

R1/12

Not to be cited without prior reference to the Marine Laboratory Aberdeen

FRV *Scotia*

Cruise 0500S

REPORT

27 March - 10 April 2000

Personnel

J R G Hislop	(In charge)
C Needle	
H Dobby	
K Peach	
I Penny	
C Lordan	Visitor, MIA (Dublin)
D Woodroffe	Visitor, Dunstaffnage Marine Laboratory
P Crozier	Visitor, Dunstaffnage Marine Laboratory
S Fleming	Visitor, Glasgow University

Objective

1. To survey the abundance and distribution of anglerfishes and megrims off the west coasts of Scotland and Ireland.
2. To obtain information on the age, growth, reproductive status and population structure of anglerfishes and megrims.
3. To sample anglerfish postlarvae.

Out-turn days to project (days): 15 days MF01g

Narrative

Scotia sailed from Aberdeen at 1015 hours on 27 March and commenced trawling north of Rona at 0600 hours on the following day. The ship then worked in a southerly direction, reaching latitude 54°50'N on 6 April. The cruise was interrupted for approximately 24 hours while the ship sheltered from a northeasterly gale in the lee of St Kilda. During this period repairs to a damaged net were completed. *Scotia* then worked northward to fill gaps in the outward leg of the survey. Trawling finished at 1800 hours on 8 April, after which *Scotia* proceeded to Aberdeen, where she berthed at 0600 hours on 10 April.

Results

Trawling

A total of 32 valid trawl hauls was made in the depth range 170 to 1,100 metres. Haul duration ranged from 90 minutes to 240 minutes. The trawl tracks are shown in Figure 1. Problems with the net monitoring equipment meant that it was not always possible to obtain real time data on the depth at which the net was fishing but this information was subsequently obtained from the Minilogger attached to the headline.

Anglerfishes

Lophius piscatorius occurred in all but one of the catches. The blank haul was made on a steep slope in relatively deep water (1,100 m) and it is possible that the trawl had not made good contact with the bottom for the duration of the tow. Highest catches and catch rates were obtained in the depth range 400 to 900 m (Table 1, Fig. 2). The length, weight, sex and maturity stage of each fish were recorded and the *illicium* and both sagittal otoliths were collected. In addition, tissue samples were taken for organochlorine analysis, skin samples for microsatellite DNA analysis and the intestinal tracts of 50 fish were frozen for parasitological studies. Many of the males were in spawning condition, but only one of the 638 fish examined was a female in maturity stage four (ripe). Two other females were in maturity stage four (maturing).

Only 21 *L. budegassa* were caught. The length, weight, sex and maturity stage of each fish were recorded and the *illicium* and both sagittal otoliths were collected.

Megrims

Lepidorhombus whiffiagonis occurred in 19 tows and 2,370 individuals were caught during the cruise. Highest catches and catch rates were between 200-500 m and no megrim were caught deeper than 700 m, Table 1, Figure 2. The length, weight, gutted weight, sex, maturity and stomach fullness was recorded for a sub-sample of 592 fish, both sagittal otoliths were also removed from these fish. The remaining fish were sexed and their length was measured. The sex ratio was heavily biased, with males accounting for only 16.4% of the fish caught. Many of the females and males were in spawning condition. Ovary samples were taken from 171 fish. Of these, 42 were maturity stage 4 females, which will be used to estimate fecundity. Fifty-seven *L. boschii* were caught during the survey. These fish were also sexed and their length was measured.

Other species

The bulk of the catches consisted of ling, *Molva molva*, blue ling, *M. dipterygia*, chimaeras (*Chimaera monstrosa* and *Hydrolagus mirabilis*) and black scabbards (*Aphanopus carbo*). There were also several substantial catches of hake (*Merluccius merluccius*).

Methot net sampling

Four 45 minutes surface tows were made with the fine-mesh net to sample *Lophius* larvae. No larvae were caught.

Eleven tows were made with the large-mesh net at depths ranging from 75 to 700 metres to sample myctophids for S Fleming.

Acknowledgements

The wholehearted cooperation of the Master and company of *Scotia* is gratefully acknowledged.

J R G Hislop
18 April 2000

Seen in draft: P Ramsay, OIC

Scotia Cruise 0500S

Catches and catch rates of anglerfish, *Lophius piscatorius*; black bellied anglerfish, *L. budegassa*; megrim, *Lepidorhombus whiffiagonis* and four spot megrim, *L. boscii*

Haul								<i>L. budegassa</i>		<i>Lep. whiffiagonis</i>		<i>Lep. boscii</i>	
						N	N/hour	N	N/hour	N	N/hour	N	N/hour
126	28/3	49E5	204	9.2	120	7	3.50		0.00	2	1.00	0	0.00
127	28/3	49E5	332	8	180	10	3.33		0.00	9	3.00	0	0.00
128	28/3	49E5	508	8.3	180	10	3.33		0.00	0	0.00	20	6.67
129	28/3	48E4	572	7.5	120	15	7.50		0.00	0	0.00	2	1.00
130	29/3	47E3	705	8.7	180	27	9.00		0.00	113	37.67	0	0.00
131	29/3	47E3	883	8.4	180	16	5.33		0.00	0	0.00	0	0.00
132	29/3	47E2	(1,100)	7.1	185	0	0.00		0.00	0	0.00	0	0.00
133	29/3	46E2	336	9.2	90	12	8.00		0.00	32	21.33	0	0.00
134	30/3	46E2	247	9.2	180	17	5.67		0.00	142	47.33	0	0.00
135	30/3	46E2	393	9.2	185	30	9.73		0.00	445	144.32	17	5.51
136	30/3	45E1	172	9.2	180	2	0.67	1	0.33	77	25.67	0	0.00
138	31/3	46E1	704	8.8	180	36	12.00		0.00	0	0.00	0	0.00
139	31/3	46E1	913	8.7	240	13	3.25		0.00	0	0.00	0	0.00
140	31/3	46E1	461	9.5	120	17	8.50		0.00	171	85.50	0	0.00
142	2/4	45E1	250	9.3	150	9	3.60	3	1.20	114	45.60	2	0.80
143	2/4	45E0	405	9.6	180	9	3.00		0.00	119	39.67	10	3.33
144	3/4	45E0	635	9.4	180	27	9.00		0.00	12	4.00	0	0.00
146	3/4	45E0	875	8.7	240	73	18.25		0.00	0	0.00	0	0.00
147	4/4	44E0	703	8.9	180	42	14.00		0.00	7	2.33	0	0.00
148	4/4	44E0	436	9.3	180	13	4.33		0.00	385	128.33	0	0.00
149	4/4	44E0	306	9.5	180	21	7.00	7	2.33	190	63.33	6	2.00
150	4/4	43E0	220	9.5	120	3	1.50	10	5.00	36	18.00	0	0.00
151	5/4	43E0	877	9.1	240	39	9.75		0.00	0	0.00	0	0.00
152	5/4	43E0	663	9.5	180	22	7.33		0.00	48	16.00	0	0.00
153	5/4	42E0	938	7.6	240	11	2.75		0.00	0	0.00	0	0.00
154	6/4	38D9	600	9.6	150	16	6.40		0.00	0	0.00	0	0.00
155	6/4	39D9	476	9.7	150	16	6.40		0.00	33	13.20	0	0.00
156	6/4	39D9	825	9.5	240	33	8.25		0.00	0	0.00	0	0.00
158	7/4	39E0	350	9.8	240	25	6.25		0.00	238	59.50	0	0.00
159	8/4	41E0	817	9	240	60	15.00		0.00	0	0.00	0	0.00
160	8/4	41E0	1,053	7.6	210	1	0.29		0.00	0	0.00	0	0.00
161	8/4	41E0	517	9.7	150	12	4.80		0.00	197	78.80	0	0.00

Scotia 0500S Trawl Positions.

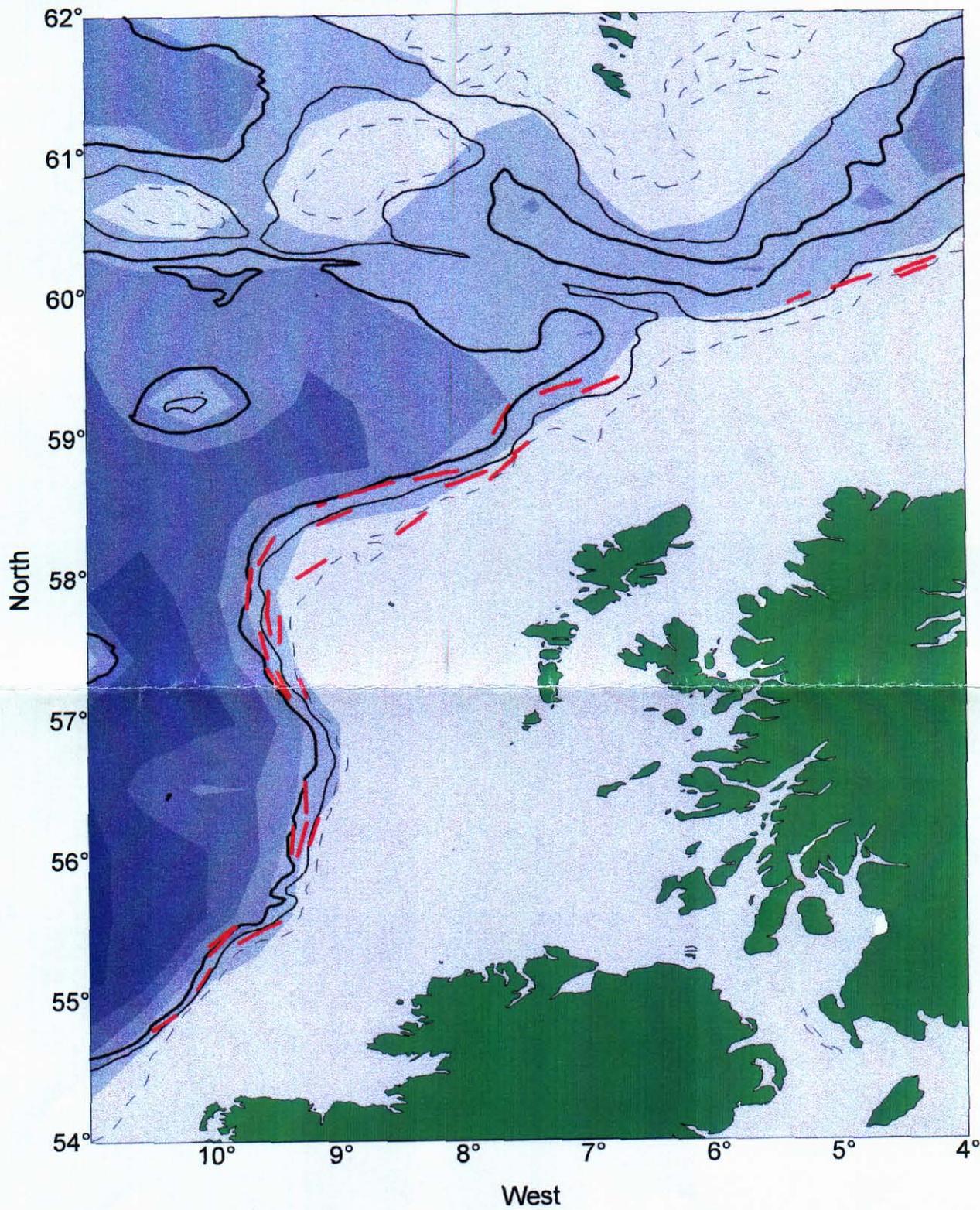
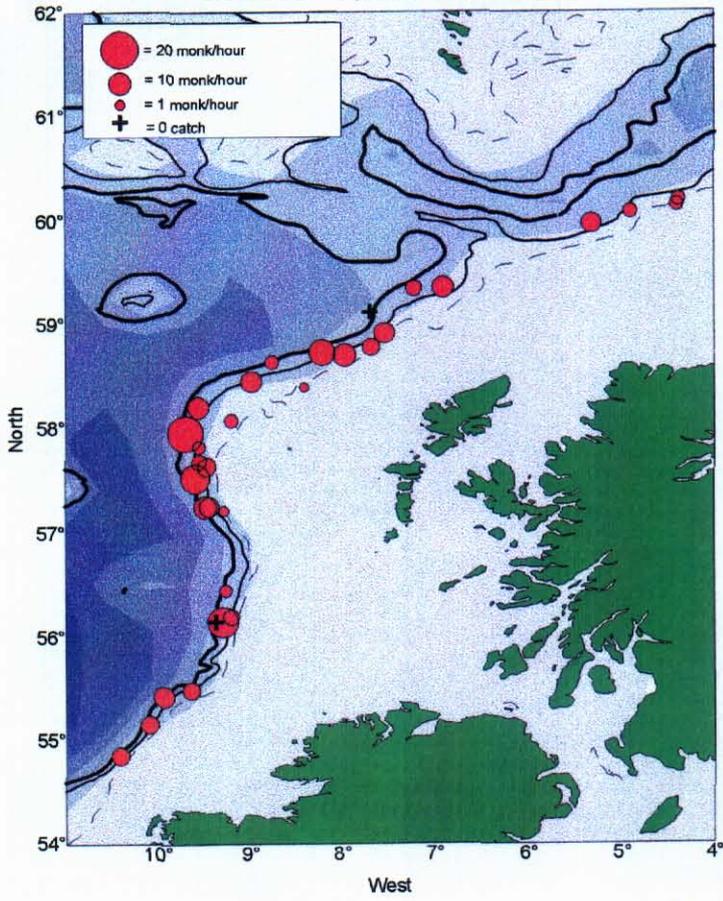


Figure 1

Scotia 0500S *L. piscatorius* numbers/hour.



Scotia 0500S *L. whiffiagonis* numbers/hour.

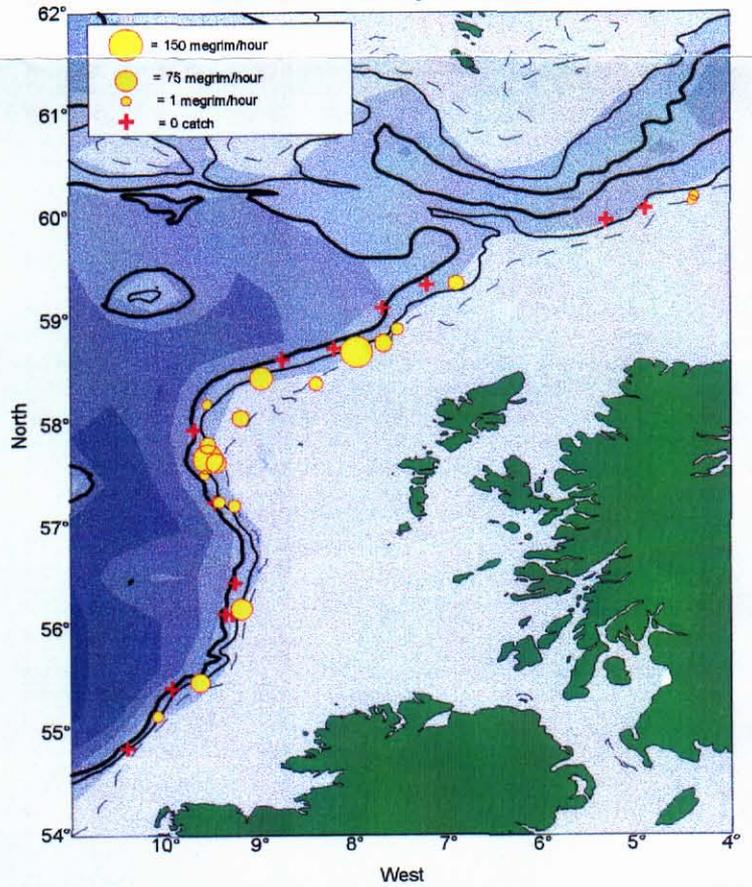


Figure 2