

**MINISTRY OF AGRICULTURE, FISHERIES AND FOOD  
FISHERIES LABORATORY, PAKEFIELD ROAD, LOWESTOFT, SUFFOLK, UK**

**1995 RESEARCH VESSEL PROGRAMME**

**REPORT: R V CORYSTES: CRUISE 8A**

**STAFF:** P Walker (SIC)  
D Palmer  
P Millican  
R C A Bannister (to 25 July)  
C Richardson UCNW (to 25 July)  
A E Howard (20-25 July)  
J Elson (from 25 July)  
L Hooper UCNW (from 25 July)  
A Kenny (18-19 July)  
I Todd SFI (25-29 July)  
D Munday SFI (from 29 July)

**DURATION:** 18 July - 2 August 1995

**LOCALITY:** English Channel and Western Approaches

**AIMS:**

1. To obtain stock indices of abundance for pre-recruit and fishable scallops on the standard survey grids on the Fowey - Eddystone, Lyme Bay, Wolf Rock and S. Eddystone grounds.
2. To carry out fishing trials with commercial meshed, fine meshed and queen meshed Newhaven dredges.
3. To carry out replicate dredge hauls at standard survey stations.
4. To investigate the effects of fine sediment dispersion by gravel dredgers on the macrobenthos of the Hastings Shingle Bank.
5. To collect scallop material, seawater samples and CTD profile data from stations between Hastings Shingle Bank and Little Sole Bank, for isotope studies with UCNW, Menai Bridge.
6. To collect live scallops for the Conwy laboratory.
7. To collect mollusc specimens for UCNW student projects.

## NARRATIVE:

CORYSTES cast off in Lowestoft at 1248 GMT on 18 July and steamed south for the eastern English Channel. On 19 July dredge hauls and Hamon grab hauls were made on the Hastings Shingle Bank. Further dredge hauls, CTD and water bottle casts were made near the Greenwich Buoy before CORYSTES steamed to Brighton to pick up a crew member who had been receiving hospital treatment at sailing time.

On the morning of 20 July CORYSTES lay off Weymouth. A Kenny left the ship by Searider and A Howard joined. CORYSTES then sailed for Lyme Bay where dredge hauls were made with one set of dredges while ship's engineers worked on a fault in the port trawl winch. It was established that the faulty winch could be operated with deck control and work on the next four days was carried out in this way.

Grounds south of the Wolf Rock were worked on 21 July and that evening CORYSTES steamed for the Western Approaches. Deep water hauls were completed SE of Haddock Bank and on Haddock Bank on 21 July and at Little Sole Bank and SW of Melville Knoll on 22 July. CORYSTES returned to the grounds south of Wolf Rock on 24 July and when work there was completed steamed for Falmouth.

CORYSTES docked in Falmouth on the morning of 25 July to land an injured deckhand for hospital treatment, exchange scientific staff and to enable an engineer to examine the defective port trawl winch. Repairs were completed that evening and CORYSTES cast off at 2124 GMT.

Bad weather delayed the start of work on 26 July until after breakfast-time. CORYSTES then began the standard survey of the Fowey- Eddystone ground which was completed on 27 July. Fishing trials commenced with commercial meshed, fine meshed and queen meshed Newhaven dredges on this ground on 28 July and continued until the afternoon of 29 July. That evening CORYSTES laid off Plymouth while Mr Todd was landed by Searider and replaced by Mr Munday.

CORYSTES then steamed to the scallop ground south of the Eddystone and the standard survey grid there was completed in the evening of 30 July. After another overnight steam, grounds in Lyme Bay were worked on 31 July and 1 August. With the replicate tow work completed CORYSTES steamed for Southampton, to rewater and exchange scientific staff for cruise 8B. CORYSTES made fast at the Ocean Terminal, Southampton at 0825 h GMT on 2 August.

## RESULTS:

### Aim 1: Scallop stock indices

#### *S of Wolf Rock*

29 hauls were made with standard and fine mesh French dredges. Numbers of pre-recruits on the ground appeared similar to those of earlier surveys and some commercially exploitable patches were found.

#### *Fowey-Eddystone Ground*

32 hauls were completed with fine and standard mesh Newhaven dredges. Stock levels of both pre-recruit and exploitable scallops appear to be similar to those found on the last two surveys.

#### *S of Eddystone*

22 hauls were completed with fine and standard mesh French dredges. Fishable stocks seem lower than on the previous survey, but unlike previous surveys there were signs of recruitment.

#### *Lyme Bay*

32 hauls were completed with fine and standard mesh French dredges. This area appears to have been fished heavily. Recruitment seems to be at a similar level to that of previous years.

### Aim 2: Dredge trials

A block of 20 stations on the Fowey Eddystone ground was selected for a fishing trial to compare the catching power of Newhaven dredges with three different ring sizes. The dredges were fished 4 per beam, with one beam per side, all dredges on a beam having the same size of ring. Each station was fished three times, towing at 2.5 knots into the tide.

The comparisons were i) standard commercial Newhaven versus fine mesh Newhaven, ii) standard commercial Newhaven versus queen ring Newhaven and iii) fine mesh Newhaven versus queen ring Newhaven.

The initial examination of the results suggests that compared with the fine mesh dredges the queen ring dredges catch larger numbers of scallops of a wider size and age range (50-90+mm) and could be more suitable for future sampling work.

**Aim 3: Replicate dredge hauls**

20 stations on the Fowey-Eddystone ground were fished twice with beams of 4 standard and 4 fine mesh Newhaven dredges. Initial examination of the results suggests that there may be a non-random variation in catches of the standard gear, possibly due to a tidal effect.

5 stations on the Lyme Bay ground were fished four times with the standard French dredges and three times with the fine French dredges. Catches in the two replicate series with the standard gear, completed on 1 August were similar, but differed markedly at some stations from the hauls of 20 and 31 July. The observed non-random variation may be due to the tidal effect proposed above.

**Aim 4: Shingle Bank Studies**

Two attempts to tow scallop gear within a 500m diameter zone were unsuccessful. Sampling therefore reverted to the 1800 m straight line tows employed on previous cruises and tows were completed at sites 1, 2 and 4. Three replicate Hamon grab hauls were made at six sites. Samples were preserved for examination at the Burnham on Crouch laboratory.

**Aim 5: Deep water scallop studies.**

Scallops were collected at five sites along a depth transect (see Table 1 below) from the Greenwich Buoy to Little Sole Bank to relate environmental factors with shell deposition. The density of scallops at all stations appeared to be lower than on previous cruises.

**Table 1: Summary of work carried out on deep-water scallops  
CORYSTES Cruise 8A 1995**

Site	Scallops caught	Dredging time (mins)	CTD deployments	Niskin casts
Greenwich Buoy	24	30	Yes*	Yes
SE of Haddock Bank	14	110	Yes**	Yes
Haddock Bank	9	120	No	No
Little Sole Bank	27	120	Yes	Yes
SW of Melville Knoll	10	105	No	No

Yes\*. CTD failed to record.

Yes\*.\* CTD failed to record, station repeated later.

**Aim 6: Scallops for Conwy**

The target was changed from live scallops to deep frozen material for DNA profiling. 25 samples were obtained from each of the four main grounds fished. In addition 15 samples were taken at the Little Sole Bank.

**Aim 7: Mollusc specimens for UCNW**

A variety of specimens were deep frozen, including *Arctica*, *Glycymeris* and *Aequipecten*. Other invertebrates collected included *Astropecten* and *Sabella*.

**Other Samples**

10 scallops from the Eastern Channel were deep frozen for A Franklin BoC.

Liver samples from megrimms, soles and lemon soles were collected for Dr Feist FDL.

Due to small numbers of spider crabs in the catch none were landed for R Turner.

P Walker  
1 August 1995

**SEEN IN DRAFT:**

B R Chapman	Master
W M May	Senior Fishing Mate

INITIALLED: R C A B pp T Macer

**DISTRIBUTION:**

Basic list +

P Walker	C Richardson UCNW	I Todd SFI
RCA Bannister	L Hooper UCNW	D Munday SFI
D Palmer	Sea Fisheries Committees	
P Millican	Devon	
J Elson	Cornwall	
A Kenny	Isles of Scilly	
A E Howard	Sussex	

# Track plot - Corystes 8a/95

