

NEAFC PORTUGUESE RESEARCH REPORT FOR 2002

by

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A. Status of the fisheries

The Portuguese trawl pelagic fishery in the Irminger sea start in 1994. Redfish from the species *Sebastes mentella* essentially supports this fishery. The Portuguese Irminger sea nominal redfish catches (Tab. I -A and B) recorded a peak in 1995 (5,125 t) followed by a decreased to 2,379 t in 1996, the same decreased was observed in effort (383 to 210 days). From 1997 to 2000 the catches stabilized around 4,000t, both 1997 and 1998 years recorded the highest effort (405 days), the effort during 1999 and 2000 was around 370 days. In 2000 the redfish catches and effort decreased again to 2,577 t and 301 days. In 2002 the redfish catches proceeding from both Div. XII and XIVb of the Irminger Sea recorded 3,165 ton corresponding to 343 effort days. In 2002 six trawlers fishing with a pelagic net composed the Portuguese fleet.

B. Portuguese Annual Sampling Program

1. Catch and effort sampling.

Effort and cpue data for 2002 Portuguese trawl fishery on the NEAFC Area were obtained through the revision of the skipper logbook from one trawler, kindly supplied by its owner. All the information (round weight of the catch by species, fishing effort, positions and depths) has been recorded on a tow-by-tow basis. The vessel conversion factors were used to convert its processed landings in catches.

All the fishing effort was directed towards the redfish. The daily catch and effort data from the logbooks were used to estimate the redfish directed effort and CPUE on a monthly basis (Tab. II-A). Using the mean depth of each tow the CPUE was calculated below or above 500m-depth (Tab II-B).

From the available data of only one vessel the level of redfish rejected was very small, between 0.6 and 1.0% of the catch (Tab III).

1.1. Comments on redfish catch rate data.

Redfish was the priority species for the Portuguese trawl fleet during 2002. Based on the observed vessel, the months with higher catch rates were October in Div. XII, and June in Div. XIVb. Despite the concentration of fishing effort on Div. XIVb, Div.XII recorded a higher CPUE than the northern Div. XIV b (Tab I-A and II-A). In Div. XIVb CPUE at depth minor 500m were smaller than those at greater depth (Tab II-B).

2. Biological Sampling

In 2002 biological sampling was obtained from one stern trawler fishing in Div. XII in September and October from 203m to 380m depths, and in Div. XIVb from May to July from 400m to 770m depths. Redfish was only species sampled during this periods (Tab IV).

All commercial information is representative of the catch as a whole, although sampling was carried out by sex. Mean length and weight is the mean of mean lengths and weights by sex, weighted by the abundance in the sampled catches of males and females. The mean weights in the catch are derived from the calculated length-weight relationships (Tab V).

2.1. Comments on length composition of the 2002 redfish (*S. mentella*) trawl catches.

In Div. XII (Tab.VI, Fig.1), lengths between 32cm and 36cm dominated catches (mean length and weight of 34cm and 555g).

In Div. XIVb at depth <500m (Tab.VII-A), lengths between 39cm and 42cm dominated catches (mean length and weight of 39cm and 815g). At depth >500m and for the all Div.XIVb (Tab.VII-B and C, Fig.2), lengths between 38cm and 43cm dominated catches (mean length and weight of 39cm and 838g).

Acknowledgements

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TABLE I - A: Portuguese nominal trawl effort (days) and catch (t) by Division in Irrminger sea, 2002.

MONTH	DIVISION						MONTH
	XII		XIVb		TOTAL		
	DAYS	CATCH	DAYS	CATCH	DAYS	CATCH	
JAN.							JAN.
FEB.							FEB.
MAR.							MAR.
APR.			14	171	14	171.0	APR.
MAY			70	721.8	70	721.8	MAY
JUN.			88	840.6	88	840.6	JUN.
JUL.	9	25	72	546.9	81	571.9	JUL.
AUG.	7	8.4			7	8.4	AUG.
SEP.	60	548.8			60	548.8	SEP.
OCT.	23	301.9			23	301.9	OCT.
NOV.							NOV.
DEC.							DEC.
TOTAL	99	884	244	2280	343	3164	TOTAL

TABLE I - B: Portuguese nominal trawl effort (days) and catch (t) in Irrminger sea, 1994 - 2002.

MONTH	YEAR																MONTH		
	1994		1995		1996		1997		1998		1999		2000		2001			2002	
	DAYS	CATCH	DAYS	CATCH	DAYS	CATCH	DAYS	CATCH	DAYS	CATCH	DAYS	CATCH	DAYS	CATCH	DAYS	CATCH		DAYS	CATCH
JAN.																			JAN.
FEB.																			FEB.
MAR.				1	11.0														MAR.
APR.			40	759.5	16	235.4	56	695.0	98	1134.1	37	417.0	20	172.1		14	171.0		APR.
MAY			48	1635.3	22	567.3	88	1196.4	138	1580.1	103	1062.9	147	1488.3	92	757.9	70	721.8	MAY
JUN.			25	432.1	40	324.9	119	1347.4	124	893.1	166	2182.5	127	1124.6	95	1097.1	88	840.6	JUN.
JUL.			23	170.9	22	252.9	44	269.2	45	604.0	24	194.4	13	25.0	26	63.5	81	571.9	JUL.
AUG.	1	11.3	57	592.8	41	476.0					22	341.2	64	925.0	15	136.7	7	8.4	AUG.
SEP.	36	460.8	62	491.4	50	378.6	29	91.9			16	123.7			64	453.8	60	548.8	SEP.
OCT.	53	696.8	92	648.5	19	144.2	54	188.6							9	68.0	23	301.9	OCT.
NOV.	46	718.5	30	346.2			15	29.9											NOV.
DEC.			5	37.5															DEC.
TOTAL	136	1887.3	383	5125.2	210	2379.3	405	3818.5	405	4211.5	368	4321.7	371	3734.9	301	2577.0	343	3164.5	TOTAL

TABLE II-A: Portuguese observed trawl fishery: cpue's by month and division for 2002.

DIVISION	TARGET SPECIES	MONTH	DEPTH RANGE (m)		CPUE (ton/hour)
			MIN.	MAX.	
XII	REDFISH	SEP	203	336	0.788
XII	REDFISH	OCT	223	380	1.217
XIVb	REDFISH	MAY	465	770	0.712
XIVb	REDFISH	JUN	400	769	0.904
XIVb	REDFISH	JUL	478	701	0.675

TABLE II-B: Portuguese observed trawl fishery: cpue's by month, division and depth interval (mean depth of trawl) and division for 2002.

DIVISION	TARGET SPECIES	MONTH	DEPTH INTERVAL	CPUE (ton/hour)
XII	REDFISH	SEP	<500m	0.788
XII	REDFISH	OCT	<500m	1.217
XIVb	REDFISH	MAY	<500m	0.545
XIVb	REDFISH	MAY	>500m	0.724
XIVb	REDFISH	JUN	<500m	0.552
XIVb	REDFISH	JUN	>500m	0.915
XIVb	REDFISH	JUL	>500m	0.675

TABLE III: Portuguese trawl fishery:
% of redfish catch rejected.

DIVISION	MONTH	REJECTION (%)
XII	SEP	0.8
XII	OCT	0.8
XIVb	MAY	1.0
XIVb	JUN	0.6
XIVb	JUL	0.8
XII	Total	0.8
XIVb	Total	0.7
Grand Total		0.7

TABLE IV: Intensity of the trawl sampling during 2002, by species, division and month.

SPECIES	DIV.	MONTH	N° OF SAMPLES	N° FISH MEASURED	SAMPLING WEIGHT(Kg)	OTOLITHS	
						N°	LENGTH RANGE (cm)
REDFISH (S. mentella)	XII	SEP	14	1120	629	134	24 - 40
REDFISH (S. mentella)	XII	OCT	15	1200	668	144	25 - 41
REDFISH (S. mentella)	XIVb	MAY	17	1360	1066	188	27 - 60
REDFISH (S. mentella)	XIVb	JUN	34	2720	2304	183	27 - 47
REDFISH (S. mentella)	XIVb	JUL	7	560	463	150	27 - 46

TABLE V: REDFISH (S. mentella), Div. XII and XIVb, 2002: length-weight relationship.

Sex	a	b	n	r^2	Length interval (cm)
F	0.008	3.148	3113	0.987	24-60
M	0.014	2.994	3847	0.996	25-46
F+M	0.007	3.168	6960	0.987	24-60

TABLE VI: REDFISH (*S. mentella*), DIV. XII, 2002: length composition of the trawl catches.

LENGTH GROUP	SEP =3rd Q.	OCT =4th Q.	YEAR	LENGTH GROUP
24	1.5		0.7	24
25	1.3	0.7	1.0	25
26	3.8	11.4	7.9	26
27	4.2	10.3	7.5	27
28	18.4	9.9	13.8	28
29	24.8	14.0	18.9	29
30	35.6	34.6	35.1	30
31	52.4	52.3	52.3	31
32	92.8	118.7	106.9	32
33	148.6	150.4	149.6	33
34	188.7	179.6	183.8	34
35	154.9	170.0	163.1	35
36	136.6	119.4	127.2	36
37	77.7	67.1	71.9	37
38	37.2	44.6	41.2	38
39	19.3	13.2	15.9	39
40	2.4	2.7	2.6	40
41		1.1	0.6	41
TOTAL	1000	1000	1000	
No. SAMPLES	14	15	29	
SAMPLING WEIGHT(kg)	629	668	1297	
No. F.MEASURED	1120	1200	2320	
MEAN LENGTH(cm)	34.5	34.4	34.4	
MEAN WEIGHT (g)	557	554	555	
DEPTH RANGE (m)	203/336	223/380	203/380	

TABLE VII-A: REDFISH (*S. mentella*), DIV. XIVb (<500m), 2002:
length composition of the trawl catches.

LENGTH GROUP	MAY	JUN	2nd Q. =YEAR.	LENGTH GROUP
30	37.5		21.7	30
31	37.5		21.7	31
32	87.5		50.7	32
33	50.0	12.5	34.2	33
34	75.0	25.0	54.0	34
35	100.0	50.0	79.0	35
36	37.5	50.0	42.8	36
37	50.0	112.5	76.3	37
38	12.5	87.5	44.0	38
39	112.5	75.0	96.7	39
40	112.5	150.0	128.3	40
41	150.0	137.5	144.7	41
42	50.0	162.5	97.3	42
43	62.5	50.0	57.2	43
44	12.5	87.5	44.0	44
45	12.5		7.2	45
TOTAL	1000	1000	1000	
No. SAMPLES	1	1	2	
SAMPLING WEIGHT(kg)	62	71	133	
No. F.MEASURED	80	80	160	
MEAN LENGTH(cm)	37.9	40.2	38.9	
MEAN WEIGHT (g)	760	890	815	

TABLE VII-B: REDFISH (*S. mentella*), DIV. XIVb (>500m), 2002: length composition of the trawl catches.

LENGTH GROUP	MAY	JUN	JUL	2nd Q.	3rd Q.	YEAR	LENGTH GROUP
27	0.9	0.4	2.2	0.6	2.2	0.7	27
28	6.5	0.4	5.3	2.5	5.3	2.8	28
29	10.3	5.5	6.3	7.2	6.3	7.1	29
30	16.8	6.5	8.1	10.1	8.1	10.0	30
31	22.4	11.0	12.0	15.0	12.0	14.7	31
32	35.3	16.8	5.6	23.3	5.6	21.9	32
33	51.6	30.6	15.1	38.0	15.1	36.2	33
34	66.3	32.3	42.9	44.2	42.9	44.1	34
35	63.2	60.3	61.8	61.3	61.8	61.4	35
36	78.8	58.6	81.8	65.6	81.8	66.9	36
37	79.3	72.1	59.0	74.6	59.0	73.4	37
38	71.4	86.2	113.7	81.0	113.7	83.6	38
39	60.7	117.6	119.5	97.7	119.5	99.5	39
40	99.0	121.8	115.8	113.8	115.8	114.0	40
41	103.2	125.7	113.0	117.8	113.0	117.4	41
42	94.8	106.9	101.4	102.7	101.4	102.6	42
43	73.2	87.7	69.8	82.6	69.8	81.6	43
44	41.1	38.5	49.4	39.4	49.4	40.2	44
45	13.3	16.1	14.8	15.1	14.8	15.1	45
46	11.1	5.0	2.4	7.1	2.4	6.7	46
47		0.1		0.1		0.1	47
48							48
49							49
50							50
51							51
52							52
53							53
54							54
55							55
56							56
57							57
58							58
59							59
60	0.7			0.2		0.2	60
TOTAL	1000	1000	1000	1000	1000	1000	
No. SAMPLES	16	33	7	49	7	56	
SAMPLING WEIGHT(kg)	1004	2233	463	3237	463	3700	
No. F.MEASURED	1280	2640	560	3920	560	4480	
MEAN LENGTH(cm)	38.6	39.5	39.4	39.2	39.4	39.2	
MEAN WEIGHT (g)	807	855	844	838	844	839	

TABLE VII-C: REDFISH (*S. mentella*), DIV. XIVb, 2002: length composition of the trawl catches.

LENGTH GROUP	MAY	JUN	JUL	2nd Q.	3rd Q.	YEAR	LENGTH GROUP
27	0.9	0.4	2.2	0.6	2.2	0.7	27
28	6.2	0.4	5.3	2.5	5.3	2.7	28
29	9.8	5.4	6.3	7.0	6.3	6.9	29
30	17.9	6.4	8.1	10.5	8.1	10.3	30
31	23.2	10.8	12.0	15.2	12.0	15.0	31
32	38.0	16.5	5.6	24.2	5.6	22.8	32
33	51.5	30.3	15.1	37.9	15.1	36.1	33
34	66.8	32.2	42.9	44.5	42.9	44.4	34
35	65.2	60.1	61.8	61.9	61.8	61.9	35
36	76.6	58.4	81.8	64.9	81.8	66.2	36
37	77.8	72.8	59.0	74.6	59.0	73.4	37
38	68.3	86.2	113.7	79.8	113.7	82.4	38
39	63.5	116.9	119.5	97.8	119.5	99.5	39
40	99.7	122.2	115.8	114.2	115.8	114.3	40
41	105.7	125.9	113.0	118.7	113.0	118.2	41
42	92.5	107.8	101.4	102.4	101.4	102.3	42
43	72.6	87.0	69.8	81.9	69.8	81.0	43
44	39.6	39.3	49.4	39.4	49.4	40.2	44
45	13.3	15.8	14.8	14.9	14.8	14.9	45
46	10.5	4.9	2.4	6.9	2.4	6.6	46
47		0.1		0.1		0.1	47
48							48
49							49
50							50
51							51
52							52
53							53
54							54
55							55
56							56
57							57
58							58
59							59
60	0.7			0.2		0.2	60
TOTAL	1000	1000	1000	1000	1000	1000	
No. SAMPLES	17	34	7	51	7	58	
SAMPLING WEIGHT(kg)	1066	2304	463	3370	463	3833	
No. F.MEASURED	1360	2720	560	4080	560	4640	
MEAN LENGTH(cm)	38.6	39.6	39.4	39.2	39.4	39.2	
MEAN WEIGHT (g)	804	856	844	837	844	838	
DEPTH RANGE (m)	465/770	400/769	478/701	400/770	478/701	400/770	

Fig. 1 - Annual length composition of redfish on Division XII trawl fishery in 2002.

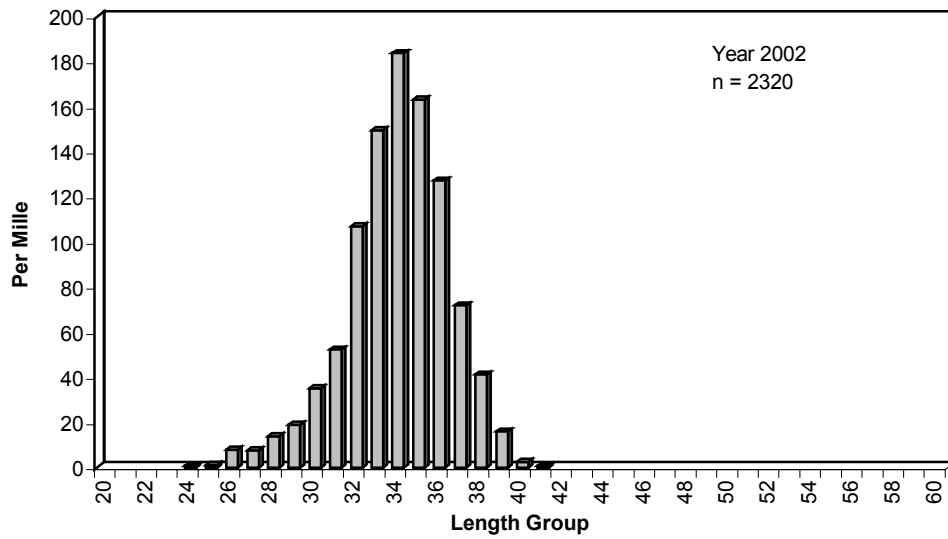


Fig. 2 - Annual length composition of redfish on Division XIVb trawl fishery in 2002.

