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

2002 RESEARCH VESSEL PROGRAMME

REPORT: RV CORYSTES: CRUISE 1x/02

STAFF: J.M.ELSON
M.T.SMITH
S.R.LOVEWELL
C.J.FIRMIN
D.W.PALMER
T.LOCKE

DURATION: Left Lowestoft 2048 h 15 March
Arrived Lowestoft 1000 h 25 March.

LOCALITY: North Sea (English NE Coast)

AIMS:

1. To conduct a survey of *Nephrops* burrow densities on the Farn Deeps *Nephrops* grounds, 55° 35' - 54° 45' N and 1° 30' - 0° 40' W, by underwater TV to examine spatial patterns in the distribution of burrows at different spatial scales; to measure variance for replicated counts and to evaluate *Nephrops* abundance for comparison with previous years. The aim will be to sample ten clusters of six stations each to be sampled three times giving a total of 180 sledge tows, for comparison with the same locations worked in October 2001.
2. If time allows to sample some other stations regularly sampled in previous surveys.

NARRATIVE:
CORYSTES departure from Lowestoft was delayed until the evening tide on 15 March because of easterly gales. She left at 2048 h but developed engine problems and had to return to Lowestoft, docking at 2355 h on the same tide. Repairs and testing took over 60 hours so she then departed from Lowestoft on 1502 h 18 March and sailed to the southern part of the survey area. Extra days were added to the previously scheduled finish date so it would be possible to complete the survey. Work commenced the following morning at 0930 h. Within 12 hours, the switch on one of the deck units controlling one of the two lights on the sledge tripped and we were unable to get it back on line. All tests pointed to either a fault in the main umbilical cable or the junction box on the sledge. Any further investigation and possible repairs would have cost too much time, so the remaining light was rigged to provide a more diffuse light in the camera's field of view. This proved to be very effective and no definition was lost.

There were no further problems or delays encountered throughout the rest of the survey. A total of 183 TV tows was completed resulting in all 180 stations being

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.

On the return journey the video and sledge mounted camera were calibrated at a station off the entrance to the River Tyne.

RESULTS:

1. 3 tows with the sledge-mounted TV camera were carried out at each of the 60 stations. All clusters were sampled. Over the survey 183 stations were sampled in total. These include repeats of stations where the visibility underwater had been poor. Excellent results were obtained for the majority of video recordings. Clarity was only aversely affected by the close proximity of trawlers. 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 areas where high catches of *Nephrops* are normally made (Fig 1).
2. No time was available to sample any of the other stations from previous surveys.

JON ELSON
(Scientist-in-Charge)
24 March 2002

INITIALLED: AR (Master)

DISTRIBUTION:

Basic list +
C.G.BROWN
J.M.ELSON
M.T.SMITH
S.R.LOVEWELL
D.W.PALMER
C.J.FIRMIN
T.LOCKE

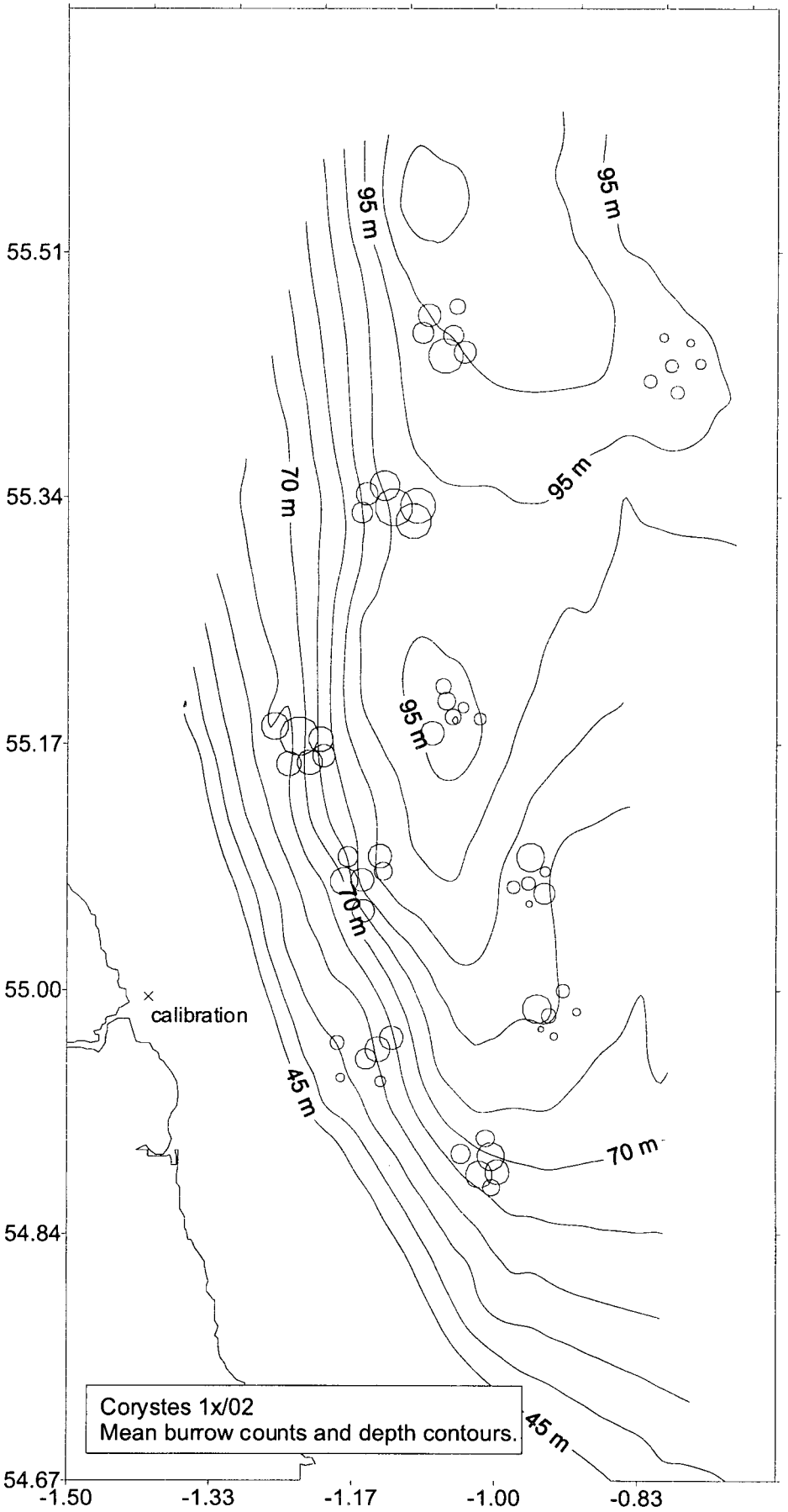
55.51
55.34
55.17
55.00
54.84
54.67
-1.50
-1.33
-1.17
-1.00
-0.83
95 m
95 m
95 m
95 m
70 m
70 m
70 m
45 m
45 m
calibration
Corystes 1x/02
Mean burrow counts and depth contours.

Figure 1.