

Northwest Atlantic



Fisheries Organization

Serial No. N1022

NAFO SCS Doc. 85/15

SCIENTIFIC COUNCIL MEETING - JUNE 1985

Portuguese Research Report, 1984

by

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The present paper summarises the nominal catches caught by the Portuguese fishing fleet during 1984 in NAFO area and the biological information collected on board of a commercial fishing vessel.

A - STATUS OF THE FISHERIES

The fishing operations of the Portuguese fleet in the North West Atlantic area during 1984 were developed in Subareas 2,3 and 4. The total nominal catch reached 18544 metric tons which represents an increase of 1960 tons from 1983 to 1984 (TAB.1).

The nominal catches of the main species by divisions and Subareas are contained in Tab. 2 (from available statistics).

B - SPECIAL RESEARCH STUDIES

1. Enviromental studies

No enviromental studies were carried out on these subject.

2. Biological studies

Biological sampling was conducted on board of a commercial otter trawl in divisions 3M, 3N and 4W, from April to June, in order to obtain information on length and age composition of the catches, weight measurements, sex ratio and maturity. Cod, red fish and silver hake were sampled.

COD

Division 3M

Samples were taken during April and May. A total of 547 fishes were measured (Lt) and weighted and 305 aged. Length and age composition (%) are represented in Tab. 3 and 4, Fig. 1 for each month. The age/length key obtained (for the 2nd quarter) is contained in Tab. 5. It is clear from the available data that the pattern of exploration still occur on small young

fishes. The age composition of the catches was dominated by the 1981 year class.

The cod caught was 98% immature or first maturing. Sex ratio was 53.2 ♀ : 42.2 ♂.

Division 3N

Sampling data are available only for 76 measured and aged fish, during May (Tab. 3 and 4). The conclusions that can be pointed out indicate that the age composition of the catches was dominated by the 1980 year class (34.3%) followed by the 1978 (28.4%). The cod caught was at the beginning of maturity.

Red fish

Lengths composition (Lf) are available in divisions 3M and 3N for April and May. Otoliths for age determination were not collected. Length composition (L%) for each month and division are presented in Tab. 6.

Silver hake

A total of 5756 fishes were measured (Lt) in division 4W during June. The length composition of the catches is presented in Tab. 7. Information on age composition is poor (104 otoliths) and is not ready for use.

TABLE 1 - PORTUGUESE NOMINAL CATCHES (METRIC TONS) OF SPECIES IN THE NAFO AREA FOR 1983 AND 1984.

SPECIES	1983	1984
Atlantic cod	11837	11170
Atlantic red fish	1869	2918
White hake	2156	2495
Silver hake	378	1714
Others	2304	242
T O T A L	16587	18544

TABLE 2 - PORTUGUESE NOMINAL CATCHES (METRIC TONS) OF SPECIES BY DIVISIONS OF SUBAREAS 2,3 AND 4, 1984.

SPECIES	2H	2J	3K	3L	3M	3N	3O	4V _S	4W
Atlantic cod	49	426	1537	4310	3474	316	755	282	21
Atlantic red fish	-	5	392	33	2123	365	-	-	-
White hake	-	-	-	-	-	-	2495	-	-
Silver hake	-	-	-	-	-	-	-	-	1714
Others	-	-	18	16	196	-	-	-	17
T O T A L	49	431	1947	4359	5793	681	3250	282	1752

TABLE 3 - LENGTHS COMPOSITION OF COD (%_w) SAMPLED

LENGTH (L _t , cm)	3M APRIL	3M MAY	3N MAY
18		3	
21		-	
24	38	18	
27	95	26	
30	165	67	
33	222	98	13
36	133	118	40
39	101	139	13
42	25	154	53
45	13	123	66
48	7	64	92
51	-	23	145
54	7	13	40
57	19	13	66
60	32	23	66
63	25	54	53
66	19	31	105
69	-	13	66
72	6	8	26
75	19	-	40
78	13	3	26
81	25	-	26
84	6	5	-
87	6	3	13
90	-	-	26
93	6	-	-
96	6	-	-
99	-	-	-
102	6	3	-
105	-		-
108	-		-
111	-		13
114	-		-
117	-		-
120			-
123	6		-
---			-
141			13
TOTAL % _w	1000	1000	1001
Mean Length (Lt mm)	422	442	608
No.fish measured	158	389	76
No.samples	2	4	1

TABLE 4 - AGE COMPOSITION, MEAN LENGTH AND MEAN WEIGHT OF COD, 1984.

YEAR	AGE	3M			3M			3N	
CLASS	YEARS	APRIL			MAY				
		No.Fish	\bar{L}_t	W	No.Fish	\bar{L}_t	W	No.Fish	\bar{L}_t
		‰	cm	gr	‰	cm	gr	‰	cm
1984									
1983	1								
1982	2	9	25.0		7	22.9	110		
1981	3	742	33.6	295	529	36.7	376	79	38.0
1980	4	54	44.8	621	303	46.0	897	343	49.1
1979	5	96	62.2	2163	136	63.4	2066	126	58.3
1978	6	9	75.0	4025	9	71.3	3175	284	67.0
1977	7	51	79.9	4769	13	80.2	4608	78	73.5
1976	8	12	88.0	7075	-	-	-	52	85.0
1975	9	21	93.1	9000	1	88.0	5600	26	1010.0
1974	10				-	-	-	-	
1973	11				2	100.0	10500	-	
1972	12							-	
1971	13							-	
1970	14	6	125.0	21000				-	
1969	15							-	
1968	16							-	
1967	17							-	
1966	18							13	1420.0
Mean age, years				3.72		3.66			5.37
Mean Length(cm)				42.2		44.2			60.8
Nº Fish aged				179		118			75

TABLE 5 - AGE LENGTH KEY FOR COD, DIVISION 3M, 2nd QUARTER 1984

TOTAL LENGTH (CM)	II	III	IV	V	VI	VII	VIII	IX	XI	XIV	NO AGED
18	1										1
21	-										-
24	3	10									13
27		23									23
30		30									30
33		29	1								30
36		23	1								24
39		10	3								13
42		2	10								12
45			17								17
48			14								14
51			8	1							9
54			3	3							6
57			1	7							8
60				13							13
63				18							18
66				9							9
69				3							5
72					2						2
75					1	1					3
78						2					3
81						3	1	1			4
84						2	-	-			3
87						1	-	1			1
90							-	-			-
93							1	-			1
96								1			1
99								-	1		1
102								1			1
105											-
108											-
111											-
114											-
117											-
120											-
124										1	1
TOTAL	4	157	58	54	4	12	2	4	1	1	297
%	14	529	195	182	14	40	7	14	3	3	1001

TABLE 6 - LENGTH COMPOSITION OF RED-FISH (%) IN CATCHES

FORK LENGTH (CM)	3M APRIL	3M MAY	3N MAY
10			
11		2	
12		2	
13		6	
14		22	
15		23	
16	2	9	
17		7	14
18		4	30
19		6	7
20		17	9
21		19	12
22	2	8	48
23	3	19	83
24		18	67
25	8	14	62
26	7	23	51
27	23	39	55
28	47	54	64
29	88	69	86
30	121	71	72
31	91	49	51
32	81	57	58
33	91	66	41
34	75	68	27
35	119	62	23
36	83	69	19
37	55	62	30
38	52	44	35
39	11	24	19
40	16	25	21
41	11	13	5
42	2	9	5
43	8	11	2
44	2	4	
45		3	2
46	2	1	2
47			
48			
49			
50		1	
TOTAL	1000	1000	1000
Mean Length	330	308	286
Nº fish meas.	614	614	567
Nº samples	5	7	4

TABELA 7 - LENGTH COMPOSITION OF SILVER HAKE (%) IN CATCHES

TOTAL LENGTH (CM)	4W JUN	4W JULY
15		
16	3	
17	9	
18	31	
19	51	4
20	72	8
21	68	19
22	50	18
23	38	23
24	20	12
25	9	16
26	20	20
27	56	49
28	95	127
29	121	133
30	126	135
31	87	84
32	59	70
33	35	70
34	18	52
35	13	51
36	8	45
37	4	35
38	2	19
39	3	8
40	1	2
41	1	
42		
43		2
44		
45		
46		
47		
TOTAL	1000	1002
Mean Length	268	303
Nº fish meas.	6233	513
Nº of samples	43	4

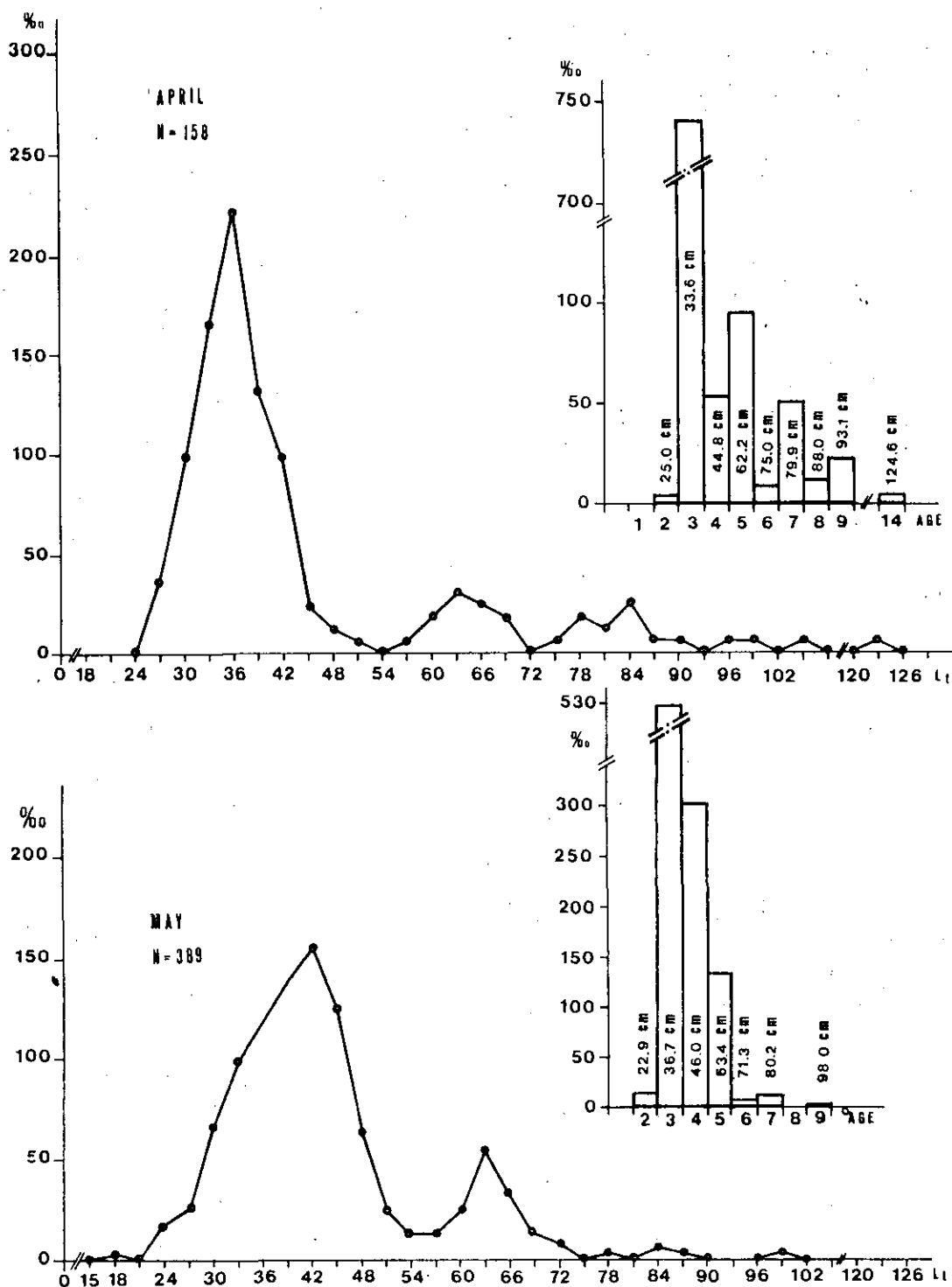


FIG. 1 - Length and age composition of cod from commercial bottom trawl, division 3M, 1984.

