

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

1982 RESEARCH VESSEL PROGRAMME

REPORT: RV CORELLA: CRUISE 6  
(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF:

M Greer Walker  
G Caston )  
R Stubbs ) IOS  
J Weller )  
A Read Taunton

DURATION:

23-28 April

LOCALITY:

Norfolk Banks

AIMS:

1. To study the bottom fauna and sediment types using transects across the Norfolk Banks.
2. To survey the area using the boomer and the 80 kHz side scan sonar.

NARRATIVE:

CORELLA sailed at 1030 h 23 April. The first survey using a conical dredge consisted of stations around the southern end of Hearty Knoll and was completed at 2230 h.

During the next two days grab surveys were completed over both the southern and northern ends of the Smiths Knoll bank. Beginning at 1500 h 25 April the ship steamed along a series of transects at the eastern ends of the Leman and Well Banks and then across the remaining more northerly banks up to the Indefatigable bank. During this time the 80 kHz and UD1 side scan sonars were run continuously. Between 0700 h and 1830 h 26 April the Indefatigable Bank was surveyed with sonar in some detail and a rock dredge was used to sample the fauna on the crest of the bank. A second transect running across the middle of these banks between the Indefatigable and Well banks was next surveyed by sonar. This was concluded at 0030 h 27 April. Later that day CORELLA returned to Smiths Knoll and a line along the eastern margin was surveyed using sonar and grab stations. During the evening samples were collected from the top of the bank by rock dredge and from the adjacent pectinaria beds by Agassiz trawl. CORELLA docked at 1130 h 28 April.

RESULTS:

1. Some 95 benthos and sediment samples were obtained in all. Hearty Knoll and the northern end of Smiths Knoll proved to be sandy areas with little live material. In contrast the SE end of Smiths Knoll was rich in live material with 2 genera dominant (Pectinaria sp and Ophiura sp) in the mud. Sonar records were used to map these muddy areas which gave way progressively to silt then coarse sand towards the northern end of Smiths Knoll.

2. The faunas of the crests of the Indefatigable and Smiths Knoll banks were sampled using the I.O.S. rock dredge. At the Indefatigable several species were recorded which included the thick shelled bivalve *Donax vittatus* and also *Ensis siliqua* in addition to other bivalves several crustaceans and echinoderms. At Smiths Knoll in more hostile conditions the fauna was less variable with only a few crustaceans and no infaunal bivalves. *Ammodytes* sp were present on both banks.
  
3. The Huntec boomer system failed to function so that no information was obtained on the internal structure of the banks. The two side scan sonar systems, the I.O.S. 80 kHz and the MAFF UDI 50 kHz, complemented each other to give continuous sonar coverage. The hull-mounted I.O.S. side scan was used in conjunction with the grabbing, giving a good correlation between the sonographs and the sampled sediment types. The UDI towed side scan was used only on the Indefatigable Bank survey and for the two transects of the banks (west transect: 53°36'.5N, 2°20'.0E to 53°8'.5N, 2°11'.5E; East transect: 53°5'.5N, 2°18'.0E to 53°34'.0N, 2°30'.0E). The UDI gave good results even when quenching due to bad weather marred the I.O.S. sonographs. The sonographs provide valuable information on the surface morphology of the banks and also on the distribution of the various sediment types. The sonar transects of the banks will be used to plan a sampling programme along the same tracks in June.

M Greer Walker

7 May 1982

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M Greer Walker  
G Caston )  
R Stubbs ) IOS  
J Weller )  
A Read Taunton