

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

1983 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE: CRUISE 9

(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF:

D B Bennett (SIC)
M R Vince
C Humphreys
S Flatman
D R Eaton
J M Elson

DURATION:

Left Lowestoft 1700h 7 July 1983
Arrived Lowestoft 0900h 26 July 1983
(All times are Greenwich Mean Time)

LOCALITY:

Celtic Sea, Bristol Channel, Western English Channel (ICES
Divisions VIIe-h)

AIMS:

1. To carry out a groundfish survey
2. Examine stomach contents of a wide range of fish species
3. Laying and recovery of Nab Tower current meter rig (AEP3)
4. Collect surface water samples for AEP1
5. Trials of atomic absorption spectrophotometer - Cambridge University.

NARRATIVE:

CLIONE left Lowestoft at 1700h and laid just off Lowestoft to allow Dr Klinkhammer from Cambridge University to test a portable atomic absorption spectrophotometer (Aim 5). This was successfully completed and Dr Klinkhammer disembarked aboard a local boat at 1845h. CLIONE then proceeded to the Nab Tower current meter station. Surface water samples (Aim 4) were taken at 1° longitude intervals during the steam along the English Channel. The current meter rig was deployed at 1630h 8 July and Niton Radio duly informed. CLIONE then steamed to the most westerly trawl station which could be reached by 0700h, 9 July. Further water samples were collected during the steam. Trawling began at 0702h 9 July and two stations (Track Chart, station numbers 7 and 8) were completed. While steaming to the third station planned for that day CLIONE was called upon to give assistance to a vessel which had broken down off the North Cornwall coast. The vessel was towed into St Ives Bay where the local lifeboat took over the tow. The third station of that day had to be abandoned as it was by then nightfall. Fishing recommenced the following day with three stations (9, 10, 11) completed successfully. On the fourth station (12) the

belly of the trawl was torn. This station was repeated two days later (no. 19). During 11-12 July seven stations (13-19) were fished. July 13 (not a Friday) was a day for mishaps with a split trawl belly, torn cover, net turned inside out and the freezer broken down. However, eventually three valid hauls were obtained.

During these trawling stations, and at many subsequent ones, water samples were collected for AEP1 (Aim 4) according to the sampling grid requested. Most water samples were taken at trawl hauling positions. After the problems on 13 July, fishing continued during 14-17 July with no problems and 14 stations (nos. 25-38) were completed at the western and southern areas of the planned sampling grid. These included three new stations which were not fished last year (CLIONE: CRUISE 8). During this period the weather was exceptionally fine with calm seas which made shooting and hauling difficult at times.

CLIONE docked in Concarneau at 0830h 18 July. After obtaining fresh water and stores, attempting to repair the freezer, and having a break ashore CLIONE left at 0800h the next day. Trawling recommenced that day with station 39. A radio call informed us that the Nab Tower current meter rig's surface buoy had been found drifting. Three stations (40-42) were completed on 20 July, but on the third haul on 21 July the belly and bunt were badly torn. After repairs the station (45/46) was repeated without mishap. This was the only day when any wind above 20 knots was experienced for the whole trip. Fishing continued 22-24 July with a further 10 trawling stations, (47-56), which completed the planned sampling grid.

Attempts to contact CIROLANA, which had the acoustic release equipment for the current meter rig, failed as she was still out of range well to the west. As the weather was fine it was decided to proceed to the Nab Tower current meter position and investigate the loss of the mooring buoy. At low water slack tide at 0445 the small buoy attached to the sub-surface float was sighted. The rig was successfully grappled and raised with the meters apparently undamaged and still functioning. With all the aims achieved CLIONE proceeded to Lowestoft and docked at 0900h on 26 July.

RESULTS:

1. A total of 46 valid trawl hauls was made giving a complete coverage of all rectangles in ICES Divisions VIIe-h, except those few considered to be unsuitable for trawling. The trawl used was a standard Granton trawl fished without bridles. The groundrope had 12" rubber bobbins in the bosom and $3\frac{1}{2}$ " rubber discs in the wings. The codend of double twine 80mm mesh was rigged with internal bottom blinder and external top cover of 20mm shrimp mesh. Although the survey grid was fully achieved within the overtime limit, this was only possible thanks to the exceptionally fine weather experienced. All fish species, and the few commercially important shellfish, were identified, counted, weighed and measured (with sub-sampling where necessary). These data were recorded on catch record and length record forms, which together with the station log forms are the input documents for the new Groundfish Survey Program Suite currently under development. Initially it was hoped to input these data at sea but the CLIONE computer system was not available in time for this cruise. In retrospect, with the overtime limit imposed, it seems most unlikely that data input from these forms could have been achieved at sea. Records were made of the benthos caught, with identification wherever possible, and photographs were also taken at many stations.

A sample of Nephrops was measured to establish carapace length/total length/tail length relationships.

A full consideration of these groundfish survey data obviously awaits computer input and analysis. Catch rates were low compared with other areas, eg Irish Sea and North Sea. Much of the bulk of the catches, by weight and particularly by numbers, was made up of commercially unimportant or low value species, such as poor cod, Norway pout, blue whiting and horse mackerel. Small quantities of the more valuable commercial species were caught at many stations eg, monk (angler fish), megrim, hake, rays, cod, ling, and john dory. In addition, haddock, pollack, saithe, whiting, lemon sole, plaice, sole, spurdogs and conger eel were occasionally caught. The small sample size of the commercially important species, resulting of course from the low catch rates, is likely to make comparisons of annual relative abundance somewhat difficult. Once these data are computerised it will be possible to consider how effective the present groundfish survey plan is and whether improvement can be made in the sampling design, in the data recording procedures, the factors being measured, and the future use of these data.

2. A total of 1,732 fish stomachs were examined for contents which were identified, quantified and the digestion stage recorded (Aim 2). In all, 31 different species were examined, with whiting, poor cod, hake, blue whiting, grey gurnards, lesser spotted dogfish and megrim being the most fully sampled species (Table 1). Otolith samples were taken from commercially important species to supplement or make up shortfalls in the market sampling and for specific studies on ageing and growth of some species. In all a total of 664 otoliths were collected (Table 2). A few samples were collected for the fish identification course. The freezer breakdown prevented the full requirement being achieved.
3. The Nab Tower current meter rig was recovered, apparently undamaged although the surface doughnut buoy and the buoy weight were missing (Aim 3). The meters appeared to have continued functioning despite the loss of part of the rig. The 35 water stations (see track chart) were completed with 50l of surface sea water being collected from the stainless steel clean water supply (Aim 4). Dr Klinkhammer, Cambridge University, completed his trials of the portable atomic absorption spectrophotometer. He would have preferred less settled weather conditions to provide a more rigorous test of the capabilities of the equipment at sea.

D B Bennett
Scientist-in-Charge
25 July 1983

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TABLE 1 CLIONE 9/83 NUMBER OF STOMACHS TAKEN BY AREA PER SPECIES

ICES DIVISION SPECIES	VIIe	VIIIf	VIIg	VIIh	TOTAL
Cod	1	9	17	3	30
Whiting	55	37	56	3	151
Pollack	6	1	24	2	33
Pout Whiting	35	9		1	45
Poor Cod	21	25	31	26	103
Norway Pout	13	18	30	20	81
Hake	9	29	55	29	122
Ling	1		1	1	3
Saithe			7		7
Blue Whiting	50	9	41	40	140
Haddock			4	44	48
Angler (pisc)	34	11	8	13	66
Angler (bud)				4	4
Forkbeard			1	11	12
Grey Gurnard	18	38	34	13	103
Red Gurnard	45	8	2	32	87
Tub Gurnard		1			1
J Dory	39	8	6	8	61
Conger	2		1	3	6
L S Dogs	79	68	23	51	221
G S Dogs	4		1		5
R clavata	4	5	1	1	11
R montagui	10	14		2	26
R fullonica				1	1
R microcellata		1			1
R naevus	1	2	4	26	33
R brachyura	4				4
Spurdog	19	3	37	2	61
Smoothound		1			1
Tope	1				1
Megrim	20	1	79	164	264
Total	471	298	463	500	1732

TABLE 2 CLIONE 9/83 : CELTIC SEA GROUND FISH SURVEY OTOLITH TOTALS

ICES DIVISION SPECIES	VIIe	VIIIf	VIIg	VIIIi	Total
Cod	1	9	16	5	31
Sole	2	10	2	5	19
Whiting	58	39	55	4	156
Lemon Sole	4	5	12	15	36
Scad			All divisions total:		68
Megrim	22	1	79	166	268
L. piscatorius	28	13	5	15	61
L. budegassa	-	-	-	4	4
Spurdog (spines)			All divisions total:		<u>21</u>
					<u>664</u>

CLIONE

9/83

