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Charter vessel "Kings Cross"

CRUISE REPORT

23 May-12 June 1989

Personnel

P Hopkins	SSO (in charge)
P Witthames	MAFF, Lowestoft
W Dawson	MAFF, Lowestoft
G Hays	Aberdeen University
M Warmerdam	NIFI (23 May-2 June)
S Rijs	NIFI (2-12 June)

Half Landing

Cork 2-3 June

Objectives

1. To obtain biological samples of the western mackerel stock under an EC contract with Aberdeen University.
2. To collect and preserve mackerel ovaries for the determination of spawning fraction, batch fecundity and levels of atresia.
3. To obtain biological samples of horse mackerel.
4. To collect and preserve horse mackerel ovaries for the determination of spawning fraction, batch fecundity and levels of atresia.

Narrative

"Kings Cross" sailed from Fraserburgh at 1500 on 23 May after a short delay when discarded rope in Fraserburgh harbour fouled the propeller.

The first haul was made north west of the Butt of Lewis at midday on 24 May. Favourable weather allowed the most southerly stations of the survey to be completed before docking in Cork on the morning of 2 June. Twenty seven hauls were completed in the first half of the cruise.

"Kings Cross" sailed from Cork at 0900 on 3 June and fishing recommenced at 1500 the same day. A further 24 hauls were made before docking in Fraserburgh at 0600 on 12 June.

Results

Cruise tracks and trawl haul positions are shown on the attached charts. Most tows were of one hour duration but this was modified if catch rates warranted. The net was placed near the bottom for the first half and near the surface for the second half of each tow.

Haul summaries are shown in the attached table. Of a total of 51 hauls, 47 were successful in catching mackerel. The first 30 mature ovaries from each sample were preserved in buffered formalin for the estimation of spawning fraction. Otoliths were taken from all fish until the 30 ovaries had been collected, thereafter otoliths were removed as required to make up to 5 per centimetre length class. A total of 1300 ovaries and 3583 otoliths were taken in this way. In addition, 50 ovaries were collected from the main spawning area for the estimation of atresia and approximately 180 ovaries with hydrated oocytes were collected for the estimation of batch sizes.

The proportion of fish which were spent (stage 6) generally showed an increasing trend from south (typically 5%) to north (typically 30%). However the 3 most northerly samples contained high proportions of stage 3 fish (30-50%) contrary to the general trend. Similarly high proportions of stage 3 fish were found in a single haul taken in the same area during the 1988 survey by "Kings Cross".

The contents of a total of 375 mackerel stomachs were examined on board and the incidence of major prey items recorded.

The first 15 horse mackerel ovaries from each sample were collected and preserved in buffered formalin. Otoliths were removed from all fish until the ovaries had been collected, thereafter otoliths were removed as required or until a minimum of 25 had been taken from the sample. A total of 639 otoliths and 300 ovaries were collected.

P Hopkins

17 July 1989

Kings Cross charter

23 May - 12 June

Summary of hauls

Haul	Duration (hrs)	Position	Catch composition (baskets)	Mackerel number and length		composition (cm)	
				#	min	mode	max
1	1.0	5845N 0733W	0.25 mackerel 0.25 gurnards	34	27	31	43
2	1.5	5815N 0831W	0.2 mackerel	18	30	31	41
3	1.5	5614N 0831W	13 mackerel 1 herring 1 gurnards	954	25	28	45
4	1.5	5544N 0912W	280 mackerel	22493	28	34	43
5	1.5	5344N 1101W	80 mackerel 20 herring	2680	20	31	42
6	1.0	5314N 1130W	400 mackerel	45500	28	29	43
7	1.5	5245N 1130W	400 mackerel	35500	25	28	45
8	0.5	5115N 1030W	50 mackerel 100 horse mackerel	7235	23	28	45
9	0.5	5044N 1030W	100 mackerel	17000	22	28	43
10	1.0	5014N 1030W	40 mackerel	4300	24	30	47
11	1.0	4857N 1022W	10 mackerel 15 horse mackerel	766	28	39	46
12	1.0	4844N 0940W	3 mackerel 1 boar fish	213	28	36	46
13	1.0	4842N 0840W	15 mackerel 10 horse mackerel 10 boar fish	1245	27	36	47
14	1.0	4816N 0828W	20 horse mackerel				
15	1.0	4809N 0740W	150 horse mackerel				
16	0.5	4745N 0717W	3 mackerel 200 horse mackerel	286	27	36	45
17	1.0	4745N 0630W	5 mackerel	588	20	21	42
18	1.0	4815N 0630W	10 mackerel 5 horse mackerel	997	20	27	41
19	1.0	4911N 0536W	4 mackerel	1081	20	23	40
20	1.0	4915N 0630W	4 mackerel 5 herring 5 pilchard	557	19	23	42

Summary of hauls (continued)

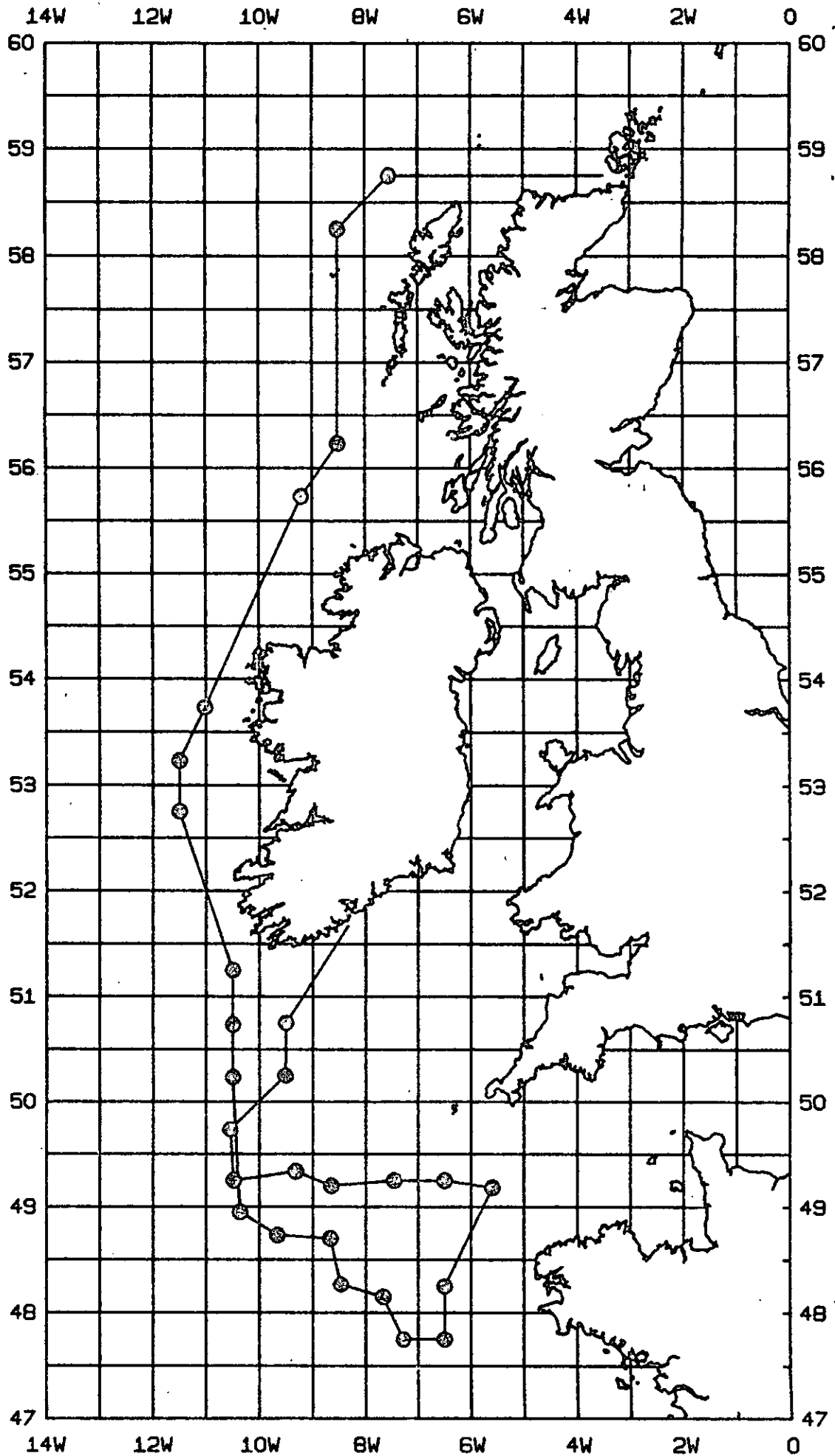
Haul	Duration (hrs)	Position	Catch composition (baskets)	Mackerel number and length		composition (cm)	
				#	min	mode	max
21	1.0	4915N 0728W	3 10	mackerel horse mackerel	429	19	21 44
22	1.0	4912N 0839W	5 120 25	mackerel horse mackerel boar fish	448	28	38 43
23	1.0	4920N 0919W	4 20 80	mackerel horse mackerel boar fish	301	27	36 45
24	1.0	4915N 1029W	5 75	mackerel horse mackerel	454	27	36 44
25	0.5	4944N 1033W	2 35	mackerel horse mackerel	150	28	35 44
26	1.0	5015N 0931W	5	mackerel	396	26	30 42
27	0.7	5045N 0930W	120 180	mackerel horse mackerel	17700	21	27 42
28	1.0	5113N 0730W	48 12	mackerel herring	17745	20	22 40
29	1.0	5044N 0727W	3	herring			
30	1.0	5016N 0626W	0.5 2	mackerel herring	203	19	21 35
31	1.0	5015N 0730W	4 6	mackerel herring	600	19	29 39
32	0.7	5015N 0829W	5 2 3	mackerel horse mackerel herring	580	20	33 42
33	1.0	5041N 0830W	6 0.5 3	mackerel horse mackerel herring	822	21	29 41
34	1.0	5044N 0930W	100	mackerel	13750	21	30 41
35	1.0	5045N 1029W	0.5	mackerel	27	27	33 43
36	1.0	5146N 1046W	10 0.5	mackerel horse mackerel	2060	21	27 45
37	1.0	5145N 1115W	1 4	mackerel boar fish	70	23	39 46
38	1.0	5215N 1129W	15 25	mackerel horse mackerel	1159	23	37 45
39	1.0	5315N 1348W	48 72	mackerel horse mackerel	4864	26	35 43
40	1.0	5315N 1230W	5 1 100 20	mackerel horse mackerel argentine blue whiting	561	23	35 45

Summary of hauls (continued)

Haul	Duration (hrs)	Position	Catch composition (baskets)	Mackerel number and length		composition (cm)		
				H	min	mode	max	
41	1.0	5315N 1130W	25 125	mackerel herring	3029	26	28	45
42	1.0	5418N 1033W	3 3	mackerel herring	423	26	28	41
43	1.0	5445N 1015W	10 10	mackerel herring	1120	27	33	45
44	1.0	5516N 0930W	20 5 5	mackerel herring gurnards	3030	26	28	47
45	1.0	5650N 0853W	100 200	mackerel herring	10150	28	35	43
46	0.5	5715N 0900W	4 600	mackerel herring	410	22	35	43
47	1.0	5745N 0900W	210 90	mackerel herring	19950	29	37	45
48	1.0	5848N 0716W	30 920	mackerel herring	4695	23	29	42
49	1.0	5915N 0630W	15 135	mackerel herring	1817	27	31	41
50	1.0	5940N 0529W	100	mackerel	11300	28	30	44
51	1.0	5953N 0434W	3	mackerel	204	27	30	43

Kings Cross charter 1989

First half (23 May - 2 June)



Kings Cross charter 1989

Second half (3 -12 June)

