

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

1993 RESEARCH VESSEL PROGRAMME

REPORT: RV CORYSTES CRUISE: 13 JoNuS 21

STAFF: S J Malcolm (Scientist-in-Charge)
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DURATION: 15 - 21 December 1993

LOCALITY: Humber, Wash and North Sea, Southern Bight.

AIMS:

1. To identify and quantify the fate of river-borne nutrients entering the Humber and Wash, examining nutrient distributions from the river input through to the North Sea (AE0504A0).
2. To take samples over a grid in the North Sea to improve knowledge of the seasonal signal in nutrient concentrations, particularly phosphate (AE0503A0).
3. To release plaice with electronic tags at sites in the southern bight of the North Sea (MF 0109A0).

NARRATIVE:

Corystes left Lowestoft on the morning tide (1010h) of Wednesday 15 December 1993 and proceeded to 3 sites in the Southern Bight for the release of tagged plaice, taking advantage of a short window in the run of gales that dogged the cruise. Corystes then went direct to anchor in the Humber at North Killingholme to transfer staff to shore. Current profiles were measured along the cruise track to test the acoustic Doppler current profiler (ADCP).

Water sampling commenced in the outer Humber and continued at Humber Grid sites offshore. Failure of the CTD-rosette system required an engineer to be called out and after collecting surface water samples from the Humber Grid Corystes returned to the Humber to effect the repairs. Work continued from the 17 to 18 December completing the CTD-water sampling work on the Humber and Wash Grids.

During the remainder of the 18 and 19 December gale force winds forced Corystes to remain close to the UK coast. Work was abandoned for several hours due to the ferocity of the weather and the ship laid to. The weather ameliorated on the 20 December and the remainder of the JoNuS North Sea grid was sampled.

Corystes docked at Lowestoft at 1430h on the afternoon tide of Tuesday 21 December 1993 having successfully completed the last JoNuS cruise.

RESULTS:

Aim 1 was satisfactorily completed despite the problems experienced with the CTD-rossette system. Sampling in the Humber indicated the very high run-off due to the recent rainfall resulting in high nutrient concentrations measured in the outer estuary and a very distinct plume along the Lincolnshire coast. Low nitrate concentrations were encountered at the outer part of the Humber Grid.

Water column profiles in the Wash once again showed little stratification consistent with mixing due to the high winds over the previous days. High turbidity in all areas sampled was also likely to be due to wind mixing.

Major differences were apparent between UK coastal waters and the waters off the Dutch coast. The UK coastal waters had high turbidity resulting from wind mixing of shallow areas together with low measured fluorescence while continental coastal waters had a low apparent turbidity and relatively high fluorescence.

Aim 2 was not completed due to gales preventing the ship from sampling offshore in the southern bight.

Aim 3 was completed successfully. Plaice were released at 3 sites off Smiths Knoll and all involved await the capture and return of both fish and tags.

Additional work was conducted by UEA on the distribution of low molecular weight hydrocarbons as part of a seasonal study of volatile hydrocarbon emissions from the North Sea.

S J Malcolm
21 December 1993
(Scientist-in-Charge)

SEEN IN DRAFT:

Master
Senior Fishing Mate

INITIALLED:

DISTRIBUTION:

Basic List +
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