MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1997 RESEARCH VESSEL PROGRAMME

REPORT: RV CORYSTES: CRUISE 5a

STAFF:

C G Brown	
S R Lovewell	
D Eaton	
M Bell	
J M Elson	
P M Hudson	Part time
W J Meadows	"
R Flatt	"
T Locke	"

DURATION: Left Lowestoft 15.00 h 16 April.
Arrived N. Shields 08.00 h 26 April.
All times are Greenwich Mean Time.

LOCALITY: North Sea (English NE Coast)

AIMS:

1. To conduct a TV survey of the English NE coast Nephrops grounds using a towed sledge and underwater TV camera to evaluate burrow density and estimate Nephrops biomass in the area 55° 35' -54° 45' N and 1° 30'-0° 40' W.

2. To backup the TV survey with a trawl survey to establish the size composition and sex ratio of the Nephrops catch.

3. To collect sediment samples by Day grab to establish the type of substrate most suitable for Nephrops.

4. To carry out seabed classification trials using Quester Tangent QTCview mk4.

NARRATIVE:

CORYSTES departed from Lowestoft on 16 April at 15.00 h and sailed to the southern part of the survey area where work commenced. Quester Tangent QTCview mk4 trials were carried out in this area during the first 3 days. A total of 109 TV stations was completed and preliminary Nephrops burrow counts were made over a ten minute part of the tow which was recorded on video tape for further detailed analysis at the laboratory. Sediment samples were taken by Day grab at each TV station and additional sediment samples were taken on various ground types during the calibration trials of Quester Tangent QTCview mk4. W Meadows R Flatt and T Locke were put

ashore at N Shields by sea rider at 09.00 on 20 April and P Hudson was brought aboard.
A total of 23 trawl stations were completed to give a wide coverage of the area surveyed by TV. All Nephrops were measured and sexed to obtain a length distribution and sex ratio at each trawl station. No time was lost due to bad weather or breakdown of equipment which resulted in a high number of stations (143) being completed during the cruise (Figure 1.). Corystes docked at N. Shields at 08.00 on 26 April to change scientific staff and crew for the second part of the cruise.

RESULTS:

1. A total of 109 tows with the sledge-mounted TV camera were made over the full extent of the Nephrops fishing grounds and excellent results were obtained for the majority of these. Clear pictures were obtained of the substrate, Nephrops burrows, burrows of other animals and emergent Nephrops as well as trawl marks caused by both footrope and doors. 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 (Figure 2.) suggest that the highest densities of burrows are found in the areas where high catches of Nephrops were found in recent trawl surveys using a chartered local Nephrops fishing boat.

2. A total of 23 trawl tows of between half and 1 hour duration with a Boris 600 prawn trawl were made throughout the fishery area to establish the size composition and sex ratio of Nephrops on different parts of the ground, and to relate to the burrow counts of those grounds. Catches were low, partly because of the time of year, weather and tide conditions. All Nephrops caught were sexed and measured.

3. Sediment samples taken by Day grab were frozen for future particle size analysis.

4. During the calibration trials of Quester Tangent QTCview mk4, seabed classification files were obtained of seabed types ranging from rough stony ground, through coarse sands and muddy moraine to pure muds. Depths ranged from 24-86 metres. The QTCview seabed classification system was loaded with a general catalogue and demonstrated a mid to high confidence in discerning the various ground types. Some catalogue combinations however gave low confidence levels and are being investigated with the manufacturer. The software operated with no major flaws but several bugs and enhancement suggestions were noted. No problems were encountered in connecting the signal processor to the computer, navigation and sounder equipment. No interference could be measured from the acoustic log and other echosounders.

CLIVE BROWN
(Scientist-in-Charge)
26 April 1997

CLIVE BROWN
(Scientist-in-Charge)
26 April 1997

INITIALLED:

DISTRIBUTION:
Basic list +
C G Brown
D B Bennett
W J Meadows
D Eaton
M Bell
S Lovewell
A R Lawler
P M Hudson
J M Elson
R Flatt
T Locke

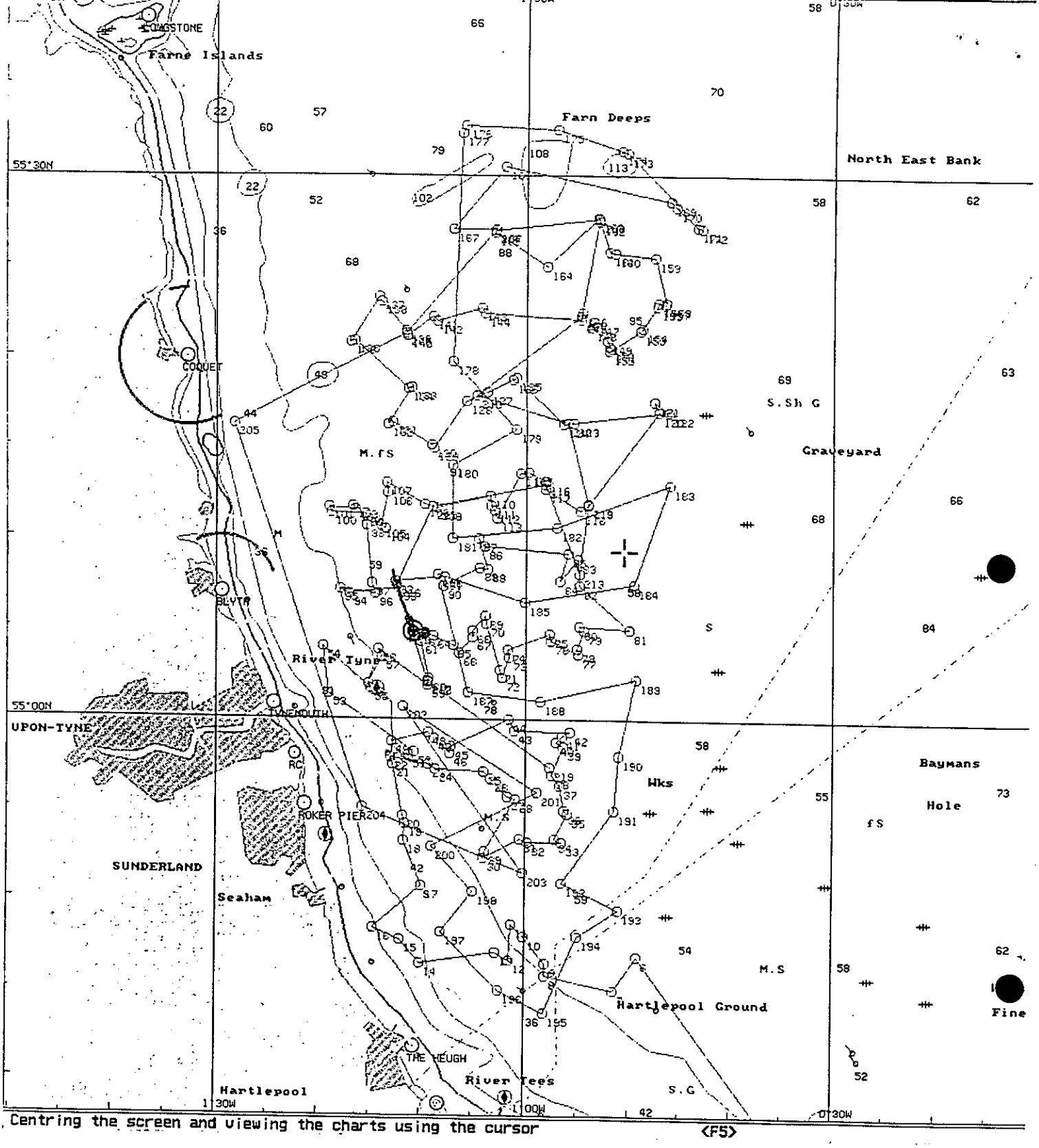
Farne Islands
Farn Deeps
North East Bank
55°30N
COQUET
BLYTH
River Tyne
55°00N
TYNEMOUTH
UPON-TYNE
ROKER PIER
SUNDERLAND
Seaham
Hartlepool
THE HEUGH
River Tees
Hartlepool Ground
Graveyard
Baymans
Hole
Wks
M.fS
S.Sh G
M.S
S.G
Centring the screen and viewing the charts using the cursor
<F5>

Figure 1

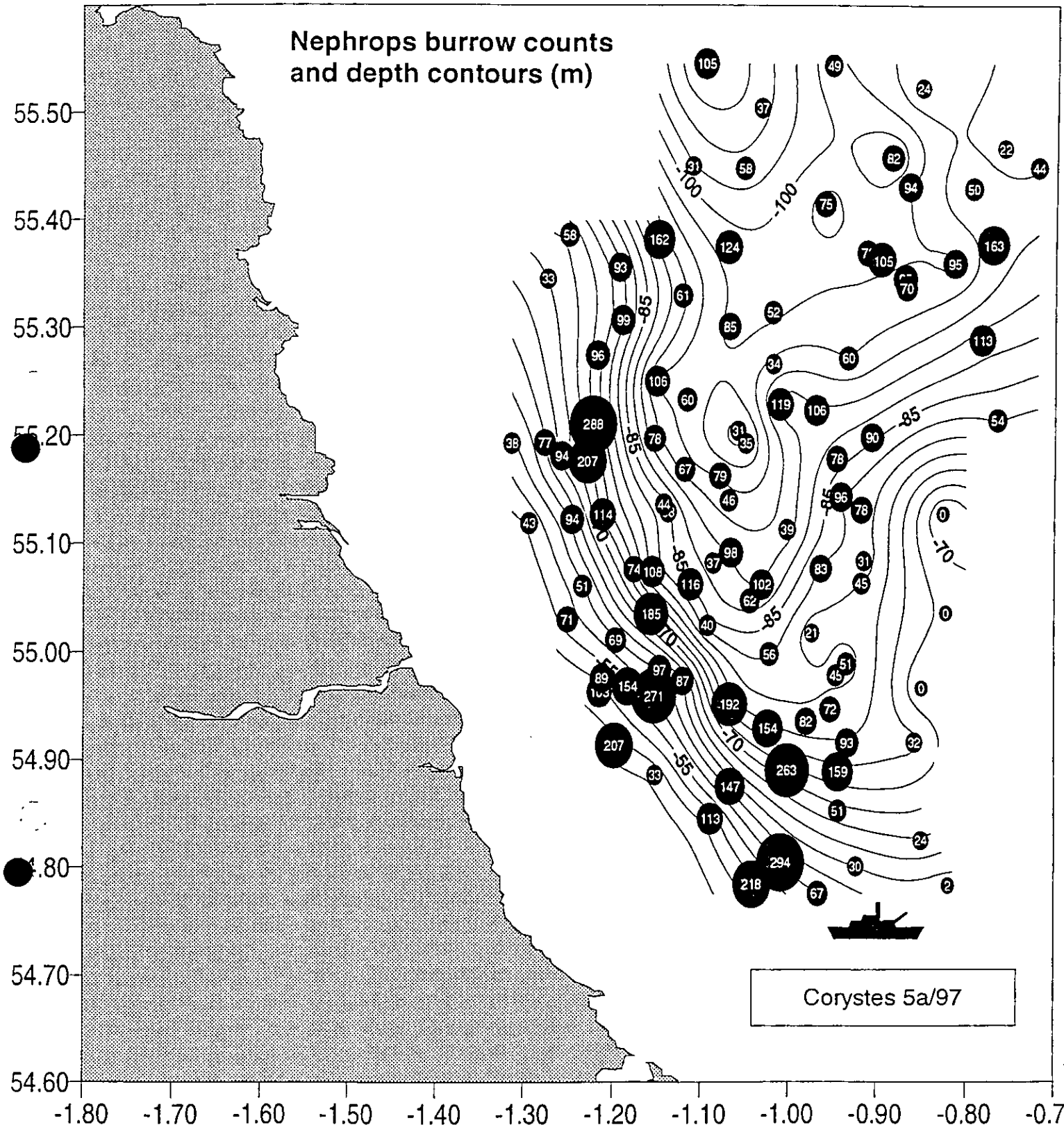
Nephrops burrow counts
and depth contours (m)
55.50
55.40
55.30
55.20
55.10
55.00
54.90
54.80
54.70
54.60
-1.80
-1.70
-1.60
-1.50
-1.40
-1.30
-1.20
-1.10
-1.00
-0.90
-0.80
-0.7
Corystes 5a/97

Figure 2