

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

1996 RESEARCH VESSEL PROGRAMME

REPORT: R V CIROLANA: CRUISE 8

STAFF: C T Macer (SIC)
T W Boon
P J Welsby
D J Brown
M Etherton
R Hillier
S Warnes (part 1)
R A Ayers (part 1)
S Jennings (part 1)
P Stanton (part 2)
Miss J Forster (part 2)

DURATION: Left Lowestoft 1800h 9 August.
Arrived Lowestoft 0715h 9 September.
All times are Greenwich Mean Time.

LOCALITY: North Sea

AIMS:

1. To carry out a groundfish survey of the North Sea using a standard GOV trawl in order to obtain information on:
 - Distribution and an abundance of all fish species.
 - Length and age distribution of commercially important species.
 - Distribution of fish in relation to their environment.
 - Distribution of macrobenthos and anthropogenic debris.
 - Surface and bottom temperature and salinity data using Niskin bottles.
2. To collect material for fish identification courses. (T Watson).
3. To inspect herring (*Clupea harengus*) for the presence of Ichthyophonus and to preserve any infected fish. (S Feist, Weymouth).
4. To preserve material from diseased fish. (S Feist, Weymouth).
5. To carry out trial tows using a 2 metre beam trawl for sampling epibenthos as part of the biodiversity project.
6. To investigate starfish damage as an indicator of trawling intensity (M Kaiser, Conwy).

7. To carry out replicate hauls to investigate between-haul variance.
8. To collect tissue samples from cod in the northern North Sea. (R Millner).
9. To collect seawater samples for analysis of caesium.

NARRATIVE:

Sailing at 1800h on 9 August the ship proceeded overnight to the first station in the Thames Estuary, where work commenced in rectangle 32F1 at 0530h on 10 August. The grid was continued northwards with latitudinal lines of GOV trawl, beam trawl, Niskin and caesium stations between the English and continental coasts. On 14 August the ship diverted to rectangle 39F1 to retrieve an ARGOS buoy. The vessel laid off North Shields at 1030h on 22 August in order to exchange some members of the scientific staff by searider and to offload benthos samples. The grid was resumed at 1300h on 22 August, working in a northerly direction off the Scottish coast. On 25 August it became necessary to land a member of the crew by searider at Aberdeen at 0300h. After working east of Orkney, the vessel passed west of Shetland to rectangle 51E8 north of the islands, where a station was worked at 0600h on 27 August. The ship then made for a mid-cruise break at Lerwick, where she docked at 1300h on 27 August.

The ship sailed from Lerwick at 1800h on 28 August and made overnight passage to rectangle 51E8, the original tow there having been invalid. Working to the east and south, stations in the northern North Sea were sampled, and the main grid was completed in rectangle 45FO at 1315h on 5 September. A total of 6 replicate tows were then carried out in the central North Sea between 6 and 8 September. These were completed in rectangle 38FO at 0630h on 8 September, when the vessel left for Lowestoft.

RESULTS:

1. Valid hauls with the GOV trawl were made in all but two of the 74 rectangles on the grid. In rectangles 43E8 and 49F2, loss of gear or severe damage invalidated the tows. Damage which was not considered to have invalidated the tow was sustained in rectangles 47E7 and 45F1. A successful repeat for an invalid tow was made in rectangle 51E8. The usual biological sampling was carried out, using the DFR electronic data capture system. Scanmar records for headline height and door spread were obtained for most tows, but some records did not save to the hard disc due to a fault. Macrobenthos was identified, weighed and counted. Anthropogenic debris was weighed by classified groups. Surface and bottom temperature and salinity data were collected from all rectangles fished using Niskin bottles. Surface temperatures ranged from 18 degrees in the south to 13 degrees in the north; bottom temperatures ranged from 18 degrees in the south to 4 degrees in the eastern central areas.
2. Specimens from a variety of species were collected for use on the SFI fish identification course.
3. Samples of herring from all rectangles where they were caught were inspected for infection with *Ichthyophonus* but none was found.

4. Only three fish with external signs of disease were found. All the specimens were dabs, which were preserved.
5. A total of 38 stations in the central and southern North Sea were sampled with the 2 metre beam trawl, from which the epibenthos was sorted and preserved. At each of two positions 12 replicate tows were made. For each tow the ship was allowed to drift for 5 minutes, except where lack of wind and tide necessitated some engine power. Few problems were encountered in working the gear from the starboard side aft.
6. Samples of Asterias and Astropecten were examined from most stations for evidence of damaged arms, and the data recorded. Ophiuroids were too damaged by the trawl to provide useful data.
7. A total of 6 replicate hauls were carried out to investigate between-haul variance.
8. Tissue samples (gill rakers, muscle, and liver) from 100 cod were collected from the northern North Sea.
9. Surface seawater samples were collected from 38 stations for caesium analysis; 5 samples from the bottom layers were also collected using Niskin bottles.
10. All morlog caught was retained for analysis by British Geological Survey.

C T Macer
9 September 1996

SEEN IN DRAFT: Capt. M J Willcock (Master)
L Shilling (Senior fishing mate)

DISTRIBUTION:

Basic list +
C T Macer
T W Boon
S Warnes
R A Ayers
P J Welsby
D J Brown
M Etherton
P Stanton
Miss J Forster
S Jennings
R Hillier