the second camera and rig some temporary lighting. These stations were used to meet the second aim of the survey by providing the concurrent video data.

The re-runs were successfully completing at 1900h and after the sledge and the second camera was calibrated, CEFAS ENDEAVOUR set a course for Lowestoft at 2045h.

#### RESULTS:

1. On the Farn Deep ground a total of 122 TV tows were carried out providing clear video data for nearly all 105 stations. Preliminary *Nephrops* burrow counts were made over a 10-minute part of the tow, which was recorded on DVD and DV tape. All recordings were then recounted under controlled conditions. Preliminary results suggest that the highest burrow densities are found to the west of the survey area, similar to last year (Figure 1).
2. At 10 stations, concurrent video data was collected on Hi Definition Mini DV tape using a camera looking forward of the standard camera. These data compared with the standard data will allow us to analyse differences between the indices calculated using different fields of view.
3. With a HIPAP acoustic beacon on the sledge, Tower survey software was used to record ship and sledge position at regular intervals throughout the TV tow.
4. The Dynamic Positioning system (DP) was used throughout the survey to provide a controlled towing speed of around 0.7 knot.
5. QTC and Swathe data were collected on the survey between and over TV stations. For 44 hours of the survey the Swathe was unavailable due to a technical fault.
6. Additional data collected include: continuous readings on the sledge of turbidity, temperature, conductivity, depth and camera height. Laser spots projected on to the sea bed will contribute to calibrating the field of view.

JON ELSON  
(Scientist-in-Charge)  
25 September 2008

INITIALLED: RM (Master)

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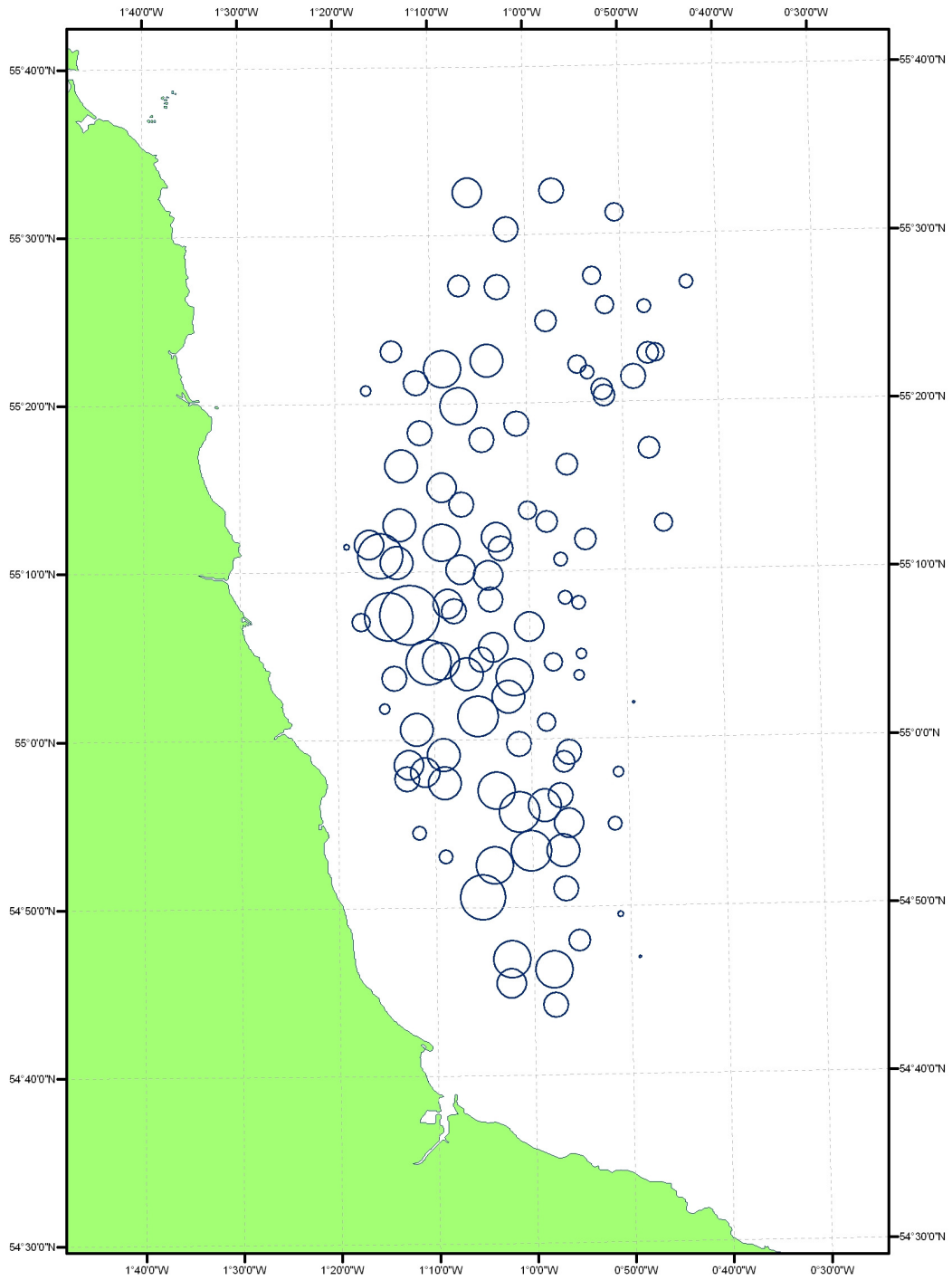


Figure 1. CEFAS ENDEAVOUR 17/08 Bubble plot of the relative burrow counts from standard TV tows on the Farn Deeps ground.