

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD  
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK NR33 0HT

1993 RESEARCH VESSEL PROGRAMME

REPORT: RV CORYSTES: CRUISE 2C

(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF

S J Malcolm (SIC)

B Jones

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J Taylor

N Faber

DURATION: 18 February-24 February 1993

LOCALITY: Wash, Humber, North Sea

AIMS:

1. To identify and quantify the fate of river-borne nutrients entering the Wash and Humber estuary, examining nutrient distributions from the river inputs through to the North Sea.
2. To measure nutrient concentrations along an offshore transect from Lowestoft to the Tyne.

NARRATIVE: (all times are GMT):

Scientific staff were exchanged on 18 February 1993 and CORYSTES departed Lowestoft at 1918h proceeding directly to the Wash. Arrival on site in the Wash was delayed by strong winds and sampling did not commence until the afternoon of 19 February. A subset of the Wash Grid sites were worked but strong winds prevented sampling close to the emergent sand banks. Early on 20 February CORYSTES entered the Freeman Channel and began water sampling in the Boston Deep and at anchor at site A3. The surveys carried out on the 19 and 20 February will be used as 'sea-truth' for the National Rivers Authority air-borne spectral imager surveys.

On 21 February the Humber Grid was sampled, however, only surface water sampling was possible due to the gale force winds. CORYSTES lay off the Humber overnight and on 22 February sampled within the Humber, as far as Immingham, and completed sampling of the northern part of the Humber Grid. Good progress was made overnight to the Tyne and on 23 February CORYSTES began the coastal water sampling survey finishing at Inner Dowsing. Sampling on 24 February started at the Dudgeon light float and surface water samples were collected on passage to Lowestoft. CORYSTES docked at 1215h.

## RESULTS:

Aim 1. The programme of sampling to determine nutrient distributions in the Wash and Humber area was completed successfully. Coverage of the Wash was not as extensive as intended due to the gale force winds. It is hoped that this does not degrade the utility of the exercise as sea truth in respect of the air-borne spectral scanner surveys.

Concentrations of nutrients in all areas sampled were at the winter maximum. This was particularly noticeable in the Wash where we have already observed concentrations of nitrate higher this year than in previous years at the Wash Monitoring Programme site. The higher concentrations of nitrate may be due to the flushing of nitrate from the land as a result of recently increased rainfall.

The Humber plume had a distinct eastern boundary that was covered by our grid sampling. It had been hoped to test one of the new in-situ nitrate analysers during this cruise but the recently delivered instrument failed to respond despite advice from the manufacturers.

Aim 2. Samples were collected from estuary mouths and at sites in between in the coastal strip between the Tyne and Lowestoft. This data will be compared with NRA coastal survey data and will be added to by the data collected by SOAFD in a similar exercise for the Scottish east coast giving a complete, though not temporally coincident, survey of nutrient concentrations for the western coastal strip of the North Sea.

The cruise lost little time despite the almost omnipresent gale force winds and covered its main scientific aims.

S J Malcolm  
(Scientist in Charge)  
10 May 1993

SEEN IN DRAFT: Master  
SFM

INITIALLED: PGS

DISTRIBUTION:

Basic List +  
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SHOWING  
STATION POSITION  
COASTLINE

