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MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND
1981 RESEARCH VESSEL PROGRAMME

REPORT: FRV G A REAY : CRUISE 4 (April 1981) (1981)
(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF:

M G Pawson
A Jamieson
P O Johnson
M R Vince
B C Mumford
P A Large

DURATION:

Left Aberdeen 1400 h 11 March
Arrived Aberdeen 0630 h 30 March
(All times GMT)

LOCALITY:

Northern North Sea

AIMS:

1. To describe the distribution of gadoids within the Norway pout fishery area using a semi-pelagic high-headline trawl.
2. To obtain biological samples of all gadoids taken during the survey, including stomach contents (J Pope) and blood and tissue samples of haddock and mackerel (A Jamieson).
3. To collect specimens for whole/gutted weight relationship determinations (B Bedford).

NARRATIVE:

G A REAY sailed from Aberdeen at 1400 h 11 March and proceeded to station 1, see Figure 1. One hour long tows were made at stations 1 to 28 before it became necessary to lie off Shielda Ness to avoid a northerly gale on 19 March. Stations 29 to 53 were fished before G A REAY spent 28 March dodging a southerly storm, after which she steamed to Aberdeen, docking at 0630 h 30 March.

RESULTS:

1. Fifty valid hauls were made with a semi-pelagic high-headline trawl within the Norway pout fishery area. The catches are detailed in Table 1.
2. Length frequency distributions were determined for cod, haddock, whiting, Norway pout, saithe, mackerel and spratts at all stations where they were present, and otolith samples were taken from gadoids for the preparation of age-length keys by roundfish sampling area and by 20 m internal depth strata in area 1. Samples of herring and mackerel were frozen for later analysis at Lowestoft.
3. Gut contents were collected from 527 cod, 2313 haddock, 1348 whiting, 483 Norway pout, 168 saithe and 55 mackerel and preserved for the ICES international working group on multi species models.

4. One hundred and fifty eight cod, 163 saithe, 89 spurdogs, 180 whiting and 90 megrims were frozen whole for whole/gutted weight relationship determination. Twenty seven pairs of Norway pout ovaries (Stage IV) were collected for fecundity analysis.

5. Samples of haddock blood (total 212 fish) were taken at 7 stations (* in Fig 1) and muscle tissue samples were taken from all saithe retained for aim 3. A total of 36 fish species provided tissue samples for protein type taxonomy.

M G Pawson
Scientist in Charge
3 April 1981

SEEN IN DRAFT:
W E C

INITIALED:
D J G

DISTRIBUTION:

Basic List +

- M G Pawson
- A Jamieson
- P O Johnson
- M R Vince
- B C Mumford
- P A Large
- J G Pope
- B C Bedford

Table 1. Catch rates by stations on cruise 4/81 of FRV G A REAY

STATION	MEAN DEPTH (m)	kg/hour						TOTAL
		COD	HADDOCK	WHITING	NORWAY POUT	COAL- FISH	HERRING	
1	108	INVALID						
2	81	4.2	113.3	107.7	0	0	0.3	323.8
3	84	20.7	381.5	22.7	0	0	+	427.4
4	98	24.2	252.0	4.5	0.3	0	1.2	298.1
5	88	2.5	78.0	69.0	+	0	0.6	180.0
6	86	25.3	298.5	88.0	0	0	0.2	513.0
7	95	16.7	317.7	22.0	0.7	0	5.5	348.2
8	85	59.7	270.9	0.7	0	0	0.1	353.4
9	146	117.2	10.0	11.0	20.0	9.7	0.2	180.6
10	155	108.5	99.9	295.2	4.3	6.0	1.5	525.8
11	152	57.4	9.5	55.2	3.5	0	0.6	144.0
12	110	39.0	321.2	16.3	+	0	1.3	371.8
13	115	7.0	132.0	68.0	0.2	0	1.6	237.3
14	148	39.4	43.3	132.0	24.0	0	0	236.5
15	136	17.2	126.0	229.5	13.5	0	0.5	400.6
16	120	19.0	307.5	2.5	0	0	0	353.7
17	121	12.0	182.1	5.8	1.2	5.0	0	234.5
18	149	24.5	118.5	759.0	165.0	4.0	5.8	1110.9
19	141	30.0	431.2	304.7	12.7	12.0	85.0	2260.7
20	140	5.5	215.7	69.0	23.0	11.5	63.2	570.9
21	150	5.0	83.1	168.4	21.9	11.0	6.1	290.2
22	150	16.0	162.5	380.0	28.5	30.5	10.9	616.6
23	148	180.5	557.0	176.5	793.5	274.5	9.2	2010.6
24	173	14.0	82.8	30.0	248.7	37.0	0	475.7
25	183	6.0	72.0	1.4	385.0	101.0	0	578.8
26	122	3.5	371.2	499.5	0	0	0	908.5
27	141	INVALID						
28	149	7.5	147.0	36.0	17.2	5.5	0	309.2
29	143	12.5	222.0	124.5	33.6	0	6.9	422.1
30	141	8.5	189.0	337.5	15.0	0	1.5	498.2
31	134	26.5	531.0	1416.0	5.9	0	0	1955.9
32	148	1.5	72.0	276.0	15.0	0	0	380.9
33	119	62.0	250.5	1350.0	4.5	8.5	1372.5	2896.4
34	80	INVALID						

Table 1.

STATION	MEAN DEPTH (m)	kg/hour							TOTAL
		GOD	HADDOCK	WHITING	NORWAY POUT	COAL FISH	HERRING		
35	81	1.75	1787.2	568.7	0	0	35.0	2357.0	
36	80	4.0	363.0	38.5	16.5	0	297.0	734.4	
37. ESE	102	16.0	150.0	163.7	12.0	0	0.5	350	
38. ESE	70	17.0	426.1	21.2	0.4	0	40.6	533.4	
39. ESE	70	7.0	12.0	19.0	+	0	20.0	103.7	
40. ESE	80	11.0	37.5	42.5	+	0	2.5	149.5	
41. ESE	78	92.0	163.5	1792.0	19.2	0	32.0	1997.3	
42. ESE	95	6.0	229.0	91.0	1.2	0	10.8	394.4	
43. ESE	109	24.2	244.0	231.4	40.0	0	2.0	664.3	
44. ESE	110	12.0	575.6	235.7	28.7	0	11.5	729.3	
45. ESE	118	5.0	74.5	7.0	35.0	0	2.2	165.7	
46. ESE	123	3.0	207.2	206.2	0	13.0	0	449.5	
47. ESE	146	4.0	42.0	2.5	13.0	89.5	0	151.8	
48. ESE	143	3.5	20.0	15.3	175.8	75.0	0	316.6	
49. ESE	128	21.0	200.0	162.7	9.0	8.5	0	411.0	
50. ESE	121	17.6	220.5	40.0	2.0	32.0	0	315.7	
51. ESE	143	9.0	53.5	3.2	13.0	22.0	0	114.5	
52. ESE	114	52.0	696.0	124.2	67.5	0	0	884.5	
53. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3	

54. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
55. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
56. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
57. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
58. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
59. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
60. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
61. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
62. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
63. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
64. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
65. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
66. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
67. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
68. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
69. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
70. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
71. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
72. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
73. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
74. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
75. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
76. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
77. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
78. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
79. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
80. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
81. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
82. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
83. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
84. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
85. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
86. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
87. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
88. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
89. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
90. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
91. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
92. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
93. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
94. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
95. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
96. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
97. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
98. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
99. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3
100. ESE	123	17.0	190.8	55.2	15.5	0	0	277.3

Figure 1

Cruise track of R.V. G.A. Reay 4/81.

