

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

1991 RESEARCH VESSEL PROGRAMME

REPORT ; RV CIROLANA : CRUISE 7

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DURATION : 9 August-5 September

LOCALITY : North Sea

AIMS :

1. To carry out a groundfish survey of the North Sea using a standard Granton 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.
2. To collect material for fish samples for Caesium analysis from a grid of stations in the North Sea.
3. To collect material for fish identification courses.
4. To provide fish samples for contaminant analysis for inclusion in the North Sea Task Force Quality Status Report (A Franklin).
5. To collect samples of heart, gonad or brain from various Gadidae for Dr P Peppin, Department of Fisheries and Oceans, Canada.
6. To collect samples of spawning herring for Dr G Carvalho, University of Wales.
7. To compare the catch rates made with alternate trawl rigs used during the survey.
8. To collect stomach samples for the 1991 ICES stomach sampling programme

NARRATIVE :

RV CIROLANA departed from Lowestoft at 0854 on 9 August and commenced the first fishing station of the annual groundfish survey at 51°36'N 01°44'E that evening. Thereafter a typical days pattern of work was 3 or 4 one hour tows at predetermined positions with a granton trawl. The trawl was fitted with SCANMAR sensors to record door spread and headline height. All fish species caught were weighed and measured and otolith samples were taken from designated species. For the purposes of the ICES stomach sampling programme, stomachs of primary and secondary predators were taken and frozen. CTD casts were made at all but a few trawl stations where rough seas and shallow depths made the deployment unnecessary. A continuous record of surface salinity and temperature was maintained. Water samples for caesium analysis were taken along the cruise track and at trawl stations. A line of bottom water samples was also collected at about 57°N. Biological material for Caesium studies and other purposes were collected in appropriate areas.

Work continued uninterrupted until 17 August when gales prevented trawling after 1030hrs. Work was resumed as normal on the following morning and was uninterrupted until 1200hrs on 23 August when RV CIROLANA's propeller was fouled by floating netting. A slow passage had to be made to Aberdeen where RV CIROLANA docked at 1102hrs on 24 August. Scientific staff took the opportunity of this break to discuss the problems of the stomach sampling programme with Mr J Hislop of the Aberdeen Laboratory who is the ICES coordinator and with Professor Neils Daan NIC, of the RV TRIDENS (Netherlands) which was also in Aberdeen. The opportunity was also taken to exchange stomach samples with both the Aberdeen Laboratory and with RV TRIDENS and also to post otolith samples back to Lowestoft to ease processing bottlenecks. Having completed repairs RV CIROLANA sailed from Aberdeen at 0508 on 25 August and resumed scientific work on that day at 0912h. Work continued without further interruption until the last trawl station and CTD cast was completed at 1845h on 4 September at 56°46'N 0°23'E. A cruise track including trawl station numbers is appended at figure 1 and figure 2 shows the position of Caesium water samples.

Having completed all scientific work RV CIROLANA made passage for Lowestoft where she arrived at 1900 h on 5 September.

RESULTS:

Aim 1

89 tows were made with the Granton trawl, only 2 of which were invalid. All fish at each station were weighed and measured and the otolith target of 1 fish per cm length group for selected species was generally achieved. The results were computer logged. The number of otoliths taken was as follows:

Species	RFA							Total
	1	2	3	4	5	6	7	
Cod	188	184	80	73	14	56	53	648
Greater S.eel	0	0	0	6	22	30	0	58
G.Gurnard	134	139	77	66	74	96	49	635
Haddock	410	212	257	73	0	1	28	981
Scad	32	12	0	0	43	70	0	157
Norway pout	182	51	62	39	0	0	5	339
Plaice	84	140	179	74	158	214	157	1006
Saithe	160	12	0	1	0	0	0	173
Lesser S.eel	0	0	0	6	7	13	0	26
Whiting	344	173	193	145	140	283	133	1411
Total								5434

Salinity and temperature profiles were taken by CTD cast at 87 stations and logged to computer file. Associated benthos was weighed, recorded and photographed at all trawl stations. A record was kept of the weight of plastic, metal and other waste at each station.

Aim 2

Caesium water samples were taken at 57 stations on a grid covering the North Sea (see fig 2). At 5 of these stations in the vicinity of 57°N bottom waters were sampled with Niskin bottles. Extra samples were added to the proposed grid where fish samples were taken and also in the Fair Isle Channel and off Sizewell power station. The number of fish samples collected for AEP1 were as follows:

ICES AREA

	IVa	IVb	IVc
Cod	2	4	1
Haddock	4	5	0
Whiting	1	2	1
Saithe	4	0	0
Mackerel	2	1	1
Herring	2	5	1
Plaice	0	5	1

Aim 3

Material for use on fish identification courses were frozen.

Aim 4

Fish samples for contaminant analysis, for inclusion in the North Sea Task Force Quality Status Report, were taken at 12 stations in designated areas.

Aim 5

Samples of material were collected for Dr P Pepin of Dept Fisheries and Oceans Canada from the following. Gadidae. Cod (27), Ling (21), Hake (25), Haddock (31), Saithe (24), 4 Beard Rockling (20), Poor Cod (18), Norway pout (20), Whiting (20), Silvery pout (20), Bib (20), Torsk (5), Blue whiting (33), Pollock (2).

Aim 6

A sample of "Banks" herring was taken for Dr Carvalho.

Aim 7

The heavy Arctic bobbin gear was not used at all this cruise and hence this aim was not attempted.

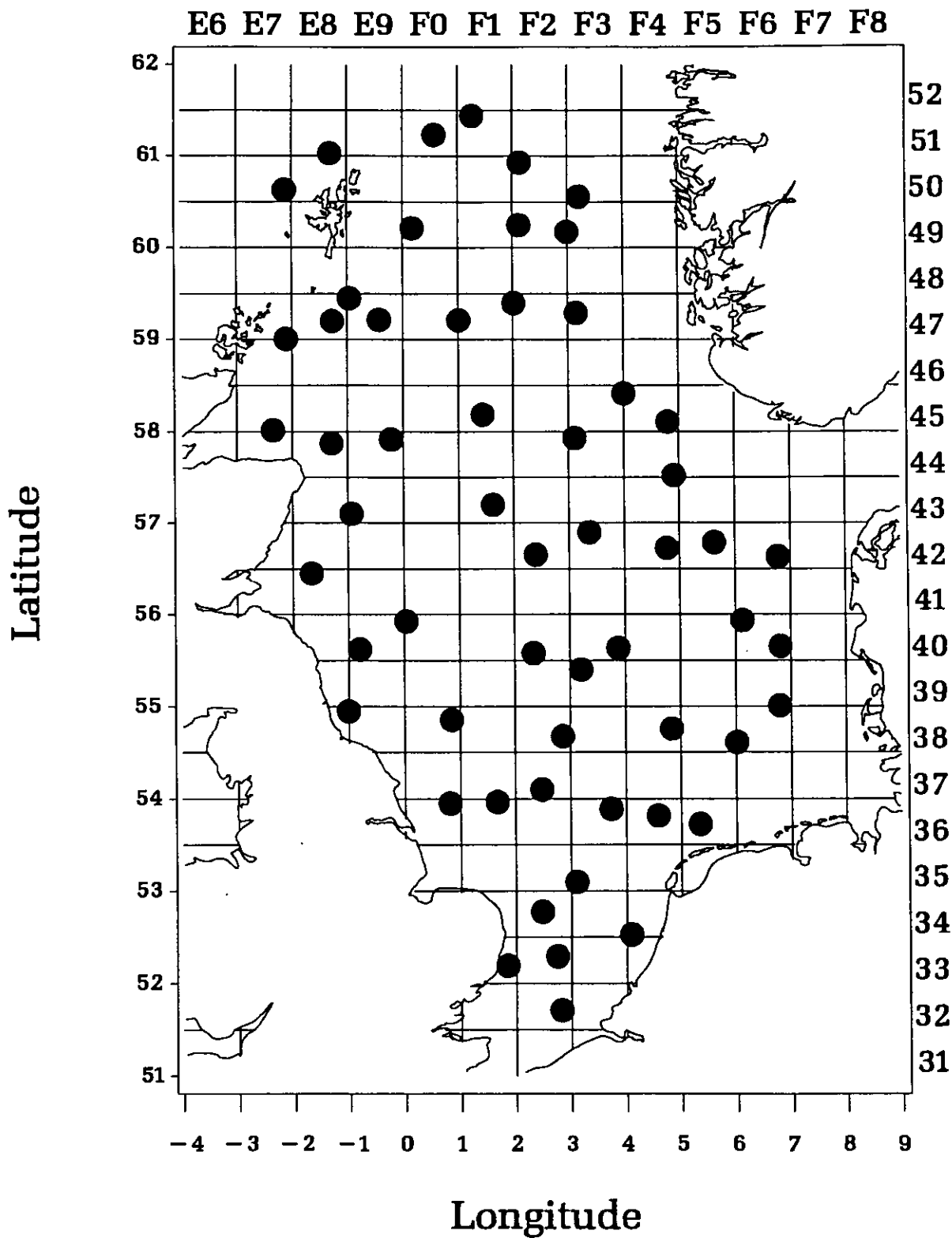
Aim 8

Stomach samples were taken routinely for the ICES stomach sampling programme at each station, the numbers of stomachs taken was as follows:

SPECIES	EXAMINED	REGURGITATED	COLLECTED
Cod	1185	157	1028
Haddock	1566	115	1451
Whiting	4324	1753	2571
Saithe	262	38	224
Mackerel	440	10	430
Rays (Var)	1378	143	1235
Dogs (Var)	83	7	76
Gurnards (Var)	1945	823	1122
Megrims	93	0	93
Turbot	4	0	4
LR.D	423	0	423
Pollack	2	0	2
Hake	90	52	38
Ling	3	2	1
Scad	380	30	350
Monk	103	18	85
Total	12281	3148	9133

20 mackerel caught dead in the trawl in the vicinity of a purse seine fleet were also examined.

1991 GFS Water Stations



J G Pope
6 September 1991

SEEN IN DRAFT:

Master
Skipper

JRF
PM

INITIALLED:



DISTRIBUTION:

Basic list +
J G Pope
T W Boon
L T Kell
B C Mumford
A M Watson
C N Humphreys
B D Rackham
R P Flat
M Ives
T A Bailey

1991 GFS Cruise Track

