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

2003 RESEARCH VESSEL PROGRAMME

REPORT: RV CEFAS ENDEAVOUR: CRUISE 9/03

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DURATION: Left Lowestoft 0900h 10 October.
Arrived Lowestoft 1400h 17 October.

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^{o} 35' - 54^{o} 45' N and 1^{o} 30' - 0 ^{o} 40' W, to evaluate Nephrops abundance for comparison with previous years.

NARRATIVE:

CEFAS ENDEAVOUR sailed from Lowestoft one hour before high tide at 0900h local time on 10 October. A contract engineer was on board to trial some repairs to one of the main propulsion units whilst she travelled north.

After successfully trialing the repairs the engineer was taken ashore at 0915h on 11 October to North Shields. In good weather conditions the ENDEAVOUR was on station west of the survey area at 0945h. After correcting a few teething problems with the winch and one sledge light tripping, the station was successfully completed at 1200h. As we worked east the next 3 stations were hampered by poor visibility. Either fishing activity or the earlier NW gales had stirred up the sediment. With no prospect of the visibility improving as we worked east, we moved straight to deeper water and picked our way north. Over the next 48hrs, even though the wind began to freshen from the south east, the visibility improved but only slightly. It was decided to concentrate on 88 priority stations and only pick up 17 lower priority stations if we had the time.

As we zig-zagged southwards, every opportunity was taken to repeat previous stations where the visibility on the recordings was poor. Persistent strong south easterly winds hampered the work further. Although the visibility improved and gear could still be deployed safely, Dynamic Positioning (DP) struggled to maintain a steady speed over ground and the surge caused by the swell kept lifting the sledge clear of the bottom.

By 0800 15/10/03 the wind and swell were fining away. After successfully completing all the priority stations and calibrating the sledge some of the lower priority stations were worked. At 1955h 16/10/03 CEFAS ENDEAVOUR set a course for Lowestoft.

A total of 128 TV tows was carried out - 88 priority and 8 of the lower priority stations were successfully sampled. Preliminary *Nephrops* burrow counts were made over a ten minute part of the tow which was recorded on videotape for further detailed analysis at the laboratory. With an HIPAP acoustic beacon on the sledge, Tower survey software was used to record ship and sledge position at regular intervals throughout the TV tow.

A remote acoustic seabed discrimination system (QTC) was run throughout the survey. Transects were logged between stations and during each station. Analysis of these data at the laboratory might provide indices that correlate with the population indices calculated from the TV analysis.

RESULTS:

1. Over the survey 96 stations were successfully sampled. This required the repeating of stations where the visibility underwater had been particularly poor. Results were obtained for the majority of video recordings. Clarity was adversely affected by fishing vessels working in the area and the swell lifting the sledge off the bottom and the cable disturbing the silt ahead of the sledge. Reasonably clear pictures were obtained of the substrate, *Nephrops* burrows and emergent *Nephrops*. Preliminary *Nephrops* burrow counts were made at each TV station. All burrow counts, usually of 10 minutes duration, were recorded for further laboratory analysis. Preliminary results suggest that the highest densities of burrows were found in the centre and to the south of the survey area (Fig 1). The denser areas were consistent with high fishing vessel activity.

JON ELSON

(Scientist-in-Charge)

17 October 2003

INITIALLED: RM (Master)

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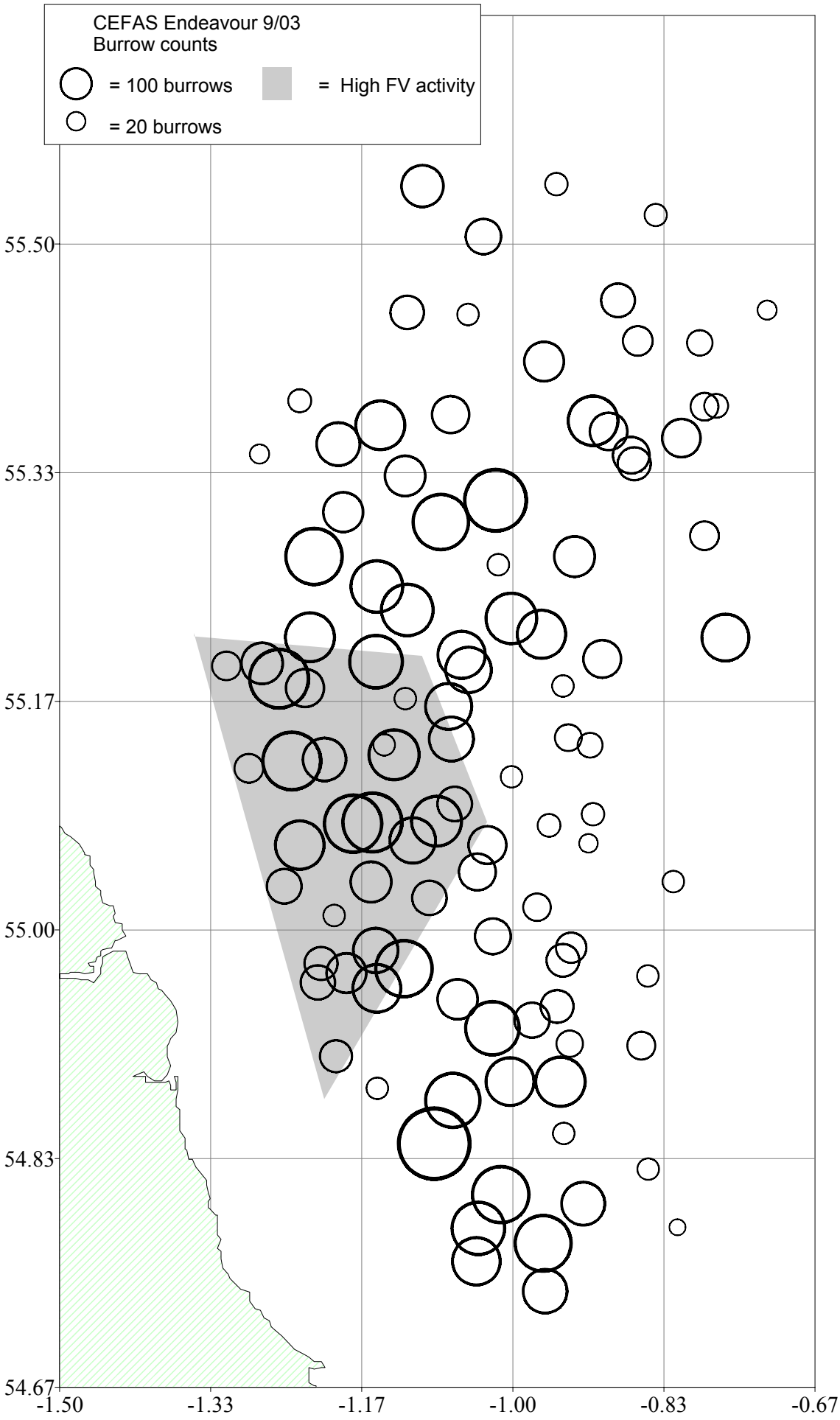

Figure 1

File: CEnd903stplotRep.srf