

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

1995 RESEARCH VESSEL PROGRAMME

REPORT: RV CIROLANA: CRUISE 9

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DURATION:

Left Lowestoft 2350h, 13 October 1995
Mid-cruise break: Leith 1700h, 30 October to 0815h, 1 November
Arrived Lowestoft: 1500h, 14 November 1995.

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:
 - a) Distribution and abundance of all fish species.
 - b) Length and age distribution of commercially important species.
 - c) Distribution of fish in relation to their environment.
 - d) Distribution of macrobenthos and anthropogenic debris.
 - e) Surface and bottom temperature and salinity data using reversing bottles and CTD equipment.
2. To identify and sample macrobenthos, taking photographs as necessary for identification purposes.
3. To collect material for fish identification courses.
4. To provide fish samples for contaminant analysis.
5. To inspect herring (*Clupea harengus*) for the presence of *Ichthyophonus* and to preserve any infected fish.
6. To collect biological data from *Myoxocephalus scorpius* (Bullrout), and *Taurulus bubalis* (Sea scorpion) as targeted by the ICES IBTS Working Group.
7. To trial TRS equipment for fish sorting and size grading. (TRS)

8. To carry out repeat tows at a number of locations to investigate within-survey variance at a station.
9. To collect haddock samples from near Shetland for Jarle Mork.
10. To collect samples of *Aphrodite* (Sea mouse) for biological studies by C Mettam, University of Cardiff.
11. To collect and freeze samples of cod, haddock, whiting, saithe, hake, plaice, sole, turbot, brill, lemon, megrim, herring, mackerel, scad, pilchard, rays, anglerfish for lecture photographs (faxed request received 8 November).

NARRATIVE:

Trawling began in the Thames estuary (rectangle 32F1 on attached chart of standard station positions) and proceeded northwards through the central North Sea to the north with only minor delays due to bad weather. Difficulties were experienced in obtaining satisfactory headline lift at three of the deepest stations (in rectangles 51E9, 51F1 and 51F2). A station (rectangle 47E9) fished on the way to Leith for the mid-cruise break was abandoned due to excessive clay in the codend.

During the second half of the cruise, the remaining northerly stations were trawled first, and repeat tows made at the four stations previously trawled unsatisfactorily. Trawling continued in the central North Sea and German Bight, with the grid of 75 stations being completed in rectangle 38F2 on 11 Nov. Replicate tows were made at two stations (in rectangles 38F0, 38E9) in accordance with aim 8 before returning to Lowestoft. A computer drawn track of the cruise is attached.

RESULTS:

1. The grid of 75 trawl stations was completed with valid tows. The usual biological sampling procedures were carried out on the target species. Electronic fish measuring boards were used successfully for all stations. The programs for these proved reliable and easy to use, but the associated electrical connectors should be upgraded for marine conditions.

Two Exocet headline kites were seriously damaged on 24 and 25 October, reportedly due to buffeting by swell at the base of the trawl ramp on shooting or hauling. They were replaced by Balmoral kites delivered to the ship in Leith. Trials of these on the first day after leaving Leith (1 Nov) and at station 99 found that six units fitted to the headline gave lift comparable to one Exocet. The new kites were more robust, reliable and convenient than the Exocet and were therefore used for the remainder of the cruise, i.e. stations 94 onwards (excepting 99).

Surface and bottom temperature and salinity data were collected from all trawl stations. The CTD device was fitted just above the weight on the end of the wire and used routinely along with the usual reversing bottles. No difficulties were experienced in processing the data. Temperatures measured with the CTD were generally within 0.2 °C of those measured with the reversing thermometers.

2. Benthos (mostly epibenthos) were sorted into taxonomic groups, usually species, weighed and counted. Anthropogenic debris was weighed and recorded by type.

3. Specimens of many fish species were collected for use on the fish identification course.
4. Fish samples for contaminant analysis were collected to supplement those taken during the 1995 third quarter GFS, depending on availability.
5. Samples of approximately 50 herring were examined for *Ichthyophonus* heart disease at stations 39, 51, 55, 60, 67, 79, 93, 141, 143, and 149. Only one possible infestation was identified, at station 60. One herring displaying a large tumour was frozen for examination at Weymouth.
6. Biological data were collected from the few bullrout caught. Sea scorpions were not encountered.
7. Developmental work on fish sorting equipment was carried out by TRS staff. The equipment can distinguish northern and southern races of whiting by colour.
8. Two stations (in rectangles 38F0 and 38E9) were fished twice with valid tows in accordance with aim 8. Repeated tows made at three other stations where low headline heights were obtained on the first occasion also served this aim.
9. Samples of muscle and liver were collected from 100 haddock caught in rectangle 49F0 for Jarle Mork.
10. Samples of *Aphrodite* were collected from the many stations at which they were found.
11. The final tows of the survey were being made in southern waters when aim 11 was received; the available specimens of the species listed were disappointing.
12. Samples of morlog were saved for the British Geological Survey.

J. Cotter
Scientist in Charge
15 November 1995.

Seen in draft and approved by A Guyatt, Master
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CRUISE/SPECIES DATA FILE FOR FSM1:JUDOO-TRKS

SHOWING :
CRUISE TRACK
STATION POSITION
STATION NUMBER
COASTLINE

