

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

1999 RESEARCH VESSEL PROGRAMME

REPORT: RV CORYSTES: CRUISE 3/99

STAFF: C.G.BROWN (9-23 APRIL)
S.R.J.LOVEWELL (9-23 APRIL)
M.W.EASEY (9-23 APRIL)
B.D.RACKHAM (9-23 APRIL)
T.LOCKE (9-23 APRIL)
J.T.ADDISON (PART TIME, 9-12 APRIL)
A.R.LAWLER (PART TIME, 12-23 APRIL)
J. READ (SECOND PART OF CRUISE, 23-26 APRIL)
D.SIVYER (SECOND PART OF CRUISE, 23-26 APRIL)
E.TINTON (SECOND PART OF CRUISE, 23-26 APRIL)
A. REEVE (SECOND PART OF CRUISE, 23-26 APRIL)

DURATION: Left Lowestoft 14.30 h 9 April.
Arrived Lowestoft 15.10 h 24 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 deploy an Instrumented Buoy Mooring (AE004) in Outer Gabbard with J. Read. (23-26 APRIL)

NARRATIVE:

CORYSTES departed from Lowestoft on 9 April at 14.30 h and sailed to the southern part of the survey area where work commenced the following morning. J. Addison was put ashore at N. Shields by sea-rider on 12 April at 15.00 h when A. Lawler was brought aboard. A total of 105 TV stations were 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 selected TV stations.

A total of 35 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. Corystes docked at Lowestoft at 13.30 on 23 April, to exchange scientific staff and equipment.

Corystes sailed at 1600 and proceeded to the mooring deployment position, east of the Outer Gabbard. On passage, the completion of the assembly of the instrumented buoy was undertaken, and after arrival at the deployment site, and the checking of the water depth, the mooring assembly was completed and laid at 2030. A short series of water samples were taken to calibrate the deployed instruments, after which Corystes set sail for Lowestoft, arriving at 1500 24th April

RESULTS:

1. A total of 198 tows with the sledge-mounted TV camera were made as a result of algal/plankton growth causing severe visibility problems over the period 15-21 April making it necessary to repeat many of the stations a number of times. The problem became so bad that TV work was discontinued and trawling was carried out until visibility improved. All stations were eventually surveyed and recordings of clear pictures were obtained. 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 1) suggest that the highest densities of burrows are found in the areas where high catches of Nephrops are normally made. Replicate counts were made at each of a station of high and low counts to compare count/distribution variability.
2. A total of 35 trawl tows of half an 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 but this was expected at this time of the year. All Nephrops caught were sexed, measured and weighed. The bycatch was also low being composed mainly of small whiting with some cod and flatfish and comprising between one and three baskets of bulk per tow.
3. Sediment samples taken by Day grab at selected stations were frozen for future particle size analysis.
4. The Instrumented Buoy was laid as planned and a short program of hourly, single depth (2m) niskin bottle casts was performed. At each cast, samples for salinity, Suspended load, Nutrients and Chlorophyll were taken and preserved where necessary.

CLIVE BROWN
(Scientist-in-Charge)
26 April 1999

INITIALLED: P.H.D.

DISTRIBUTION:

Basic list +

C.G.BROWN

S.R.J.LOVEWELL

M.W.EASEY

B.D.RACKHAM

T.LOCKE

J.T.ADDISON

A.R.LAWLER

J. READ

D.SIVYER

A. REEVE

E. TINTON

Figure 1.

Corystes 3/99 Burrow Counts

