4209

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK NR33 OHT

1996 RESEARCH VESSEL REPORT

REPORT
~~PROGRAMME~~: RV CORYSTES 14(a) 1996

STAFF:	Parts 1/3	Part 2
	D Bennett (SIC)	P Walker (SIC)
	J Metcalfe	D Palmer
	M Bell (Part 1)	M Bell
	C Brown (Part 1)	D Eaton
	D Eaton (Part 3)	J Elson
	J Elson (Part 3)	C Richardson/ S Freeman OSL Menai Bridge
	P Hudson	
	M Eagle	

DURATION: Part 1 - 25-28 October.
Part 2 - 29 October - 10 November.
Part 3 - 11-14 November 1996.

LOCALITY: English Channel and Western Approaches

AIMS:

Parts 1/3

1. To trial transponder tags as a means of locating ovigerous (berried) crabs on their over-wintering grounds.

Part 2

1. To obtain stock indices of abundance for pre-recruit and marketable scallops on the standard survey grids on the Fowey - Eddystone, Lyme Bay, Wolf Rock and S. Eddystone grounds.
2. To compare gear selectivity between French dredges rigged with current commercial sized meshes and with larger meshes.
3. To collect scallop material for studies of glycogen utilisation by OSL Menai Bridge.
4. To collect scallops and obtain CTD profiles at Haddock Bank for scallop ageing studies.
5. To collect samples of *Arctica* for Dr Dickson - temperature records from shell growth rings, and OSL Menai Bridge - internal parasites.

NARRATIVE

Part 1 (25 - 29 October)

CORYSTES left Lowestoft at 1900h GMT on 25 October 1996 and steamed to the Hastings Shingle Bank, arriving at 0800h on 26 October. The sector scanner was deployed and six 300 kHz transponding tags were tested on the standard test rig. A basket of live female crabs (*Cancer pagurus*) was transferred from the crabber ROYAL SOVEREIGN, courtesy of the skipper Mr Peter Storey. Tags were attached to the healthiest four crabs, which were considered to be well post-moult and likely to spawn this winter. These were released along a line just to the west of the ROYAL SOVEREIGN'S potting area. At each of the north and south ends of the line a tag was released attached to a sinker and small float so that it remained in position just off the sea bed.

The two stationary tags and the four tagged crabs were then relocated using the sector scanner. During a second search, with sector scanner tracks 180m apart, the sinkers and two of the crabs were located before the search was stopped at 0030h 27 October.

Adverse weather conditions, with a near hurricane force 11, prevented any further sector scanner searches. The scientific staff transferred at Folkestone by Searider on 29 October and returned by car to Lowestoft.

Part 2 (29 October - 10 November)

Scientific staff and one crew member travelled from Lowestoft to Folkestone on the morning of 29 October to join CORYSTES. The transfer of staff was carried out using the Searider and was completed by 1400h. CORYSTES then sailed for the western Channel arriving on the Fowey - Eddystone scallop survey area at 1340h on 30 October. Twelve Newhaven dredges stations were completed on the survey grid before worked ceased at 2200h.

No work was possible the following day due to gale force SW winds, the vessel spending the day laid and dodging off Mevagissey. Work commenced at first light on 1 November and the remaining 20 stations on the grid were completed successfully. CORYSTES then steamed to Lyme Bay. The next morning, 2 November, CORYSTES sailed in strong SW winds to the most sheltered station on the Lyme Bay survey grid. On station the swell was found to be too heavy to enable French dredges to be deployed safely, and CORYSTES returned inshore, laying off Teignmouth.

Gale force winds continued throughout the following day, and CORYSTES moved to anchor in Tor Bay, in preparation for a changeover of scientific staff scheduled for the following day. Dr Richardson was landed at Brixham by Searider in the late morning of 4 November and was replaced by Mr Freeman. The continuing gale force winds prevented any work that day.

Overnight the winds went to the NW and decreased for a time. During the morning and early afternoon of 5 November CORYSTES was able to complete seven exploratory hauls with 3 m beam trawl in the sheltered waters in the NW corner of Lyme Bay. On the completion of the beam trawl hauls, the fishing gear was changed to two sets of French dredges. Two hauls in the gear selectivity programme were completed, on the Lyme Bay survey grid, before

increasing SW swells caused work to be abandoned. CORYSTES returned to Tor Bay to anchor for the night. Strong winds on 6 November prevented work on the Lyme Bay grid, but three hauls with the French dredges were made in sheltered waters off Teignmouth, where soles had been taken in the beam trawl the previous day. With only one sole and few scallops being taken in two hours of fishing, the decision was taken to terminate work at 1400h. CORYSTES anchored overnight off Teignmouth.

CORYSTES steamed off to the survey grid on the morning of 7 November but sea conditions made safe working impossible and the vessel returned to anchor off Slapton. Conditions were much improved on the following morning as CORYSTES steamed out to the survey grid. As the French dredges were being deployed a problem was detected with the controls of the main trawl winch. Much of the day was lost rectifying what turned out to be two separate problems with the hydraulic and electrical control systems. Three hauls were completed in the evening to locate a suitable area for the gear selectivity comparison. On 9 November work commenced at first light. Ten hauls were made with the French dredges during the day until 2200 h, when gear was stowed and CORYSTES steamed for Brighton to exchange scientific staff for cruise 14(a) part 3.

Part 3 (10 - 14 November)

Scientific staff joined CORYSTES on 10 November by Searider from Brighton Marina. CORYSTES sailed to Hastings Shingle Bank where a sector scanner search began at 1723h. The two tags attached to sinkers were quickly located at their release positions and a search begun for the tagged crabs. The search was made with tracks 180m apart, avoiding the licensed aggregate dredging site, the Traffic Separation Zone, and, at night, the potting area.

The search continued until 0200h 14 November when CORYSTES steamed towards Southampton. CORYSTES docked in Southampton at 1100h and the scientific staff returned to Lowestoft by car.

RESULTS

Parts 1/3, Aim 1.

The initial testing, deployment and relocation of the stationary tags and tagged crabs was successful. Within 10h of releasing the crabs, movements of up to 2110m were made, but there was no evidence of directed movements. Unfortunately adverse weather conditions prevented further tracking of the crabs. Had this been possible it should have indicated any directed movements and the distances travelled. This would have provided valuable guidance to the tracking search undertaken during Part 3.

Despite operating a grid which involved steaming 250 nautical miles (Figure 1) no tagged crabs were located. The stationary tags were located on several occasions indicating that both the sector scanner and tags were operational. The crabs may have been hiding beneath stones on the sea bed, but were expected to be active during the night, and this would allow the tag signals to be detected. The area close to the release site was searched during darkness on two occasions, but no crabs were detected.

The technique as a means of tracking crabs over short time periods has potential to solve the question of where berried (ovigerous) crabs are located during their over-wintering phase. The planned development of 76 kHz tags and sector scanner transducer, which would have a considerably larger detection range, would be more suited to the task.

Part 2.

Aim 1. Preliminary examination of the survey data indicates that marketable scallops have been fished down to a uniform low level on the Fowey - Eddystone ground while numbers of prerecruits appear to be above average. Bad weather prevented any of the other grounds being surveyed.

Aim 2. Five exploratory and ten comparative hauls were made with the French dredges on the Lyme Bay ground.

Aim 3. This request was superseded by supplementary aim A below.

Aim 4. No work was possible at Haddock Bank.

Aim 5. Two specimens of *Arctica* were obtained.

Supplementary aims.

A 250 specimens of *Astropecten irregularis* were collected for feeding studies and to establish the level of infection by the commensal polychaete *Acholoe astericola*. A small number of *Luidia sarsi* were also retained

B Photographs and specimens of a variety of benthic organisms were collected for reference purposes at OSL.

SEEN IN DRAFT

Master B. A. Chapman
Senior Fishing Mate W. M. May

David Bennett / Peter Walker
19 November, 1996

INITIALLED:

DISTRIBUTION
Basic list+
D Bennett
P Walker
J Metcalfe
D Palmer

M Bell
C Brown
D Eaton
J Elson
B Riches
M Eagle
C Richardson/ S Freeman - OSL Menai Bridge
P Storey (crab fisherman)

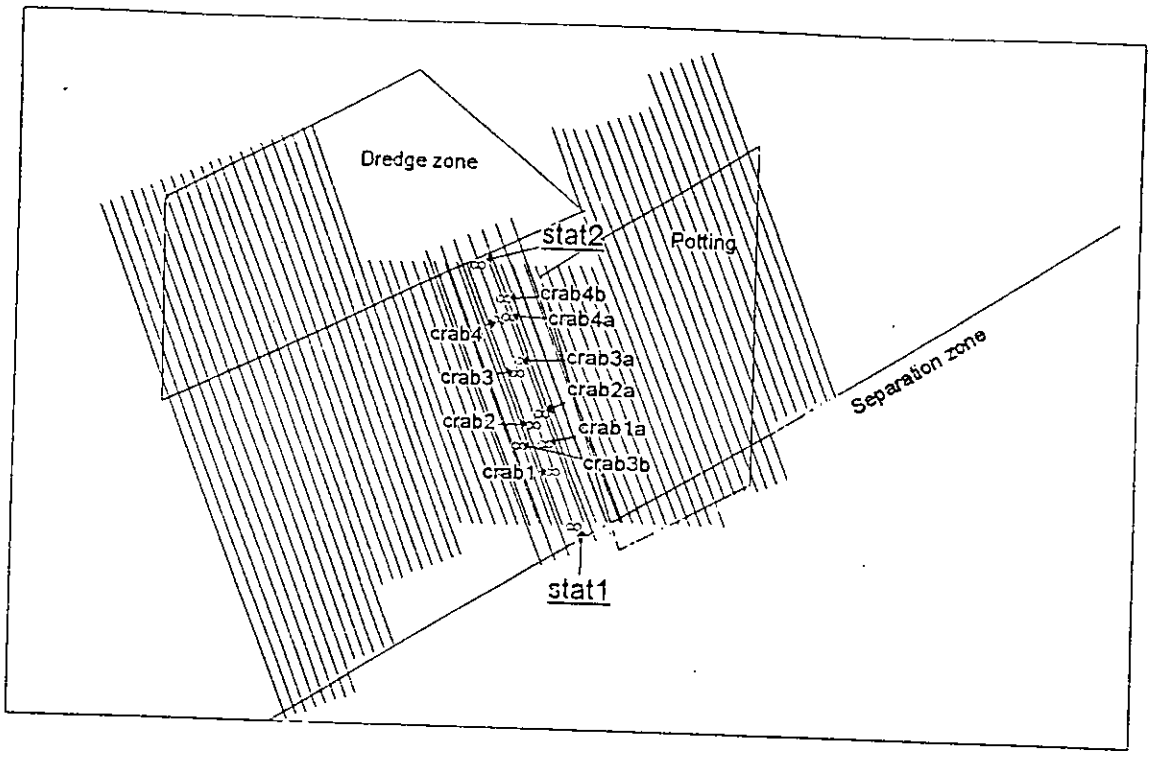

Figure 1 . The tag release positions (**stat 1 & 2** - stationary tags; **crabs 1 - 4**) in relation to the dredging and separation zones and the potting area. The search grid is shown as the series of adjacent sector scanner tracks 180m apart. The early movements of the crabs are indicated by the labels **crab1/2/3/4 a** or **b**

Track plot - Corystes 14a(ii)/96

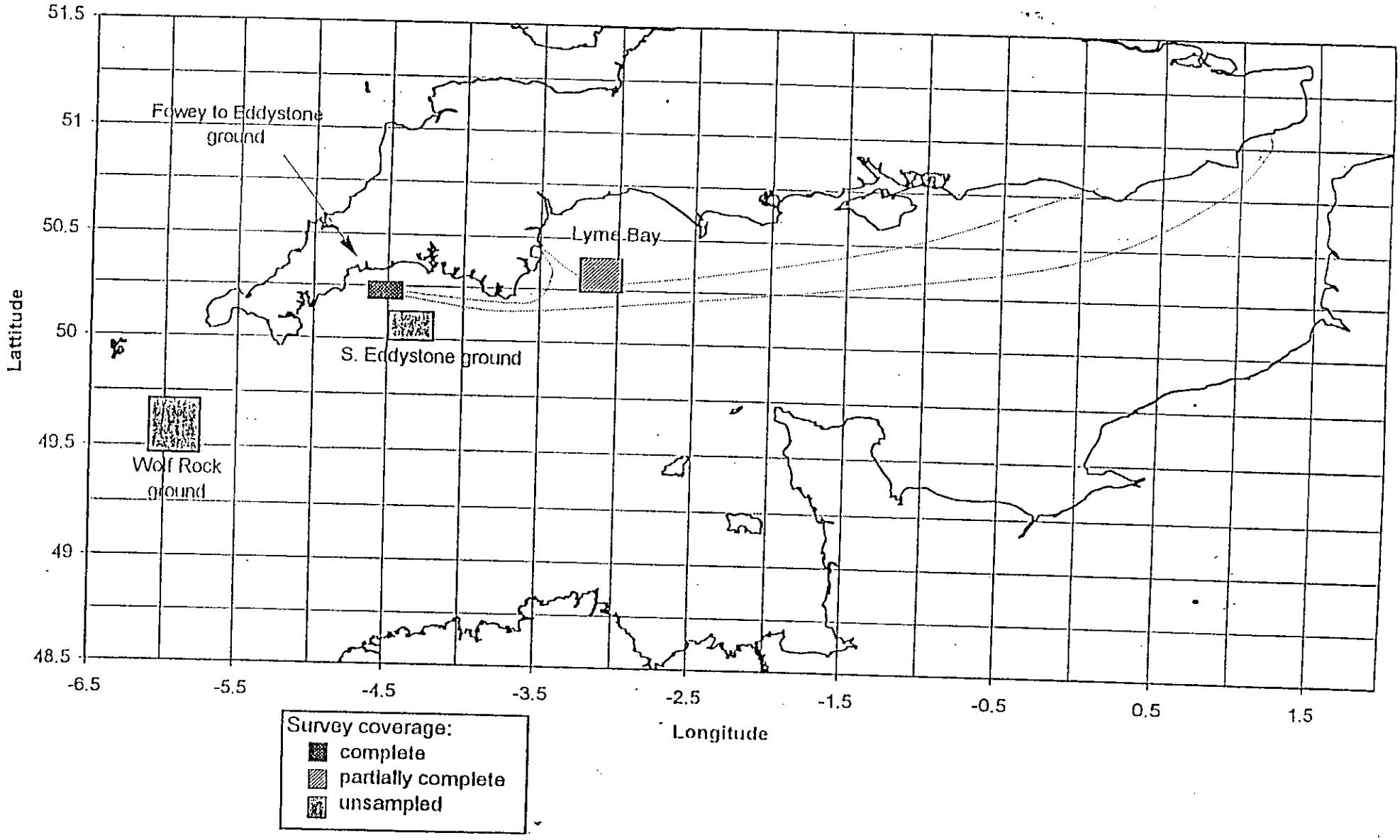

Figure 2.

09/11/96