FCA 10334 A388 3

CENTRE FOR ENVIRONMENT, FISHERIES AND AQUACULTURE SCIENCE - LOWESTOFT LABORATORY, LOWESTOFT, SUFFOLK

1998 RESEARCH VESSEL PROGRAMME

REPORT: RV CORYSTES: CRUISE 3

STAFF: S Flatman
M R Vince
M J Boon
B F M Harley
I D Holmes
M J Brown (part 1)
A J Winpenny (part 2)
C Stewart (part 2)
C Mugnier (part 2)

DURATION: Left Lowestoft 1030h 27 February
Arrived North Shields 1000h 22 March
(All times are Greenwich Mean Time)

LOCALITY: Irish Sea, Bristol Channel, Celtic Sea

AIMS:

1. To carry out beam trawl surveys of groundfish in the Irish Sea, Bristol Channel and Celtic Sea.
2. To collect data on maturity and weight at age of sole, plaice and lemon sole.
3. To determine the distribution and abundance of juvenile and adult sole and plaice.
4. To collect fish samples in support of other CEFAS projects and training courses.

NARRATIVE:

CORYSTES sailed from Lowestoft at 1030h on 27 February. Shortly after sailing the Leading Hand received news of a family bereavement, and was put ashore by Pilot launch at Harwich. An uncomfortable passage was made to the Bristol Channel, and the survey commenced off Trevose Head at 1330h on 1 March. A south-westerly severe gale forced CORYSTES to seek shelter in Bideford Bay on 3 March, and on 4 March fishing was interrupted for a short period when one of the scientific staff was put ashore by Searider at Swansea. During 4 and 5 March a further 13 stations were worked in the Bristol Channel in marginal weather conditions before another SW gale brought work to a halt. Fishing recommenced on 7 March, and by the evening of 8 March all main Bristol Channel stations had been completed. CORYSTES steamed overnight to Cardigan Bay, completed all six tows as planned and steamed to a position off Dundrum Bay. A southerly severe gale prevented work until late afternoon on 10 March when a wind shift allowed CORYSTES to work one station. The vessel steamed overnight to a position SW of the Isle of Man, but was forced to seek shelter from NW storm force winds. With no prospect of an early improvement in the weather, CORYSTES set course for Douglas for the mid-cruise staff changeover, docking at 1100h on 11 March.

After taking on water, supplies and staff, CORYSTES left Douglas at 1500h on 12 March and commenced work in the eastern Irish Sea. Work continued in good weather conditions until late morning on 15 March, when the Leading Hand was landed at Workington by Searider as he was urgently needed on CIROLANA. CORYSTES then steamed to provide assistance to a small vessel reported to be sinking off Whitehaven, and although the Searider was launched she was not required to assist in the rescue. The survey was smoothly resumed and by 2000h on 15 March all stations in the north-eastern sector of the Irish Sea had been completed.

During 16 - 18 March the remaining 15 stations in the south-eastern sector of the Irish Sea were completed. In addition, a total of 9 fifteen-minute hauls were carried out in the Liverpool Bay area, on a transect through the plaice spawning grounds, to obtain samples of male plaice and flounder for Dr Scott in support of studies on environmental oestrogens. This work was completed by 1800h on 18 March, and CORYSTES steamed overnight to a position NE of Dublin Bay. The vessel worked north, and by 1500h on 19 March had completed a further five survey stations. CORYSTES set course for the Tyne, docking at North Shields at 1000h on 22 March.

RESULTS:

Aims 1,2 and 3.

Poor weather conditions during the first part of the survey resulted in the loss of some four days of survey work, yet despite this CORYSTES managed to successfully complete a total of 88 of the 121 standard survey grid stations, and missed only one of the 68 stations used for plaice and sole recruitment estimation.

At each site the 4m beam trawl, fitted with chain mat, flip-up ropes and a 40mm cod-end liner, was towed for 30 minutes at a speed of 4 knots. A chart indicating the position of each station is attached. Station details together with catch, length and biological data were input to the Fishing Survey database. In addition, the abundance of major animal groups of benthos were recorded at each station. Data from the ROXANN and QTC VIEW seabed classification systems, and the continuous salinity/temperature monitoring system for surface water, were logged during the survey stations. A Guildline CTD profiler fitted with a shallow water sensor was deployed at the first and last stations on each day, weather permitting, to obtain additional temperature and salinity data by depth. At each CTD station water samples were collected for salinity calibration purposes.

All fish and selected commercial crustaceans were identified to species, weighed and measured; and length-stratified samples of otoliths (2889 in total) were taken from selected species:

Species	VIIa	VIIf	VIIg	Total
Angler	18	6	2	26
Brill	10	6	0	16
Cod	68	11	4	83
Lemon sole	57	41	7	105
Plaice	1261	266	6	1533
Sole	535	280	16	831
Turbot	0	3	2	5
Whiting	155	109	26	290

All otolithed fish were sexed and assigned a maturity stage, and all plaice, sole, angler, cod, turbot, brill and lemon sole sampled were weighed individually.

Favourable weather conditions during part two of the cruise permitted 1292 plaice otolith samples to be aged.

A total of 63 finfish species were recorded; the main ones by weight were lesser spotted dogfish (18%), plaice (16%), whiting (12%), dab (11%) and sole (9%).

Aim 4.

Blood plasma and gonad tissue samples from 142 plaice and 72 flounders were frozen for Dr Scott. In addition, brains and pituitary glands from mature male and female plaice were collected for studies on steroidogenesis and membrane binding.
Samples of pelvic fin tissue from 66 cod were preserved for studies at Hull University.
Samples of muscle tissue from 130 mature plaice were frozen for R. Nash (Port Erin).
1 sample of diseased cod tissue was preserved for S. Feist (Weymouth).
Samples of commercial-sized dab, plaice, sole, cod, flounder and whiting were frozen for A. Franklin (Burnham).
Liver and gill samples from 15 brill and 5 turbot were preserved for R. Millner.
All lesser weevers caught were frozen for R. Nash (Port Erin).
Incidence of damage to selected species of starfish was recorded at 4 stations (M. Kaiser, Conway).
Length, wing width and maturity stage of all rays caught were recorded (M. Vince).
26 sections of angler vertebrae were frozen for ageing studies (T. Watson).
11 male plaice were otolithed to augment VIIa market samples (M. Vince).
Specimens of 56 species of fish were frozen for fish identification courses (T. Watson).

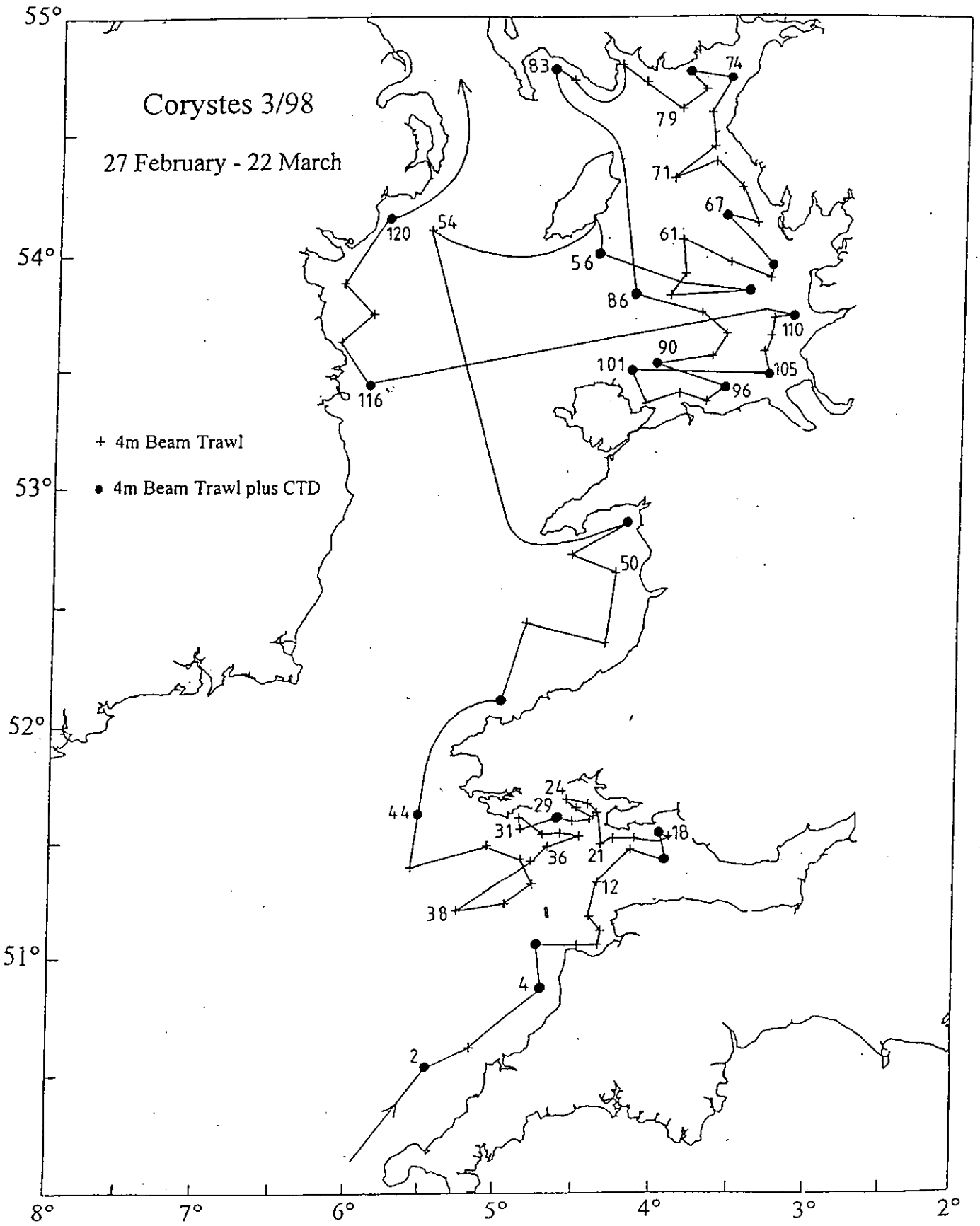
S Flatman (SIC)
22 March 1998

SEEN IN DRAFT: B Chapman (Master)
M Reynolds (Senior Fishing Mate)

INITIALLED: GPA

DISTRIBUTION:
Basic list +
S Flatman
M R Vince
M J Boon
B F M Harley
I D Holmes
M J Brown
A J Winpenny
C Stewart
C Mugnier
M G Pawson

M J Armstrong (DANI, Belfast)
R Nash (Port Erin)
FCO (for Republic of Ireland)
Sea Fisheries Committees:
Cumbria
North Western and North Wales
South Wales
Devon
Cornwall


Corystes 3/98
27 February - 22 March
+ 4m Beam Trawl
• 4m Beam Trawl plus CTD
55°
54°
53°
52°
51°
8°
7°
6°
5°
4°
3°
2°
83
74
79
71
67
61
54
120
56
86
110
90
101
105
96
116
50
24
29
44
31
18
36
21
12
38
4
2