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

1991 RESEARCH VESSEL PROGRAMME

REPORT: RV CORYSTES: CRUISE 10b
(Provisional not to be quoted without prior reference to the author.)

STAFF: M Waldock (SIC)
M Blackburn
J Osborne
E Bankay
R Hamer
M Kirby
A Kenny from 15 to 18 Oct

DURATION:

Left Lowestoft	1400h, 15 October 91
Arrived Lowestoft	1300h, 29 October 91

(All times are Greenwich Mean-Time)

LOCATION:

North Sea, English Channel and Irish Sea

AIMS:
1. To collect sediment samples for biological effects monitoring studies and analytical chemistry at stations established by the North Sea Task Force and National Monitoring programmes.

2. To collect samples of demersal fish in support of NSTF, NMP and Environmental Quality Objective programmes.

3. To collect water column samples for PAH analysis along a transect across the Dover Straits as part of the FLUXMANCHE programme.

4. To collect water samples for TBT analysis as part of the joint MAFF/DOE programme on organotin.

5. To collect dab for EROD determinations, measurement of PAH metabolites in bile and preserve samples of livers for disease determination.

6. To carry out an anchor dredge survey of the outer Thames.

NARRATIVE:

CORYSTES left Lowestoft at 1300h and steamed to the outer Thames to begin the anchor dredge survey (Aim 6) on the morning of 16 October. Work was abandoned at 1400h due to deteriorating weather, and with forecasts of severe gales CORYSTES headed for the Southern Thames and anchored off Margate. Since there was no sign of improvement by the morning of 17 October, the intended sampling of the FLUXMANCHE transect was postponed and CORYSTES headed west to Lyme Bay. On 18 October the first trawls for dab were completed, and small dab were analysed for EROD and PAH (Aim 5). A. Kenny was put ashore in Torbay at 1800h, and CORYSTES continued westward and north to Liverpool Bay arriving at 1200h on 20 October. Two trawls for Aim 2 were completed on 20 October followed by sediment and water sampling for Aim 1. The pattern of trawling and sampling was then repeated at the remaining Liverpool Bay stations and in Morecambe Bay on the following day. As CORYSTES headed south a series of sediment

taken in the mid-Irish Sea, combined with trawling in Cardigan Bay and the Bristol Channel. The Irish Sea work was completed by 25 October and the following day trawling began at the NSTF stations in the Channel. The four Channel NSTF stations were sampled over the next 2 days, leaving ample time to re-attempt the FLUXMANCHE transect. Water sampling and extraction was facilitated by calm conditions, and so the time in hand was used to take extra water samples for TBT on the outer Thames during the evening of 28 October. CORYSTES then headed for Lowestoft and docked at 1300h on 29 October.

RESULTS:

Aim 1. Samples of water were collected from 15 NSTF/NMP stations. Extractions were carried out on board ship for various analytical determinands. Sediment samples were collected from 14 NSTF/NMP stations and preserved by freezing. A further 28 sediments were collected for the JMG baseline survey.

Aim 2. Required species were cod, whiting, dab and flounder/plaice. Few stations provided all of these species, but at most samples of whiting and plaice were obtained. A variety of other fish species were collected where abundant and preserved by freezing.

Aim 3. 48 water column samples were taken and extracted on board ship.

Aim 4. TBT samples were collected at all NMP stations, along the FLUXMANCHE transect and at a further 5 stations in the outer Thames

Aim 5. Dab samples for EROD and PAH determinations were obtained from 7 stations. Shipboard assay for EROD was only partially successful. Although the fluorescence technique for measurement of activity of the enzyme appeared to give satisfactory results, the photomultiplier tube in the spectrometer used for protein assay failed. Higher EROD levels were found in dab from the inner stations in Liverpool Bay than those offshore or in Cardigan Bay. However the analysis will be repeated at the laboratory using frozen archived material. HPLC analysis for PAH metabolites in dab bile was carried out concomitantly. Some problems were encountered with the stability of the equipment at sea, and detection limits were considerably higher than expected. Nevertheless none of the Irish Sea samples appeared to contain PAH metabolites. There was some suggestion that PAH metabolites were present in samples taken from Flambrough Head in part A of the Cruise, but this will be verified at Burnham.

Aim 6. The anchor dredge survey was for the most part completed and benthic animals sieved from the samples and preserved.

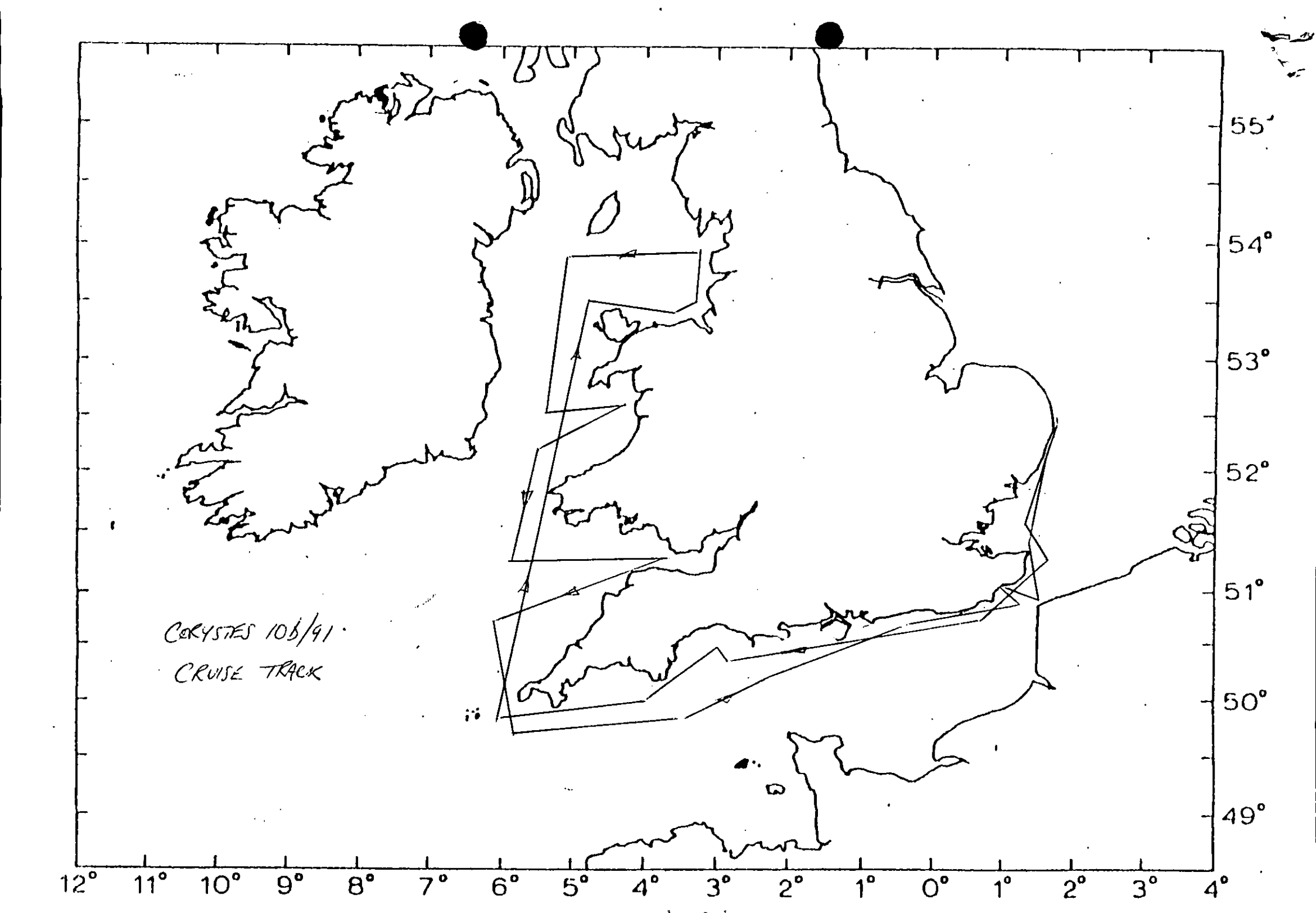
M. Waldock
29 October 91

SEEN IN DRAFT:

DISTRIBUTION:

Basic list +

R Law	J Portmann	A Franklin
C Allchin	M Blackburn	A Kenny
P Matthiessen	J Osborne	M Kirby
J Thain	E Bankey	R Hamer
D Bucke		


CORYSTES 106/91
CRUISE TRACK
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