

MR. SALES.

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

1974 RESEARCH VESSEL PROGRAMME

REPORT: R V CORELLA: CRUISE 3

(Provisional: Not to be quoted without reference to the author)

STAFF: I C White  
E Edwards  
M S Rolfe  
J E Thain  
J Everett

DURATION: Left Lowestoft 0915 h 21 February  
Arrived Lowestoft 0650 h 5 March  
All times are Greenwich Mean Time

LOCALITY: North Sea

AIMS:

- 1 To investigate by a programme of grabbing and trawling disposal grounds in the following areas: Humber, Tees, Tyne and Thames (9.4.5.)
- 2 To collect samples of sediment, benthos and fish from these areas for chemical analysis (9.1.1).
- 3 To investigate the area off Whitby receiving potash waste (9.4.3).

NARRATIVE:

CORELLA left Lowestoft at 0915 h 21 February and sailed to the Outer Humber where for two days the two disposal grounds were investigated. The nature and distribution of the benthos and sediments were determined by undertaking 27 anchor dredge hauls. Fish and benthos were collected for chemical analysis by carrying out 7 oyster dredge and 1 Granton trawl haul.

En route to the Tees area the opportunity was taken to visit the area off Boulby into which potash waste is being discharged. Half a day was spent observing the bottom with underwater TV, and sediment samples were collected with a  $1/10 \text{ m}^2$  Smith McIntyre grab. Approximately a day and a half was then spent investigating the three disposal grounds off the Tees. The distribution of sediments and benthos was determined by taking 2 Smith McIntyre grab samples at each of 36 stations and fish and epibenthos were collected for chemical analysis by 3 Agassiz, 4 oyster dredge and 1 Granton trawl hauls. All flatfish taken in the trawl were measured and examined for the incidence of lymphocystis, ulcerations or other diseases.

CORELLA next steamed to the outer Tyne where 2 Smith McIntyre grabs were taken at each of three stations to obtain samples for detailed sediment analysis in conjunction with a programme on Nephrops distribution being undertaken at the Burnham Laboratory. A fault with CORELLA's main freezer necessitated a visit to North Shields but the opportunity was taken to replenish the ship's freshwater and for the scientific staff to visit the District Inspector of Fisheries and the Cullercoats Marine Laboratory. CORELLA left North Shields next day with the freezers repaired and three days were spent taking 2 Smith McIntyre grabs at each of the 41 stations (along 7 transect lines) in the dumping areas off the Tyne. 7 Agassiz, 4 oyster dredges and 2 Granton trawl hauls were also carried out. All flatfish taken in the trawls were measured and examined for disease, and the stomach contents of cod were examined to determine the maximum size of Nephrops taken as food. Whilst off Blyth careful note was taken on two occasions of the position and operation of a dumping vessel.

CORELLA then steamed south and in the Leman area sediment cores were taken for hydrocarbon analysis from 3 Smith McIntyre grabs taken at six stations that had been sampled on a previous cruise prior to exploratory drilling for gas in the area. Benthos for hydrocarbon analysis was collected by 2 Agassiz trawls.

CORELLA finally proceeded to the sunk disposal ground off Harwich where a day was spent taking 2 Smith McIntyre grab hauls at each of 33 stations. A single Agassiz trawl was made. Two Smith McIntyre grabs were then taken in the vicinity of the Barrow Deep at each of 5 stations that could not be completed during a recent TELLINA cruise.

CORELLA steamed for Lowestoft early on 4 March on one engine, the starboard one being inoperative due to a fault in the intercooling system. A plankton sample was taken approximately 10 miles east of Lowestoft before CORELLA docked at 0650. No time was lost during the cruise due to bad weather and all aims were completed successfully.

#### RESULTS:

Aim 1: 186 stations were worked and over 250 successful <sup>1/</sup> 10 m<sup>2</sup> Smith McIntyre grab hauls, 27 anchor dredge, 15 oyster dredge, 13 Agassiz and 4 Granton trawl hauls were made.

Aim 2: A total of 112 samples of fish and benthos and approximately 120 sediment samples were retained for selected chemical analysis.

Aim 3: Detailed results of the disposal ground surveys cannot be presented until analyses are completed although the following subjective comments can be made: For the most part the bottom in the vicinity of the disposal grounds off the Humber is hard and consists of large stones with generally poor benthos. The two southern Tees disposal grounds also have poor benthic fauna but there is a clay substrate. However, the northern Tees disposal ground consists of soft mud and has a relatively rich benthic fauna. In the disposal sites off the Tyne there is a gradation from the shoreward side, where dumped spoil and moving waste gives rise to a variable substrate poor in benthos, to outer stations where sandy mud supports a greater number of species and individuals. The Sunk disposal ground is in general sandy gravel and relatively poor in benthic fauna.

I C White  
12.3.74

Seen in draft: J B (Master)  
C S (Fishing Skipper)  
A J L

#### DISTRIBUTION:

##### Basic list

Mr White  
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Mr Rolfe  
Mr Thain  
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