INTERNATIONAL COUNCIL FOR THE
EXPLORATION OF THE SEA.

C.M. 1973/F : 36.
Demersal Fish (Northern) Committee.

DUTCH INVESTIGATIONS ON THE DISTRIBUTION OF PELAGIC O-GROUP GADOIDS IN THE NORTH SEA 1973

by

Niels Daan
Netherlands Institute for Fishery Investigations,
Haringkade 1, IJmuiden (Netherlands)

International Council for the Exploration of the Sea

C.M. 1973/F : 36
Demersal Fish (Northern) Committee

DUTCH INVESTIGATIONS ON THE DISTRIBUTION OF PELAGIC O-GROUP GADOIDS IN THE NORTH SEA IN 1973.

by
Niels Daan
Netherlands Institute for Fishery Investigations, Haringkade 1, Ymuiden, The Netherlands.

Introduction

During the meeting of the North Sea Roundfish Working Group in Aberdeen in March 1973 the results of the pelagic O-group surveys, carried out in the North Sea during former years by Scotland, England and the Netherlands (e.g. HISLOP, 1972; WILLIAMS & MACDONALD, 1972; DAAN, 1972) were discussed and in view of the promising results detailed directives were put forward for future surveys in order to assure comparability of the results (ANON, 1973). In June-July 1973 two Dutch research vessels have taken part in these surveys; the "Willem Beukelsz" fished a number of stations in the southern North Sea in the second half of June, whereas the "Tridens" worked the northern part in the first half of July. The fishing methods outlined in the Working Group report were followed except for the fact that the rigging of the net and the süberkrüb boards used were less heavy than they should be. During the survey the vertical opening of the net was measured, which generally varied between 7-8 m. Although comparative fishing trials with the Scottish and English research vessels were scheduled no contact at sea could be established.

Results

In fig. 1 the numbers of O-group fish per hours fishing are given for the four important Gadoid species (Young Saithe was completely absent). In comparison with the 1972 survey (DAAN, 1972) especially the catches of cod and haddock were strikingly small. Whiting was caught in significant numbers only to the northeast of the Doggerbank, coinciding with the appearance of jellyfishes (Cyanea capillata and Cyanea larmarcki, cf DAHL, 1961) which is in agreement with the results in 1972. Norway Pout was only found along the Norwegian deep, one exceptionally large haul of 12 000 O-group fish being made at 09 00 AM. However, during this haul accidentally the bottom was hit and, because the netsonde recording showed fish schools right on the bottom during this period, it seems likely that Norway Pout was aggregating very near to the bottom and should not have been caught in these numbers, when a standard haul had been made. In the same area Norway Pout were caught in a small beamtrawl at 09 00 PM, whereas large echo's were seen to leave the bottom at 10 00 PM and reach midwater at midnight, suggesting a marked diel vertical migration in this species.

Table 1 summarises the length data of the different species and comparison with last years survey reveals that the fish were generally considerably larger. It seems possible that the much lower apparent abundance is due to the fact that part of the O-group had already ended the pelagic phase.

Some more data on condition of these fish are presented in table 2. Generally the values correspond to last years information, but in Norway Pout the condition was significantly lower in 1973 than in 1972.

The general conclusion seems to be justified that there are still big problems in the interpretation of these surveys due to the behaviour habits of the O-group fish and the exact timing of the surveys and there is obviously a need for more basic information on their behaviour in this respect.

REFERENCES

ANON., 1973. Report of the Roundfish Working Group 1973 I.C.E.S. C.M. 1973/F : (Mimeo).

DAAN, N., 1972. Dutch investigations on the distribution of pelagic O-group gadoids in the Northern North Sea in 1972. I.C.E.S. C.M. 1972/F : 8 (mimeo).

DAHL, 1961. The association between young whiting, Gadus merlangus and the jellyfish, Cyanea capillata. Sarsia (3): 47-55.

HISLOP, J.R.G., 1972. Scottish investigations on the distribution of pelagic O-group gadoids in the northern North Sea in 1972. I.C.E.S. C.M. 1972/F : 43 (mimeo).

WILLIAMS, T., & M. MACDONALD, 1972. English investigations on the distribution of pelagic O-group gadoids in the central North Sea in 1972. I.C.E.S. C.M. 1972/F : 23. (mimeo).

ds

TABLE 1 Mean length of pelagic O-group gadoids in July 1973.

SPECIES	COD				WHITING				HADDOCK				NORWAY POUT				
Area	N	$\bar{L}$	S	Range	N	$\bar{L}$	S	Range	N	$\bar{L}$	S	Range	N	$\bar{L}$	S	Range	
all stations combined	21	3.5	1.8	1.6-7.5	469	4.9	1.4	1.7-9.2	13	6.2	1.7	3.5-9.2	807	4.3	0.8	2.1-6.7	cm
1972	1048	3.4	1.1	1.6-7.8	565	3.1	1.1	1.2-7.0	966	3.0	0.9	1.4-6.6	804	3.3	0.8	1.6-5.8	cm

N = number measured; $\bar{L}$ = mean length; S = Standard deviation

TABLE 2 Weight/Length relationship and conditionfactors in O-group gadoids in 1973.

SPECIES	COD				WHITING				HADDOCK				NORWAY POUT			
length class	N	$\bar{L}$	$\bar{W}$	K	N	$\bar{L}$	$\bar{W}$	K	N	$\bar{L}$	$\bar{W}$	K	N	$\bar{L}$	$\bar{W}$	K
2.0-2.5					10	2.25	0.060	0.53								
2.5-3.0					25	2.75	0.124	0.60					9	2.75	0.121	0.58
3.0-3.5					25	3.25	0.31	0.61					25	3.25	0.182	0.53
3.5-4.0					25	3.75	0.37	0.69					25	3.75	0.28	0.54
4.0-4.5	1	4.05	0.39	0.59	25	4.25	0.61	0.79	1	4.05	0.45	0.68	25	4.25	0.46	0.60
4.5-5.0					25	4.75	0.83	0.77					25	4.75	0.60	0.56
5.0-5.5					25	5.25	1.14	0.79					25	5.25	0.80	0.55
5.5-6.0	1	5.55	1.17	0.68	25	5.75	1.59	0.84	2	5.75	1.62	0.86	28	5.75	0.96	0.51
6.0-6.5	2	6.35	1.88	0.73	25	6.25	1.99	0.82	1	6.25	2.00	0.82	7	6.25	1.30	0.53
6.5-7.0					25	6.75	2.53	0.82	1	6.95	3.24	0.79				
7.0-7.5	1	7.45	3.56	0.86	15	7.25	3.38	0.89	2	7.25	4.12	1.01				
7.5-8.0					9	7.73	3.70	0.80								
8.0-8.5					5	8.21	4.53	0.82								
8.5-9.0					1	8.95	5.79	0.81								
9.0-9.5					1	9.25	6.06	0.77	1	9.25	7.35	0.93				
TOTAL	5			0.72	266			0.75	8			0.89	169			0.55
Values 1972	197			0.68	190			0.78	161			0.91	156			0.63

N = number in sample; $\bar{L}$ = mean length in cm; $\bar{W}$ = mean wet weight in grams; K = 100 W/L^3

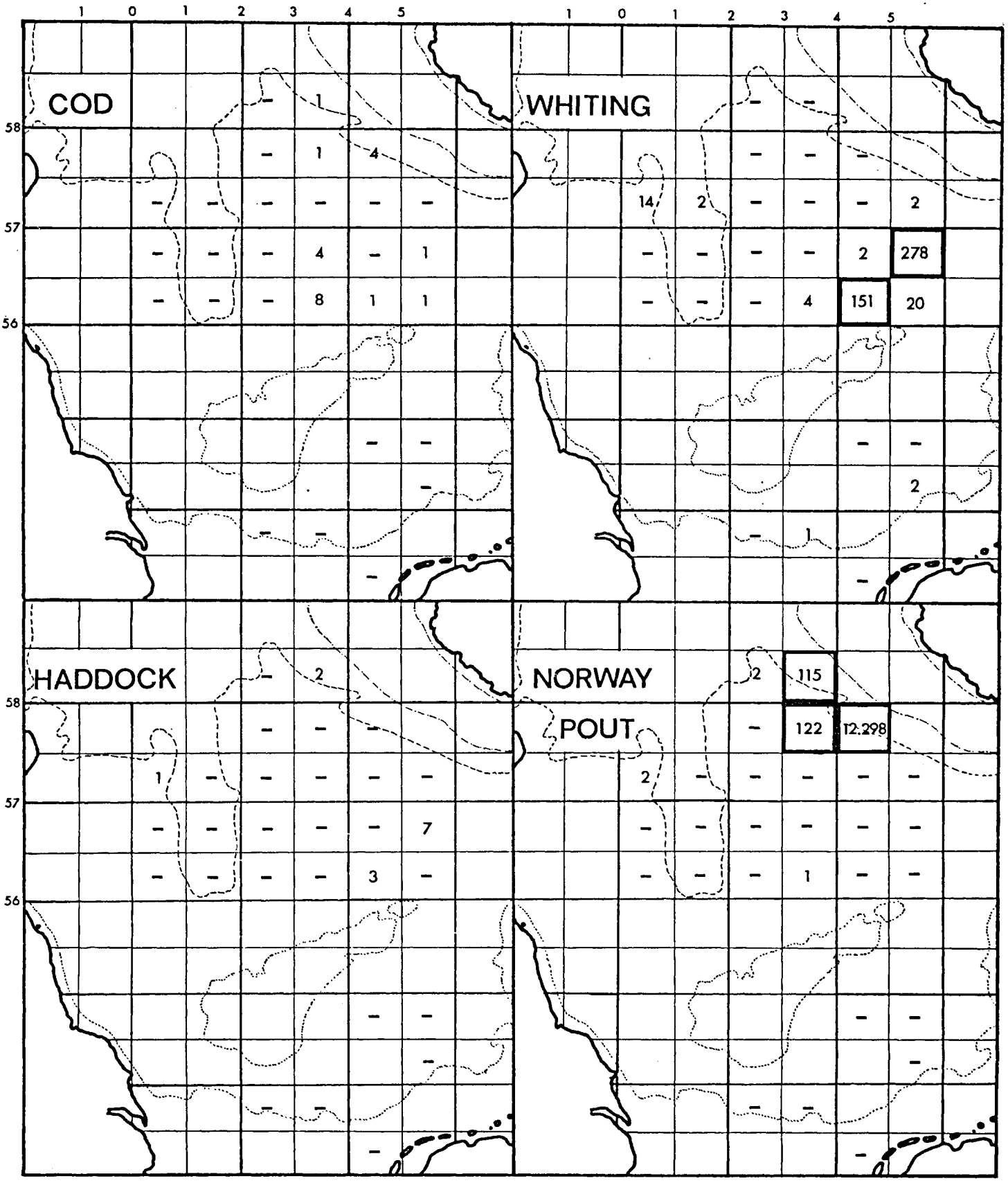

FIG. 1. RELATIVE ABUNDANCE OF PELAGIC O-GROUP GADOIDS IN JUNE/JULY 1973, CATCH PER HOUR FISHING.
Southern stations: "WILLEM BEUKELSZ", 14-22 june.
Northern stations: "TRIDENS", 2-11 july.