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Spanish Research Report for 1991

by

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Subarea 3

Status of the Fisheries

During 1991 three Spanish fleets fished in NAFO Convention area: pair-trawlers, fishing directly for cod, small freezers, fishing in a mixed fishery, mainly for flatfishes, and large freezers, fishing for Greenland halibut in deep water of Divisions 3LM.

Pair-trawl fishery for cod

During 1991 there were five observers on board pair-trawlers for periods of two months each. Sampling intensity of cod catch was:

Division:	3L	3M	3N
Samples	83	35	27
Fish measured	28569	11720	8705
Otoliths aged	1965	1117	1191

Cod length and age frequency in those months with sampling are presented in Tables 1 and 2. In these tables SAMPLED CATCH means the catches from which samples were taken; frequencies are referred to the sample size. SAMPLED WEIGHT means the weight of all samples taken from the catch to make length measurements. 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 Catch and Total (frequency). When frequencies were reduced by a factor of 10 this fact is indicated below the TOTAL figure (Table 2, p.e.).

Mean weights at age in the catch were also calculated with the same length-weight relationship. Results are presented in Table 3. In Table 2 SOP means Sum Of Products and it is a later calculation of sampled catch using age frequencies and weight at age data (Table 3). Under the headline "%" the quotient between SOP and Sampling catch is presented and expressed in percent. This figure means the proportion of Sampling catch covered by the sampling process. When the value is less than 100 it means that the same portion of the length range was not covered by otolith sampling.

As was mentioned in last year's report (NAFO SCS Doc. 91/16), length and age frequencies presented in this report come from the bulk of the catch, including discards.

During 1991 some pair-trawlers moved occasionally to deep waters to fish Greenland halibut. The geographic area belongs mainly to statistical Division 3M, but the fishery was carried out on the Grand Bank side of the Flemish Pass. We use in tables the denomination 3LM for that zone of deep waters, belonging statistically to Division 3M but topographically to Division 3L. Length distributions of Greenland halibut catches are presented in table 4.

Groundfish fishery of freezers

Catch sampling was done on board by three observers during 1991. American plaice length, age frequencies and mean weight by months are presented in Tables 5, 6 and 7, respectively. As in the case of cod, both length and age frequencies are referred to the catch figure under SAMPLED CATCH in the table. Sampled catch was divided by sex using length frequencies and a length-weight relationship, and mean weight by sex was calculated after that. Under the headline "%", the quotient between SOP by sex and catch sampled is presented and expressed in percent. So, this is a partial value, and the global percent of transformation of length to age frequencies must be calculated by the sum of values corresponding to Males, Females and Indeterminate.

Other species caught by freezers and sampled on board were yellowtail flounder (Table 8), Greenland halibut (Table 9), witch flounder (Table 10), redfish (Table 11), skates (Table 12) and Cod (Table 13). Length frequencies for all species as well as age frequencies for American plaice correspond to the total catch, not only to the retained portion of the catch.

During 1991 some small freezers moved occasionally to deep waters to fish Greenland halibut in the same area described for pair-trawlers. According to observers on board, the fishery for flatfish was carried out in less than 350 meters water depth and that for Greenland halibut in 700-1400 meters depth. In the tables the deep water zone is designated as 3LM and the depth range is indicated to emphasize the differences.

Greenland halibut fishery

Around thirty bottom trawlers fished on Greenland halibut in the zone described of Divisions 3LM. Fishing was conducted in 700-1,500 meters depth, and Greenland halibut comprised 95% of the catch. Most of the vessels have an observer on board to sample the catch. Length distribution of the catch is presented in Table 14. A complete report of this fishery is presented in a separate paper (NAFO SCR Doc. 92/).

Special Research Studies

During 1991 we co-operated in two EEC projects: Tagging cod in Flemish Cap and Bottom trawl survey of Flemish Cap:

The Tagging cruise for Flemish Cap cod was carried out in April from 1st to 15th, and about 600 cod were tagged. Some recaptures were made outside the Cap. Results are presented in the report (SCR Doc. 92/).

The fishing survey of Flemish Cap was carried out in July. The survey had a bottom trawl stratified random design and 117 valid tows were made up to a depth of 720 meters (400 f.). Results of the survey are presented in the report (SCR Doc. 92/) and it includes age compositions for cod, American plaice and redfish (Sebastes spp and S. marinus) stocks.

Division Month	3L			3M			3N								
	FEB	MAR	APR	MAY	JUN	JUL	NOV	FEB	MAR	MAY	JUN	JUL	OCT	NOV	DEC
Length															
18-20;															
21-23;															
24-26;															
27-29;	12														
30-32;	168														
33-35;	1089	194	1815	72	16296	78	7	14							
36-38;	1908	238	5573	72	43700	868	15	40	4						
39-41;	3370	584	9925	215	58190	1927	2	94	36						
42-44;	5256	2128	15246	860	66670	2146	28	51	56						
45-47;	3436	3438	1792	52116	278	2	18	19							
48-50;	9682	6225	16450	3011	64030	1245	103	11	12						
51-53;	10881	7448	15233	4373	40570	915	108	15	15						
54-56;	8967	6682	10992	5162	31166	573	105	4	5						
57-59;	6651	4564	6119	5520	18200	357	48	11	7						
60-62;	3365	2713	3376	4230	12245	175	13	9	9						
63-65;	1441	1567	16544	1792	65800	1720	59	7	23						
66-68;	1175	1113	1363	1219	3044	118	6	12	3						
69-71;	1064	776	1069	1219	828	50	6	4	4						
72-74;	454	782	643	949	3	2	4	3	3						
75-77;	226	581	480	860	456	1	1	1	1						
78-80;	416	323	162	430	393	1	2	1	1						
81-83;	162	255	235	287	174	1	1	1	1						
84-86;	73	165	373	287	87	2	1	1	1						
87-89;	63	70	329	72	72	1	1	1	1						
90-92;	50	41	22	122	122	1	1	3	3						
93-95;	50	54	72	31	2	1	4	1	1						
96-98;	.	30	.	.	.	1	1	1	1						
99-01;	.	12	.	.	.	1	1	1	1						
102-04;	.	7	.	.	.	1	1	1	1						
105-07;	.	.	.	30	.	.	.	.	.	
108-10;	.	.	.	.	.	.	.	.	.
111-13;	.	.	.	.	.	.	.	1	1						
114-16;	.	.	.	.	.	.	.	1	1						
117-19;	.	.	.	.	.	.	.	1	1						
120-22;	.	.	.	.	.	.	.	1	1						
123-25;	.	.	.	.	.	.	.	1	1						
126-28;	.	3	.	.	.	.	.	1	1						
129-31;	.	.	.	.	.	.	.	1	1						
132-34;	.	.	.	.	.	.	.	1	1						
135-37;	.	.	.	.	.	.	.	1	1						
138-40;	.	.	.	.	.	.	.	1	1						
Total	64201	39991108244	31903435978	13057	592	261	215								
Sampled															
Catch (t)	91	68	133	63	441	11	1	2	3						
Samples	10	11	13	1	44	3	1	1	1						
Fish meas.	3370	4002	4008	445	15785	959	322	72	162						
Sampled															
Weight Kg	4657	7092	4772	872	15752	822	408	57	226						
Mean weight	1.416	1.689	1.231	1.959	1.011	0.851	1.267	0.785	1.393						
Total	36328	14306312568	23869	36599	1607										
Sampled															
Catch (t)	44	16	237	137	88	6									
Samples	7	5	121	13	8	6									
Fish meas.	2368	1383	7735	5003	3251	451									
Sampled															
Weight Kg	3386	1773	8573	32616	12288	1746									
Mean weight	1.441	1.123	0.758	5.735	2.411	3.803									

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

Table 2 - Age composition of pair-trawler cod catches.

Div. Month	3L						3M			3N		
	FEB	MAR	APR	MAY	JUN	JUL	MAY	JUN	JUL	OCT	NOV	DEC
age												
1									1			42
2												
3	851	128	92	18	893	2344	8076	6257	17956	2509	3462	186
4	6062	1551	1505	376	10209	7406	2955	1844	8445	1860	1817	102
5	21745	11817	4645	6612	18697	2908	14047	3863	2448	4665	3561	154
6	22254	15001	3373	14750	10748	291	4180	1311	1281	1991	1051	62
7	8360	6274	581	3733	1819	58	487	200	177	1175	543	39
8	915	831	157	1653	373				20	2038	1148	36
9	1785	1814	197	1740	415				10	2774	1944	70
10	1088	1219	50	441	116				4	1890	1310	73
11	923	1036								2111	1027	143
12	178	250								1090	507	54
13	15	30								143	102	11
14	21	31										
15	3	6										
16+												
Total	64200	39988	10600	29323	43270	13057	30149	14166	31257	23868	36598	1607
	x 10	x 10			x 10				X 10			
Otoliths Sampled	-- 522 --	-----	1290	-----	151	-- 288 --	755	-----	1191	-----		
catch (t)	91	68	133	63	441	11	44	16	237	137	88	6
SOP	90848	67496	122437	50594	430213	11153	42776	15376	237472	136972	88287	6121
#	100	100	92	81	98	100	98	96	100	100	100	100

Table 3. - Mean weight (gr) at age of pair-trawler cod catches.

Table 4 - Greenland halibut length composition in pair-trawler catches in Division 3LM.

Division		APR			MAY			JUN		
Month	Sex	I	M	F	I	M	F	I	M	F
	length									
	28-29:	.	.	.	.	81	.	.	.	.
	30-31:	50	.	46	.	112	.	8	.	.
	32-33:	50	.	.	.	51	.	218	.	.
	34-35:	315	63	.	36	664	.	431	.	.
	36-37:	970	160	155	253	1072	1386	.	19	1
	38-39:	2760	275	242	536	3168	3526	.	19	5
	40-41:	4103	223	700	910	4997	7832	.	57	9
	42-43:	4639	442	803	1631	6795	10669	.	95	5
	44-45:	4514	362	1072	1791	7338	13699	.	57	18
	46-47:	3991	385	1128	1534	7467	14196	.	38	13
	48-49:	2684	551	1232	1131	5482	12174	.	57	17
	50-51:	2507	545	1257	687	4732	10707	.	113	15
	52-53:	1945	389	820	496	3687	7880	.	95	13
	54-55:	1437	332	551	374	2089	6141	.	95	1
	56-57:	1016	246	545	215	1445	5115	.	19	5
	58-59:	513	149	155	189	1043	3629	.	19	70
	60-61:	261	63	378	166	319	2097	.	19	30
	62-63:	255	63	223	99	213	1408	.	30	.
	64-65:	116	40	143	88	42	1190	.	.	.
	66-67:	66	.	80	13	.	564	.	.	.
	68-69:	42	.	63	13	.	233	.	.	1
	70-71:	19	.	.	13	.	215	.	.	.
	72-73:	.	.	.	13	.	68	.	.	.
	74-75:	24	.	.	.	.	65	.	.	.
	76-77:	.	.	.	.	.	68	.	.	.
	78-79:	.	.	.	.	.	43	.	.	.
	80-81:	.	.	.	.	.	16	.	.	.
	82-83:	.	.	.	.	.	.	.	.	.
	84-85:	.	.	.	.	.	.	.	.	.
	86-87:	.	.	.	.	.	16	.	.	.
	88-89:	.	.	.	.	.	.	.	.	.
Total		32275	4288	9594	10187	50797	103597		700	1280
Sampled										
	catch (t)			43			160			21
	" by sex(Kg)	28000	4321	10279	91444	4658	106179	0	718	1382
	Samples			7			27			1
	Fish meas.			1788			5808			105
	Sampled									
	weight Kg			1640			5747			111
	Mean weight	0.868	1.008	1.071	0.898	0.879	1.025	1.026	1.074	1.074

Table 5 - American plaice length frequency of freezer catch

Division Month	3L JUN			3M JUN			3N JUN			3N JUL			AUG			3N OCT			NOV			3N DEC				
	Sex	I	M	F	I	M	F	I	M	F	I	M	F	I	M	F	I	M	F	I	M	F	I	M	F	
length																										
14-15	.	.	.	.	.	.	.	.	.	.	10	21	.	.	.	.	.	.	.	.	.	.	.	.	.
16-17	.	.	.	.	.	.	.	.	.	56	21	.	.	.	.	15	.	.	.	.	.	.	.	.	.
18-19	.	.	.	.	.	.	.	3	3	127	391	.	6	6	43	15	.	.	.	.	.	.	.	.	.
20-21	.	4	10	.	.	.	22	24	.	446	669	.	6	157	242	374	384	.	128	71	.	.	.	.	.
22-23	.	3	9	.	.	2	.	60	40	1232	1384	.	235	83	114	857	759	.	1101	468	.	.	.	.	.
24-25	.	6	45	.	.	.	69	92	.	4024	4924	.	643	746	100	1683	1254	.	2292	1672	.	14	8	.	.	
26-27	.	20	65	.	.	.	103	151	.	4985	9514	.	671	1919	161	2786	2895	.	3700	4426	.	19	8	.	.	
28-29	.	39	135	.	2	6	139	243	.	5044	12412	.	996	2809	145	2397	3699	.	4723	7319	.	37	39	.	.	
30-31	.	13	171	.	2	.	129	192	.	5922	19370	.	1071	3727	121	1872	3552	.	3870	6955	.	40	67	.	.	
32-33	.	13	209	.	15	5	93	169	.	4981	21385	.	768	4343	27	1439	2837	.	2915	5327	.	56	42	.	.	
34-35	.	11	187	.	16	24	96	169	.	4291	14795	.	846	2927	35	1130	2461	.	2278	3526	.	109	91	.	.	
36-37	.	10	180	.	16	33	72	153	.	3162	8169	.	664	1789	.	1364	1552	.	1571	2964	.	86	88	.	.	
38-39	.	2	110	.	4	30	49	134	.	1350	5707	.	445	1063	.	427	1742	.	1193	2953	.	48	83	.	.	
40-41	.	5	76	.	4	17	25	117	.	762	3950	.	172	726	.	624	1544	.	542	1957	.	36	67	.	.	
42-43	.	2	27	.	12	.	9	79	.	567	2495	.	190	311	.	170	1032	.	273	1374	.	31	59	.	.	
44-45	.	13	.	27	.	13	57	.	237	1493	.	317	.	261	548	.	988	.	19	61	.	19	61	.	.	
46-47	.	9	.	28	.	7	38	.	112	1191	.	47	126	.	112	483	.	18	715	.	16	60	.	.		
48-49	.	2	.	21	.	55	.	49	691	.	31	148	.	9	269	.	308	.	471	.	30	.	8	.		
50-51	.	2	.	13	.	17	.	21	314	.	6	124	.	10	167	.	208	.	278	.	8	28	.	.		
52-53	.	2	.	2	.	16	.	48	243	.	4	43	.	.	94	.	66	.	20	.	20	.	8	.		
54-55	.	1	.	.	.	21	.	297	.	34	.	.	123	.	62	.	34	.	27	.	27	.	16	.		
56-57	.	1	.	.	.	10	.	179	.	8	.	7	37	.	32	.	16	.	42	.	19	.	14	.		
58-59	.	.	.	.	.	13	.	207	.	4	.	8	29	.	77	.	16	.	27	.	19	.	8	.	
60-61	.	.	.	.	.	2	.	133	.	10	.	20	.	.	42	.	19	.	14	.	8	.	3	.	
62-63	.	.	.	.	.	1	.	23	.	.	.	109	.	.	5	.	5	.	5	.	5	.	8	.	
64-65	.	.	.	.	.	4	.	25	.	.	20	.	.	4	.	4	.	4	.	4	.	3	.		
66-67	.	.	.	.	.	4	.	28	.	.	.	8	.	8	.	13	.	13	.	13	.	13	.		
68-69	.	.	.	.	.	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Total		129	1254		57	216		888	1808		37447	110031		6800	21421		987	15560	25660		24603	41761		526	871	
Sampled																										
catch(kg)		544		0.2		1.2				54		10		16		24									1.1	
by sex(kg)	0	36	506	0	25	169	0	284	933	0	11656	42550	0	2323	8033	16876	0	7220	16876	0	266	784	0	2		
Samples		10		2		8				38		10		15		17										
Fish meas.		1190		118		1208				7106		1647		2400		3185										
Sampled																										
weight Kg		487		81		507				2762		654		1060		1168									178	
Mean weight		.293	.404	.443	.783	.320	.516		.311	.387		.342	.375	.164	.305	.423		.293	.404		.505	.901				

Table 6 - American plaice catch at age frequency.

Div. Month	JUL			AUG			3N			NOV			DEC		
	Sex	I	M	F	I	M	F	I	M	F	I	M	F	I	M	F
AGE															
1															
2															
3		27				63		40	107			36			
4		1232	249		144	369		110	518	692	627	654		1	1
5		8885	1754		1444	3435		429	5559	4946	8281	7781		66	33
6		13199	5906		22431	1857		299	44561	10288	81431	18193		125	176
7		5250	1633		1018	3303		61	2805	4962	5080	8155		147	209
8		6761	711		1477	1241		4	1131	2639	1635	4029		92	143
9		1405	331		355	608		547	775		430	1193		52	70
10		374	194		78	351		330	608		266	921		35	68
11		88	71		25	130		64	309		104	468		8	64
12		12	31		5	29			238		245			49	
13			7			8			27		42			11	
14									149		52			39	
15			4			8			2		5			2	
16+									18		9			5	
Total		37447	11003		6800	21421		987	15560		24603			526	871
		x10							25660		41761				
Otoliths		150	200		150	200		382	154	228	154	228		154	228
Sampled															
catch(Kg)		54206			10356				15770			24096			1050
SOP		11602	41499		2320	8010		161	4732	10843	7232	16842		268	780
		21	77		22	77		1	30	69	30	70		25	74

Table 7 - American plaice mean weight (gr) at age.

Div. Month	JUL			AUG			3N			NOV			DEC		
	Sex	I	M	F	I	M	F	I	M	F	I	M	F	I	M	F
AGE															
1															
2															
3		76			76	133		95	110	128	113	150		136	175
4		102	127		114	133		95	110	128	113	150		256	249
5		170	182		172	187		143	183	193	197	209		341	347
6		264	325		266	325		221	266	280	274	283		461	560
7		389	476		405	471		308	394	507	372	496		624	745
8		477	671		496	652		393	540	674	525	662		807	1045
9		595	770		628	780		779	936	946	693	946		968	1146
10		797	1050		819	1082		819	1059		678	1045		1832	
11		804	1277		860	1258		808	1360		610	1325		1963	
12		1086	1831		1086	1619								2444	2648
13		1817			1817									2775	
14														2549	
15		1610			1610									1817	
16+															

Table 8 - Yellowtail flounder length frequency in freezer catch.

Division Month	JUN			JUL			AUG			3N			NOV			DEC		
	Sex	I	M	F	I	M	F	I	M	F	I	M	F	I	M	F		
length																		
16-17:		15	36															
18-19:		18			17			61	39		64	49				52	34	
20-21:		148	104		17	79		158	289		10	209	378			138	59	
22-23:		320	174		190	330		1436	1425		74	343	324			34	217	
24-25:		1292	1243		1114	846		3866	3608		146	1321	1151			470	447	
26-27:		3019	3858		1557	1907		8017	9600		230	2751	2603			1394	1511	
28-29:		2571	4010		1986	5844		18634	18338		207	4222	5062			2322	2712	
30-31:		1236	4201		1489	10344		7486	29469		88	2803	6499			2614	3627	
32-33:		472	1918		498	9709		2432	23627		1760	6600			1127	2284	1569	
34-35:		227	945		195	5010		489	10711		473	3744			574	1350	557	
36-37:		21	393		65	1129		190	2889		352	1371			167	798	307	
38-39:		149	217		257			90	763		222	477			195	389	277	
40-41:		18	111		34	73		98	145		207	465			91	187	128	
42-43:		35	207			79			19		62	350			62	227	58	
44-45:		90			48	39		45			50	206			28	112		
46-47:			61						23			114			36		39	
48-49:			21			16						41			28		38	
50-51:			18									22			5			
52-53:															17			
54-55:															5			
Total		9540	17607		7194	35678		33002	100945		755	14839	30456			8125	9588	9919
Sampled		6			12			35			13				6		7	
by sex(Kg)		0	1947	4511	0	1561	10399	0	7019	27706	132	3575	9157		0	2197	3315	0
Samples		6			7			14			10				8		9	
Fish meas.		1228			1559			3055			1927				1478		1815	
Sampled																		
weight Kg		311			429			801			544				494		543	
Mean weight		.204	.256		.217	.291		.213	.274	.174	.241	.301			.270	.346	.267	

Table 9 - Greenland halibut length frequency in freezers catch.

Division	Month	< 350 m			> 700 m			3LM			3LM			APR			MAY		
		I	M	F	I	M	F	I	M	F	I	M	F	I	M	F	I	M	F
		Length	Length	Length	Length	Length	Length	Length	Length	Length	Length	Length	Length	Length	Length	Length	Length	Length	Length
20-21;	JUN	10	8	-	-	-	-	-	-	-	20-21;	20-21;	20-21;	-	-	-	-	-	-
22-23;	-	-	8	-	-	-	-	-	-	-	22-23;	22-23;	22-23;	-	-	-	-	-	-
24-25;	-	-	-	7	-	-	-	-	-	-	24-25;	24-25;	24-25;	-	-	-	-	-	-
26-27;	-	-	5	6	-	-	-	-	-	-	26-27;	26-27;	26-27;	-	-	-	-	-	-
28-29;	-	-	20	25	-	-	-	-	-	-	28-29;	28-29;	28-29;	-	-	-	-	-	-
30-31;	-	-	28	67	-	-	-	-	-	-	30-31;	30-31;	30-31;	-	-	-	-	-	-
32-33;	-	68	109	-	-	-	-	-	-	-	32-33;	32-33;	32-33;	-	-	-	-	-	-
34-35;	-	118	231	-	-	-	-	-	-	-	34-35;	34-35;	34-35;	-	-	-	-	-	-
36-37;	-	162	225	-	-	-	-	-	-	-	36-37;	36-37;	36-37;	-	-	-	-	-	-
38-39;	-	151	335	-	-	-	-	-	-	-	38-39;	38-39;	38-39;	-	-	-	-	-	-
40-41;	-	157	316	-	-	-	-	-	-	-	40-41;	40-41;	40-41;	-	-	-	-	-	-
42-43;	-	141	269	-	-	-	-	-	-	-	42-43;	42-43;	42-43;	-	-	-	-	-	-
44-45;	-	56	140	-	-	-	-	-	-	-	44-45;	44-45;	44-45;	-	-	-	-	-	-
46-47;	-	49	56	-	-	-	-	-	-	-	46-47;	46-47;	46-47;	-	-	-	-	-	-
48-49;	-	10	28	-	-	-	-	-	-	-	48-49;	48-49;	48-49;	-	-	-	-	-	-
50-51;	-	5	6	-	-	-	-	-	-	-	50-51;	50-51;	50-51;	-	-	-	-	-	-
52-53;	-	-	-	-	-	-	-	-	-	-	52-53;	52-53;	52-53;	-	-	-	-	-	-
54-55;	-	-	-	8	-	-	-	-	-	-	54-55;	54-55;	54-55;	-	-	-	-	-	-
56-57;	-	-	-	-	-	-	-	-	-	-	56-57;	56-57;	56-57;	-	-	-	-	-	-
58-59;	-	-	-	-	-	-	-	-	-	-	58-59;	58-59;	58-59;	-	-	-	-	-	-
60-61;	-	-	-	-	-	-	-	-	-	-	60-61;	60-61;	60-61;	-	-	-	-	-	-
62-63;	-	-	-	-	-	-	-	-	-	-	62-63;	62-63;	62-63;	-	-	-	-	-	-
64-65;	-	-	-	-	-	-	-	-	-	-	64-65;	64-65;	64-65;	-	-	-	-	-	-
66-67;	-	-	-	-	-	-	-	-	-	-	66-67;	66-67;	66-67;	-	-	-	-	-	-
68-69;	-	-	-	-	-	-	-	-	-	-	68-69;	68-69;	68-69;	-	-	-	-	-	-
70-71;	-	-	-	-	-	-	-	-	-	-	70-71;	70-71;	70-71;	-	-	-	-	-	-
72-73;	-	-	-	-	-	-	-	-	-	-	72-73;	72-73;	72-73;	-	-	-	-	-	-
74-75;	-	-	-	-	-	-	-	-	-	-	74-75;	74-75;	74-75;	-	-	-	-	-	-
76-77;	-	-	-	-	-	-	-	-	-	-	76-77;	76-77;	76-77;	-	-	-	-	-	-
78-79;	-	-	-	-	-	-	-	-	-	-	78-79;	78-79;	78-79;	-	-	-	-	-	-
80-81;	-	-	-	-	-	-	-	-	-	-	80-81;	80-81;	80-81;	-	-	-	-	-	-
82-83;	-	-	-	-	-	-	-	-	-	-	82-83;	82-83;	82-83;	-	-	-	-	-	-
84-85;	-	-	-	-	-	-	-	-	-	-	84-85;	84-85;	84-85;	-	-	-	-	-	-
86-87;	-	-	-	-	-	-	-	-	-	-	86-87;	86-87;	86-87;	-	-	-	-	-	-
88-89;	-	-	-	-	-	-	-	-	-	-	88-89;	88-89;	88-89;	-	-	-	-	-	-
90-91;	-	-	-	-	-	-	-	-	-	-	90-91;	90-91;	90-91;	-	-	-	-	-	-
92-93;	-	-	-	-	-	-	-	-	-	-	92-93;	92-93;	92-93;	-	-	-	-	-	-
94-95;	-	-	-	-	-	-	-	-	-	-	94-95;	94-95;	94-95;	-	-	-	-	-	-
Total		981	1844		7820	23716		15805	60151		Total	19823	44079		17762	38639		43745	11160
Sampled								Sampled			Sampled								
Catch (t)								Catch (t)			Catch (t)								
" by sex (kg)	0	492	935	0	8930	42267	0	18248	114657		" by sex (kg)	0	19604	63616	0	17575	50130	16	
Samples								Samples			Samples								
Fish males								Fish males			Fish males								
Sampled								Sampled			Sampled								
Weight Kg								Weight Kg			Weight Kg								
Mean weight								Mean weight			Mean weight								

Table 10 - Witch flounder length frequency in freezers catch.

Division	3LM JUN			3LM MAR			3LM APR			3LM MAY			3LM JUN			3N OCT		
Month	< 350 m			> 700 m			> 700 m			> 700 m			< 500 m			< 500 m		
Depth	I	M	F	I	M	F	I	M	F	I	M	F	I	M	F	I	M	F
<u>length</u>																		
24-25:	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.
26-27:	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
28-29:	.	.	.	.	.	.	.	.	3	.	.	1	.	.	.	.	.	.
30-31:	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
32-33:	.	.	.	.	1	.	.	.	.	.	.	1	.	.	.	.	.	.
34-35:	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.
36-37:	.	.	.	13	5	.	2	.	.	.	.	.	.	.	.	14	.	.
38-39:	1	.	.	11	8	.	2	8	.	.	.	1	1	2	.	58	72	.
40-41:	3	.	.	10	5	.	12	11	.	2	1	1	3	.	29	43	.	.
42-43:	7	.	.	9	3	.	15	30	.	2	1	1	3	.	43	130	.	.
44-45:	10	1	.	4	7	.	21	63	.	1	5	2	12	.	130	.	.	.
46-47:	6	2	.	1	12	.	20	70	.	1	5	1	16	.	87	.	.	.
48-49:	5	8	.	2	10	.	14	51	.	1	4	1	8	.	14	145	.	.
50-51:	5	12	.	6	.	.	36	.	1	3	1	10	.	58	.	.	.	.
52-53:	2	10	.	9	.	2	13	.	2	.	8	.	29	.	.	.	.	.
54-55:	1	13	.	6	.	42	.	.	1	.	6	.	14	.	.	.	.	.
56-57:	6	7	.	2	.	7	.	1	.	1	3	.	29	.	.	.	.	.
58-59:	1	12	.	.	1	.	.	.	.	.	.	.	.	.	.	29	.	.
60-61:	1	2	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.
62-63:	.	1	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Total	49	68	.	53	72	.	88	338	.	6	21	2	5	67	145	781	.	.
<u>Sampled</u>																		
catch (t)	0	48	96	0	27	63	0	65	319	0	4	21	1	3	67	0	81	681
by sex(Kg)	1	.	.	29	.	15	.	.	.	1	.	1	.	98	.	64	.	.
Samples	101	.	.	124	.	211	.	49	.	98	.	.	.	.	.	.	.	.
Fish meas.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<u>Sampled</u>																		
weight Kg	124	.	99	.	191	.	44	.	95	.	53	.	.	.	.	.	.	.
Mean weight	.979	1.408	.	.502	.874	.	.739	.944	.	.663	.977	.611	.670	1.007	.560	.872	.	.

Table 11 - Redfish length frequency in freezers catch.

Division	3LM FEB			3LM MAR			3LM APR			3LM MAY			3LM JUN				
Month	> 700 m			> 700 m			> 700 m			> 700 m			> 700 m				
Depth	I	M	F	I	M	F	I	M	F	I	M	F	I	M	F		
<u>length</u>																	
22:	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
23:	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
24:	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.
25:	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.
26:	.	.	.	.	.	.	.	.	.	3	.	.	.	.	.
27:	.	.	.	.	.	.	.	.	2	1	.	.	1	.	.
28:	.	.	.	.	.	.	.	.	1	2	.	.	1	.	.
29:	.	.	.	.	.	.	.	.	1	1	.	.	1	.	.
30:	1	.	.	.	1	.	.	2	3	.	.	5	.	.	.		
31:	2	3	.	6	2	.	3	1	5	2	.	7	2	.	.		
32:	.	.	.	4	.	.	7	3	.	9	6	.	9	15	.		
33:	.	.	.	2	6	.	4	5	.	10	12	.	10	12	.		
34:	.	.	.	5	4	.	6	4	.	12	10	.	12	10	.		
35:	1	.	.	2	5	.	5	7	.	10	6	.	10	6	.		
36:	2	.	.	1	3	.	5	9	.	9	21	.	6	6	.		
37:	1	.	.	1	2	.	2	5	.	6	6	.	5	.	.		
38:	.	1	.	2	1	.	3	5	.	5	.	1	.	.	.		
39:	.	1	.	1	1	.	2	5	.	5	.	1	.	.	.		
40:	.	.	.	1	.	.	1	1	.	1	
41:	.	.	.	1	.	.	1	1	.	1	
42:	.	.	.	1	.	.	1	1	.	1	
43:	.	.	.	2	.	.	1	
44:	.	.	.	1	.	.	1	
45:	.	.	.	1	.	.	1	
Total	8	6	.	27	28	.	47	55	.	76	92
<u>Sampled</u>																	
catch(Kg)	8	35	.	62	.	.	100
by sex(Kg)	0	5	3	0	17	18	0	28	34	0	45	55	1
Samples	1	.	21	.	13	.	147	.	137
Fish meas.	12	.	46	.	147
<u>Sampled</u>																	
weight Kg	7	.	31	.	90	.	82
Mean weight	.594	.614	.	.652	.627	.	.592	.627	.	.591	.598

Table 12 - Skates length frequency in freezers catch.

Division Month	3L JUN	3M	3N	3D
length				
39	20		72	39
40	39		73	57
41	20		74	77
42	19		75	77
43	39		76	116
44	40		77	137
45	59		78	19
46	59		79	57
47	19		81	57
48	19		82	19
49	20		83	.
50	60		84	.
51	98		85	19
52	78		86	.
53	20		87	20
54	.		88	.
55	57		89	.
56	20		90	.
57	38		91	.
58	38		92	.
59	38		93	.
60	59		94	19
61	59			
62	19		Total	1907
63	.			
64	59			
65	.		Sampled	
66	19		catch (t)	6
67	19		Samples	2
68	.		Fish meas.	98
69	.		Sampled	
70	57		Weight Kg	300
71	58		Mean weight	3.046

Table 13 - Cod length frequency in freezers catch.

Division Month	3L JUN	3M FEB	3N OCT	3N NOV	3D DEC
length					
21-23	65	79	105	11	.
24-26	192	198	1956	279	19
27-29	420	237	6761	2843	407
30-32	1101	1741	9710	6786	1182
33-35	2297	2256	6885	6226	1279
36-38	3487	712	2079	2765	465
39-41	3393	198	1199	1187	97
42-44	2791	119	1074	745	58
45-47	2564	.	165	593	58
48-50	1902	.	153	253	.
51-53	1184	.	108	295	.
54-56	855	.	68	269	.
57-59	412	.	135	76	.
60-62	127	.	.	77	.
63-65	149	.	34	33	.
66-68	68	.	.	41	.
69-71	27	.	.	19	.
72-74	16	.	.	13	.
75-77	.	.	.	21	.
78-80	18	.	.	2	.
Total	21068	5541	30432	22532	3565
Sampled					
catch (t)	16	2	10	10	1.2
Samples	11	1	5	12	1
Fish meas.	1348	140	1092	2416	184
Sampled					
Weight Kg	1323	49	351	1022	64
Mean weight	.769	.349	.335	.429	.348

Table 14 - Greenland halibut length composition for the second half of the year in deep-water trawler catch in Division 3LMN.

Division Sex	I	3LMN	
length		M	F
< 21:	16		
22-23:	0	12	6
24-25:	8	18	48
26-27:	2	55	46
28-29:	8	105	74
30-31:	15	154	175
32-33:	18	290	251
34-35:	25	543	510
36-37:	39	911	972
38-39:	47	1710	1820
40-41:	60	3399	3592
42-43:	46	5052	5889
44-45:	49	7157	9212
46-47:	69	9945	13298
48-49:	38	11128	16363
50-51:	58	12376	18515
52-53:	49	11774	20124
54-55:	45	11023	21198
56-57:	29	10155	21746
58-59:	42	8769	21923
60-61:	24	7662	20892
62-63:	27	4977	18322
64-65:	19	3744	16117
66-67:	7	2427	12773
68-69:	6	1648	11048
70-71:	11	1249	9876
72-73:	5	916	8325
74-75:	3	803	7036
76-77:	5	492	5855
78-79:	3	474	4959
80-81:	.	410	3909
82-83:	2	229	3382
84-85:	.	188	2530
86-87:	.	106	1785
88-89:	.	64	1208
90-91:	3	64	830
92-93:	2	3	431
94-95:	.	.	603
96-97:	.	.	366
98-99:	.	.	229
>100:	.	.	199
Total:	780	120035	285437
Sampled catch (t)	0.8	155.5	528.6
Samples	1539		
Fish meas....	412002		
Mean weight (Kg)	1.02	1.29	1.85