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CRUISE REPORT

FRS "EXPLORER"

9-13 August 1973

1st Joint Marine Laboratory-T.R.S. Oil Baseline Cruise

AIMS:

1. To collect baseline data on hydrocarbons in selected components of the ecosystem in the region of North Sea oil fields.
2. To collect water and plankton samples for PCB analyses (Mr Holden).
3. To collect nutrient-free sea water (Mr Burns).

PROCEDURE:

After a delay caused by crew shortage, 'Explorer' left Aberdeen at 2100 on Thursday 9 August and proceeded in gale force winds to the Forties area. Sea conditions prevented all but surface water sampling at the first two stations on the morning of Friday 10th, but the weather later moderated and in the afternoon, sediment and bottom-water sampling were possible. With a further improvement in sea conditions early on Saturday 11th the full sampling programme, involving work from the small boat was begun and this was continued until the end of the cruise.

In view of the reduced time available it was decided to concentrate on the nearest (southern) stations, in the hope that the William Hardy (TRS) would be able to complete the programme in September. The most northerly station operated was at 59°41'N, 01°25'E at 0600 on Sunday 12th. After this the ship picked up all the remaining stations to the south-west, and finished work early on Monday 13th August docking at Aberdeen at noon the same day.

RESULTS:

Aim 1. A total of 14 stations were occupied, including two which were revisited to complete sampling which had been restricted by bad weather. This covered the vicinities of the following fields: Ekofisk, Eldfisk, Auk, Montrose, Forties, Piper and Beryl, plus a number of intermediate drilling positions.

The full routine at each station included sampling (1) surface film; (2) subsurface water from 3 m depth; (3) chlorophyll and carbon from 3 m depth (from the non-toxic sea water supply); (4) zooplankton from the upper water; (5) bottom water from the large-volume sampler; (6) sediment from the S.M. grab and the Moore-Neil corer. Operations (1), (2) and (4) were done whenever possible from the small boat at least 200 m clear of the ship, with special precautions to prevent contamination by the surface film. This sampling routine covered the main components of the ecosystem, a previous cruise having collected fish and benthos.

Water and sediment samples were collected in duplicate at selected stations for intercalibration work with Norway.

Aim 2. Water samples in metal bottles were collected for Mr Holden at

56°29'N 03°10'E
56°37'N 02°57'E
57°43'N 00°52'E
58°07'N 00°00'

In addition at the last two stations listed above duplicate plankton and surface film samples were taken for him.

Aim 3 was completed as specified.

A D McINTYRE
15 August 1973