

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

1981 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE 4/81

STAFF:

M S Rolfe (SIC)

E G Shreeve

P A Ayres (from 24 March)

R J Rycroft

Nicola Shakspeare

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DURATION:

Left Lowestoft 0958 h, 20 March

Arrived Lowestoft 0620 h, 1 April

All times are

Greenwich Meantime.

LOCALITY:

Southern North Sea and English Channel.

AIMS:

1. To investigate an area of sea bed off Orfordness, Suffolk using side scan sonar for evidence of illegal dredging for aggregate.
2. To conduct an 'intensive' monitoring survey of the Nab disposal ground by (i) side scanning sonar for bottom morphology studies, (ii) grabbing for sediments for biological, physical, chemical and bacteriological analysis and (iii) trawling by Agassiz for chemical analysis.
3. To conduct an 'intensive' monitoring survey of the Lyme Bay disposal ground (off Exmouth) as in Aim 2 excepting a sonar survey.
4. To conduct a 'routine' monitoring survey of the Barrow Deep sewage sludge disposal ground by (i) grab sampling for sediments from a limited number of stations for physical and chemical analysis and (ii) trawling for fish for chemical analysis.

Additional Aim (not on programme). To obtain samples of dumped spoil from the vicinity of Roughs Tower dumping ground.

NARRATIVE:

CLIONE sailed from Lowestoft at 0958 h, 20 March but was delayed off Kessingland for 2½ h because of a problem in the ship's main salt water cooling pump. At 1500 h the side scan was launched and a successful trial run was completed by the commencement of surveying off Orfordness at 1808 h (Aim 1). Scanning was stopped at 2130 h and CLIONE anchored overnight off Aldeburgh. Surveying was continued the following morning but terminated at 1100 h because the heavy pitching was causing excessive

deterioration of the sonar record. In increasing south-westerly winds CLIONE steamed to Margate Roads for shelter. On the following day (22 March) the wind veered and CLIONE moved to the Downs anchorage off Deal. Later in the day, when the weather improved, CLIONE steamed to the Nab Tower area, arriving early morning on 23 March to commence Aim 2. Only five side-scanning legs could be completed before CLIONE had to take shelter in St. Helen's Roads with the south-westerly winds gusting to 70 knots. A fault in the UDI receiver prevented the continuation of the scanning survey on the 24 March. After Dr Ayres had joined CLIONE at 1300 h by launch from Portsmouth, a grabbing survey was commenced over the Nab Tower dumping ground using a 0.14 m<sup>2</sup> Day grab and a total of 45 stations were completed by 1630 h the following day.

With the necessary replacement parts for the scanner receiver ordered from UDI Aberdeen, CLIONE steamed overnight to Lyme Bay to carry out Aim 3 and to collect the spare part on arrival at Brixham. On 26 March seven Agassiz trawl stations were worked in the vicinity of the 'Exeter' dumping ground to collect fauna for chemical analysis; this was followed by a grabbing survey of 39 stations. While at anchor in Torbay overnight many gravid Heteronereid polychaetes, up to 20 cm in length, were seen swimming at the surface. The grabbing was completed on the morning of 27 March and after the replacement scanner parts had been collected from Brixham by Z-boat, CLIONE steamed towards Nab Tower to complete Aim 2. While steaming eastwards a gland in the ship's freshwater pump failed and CLIONE anchored in Cowes Roads at 2330 h 27 March for repairs to be effected in calm conditions.

The replacement scanner parts enabled a signal to be received but the unit was still not functioning correctly on the morning of 28 March and CLIONE remained at anchor off Cowes while further work on the receiver was completed. While steaming to the survey area on the afternoon of 28 March a fault occurred in the EPC recorder and scanning could not be recommenced until 0618 h the following morning. The survey was completed at 1700 h, 29 March and CLIONE steamed to the outer Thames estuary to complete Aims 4 and 1. Granton trawling was commenced at 0933 h on arrival in East Swin, this was followed by grab sampling in the Middle and Barrow Deeps; six stations on 30 March and the remaining seven on the following morning.

A Forster anchor dredge was deployed at five stations in and to the landward side of the Roughs Tower dumping ground (Extra Aim) and large samples of dumped dredge spoil were recovered from three stations during the afternoon of 31 March. Finally, the remaining legs of the side scan survey off Orfordness (Aim 1) were successfully completed before CLIONE steamed back towards Lowestoft, anchoring overnight and berthing at 0620 h, 1 April.

#### RESULTS:

All the aims were successfully completed in spite of poor weather and faults which occurred in the side scan equipment.

Aim 1: Successful: trailer tracks were clearly seen during several of the 18 scanning legs.

Aim 2: Successful except that no Agassiz trawling was possible. Bacteriological analysis of sediments showed high concentrations of

Clostridium perfringens both in the dumping ground and also in a deep gully to the north-east - indicating a possible transport route of sewage particles. Coliform and E. coli counts were low as there had not been any recent dumpings of sewage in the area (vessel refit).

Aim 3: Successful: in addition 5 Agassiz trawl stations were worked. The bacteriological picture was similar to that at Nab Tower.

Aim 4: Successful: trawling yielded samples of cod, whiting, sole and brown shrimp for chemical analysis.

Additional Aim: The Forster anchor dredge was successfully deployed. Unweathered clay was recovered from within and just outside the dumping ground, but the origin of the sediments dredged at other stations further from the dumping ground is not yet known.

M S Rolfe  
2 April 1981

Seen in draft: JRF, GFL

Initialled: EWH

Distribution:

Basic list +  
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