

Northwest Atlantic



Fisheries Organization

Serial No. N2555

NAFO SCS Doc. 95/15

Revised

SCIENTIFIC COUNCIL MEETING - JUNE 1995

Spanish Research Report for 1994

by

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Subarea 3

Status of the Fisheries

The Spanish fleet currently fishing in NAFO Convention area contains three components: pair-trawlers, fishing traditionally for cod, small freezers, fishing for flatfish, and large freezers, fishing for Greenland halibut. During 1994 pair-trawlers fished mainly for cod and partially for Greenland halibut, and all freezers fished for Greenland halibut in deep water zones of Divisions 3LMN.

Pair-trawl fishery for cod

There were 9 pair-trawlers fishing in NAFO area during 1994. Most of the vessels only fished in the first half of the year; only two vessels were present for same time during the second half. One observer was on board a pair-trawler. Sampling intensity of cod catch was:

Division:	3M

Samples	24
Fish measured	6333
Otoliths aged	817
Catch (t)	2241

Cod length and age frequency in those months with sampling are presented in Tables 1 and 2. In these tables SAMPLED WEIGHT means the weight of all samples taken from the catch to make length measurements; frequencies are referred to the sample size. Samples were not weighed on board; their weights were calculated with a length-weight relationship. SAMPLES means the number of samples taken, and MEAN WEIGHT is the quotient between Sampled Weight and Total (frequency). As in previous reports, length and age frequencies presented in this report came from the bulk of the catch, including discards.

Redfish caught as by-catch was sampled, and length frequencies are presented in table 3.

Freezers fishery for Greenland halibut

During 1994 there were 11 small freezers mainly fishing for Greenland halibut in deep water zones of Divisions 3LMNO. Four observers were on board. Length frequencies of Greenland halibut, American plaice and witch flounder are presented in tables 4, 5 and 6, respectively.

There were 27 large freezers fishing for Greenland halibut in the same deep zones. 51 surveys of fishing activities were made by observers on board, covering approx. 1/3 of the fishing activity of the fleet. Length frequencies of Greenland halibut, American plaice, witch flounder and roughhead grenadier (M. berglax) are presented in tables 7, 8, 9 and 10, respectively.

Observers on board both fleets covered one third of all the year activity of the vessels.

Greenland halibut age was determined by otoliths' reading. A sample of 2650 otoliths was selected, equaling covering each quarter, division and sex. Length distribution of the Greenland halibut catch of both fleets (tables 4 and 7) were transformed to catch at age: table 11.

Special Research Studies

During 1994 we co-operated in the EU survey of Flemish Cap, carried out in July. The survey had a bottom trawl stratified random design and 116 valid tows were made up to a depth of 720 meters (400 fathoms). Results of the survey are presented in the report (SCR Doc. 94/26) and it includes age compositions for cod, American plaice, redfish (the three species of Sebastes sp) and Greenland halibut stocks.

In February 1995, a mesh selectivity survey for Greenland halibut was carried out in the NAFO Regulatory area. Results of this experiment are presented in NAFO SCR Doc. 95/... During this survey, samples to analyze sexual maturity of Greenland halibut and roughhead grenadier were also collected.

Table 1 - Length composition of pair-trawler cod catches.

Division	3M			
Month	FEB	MAR	APR	MAY
<u>length</u>				
30-32:	5	1	.	.
33-35:	39	37	15	6
36-38:	340	263	182	25
39-41:	617	909	441	82
42-44:	264	818	391	73
45-47:	104	756	357	69
48-50:	98	861	658	106
51-53:	33	840	738	108
54-56:	24	520	524	84
57-59:	.	300	244	44
60-62:	9	105	112	11
63-65:	.	44	32	5
66-68:	.	23	33	.
69-71:	.	20	28	1
72-74:	.	16	26	.
75-77:	.	21	12	.
78-80:	.	20	14	.
81-83:	.	14	15	.
84-86:	.	13	11	.
87-89:	.	7	6	.
90-92:	.	5	4	.
93-95:	4	.	5	.
96-98:	.	2	1	.
99-01:
102-04:	.	2	.	.
105-07:
108-10:	.	2	.	.
111-13:	.	.	1	.
114-16:	.	1	.	.
117-19:	.	2	.	.
Total	1536	5602	3850	613
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Samples	3	8	10	3
Fish meas.	757	2113	2874	589
Sampled				
weight Kg	501	2467	3371	487
Mean weight	0.713	1.174	1.202	0.822
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Table 2 - Age composition of pair-trawler cod catches.

Division Month	3M			
	FEB	MAR	APR	MAY
<u>age</u>				
1:	0	0	0	0
2:	8	5	2	1
3:	1313	2584	1332	241
4:	209	2798	2307	363
5:	3	92	85	8
6:	0	37	52	1
7:	0	4	5	0
8:	1	63	53	0
9:	1	11	11	0
10:	1	3	3	0
11:	0	0	0	0
12:	0	3	0	0
Total	1536	5602	3850	613
n. of samples Sampled	3	8	10	3
catch Kg	1095	6575	4627	504

Table 3 - Length composition of redfish caught by pair-trawler.

Division Month	3M					
	MAR			APR		
Sex	I	M	F	I	M	F
<u>length</u>						
17 :	8	.	.	31	.	.
18 :	29	.	.	38	.	.
19 :	6	.	.	76	.	.
20 :	14	.	.	76	.	.
21 :	.	.	.	7	.	.
22 :	8	.	.	31	.	.
23 :	.	.	.	69	.	.
24 :	8	.	.	38	.	.
25 :	15	.	.	38	.	.
26 :	41	.	.	38	.	.
27 :	39	.	.	151	.	.
28 :	52	.	.	195	.	.
29 :	84	.	.	478	.	.
30 :	37	.	.	931	.	.
31 :	91	.	.	885	.	.
32 :	167	.	.	841	.	.
33 :	142	.	.	627	.	.
34 :	210	.	.	1140	.	.
35 :	156	.	.	790	.	.
36 :	231	.	.	617	.	.
37 :	204	.	.	877	.	.
38 :	219	.	.	777	.	.
39 :	252	.	.	559	.	.
40 :	111	.	.	169	.	.
41 :	138	.	.	120	.	.
42 :	147	.	.	31	.	.
43 :	91	.	.	62	.	.
44 :	74	.	.	7	.	.
45 :	74	.	.	7	.	.
46 :	39	.	.	7	.	.
47 :	35	.	.	.	.	.
Total	2720			9712		
Sampled weight						
by sex Kg	1601			5108		
Sampleless	2			2		
Fish meas.	408			447		
Sampled						
weight Kg	240			205		
Mean weight	0.589			0.526		

Table 4. Greenland halibut length composition in small freezers catch in Div. 3L, 3M, 3N and 3O.

GREENLAND HALIBUT LENGHT DISTRIBUTION OF CATCHES (SMALL TRAWLERS)														
Division 3L														
LENGHT	JAN	FEB	MAR	APRIL	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	
24-25	0	0	0	0	0	0	1	0	1	0	0	0	2	
26-27	0	0	0	0	0	0	3	10	4	0	0	0	17	
28-29	1	0	0	0	0	0	9	55	10	0	0	0	77	
30-31	11	1	1	0	0	17	75	21	2	0	0	0	132	
32-33	19	3	1	2	0	34	70	27	4	0	0	0	165	
34-35	42	9	5	5	1	33	111	52	12	0	0	0	275	
36-37	43	8	8	7	1	42	118	103	15	0	0	0	351	
38-39	41	6	10	9	1	51	119	126	29	0	0	0	401	
40-41	51	5	13	11	2	31	57	105	23	0	0	0	305	
42-43	49	7	15	9	2	26	44	70	19	0	0	0	244	
44-45	36	7	12	9	3	26	26	23	14	0	0	0	159	
46-47	15	6	13	8	5	19	8	18	13	0	0	0	106	
48-49	12	5	8	7	5	19	0	4	13	0	0	0	74	
50-51	8	6	6	4	7	14	0	4	9	0	0	0	58	
52-53	9	4	5	3	5	12	5	1	9	0	0	0	54	
54-55	5	3	4	2	3	11	0	0	7	0	0	0	36	
56-57	6	4	2	2	3	7	0	0	5	0	0	0	28	
58-59	6	3	1	2	2	6	0	0	4	0	0	0	23	
60-61	3	3	1	1	2	6	0	0	3	0	0	0	21	
62-63	1	1	1	0	1	5	0	0	2	0	0	0	10	
64-65	3	1	0	0	0	3	0	0	1	0	0	0	10	
66-67	2	1	0	1	0	2	0	0	1	0	0	0	7	
68-69	1	1	1	0	0	1	0	0	1	0	0	0	4	
70-71	1	0	0	1	0	1	0	0	0	0	0	0	4	
72-73	0	0	0	0	0	1	0	0	0	0	0	0	1	
74-75	0	0	0	0	0	0	0	0	0	0	0	0	2	
76-77	0	0	1	0	0	1	0	0	0	0	0	0	2	
78-79	0	0	1	0	0	1	0	0	0	0	0	0	1	
80-81	0	0	0	0	0	0	0	0	0	0	0	0	1	
82-83	0	0	0	0	0	0	0	0	0	0	0	0	0	
84-85	0	0	0	0	0	0	0	0	0	0	0	0	1	
86-87	0	0	0	0	0	0	0	0	0	0	0	0	0	
88-89	0	0	0	0	0	0	0	0	0	0	0	0	0	
90-91	0	0	0	0	0	0	0	0	0	0	0	0	0	
92-93	0	0	0	0	0	0	0	0	0	0	0	0	0	
94-95	0	0	0	0	0	0	0	0	0	0	0	0	0	
96-97	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL	365	86	110	83	42	383	698	568	186	0	0	0	2573	
Samp. fish	346	592	744	504	391	2067	256	2476	2489	0	0	0	9865	
Samples	4	3	5	4	2	10	2	14	13	0	0	0	57	
Catcht (t)	251	83	101	68	51	286	296	291	155	0	0	32	1614	
Sam.catch	8.1	5.1	6.7	5.2	2.2	14.2	1.6	15.3	12.4	0	0	0	71	

GREENLAND HALIBUT LENGHT DISTRIBUTION OF CATCHES (SMALL TRAWLERS)														
Division 3M														
LENGHT	JAN	FEB	MAR	APRIL	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	
24-25	0	0	0	0	0	0	0	0	0	0	0	0	0	
26-27	0	0	0	0	0	0	0	0	0	0	0	0	0	
28-29	0	0	0	0	0	0	0	0	0	0	0	0	0	
30-31	3	0	0	0	0	0	0	0	0	1	0	0	4	
32-33	7	0	1	0	0	0	0	0	0	1	0	0	9	
34-35	26	1	1	0	0	1	0	1	2	0	0	0	32	
36-37	23	0	3	1	1	2	0	1	4	0	1	0	37	
38-39	24	2	4	1	1	2	0	3	7	0	1	0	45	
40-41	23	2	8	2	2	3	0	2	6	0	2	0	49	
42-43	38	3	7	3	1	3	0	1	7	0	2	0	67	
44-45	31	4	11	3	2	5	0	0	5	0	1	0	63	
46-47	17	3	11	4	2	5	0	0	1	0	2	0	46	
48-49	26	3	8	3	3	5	0	0	0	0	2	0	50	
50-51	11	4	5	3	3	5	0	0	0	0	2	0	34	
52-53	14	4	4	3	4	3	0	0	0	0	1	0	32	
54-55	6	2	4	1	2	2	0	0	0	0	1	0	17	
56-57	9	1	4	1	2	2	0	0	0	0	1	0	19	
58-59	9	2	2	1	1	1	0	0	0	0	0	0	16	
60-61	6	1	1	0	1	2	0	0	0	0	0	0	11	
62-63	6	1	1	1	0	1	0	0	0	0	0	0	9	
64-65	6	1	0	0	1	1	0	0	0	0	0	0	9	
66-67	3	0	0	0	0	1	0	0	0	0	0	0	4	
68-69	1	0	0	0	1	0	0	0	0	0	0	0	2	
70-71	3	0	0	0	0	0	0	0	0	0	0	0	3	
72-73	1	0	0	0	0	0	0	0	0	0	0	0	1	
74-75	0	0	0	0	0	0	0	0	0	0	0	0	1	
76-77	0	1	0	0	0	0	0	0	0	0	0	0	1	
78-79	0	0	0	0	0	0	0	0	0	0	0	0	0	
80-81	0	0	0	0	0	0	0	0	0	0	0	0	0	
82-83	0	0	0	0	0	0	0	0	0	0	0	0	0	
84-85	0	0	0	0	0	0	0	0	0	0	0	0	0	
86-87	0	1	0	0	0	0	0	0	0	0	0	0	1	
88-89	0	0	0	0	0	0	0	0	0	0	0	0	0	
90-91	0	0	0	0	0	0	0	0	0	0	0	0	0	
92-93	0	0	0	0	0	0	0	0	0	0	0	0	0	
94-95	0	0	0	0	0	0	0	0	0	0	0	0	0	
96-97	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL	289	35	76	27	28	45	0	10	34	0	18	0	563	
Samp. fish	190	135	622	225	210	491	0	184	258	0	147	0	2462	
Samples	2	1	4	2	1	2	0	1	2	0	2	0	17	
Catcht (t)	261	44	75	26	33	50	0	5	20	1	18	1	534	
Sam.catch	3	2	6.8	1.1	2.3	1.7	0	8.4	1.4	0	1.3	0	28	

Table 4. (continued)

GREENLAND HALIBUT LENGHT DISTRIBUTION OF CATCHES (SMALL TRAWLERS)													
LENGHT	Division 3NO												
	JAN	FEB	MAR	APRIL	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
18-19	0	0	0	0	0	0	0	0	0	0	0	0	0
20-21	0	0	0	0	0	0	0	0	1	1	0	0	2
22-23	0	0	0	0	0	3	0	0	4	3	0	0	10
24-25	0	0	0	0	0	7	0	1	8	5	0	1	21
26-27	0	0	0	3	1	14	4	1	8	8	0	3	41
28-29	0	0	1	9	8	44	21	3	17	19	0	7	130
30-31	0	0	1	20	16	88	111	21	24	34	1	14	332
32-33	0	5	3	19	14	106	193	90	39	54	3	28	553
34-35	0	11	9	37	27	91	325	151	43	56	4	39	794
36-37	0	15	15	46	36	93	257	142	59	68	7	41	779
38-39	0	31	15	61	47	97	231	102	81	76	16	38	795
40-41	0	43	19	63	38	88	126	76	88	86	25	38	691
42-43	0	49	27	44	32	63	50	43	86	74	33	35	535
44-45	0	69	31	47	39	48	23	36	68	68	43	28	500
46-47	0	64	29	41	36	36	23	25	50	61	57	26	447
48-49	0	66	36	42	36	29	5	21	41	48	56	26	405
50-51	0	60	40	39	41	23	3	19	35	37	44	20	360
52-53	0	50	36	40	36	22	0	15	22	32	45	15	313
54-55	0	39	34	29	44	13	1	17	16	24	31	11	258
56-57	0	37	27	31	41	10	0	13	11	15	26	9	219
58-59	0	31	27	25	39	9	1	16	8	12	17	6	192
60-61	0	18	23	23	29	4	0	6	5	10	11	5	135
62-63	0	13	15	20	23	4	0	3	1	6	7	4	97
64-65	0	16	13	18	20	2	0	4	1	4	5	2	86
66-67	0	15	9	12	17	1	0	3	2	4	5	1	69
68-69	0	13	12	12	13	1	0	1	0	3	3	1	60
70-71	0	10	8	12	11	1	0	2	1	2	2	1	48
72-73	0	7	6	10	10	1	0	3	0	1	1	1	40
74-75	0	6	5	7	5	1	0	1	0	1	1	1	29
76-77	0	2	4	5	5	0	0	1	0	1	0	0	18
78-79	0	3	2	4	3	1	0	0	0	0	1	0	13
80-81	0	1	1	2	2	1	0	0	0	0	0	0	8
82-83	0	1	1	2	2	0	0	0	0	0	0	0	6
84-85	0	2	1	1	1	1	0	0	0	0	0	0	6
86-87	0	1	0	0	1	1	0	0	0	0	0	0	3
88-89	0	1	0	1	0	0	0	1	0	0	0	0	2
90-91	0	0	0	0	0	0	0	0	0	0	0	0	1
92-93	0	0	0	0	0	0	0	0	0	0	0	0	0
94-95	0	0	0	0	0	0	0	0	0	0	0	0	0
96-97	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	680	446	724	675	901	1374	816	721	812	449	402	7999
Samp. fish	0	1710	3322	4086	4323	3188	736	2437	3453	7349	6719	4388	41711
Samples	0	14	25	28	32	19	16	21	24	45	47	26	297
Catch (t)	0	865	627	854	877	535	584	521	500	611	512	303	6789
Sam.catch(	0	16.3	26.5	32.4	37.9	19.4	3.7	15.3	15.5	28.9	33.4	10.6	240

Table 5. American plaice length distribution in small freezers catch in Div. 3N and 3O.

AMERICAN PLAICE LENGTH Division 3NO	SMALL TRAWLERS				TOTAL
	1Q.	2Q.	3Q.	4Q.	
14-15	0	0	0	1	1
16-17	0	0	0	1	1
18-19	0	0	0	10	11
20-21	1	1	1	21	26
22-23	5	8	6	56	81
24-25	12	18	16	76	133
26-27	24	38	49	171	306
28-29	33	53	122	231	474
30-31	40	65	197	274	623
32-33	41	81	219	381	782
34-35	42	76	192	408	777
36-37	37	74	69	341	564
38-39	26	53	47	264	422
40-41	21	43	25	189	301
42-43	14	28	22	103	182
44-45	6	15	13	29	69
46-47	5	9	8	16	41
48-49	2	6	7	8	25
50-51	1	4	3	3	13
52-53	1	3	4	3	13
54-55	0	1	4	2	9
56-57	1	2	13	1	17
58-59	1	1	3	1	5
60-61	0	1	7	0	8
62-63	0	1	4	0	6
64-65	0	0	2	1	4
66-67	0	0	2	0	2
68-69	0	0	1	0	1
70-71	0	0	0	0	0
72-73	0	0	0	0	0
TOTAL	314	583	1036	2591	4898
Samp. fish	1768	4070	1551	3022	24614
Samples	13	27	11	16	156
Catch (t)	148	291	492	1145	2248
Sam.catch(	7	12	14	32	168

Table 6. Witch flounder length distribution in small freezers catch in Div. 3N and 3O.

WICH FLOUNDER LENGTH Division 3NO	SMALL TRAWLERS				TOTAL
	1Q.	2Q.	3Q.	4Q.	
25-26	0	0	1		1
27-28	0	0	0		0
29-30	4	0	0		5
31-32	14	2	5		31
33-34	42	11	14		95
35-36	49	38	17		147
37-38	57	53	13		175
39-40	46	55	13		162
41-42	32	43	8		117
43-44	19	34	11		90
45-46	13	25	2		58
47-48	14	18	1		45
49-50	6	16	2		34
51-52	4	8	0		18
53-54	3	5	0		10
55-56	2	2	0		6
57-58	0	1	0		1
59-60	0	0	0		0
61-62	0	0	0		0
TOTAL	305	312	85		995
Samp. fish	1781	2098	141		4020
Samples	13	10	1		24
Catch (t)	154	191	39		384
Sam.catch	4	3	0		7

Table 7. Greenland halibut length distribution in large freezers catch in Div. 3L, 3M and 3N.

LENGTH	GREENLAND HALIBUT LENGTH DISTRIBUTION OF CATCHES (, 000) (LARGE TRAWLERS)												TOTAL
	Division 3L												
	JAN	FEB	MAR	APRIL	MAY	JUN	JULY	AUG	SEPT	OCT	NOV	DEC	
22 - 23	0	0	0	0	0	0	6	1	0	0	0	0	7
24 - 25	6	1	0	0	2	0	12	4	0	0	0	0	26
26 - 27	29	5	2	4	5	7	28	18	10	2	0	2	113
28 - 29	76	15	8	23	16	13	99	42	38	6	3	20	359
30 - 31	191	39	11	54	46	41	150	91	81	22	8	126	860
32 - 33	351	79	18	56	77	74	231	118	122	34	38	411	1610
34 - 35	543	129	34	108	161	131	261	168	124	44	76	721	2500
36 - 37	488	167	42	136	243	188	335	228	145	58	120	713	2863
38 - 39	415	161	48	144	259	193	295	287	140	71	138	650	2801
40 - 41	292	184	48	123	222	161	245	256	134	81	174	588	2508
42 - 43	212	177	52	119	188	119	222	212	102	73	165	431	2073
44 - 45	158	145	54	95	161	107	176	172	88	61	161	286	1665
46 - 47	135	107	39	79	130	96	193	147	73	62	143	199	1401
48 - 49	88	79	30	59	99	78	141	114	58	54	124	126	1051
50 - 51	53	50	19	38	80	59	90	79	43	45	100	77	733
52 - 53	49	34	14	35	53	46	49	67	32	34	80	51	544
54 - 55	22	18	10	21	43	33	34	53	24	28	63	31	381
56 - 57	15	14	4	17	34*	26	38	41	18	22	52	18	300
58 - 59	14	10	4	10	21	16	16	30	12	20	32	10	196
60 - 61	8	8	2	8	17	10	22	18	12	11	24	8	149
62 - 63	3	4	2	6	11	11	14	12	5	8	15	8	99
64 - 65	4	2	1	4	11	8	8	7	3	5	9	2	65
66 - 67	1	1	0	3	5	5	4	5	2	3	7	3	39
68 - 69	1	2	0	2	6	4	5	4	1	3	6	1	35
70 - 71	0	3	0	2	4	2	4	3	1	2	4	3	28
72 - 73	1	1	1	2	5	5	4	2	0	2	4	2	27
74 - 75	1	1	0	2	3	3	2	1	1	2	3	1	19
76 - 77	0	1	0	1	3	3	1	1	0	1	2	1	14
78 - 79	0	1	0	0	4	3	3	1	0	2	2	1	18
80 - 81	1	0	0	1	3	3	3	1	0	1	2	1	16
82 - 83	0	1	0	0	1	3	1	1	0	1	1	1	10
84 - 85	1	0	0	1	2	2	1	1	0	1	1	0	10
86 - 87	0	0	0	0	1	1	1	1	0	0	2	1	6
88 - 89	0	0	0	0	2	2	0	0	0	0	1	1	7
90 - 91	0	1	0	0	0	1	0	0	0	0	1	0	5
92 - 93	0	0	0	0	1	1	0	0	0	0	0	0	2
94 - 95	0	0	0	0	0	1	0	0	0	0	0	0	2
96 - 97	0	0	0	0	0	0	0	0	0	0	0	0	1
98 - 99	0	0	0	0	0	0	0	0	0	0	0	0	0
100 - 101	0	0	0	0	0	0	0	0	0	0	0	0	0
102 - 103	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	3160	1439	446	1154	1920	1457	2694	2186	1273	759	1562	4494	22543
Samp. fish	4312	6755	2851	5560	6573	4209	2418	9104	7520	11222	16409	15312	92245
Samples	27	44	14	29	38	23	13	43	40	59	83	74	487
Catch (t.)	1679	980	319	814	1471	1152	1747	1556	816	664	1426	2528	15152
Sam.cath (	56	73	19	43	75	28	19	56	41	46	82	78	615

LENGTH	GREENLAND HALIBUT LENGTH DISTRIBUTION OF CATCHES (LARGE TRAWLERS)												TOTAL
	Division 3M												
	JAN	FEB	MAR.	APRIL	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	
22 - 23	0	0	0	0	0	0	0	0	0	0	0	0	0
24 - 25	0	0	0	0	0	0	0	0	0	0	0	0	0
26 - 27	1	1	1	0	0	0	0	0	0	0	0	0	4
28 - 29	4	3	2	1	0	0	0	0	0	0	0	0	11
30 - 31	11	11	3	2	2	0	0	0	0	0	2	0	32
32 - 33	56	32	8	4	3	1	2	0	0	0	3	0	108
34 - 35	92	65	26	9	8	2	3	2	0	1	4	2	213
36 - 37	131	93	38	24	20	5	6	4	2	1	7	2	331
38 - 39	115	84	55	33	24	6	9	6	3	2	9	3	348
40 - 41	102	101	97	53	31	7	9	9	5	4	11	3	431
42 - 43	92	102	132	72	35	8	9	11	6	6	11	3	486
44 - 45	93	110	161	87	41	10	13	12	7	8	12	1	554
46 - 47	61	114	155	98	58	9	13	13	8	10	13	2	554
48 - 49	49	94	142	99	53	10	10	12	9	10	9	2	499
50 - 51	41	73	127	89	56	8	9	9	8	11	10	1	442
52 - 53	27	58	112	92	58	7	8	8	9	11	10	0	401
54 - 55	24	49	88	81	49	7	8	10	7	11	7	0	342
56 - 57	16	40	72	62	44	7	9	8	8	12	6	0	285
58 - 59	15	28	57	40	35	6	7	7	6	9	5	0	216
60 - 61	8	24	43	28	27	5	7	6	5	8	4	0	164
62 - 63	6	14	32	15	16	4	6	5	4	5	2	0	109
64 - 65	5	12	21	13	11	2	3	4	3	3	1	0	78
66 - 67	2	9	14	8	9	2	3	2	3	2	1	0	54
68 - 69	2	7	9	5	8	2	3	2	2	2	0	0	41
70 - 71	1	4	7	4	6	1	1	1	3	1	1	0	30
72 - 73	1	5	6	4	4	1	2	1	2	1	0	0	26
74 - 75	0	4	6	3	3	1	2	1	1	1	0	0	22
76 - 77	1	3	4	2	4	1	1	1	0	0	0	0	16
78 - 79	0	3	3	1	3	1	1	0	0	0	0	0	13
80 - 81	1	3	4	1	4	1	1	1	0	0	0	0	15
82 - 83	0	2	4	1	3	1	1	1	1	0	0	0	13
84 - 85	0	1	2	1	2	1	1	1	0	0	0	0	10
86 - 87	0	1	1	0	3	0	0	0	0	0	0	0	7
88 - 89	0	0	1	1	1	0	0	0	0	0	0	0	5
90 - 91	0	1	1	0	1	0	0	0	0	0	0	0	4
92 - 93	0	0	1	0	1	0	0	0	0	0	0	0	3
94 - 95	0	0	0	0	0	0	0	0	0	0	0	0	1
96 - 97	0	0	0	0	0	0	0	0	0	0	0	0	0
98 - 99	0	0	0	0	0	0	0	0	0	0	0	0	0
100 - 101	0	0	0	0	0	0	0	0	0	0	0	0	0
102 - 103	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	956	1150	1433	933	624	116	149	138	103	120	130	20	5872
samp. fish	3002	10036	13760	6782	7786	2379	937	1196	2005	2498	2436	216	53033
Samples	18	54	71	35	45	19	5	6	11	14	11	1	290
Catch (t.)	700	1123	1674	1096	856	162	209	191	154	172	133	14	6484
Sam.cath (	28.2	85.1	104.1	50.3	57.2	27.9	3.2	5.6	10.9	11.6	11.7	1	397

Table 7. (continued)

GREENLAND LENGTH	HALIBUT LENGTH DISTRIBUTION OF CATCHES (LARGE TRAWLERS)												TOTAL
	Division 3N												
	JAN	FEB	MAR	APRIL	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	
18 - 19	0	0	0	0	0	0	0	0	1	0	0	0	1
20 - 21	0	0	0	0	0	0	0	0	6	1	0	0	7
22 - 23	0	0	1	0	0	1	0	3	29	4	0	0	39
24 - 25	0	0	9	3	0	1	0	7	51	12	1	0	85
26 - 27	0	0	33	10	4	6	0	6	44	18	4	0	126
28 - 29	0	0	42	27	13	31	6	12	90	33	19	0	273
30 - 31	0	0	39	42	34	73	9	39	149	62	41	0	490
32 - 33	0	0	45	56	38	179	24	90	219	77	65	0	796
34 - 35	0	1	48	93	68	250	47	100	220	88	74	0	990
36 - 37	0	2	40	167	84	331	74	104	198	84	75	0	1160
38 - 39	0	2	34	150	93	354	89	129	187	89	75	0	1203
40 - 41	0	3	29	128	92	296	102	121	164	71	64	0	1071
42 - 43	0	5	24	91	59	197	92	90	116	58	55	0	788
44 - 45	0	6	26	86	66	143	80	65	79	46	41	0	639
46 - 47	0	8	24	59	65	109	88	57	62	35	31	0	539
48 - 49	0	8	26	64	65	101	82	46	46	28	26	0	493
50 - 51	0	8	32	52	61	70	75	45	31	18	19	0	413
52 - 53	0	8	24	44	62	73	66	40	28	13	16	0	375
54 - 55	0	7	22	38	62	63	46	36	22	12	14	0	323
56 - 57	0	5	19	41	56	54	42	34	16	10	14	0	290
58 - 59	0	2	15	31	40	23	32	37	12	7	9	0	208
60 - 61	0	1	15	21	37	24	19	25	9	5	5	0	161
62 - 63	0	1	10	19	32	15	13	20	5	3	3	0	121
64 - 65	0	0	6	11	26	11	8	8	5	2	1	0	79
66 - 67	0	0	4	10	18	10	7	8	2	1	1	0	62
68 - 69	0	0	5	11	15	8	5	8	1	1	1	0	56
70 - 71	0	0	5	8	18	5	4	4	1	1	1	0	46
72 - 73	0	0	4	6	14	3	4	4	1	1	0	0	38
74 - 75	0	0	2	5	13	1	3	4	1	0	0	0	31
76 - 77	0	0	4	4	8	2	3	3	0	0	0	0	24
78 - 79	0	0	1	3	8	3	1	2	2	0	0	0	21
80 - 81	0	0	1	3	8	2	1	3	1	0	0	0	19
82 - 83	0	0	1	1	6	1	1	2	0	0	0	0	13
84 - 85	0	0	1	2	2	0	1	1	1	0	0	0	8
86 - 87	0	0	0	2	3	1	0	1	0	0	0	0	8
88 - 89	0	0	0	1	2	0	0	0	0	0	0	0	3
90 - 91	0	0	0	1	1	1	0	0	0	0	0	0	3
92 - 93	0	0	0	0	1	0	0	0	0	0	0	0	1
94 - 95	0	0	0	0	0	0	0	0	0	0	0	0	1
96 - 97	0	0	0	0	0	0	0	0	0	0	0	0	0
98 - 99	0	0	0	0	0	0	0	0	0	0	0	0	0
100 - 101	0	0	0	0	0	0	0	0	0	0	0	0	0
102 - 103	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	5	68	593	1289	1176	2441	1025	1154	1798	781	655	0	11003
Samp. fish	184	540	2661	4168	4438	4170	2971	7733	9218	6856	5612	0	48551
Samples	1	5	21	24	25	22	15	30	42	34	28	0	247
Catch (t)	9	71	512	1135	1429	1716	994	986	952	455	416	14	8689
Sam.catch (	1.2	5.8	17.2	30	40.9	36.8	16.6	33.3	54.9	25.5	25.2	0	287

Table 8. American plaice length distribution in large freezers catch in Div. 3L, 3M and 3N.

AMERICAN PLAICE LENGTH	LENGTH DISTRIBUTION OF CATCHES (LARGE TRAWLERS)				TOTAL
	Division 3L				
	1Q.	2Q.	3Q.	4Q.	
16 - 17	0	0	0	0	1
18 - 19	10	0	0	0	11
20 - 21	15	1	0	3	21
22 - 23	34	2	0	6	46
24 - 25	69	7	0	12	94
26 - 27	64	19	0	75	170
28 - 29	76	30	0	177	305
30 - 31	66	34	0	212	336
32 - 33	58	41	0	245	371
34 - 35	47	32	0	157	254
36 - 37	42	24	0	202	289
38 - 39	31	13	0	116	173
40 - 41	15	11	0	70	104
42 - 43	7	5	0	49	64
44 - 45	5	2	0	31	41
46 - 47	2	2	0	31	38
48 - 49	2	2	0	12	16
50 - 51	1	1	0	5	8
52 - 53	1	1	0	10	14
54 - 55	0	1	0	2	3
56 - 57	0	0	0	1	1
58 - 59	1	0	0	0	1
TOTAL	546	230	0	1416	2361
Samp. fish	1274	813	0	2150	10624
Samples	10	5	0	11	63
Catch (t)	217	98	20	670	1005
Sam.catch	3	2	0	8	33

Table 8. (continued)

AMERICAN PLAICE LENGHT DISTRIBUTION OF CATCHES (LARGE TRAWLERS)					
LENGTH	Division 3M				TOTAL
	JAN	FEB	MAR	APRIL	
16 - 17	0	0	0	0	0
18 - 19	0	0	0	0	0
20 - 21	0	0	0	83	167
22 - 23	0	0	0	83	167
24 - 25	0	0	0	250	500
26 - 27	0	0	0	1833	3667
28 - 29	0	0	0	1083	2167
30 - 31	0	0	0	1500	3000
32 - 33	0	0	0	2083	4167
34 - 35	0	0	0	1000	2000
36 - 37	0	0	0	833	1667
38 - 39	0	0	0	750	1500
40 - 41	0	0	0	250	500
42 - 43	0	0	0	83	167
44 - 45	0	0	0	250	500
46 - 47	0	0	0	0	0
48 - 49	0	0	0	0	0
50 - 51	0	0	0	0	0
52 - 53	0	0	0	83	167
54 - 55	0	0	0	0	0
56 - 57	0	0	0	0	0
58 - 59	0	0	0	0	0
TOTAL	0	0	0	10164	20333
Samp. fish	0	0	0	122	122
Samples	0	0	0	1	1
Catch (t)	1	1	1	3	6
Sam.catch (t)	0	0	0	0.07	0.07

AMERICAN PLAICE LENGHT DISTRIBUTION OF CATCHES
Division 3N
LARGE TRAWLERS

LENGTH	1Q.	2Q.	3Q.	4Q.	TOTAL
14 - 15	0	0	0	3	3
16 - 17	1	0	0	12	14
18 - 19	1	1	0	43	47
20 - 21	12	12	3	116	151
22 - 23	58	44	6	238	363
24 - 25	112	82	9	377	610
26 - 27	129	142	15	391	713
28 - 29	153	175	15	399	781
30 - 31	156	192	21	301	705
32 - 33	151	158	36	254	630
34 - 35	125	152	44	182	529
36 - 37	77	123	31	146	397
38 - 39	85	97	22	116	337
40 - 41	48	57	23	68	207
42 - 43	37	37	9	57	147
44 - 45	19	33	12	45	114
46 - 47	17	18	4	24	66
48 - 49	10	10	6	10	38
50 - 51	6	10	1	9	27
52 - 53	12	5	3	2	23
54 - 55	5	3	1	2	12
56 - 57	1	3	3	2	10
58 - 59	1	1	1	1	4
60 - 61	2	1	0	2	5
62 - 63	1	1	0	0	2
64 - 65	0	0	0	1	1
66 - 67	0	0	0	0	0
68 - 69	0	0	0	0	0
70 - 71	0	0	0	1	1
72 - 73	0	0	0	0	0
TOTAL	1218	1358	265	2799	5936
Samp. fish	1453	4433	206	1628	17274
Samples	9	23	1	11	100
Catch (t)	526	573	220	893	2212
Sam.catch	7	17	1	15	92

Table 9. Witch flounder length distribution in large freezers catch in Div. 3L and 3N.

Lt. (cm)	JAN	FEB	MAR	APR	MAY	JUN	JUL	OCT	NOV	DEC	TOTAL
25 - 26	0	0	0	0	0	0	1	0	0	1	3
27 - 28	0	0	0	0	0	0	2	0	2	6	11
29 - 30	0	0	1	1	0	2	1	0	7	10	24
31 - 32	1	0	2	2	1	11	5	0	9	6	38
33 - 34	1	1	1	3	8	28	10	1	3	5	66
35 - 36	1	0	5	8	11	33	13	9	5	10	104
37 - 38	3	1	10	15	15	34	13	14	9	19	145
39 - 40	5	2	12	28	17	22	14	21	19	30	166
41 - 42	6	7	10	26	13	12	7	16	23	25	157
43 - 44	5	2	13	24	15	12	8	12	10	20	133
45 - 46	6	4	12	20	13	9	8	6	9	15	110
47 - 48	5	3	8	18	16	3	4	2	7	12	86
49 - 50	4	2	5	16	10	4	7	2	9	10	75
51 - 52	3	2	10	10	11	2	8	2	9	9	72
53 - 54	3	2	8	6	4	1	9	0	0	5	43
55 - 56	2	1	4	2	1	0	6	0	0	1	19
57 - 58	1	1	1	1	0	0	0	0	0	1	6
59 - 60	1	2	0	0	0	0	1	0	0	0	5
61 - 62	0	0	1	0	0	0	0	0	0	0	1
63 - 64	0	0	0	0	0	0	0	0	0	0	0
TOTAL	48	31	103	180	133	174	117	85	120	188	1285
S. FISH	347	38	150	479	570	304	755	143	69	1283	4138
SAMPLES	2	1	1	3	4	2	4	2	1	7	27
CATCH (t)	41	30	85	133	95	82	83	49	74	119	863
S. CATCH	0.3	0.0	0.1	0.4	0.4	0.1	0.5	0.1	0.0	0.8	2.8

Table 10. Roughhead grenadier length distribution (anal fin length) in large freezers catch in Div. 3L, 3M and 3N.

GRENADIER (Macrourus berglax) LENGTH DISTRIBUTION OF CATCHES					
DIV. 3L LARGE TRAWLERS					
LENGTH	1er Q	2nd Q	3er Q	4th Q	TOTAL
5 - 6	0	0	10	7	18
6.5 - 7.5	0	17	29	36	83
8 - 9	92	239	302	227	859
9.5 - 10 .5	1368	420	1352	1177	4317
11 - 12	1701	1002	3433	3708	9843
12.5 - 13.5	1993	770	2331	2785	7878
14 - 15	2537	2337	5833	6388	17096
15.5 - 16.5	3001	1977	5065	5968	16011
17 - 18	5324	3740	7169	5190	21423
18.5 - 19.5	5366	3677	6329	6382	21754
20 - 21	2493	2141	4028	4514	13175
21.5 - 22.5	1352	920	2088	2283	6644
23 - 24	961	666	2201	1342	5169
24.5 - 25.5	996	746	2125	1009	4876
26 - 27	836	629	2266	1352	5083
27.5 - 28.5	954	350	1353	874	3530
29 - 30	816	246	1455	640	3158
30.5 - 31.5	183	195	335	190	903
32 - 33	236	161	411	235	1043
33.5 - 34.5	110	66	303	313	792
35 - 36	8	55	31	73	168
36.5 - 37.5	5	12	10	78	105
38 - 39	0	6	57	2	65
39.5 - 40.5	5	9	0	0	15
41 - 42	0	0	0	14	14
42.5 - 43.5	0	0	0	0	0
44 - 45	27	0	0	0	27
TOTAL	30363	20383	48515	44787	144048
Samp. fish	1717	5904	4902	13049	25572
Samples	12	34	30	75	151
Catch (t.)	227	410	664	612	1913
Sam. catch(t)	4	5	6	9	23.34

Table 10. (continued)

GRENADIER (<i>macrourus berglax</i>) LENGTH DISTRIBUTION OF CATCHES					
Division 3M					
LENGTH	LARGE TRAWLERS				TOTAL
	1Q.	2Q.	3Q.	4Q.	
5 - 6	0	0	2	0	2
6.5 - 7.5	0	0	1	0	1
8 - 9	3	1	4	0	8
9.5 - 10	12	2	21	0	36
11 - 12	12	2	35	2	51
12.5 - 13.	35	7	21	1	64
14 - 15	43	22	56	5	126
15.5 - 16.	76	27	31	7	141
17 - 18	127	57	38	12	233
18.5 - 19.	91	59	23	8	181
20 - 21	54	37	17	9	116
21.5 - 22.	32	20	2	5	58
23 - 24	28	17	2	1	48
24.5 - 25.	26	12	2	1	41
26 - 27	15	9	0	2	25
27.5 - 28.	8	7	0	1	16
29 - 30	5	6	0	1	12
30.5 - 31.	2	5	0	0	8
32 - 33	3	3	0	1	6
33.5 - 34.	3	2	0	0	5
35 - 36	3	1	0	0	4
36.5 - 37.	0	1	0	0	1
38 - 39	0	1	0	0	1
39.5 - 40.	0	0	0	0	0
41 - 42	0	0	0	0	0
42.5 - 43.	0	0	0	0	0
TOTAL	578	297	253	57	1186
Samp. fish	4704	5702	1091	1586	13083
Samples	30	32	6	11	79
Catch (t.)	419	258	97	43	817
Sam.catch(	3	7	1	1	13

GRENADIER (<i>Macrourus berglax</i>) LENGTH DISTRIBUTION OF CATCHES					
Division 3N					
LENGTH	LARGE TRAWLERS				TOTAL
	1Q.	2Q.	3Q.	4Q.	
5 - 6	0	0	1	0	2
6.5 - 7.5	3	5	2	0	11
8 - 9	1	8	16	0	31
9.5 - 10	15	31	43	10	118
11 - 12	10	53	49	16	154
12.5 - 13.	22	48	39	24	158
14 - 15	60	123	103	17	361
15.5 - 16.	60	155	155	31	479
17 - 18	104	279	273	31	821
18.5 - 19.	105	333	203	39	812
20 - 21	79	225	135	31	561
21.5 - 22.	25	98	49	10	217
23 - 24	20	73	41	5	166
24.5 - 25.	16	56	37	2	133
26 - 27	5	52	17	5	94
27.5 - 28.	19	31	10	2	75
29 - 30	9	21	8	1	47
30.5 - 31.	7	8	10	1	31
32 - 33	5	6	9	0	24
33.5 - 34.	0	3	0	0	4
35 - 36	0	1	0	0	2
36.5 - 37.	0	0	0	2	3
38 - 39	0	0	0	0	0
TOTAL	565	1610	1201	226	4304
Samp. fish	1118	6403	5077	705	13303
Samples	6	35	32	5	78
Catch (t.)	748	1189	776	502	3215
Sam.catch(	4	12	5	0	21

Table 11. Roughhead grenadier length distribution (anal fin length) in small freezers catch in Div. 3L, 3M and 3N.

GRENADIER (Macrourus berglax) LENGHT DISTRIBUTION OF CATCHES (,000)					
Division 3L	SMALL TRAWLERS				
LENGHT	1Q.	2Q.	3Q.	4Q.	TOTAL
7.5-8.5	0	0	0	0	0
9-10	0	0	0	0	1
10.5-11.5	0	1	1	0	3
12-13	0	1	4	0	8
13.5-14.5	0	5	21	0	33
15-16	0	8	31	1	52
16.5-17.5	1	15	31	1	61
18-19	1	20	30	1	67
19.5-20.5	0	14	14	1	36
21-22	0	5	4	1	13
22.5-23.5	0	4	3	1	10
24-25	0	4	0	1	7
25.5-26.5	0	3	1	0	5
27-28	0	2	1	0	3
28.5-29.5	0	1	0	0	2
30-31	0	0	0	0	1
31.5-32.5	0	1	0	0	1
33-34	0	0	0	0	1
34.5-35.5	0	0	0	0	1
36-37	0	0	0	0	0
37.5-38.5	0	0	0	0	0
TOTAL	2	86	142	7	304
Samp. fish	82	621	299	94	2286
Samples	1	3	2	1	15
Catch (t)	18	80	86	6	190
Sam. catch	0	1	2	2	11

GRENADIER (Macrourus berglax) LENGHT DISTRIBUTION OF CATCHES (,0					
Division 3M	SMALL TRAWLERS				
LENGHT	1Q.	2Q.	3Q.	4Q.	TOTAL
7.5-8.5	18	0	0	0	38
9-10	137	42	0	0	380
10.5-11.5	71	73	0	0	305
12-13	66	104	0	0	362
13.5-14.5	71	125	0	0	416
15-16	97	271	0	0	782
16.5-17.5	173	448	0	0	1319
18-19	102	302	0	0	858
19.5-20.5	53	271	0	0	688
21-22	4	62	0	0	142
22.5-23.5	0	83	0	0	177
24-25	9	83	0	0	196
25.5-26.5	0	62	0	0	133
27-28	0	21	0	0	44
28.5-29.5	0	10	0	0	22
30-31	0	21	0	0	44
31.5-32.5	0	10	0	0	22
TOTAL	801	1988	0	0	5926
Samp. fish	181	191	0	0	372
Samples	1	1	0	0	2
Catch (t)	12	18	1	3	34
Sam. catch	0	1	0	0	0.6

Table 11. (continued)

GRENADIER (Macrourus berglax)		LENGHT DISTRIBUTION OF CATCHES (,000)			
Division 3NO	SMALL TRAWLERS				
LENGHT	1Q.	2Q.	3Q.	4Q.	TOTAL
3-4	0	0	0	0	0
4.5-5.5	0	0	0	0	0
6-7	0	0	0	0	0
7.5-8.5	0	1	0	0	1
9-10	1	2	4	0	9
10.5-11.5	2	9	22	0	39
12-13	3	21	14	0	46
13.5-14.5	8	83	3	1	116
15-16	32	119	25	11	226
16.5-17.5	34	226	33	19	379
18-19	37	222	45	29	404
19.5-20.5	30	105	48	25	253
21-22	17	74	21	12	151
22.5-23.5	11	46	6	7	86
24-25	11	45	3	5	78
25.5-26.5	9	25	3	2	47
27-28	6	10	6	1	28
28.5-29.5	3	17	0	1	25
30-31	4	2	0	0	8
31.5-32.5	1	7	0	0	11
33-34	0	1	0	0	2
34.5-35.5	0	0	0	0	0
36-37	0	0	0	0	0
37.5-38.5	0	0	0	0	0
39-40	0	0	0	0	0
TOTAL	211	1015	235	115	1909
Samp. fish	1974	2581	745	2384	16516
Samples	12	13	10	23	126
Catch (t)	169	702	144	87	2264
Sam. catch	3	6	1	4	30

Table 12. Length distribution of the Spanish catch.

AGE	3L	3M	3N	TOTAL
2	13	0	91	104
3	914	63	1131	2108
4	2687	228	2291	5206
5	3260	386	2615	6261
6	4250	608	2381	7239
7	4588	794	2413	7796
8	3423	825	1454	5702
9	2601	920	1615	5137
10	1442	814	1514	3770
11	812	619	1268	2699
12	629	563	885	2076
13	193	299	645	1137
14	152	139	328	618
15	78	69	202	349
16	27	46	77	150
17	20	22	43	85
18	10	17	33	60
19	8	11	12	31
20	2	7	1	11
21	0	1	2	3
22	0	4	0	4
23	1			1