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PORTUGUESE RESEARCH REPORT FOR 2017

by

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A. Status of the fisheries

In 2017, the Portuguese provisional nominal catches proceeding from NAFO Regulatory Sub Area 3 reached 19 448 ton (Table 1-A). Nominal catches increased continuously from 2000 to 2003, when they peaked at 22 700 ton, but declined sharply afterwards (Table I-B); during 2004-2008 catches stabilized between 11 700 and 13 500 ton. Since then catches increased been between 15 500 and 16 500 ton from 2009 to 2012, and from 16 900 to 19 000 ton in recent years.

The 2017 fishing effort (Table II) and the catches are provisional (data extracted from NAFO Database STATLANT 21A on 17 May 2018). In 2017, 9 trawlers composed the Portuguese fleet that operated in the NAFO area.

Due to the reopening, in 2010, of the fishery for cod in Div 3M (Flemish Cap), this species is the most important fishery in this division and represents now 56% of the total catch in this division and around 30% of the Portuguese catches in all Sub Area 3.

Catches of redfish tripled its value from 2013 (571 ton) to 2015-2017 (around 1600 ton) in Div. 3L and in Div. 3N catches oscillated between 250 and 400 ton in 2015-2016, but more than doubled in 2017 (from 412 to 1023 ton), representing now the most important fishery in Div. 3N. In Div. 3M, from 2015 to 2016, the redfish catches increased around 1 400 ton and remains stable at the same level (around 3600 ton), representing now almost 40% of the total catches in this division and 19% of the Portuguese catches in all Sub Area 3. In Div. 3O, catches of redfish remained relatively stable in recent years and represents about 80% of the total catches in this division and around 20% of the Portuguese catches in all Sub Area 3. Redfish remains by far the most important species in the Portuguese commercial catches from Sub Area 3, representing in recent years around 50% of the overall catch.

The Greenland halibut catches increased in 2017 to 1 900 ton after a continuous reduction since 2013. Since 2015, this fishery has been developed in the North (mainly in division 3L). Greenland halibut catches in divisions 3N and 3O became residual.

Roughhead grenadier catches, in recent years, are mainly by-catch of the Greenland halibut fishery and have been decreasing year by year and are residual now. The witch flounder catches, that in 2015 decreased to residual values (55 ton in all Subarea 3), reached in 2016-2017 an average of 250 ton (due the increase of 120 ton in both Div. 3M and 3O in this two years). The yellowtail catch in Div. 3N reached 280 ton in 2017 (4 ton in 2016) and represents now almost 20% of the catches in this division. Skates catches in Subarea 3 remains stable at the level of 370 ton until 2016, but loss 35% in 2017; the bulk of the catches come from Div. 3N and Div. 3O. The 3O division catches of silver hake, after almost doubled in 2016 (returning to the values of 2014 -

at the level of 400 ton), loss more than 60% of his catch. The by-catch of haddock in Div. 3M, that reached 108 ton in 2016, are now residual, both in this division and in all Sub Area 3. The catch of white hake in Div. 3O decrease from 109 ton to 62 ton (loss 40%). The shrimp fishery in Div. 3L, that in 2009 its catches reached 20% of the total catch in this division, declined significantly in 2010. Portugal stopped fishing shrimp in 2013. The catches of other species remained more or less stable in all divisions.

Greenland halibut together with redfish continues to be the bulk of the catch on Div. 3L. The catch in Div. 3M (mainly cod and redfish) continue in 2017, like in most 4 recent years, to represent around 50% of the total catch. This division is, at present, the most important ground for the Portuguese NAFO fishery (50% of the annual catches), but cod replaced redfish as the most important fishery. In 2017, due to raise of the redfish and yellowtail flounder catches, the catches in division 3N more than doubled, being now redfish (60%) and yellowtail flounder (16%) catches the most representative in the total Div. 3N catches, the skates representing now only 9% of the catches; the catches of Greenland halibut are now residual (2%). On division 3O, redfish continues by far the most important fishery (84% of the catches in this division and 20% of the total annual catches).

B. Portuguese Annual Sampling Program

1. Catch and effort sampling.

Effort and CPUE data for 2017 Portuguese trawl fishery on the NAFO Regulatory Area were obtained through the revision of skipper logbooks from three trawlers, kindly supplied by its owners. 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. Effort data in days and hours were supplied by the Portuguese administration, but the values for 2017 are provisional and available only for the fishing effort in days (not yet in hours). The update for the past years was extracted from Database STATLANT 21B, on May 21, 2017 (Table II-A/B).

The daily catch and effort data from the logbook were used to estimate the directed effort and CPUE for each of the target species/stock, as well as the main by-catch species and depth range of the different fisheries, on a monthly basis. From the data available, the majority of the fishing effort was directed towards cod, redfish and Greenland halibut. Data regarding directed effort and catch rates of the Greenland halibut fishery are presented in Table III to IV-B and Fig. 1.

The Greenland halibut CPUE series was updated with the 2017 observed CPUEs. The additive model (Ávila de Melo and Alpoim, 1995), was upgraded in 1998 (Alpoim *et al*., 1998) and used, like in previous years, to standardize the observed CPUEs, but excluding the vessel factor because the sampling program in recent years was carried out on vessels that were not sampled before. If the vessel factor is applied, these new vessels will increased a lot the noised. Because they are the only vessels sampled in the recent years, we assumed that all vessels belong to the same category what is realistic. From January 1988 till April 1995, each monthly observed CPUE of this series was previously corrected for 130mm mesh size (Ávila de Melo and Alpoim, 1996). In this analysis, any observation corresponding to a month and a trawler with less than 10 hours of directed effort was rejected. The CPUEs are presented in Tables IV and Fig. 1, with the associated standard errors (+/- 2 standard errors in the Figures) and coefficients of variation.

1.1. Comments on catch and effort data (based on the vessels sampled)

1.1.1. Greenland halibut in Div. 3L, 3M, 3N and 3O

In Div. 3L catch rates declined prior to the boom of the deep-water fishery (Table IV-A, Fig. 1). However, it is from 1990 to 1991, i.e. from the first to the second year of this new fishery in the Regulatory Area, that CPUEs fell by half. Between 1991 and 1994 catch rates remained stable at a low level. Since then, catch rates gradually increased, reaching an upper level in 1999-2000. Catch rates declined in 2001 and remained stable at that lower level in 2002 and 2003. In 2004 the catch rates decline again, reaching the lowest value since 1994. However, after 2004, the Greenland halibut catch rates recovered continuously and, despite the high variability

from 2006 to 2017 (0.589 ton/h in 2017), the catch rates reached, in this period, the highest values observed of the time series (between 0.422 and 0.828 ton/h).

Div. 3M catch rates, despite more noisy, follows the same trend as the ones in Div. 3L.

For all Div. 3LMNO combined (Table IV-A, Fig. 1) the observed catch rates series follows the Div. 3L pattern, since this is the division of Sub Area 3 with the highest concentration of Greenland halibut fishing effort.

2. Biological Sampling

In 2017, biological sampling was obtained from three stern trawlers fishing in Div. 3L, 3M, 3N and 3O during all the year. Apart from species under moratoria, a priority to be sampled whenever they appear in the hauls, biological sampling was conducted for the two most abundant species in each haul, following the NAFO sampling recommendations.

Redfish (*S. mentella*) was sampled in Div. 3L, 3M, 3N and 3O (Tab. V). American plaice was sampled in Div. 3M, 3N and 3O. Greenland halibut and roughhead grenadier were sampled in Div. 3L and 3M. Thorny skate was sampled in Div. 3L and 3O. Cod, redfish (*S. marinus*) and witch flounder were sampled only in Div. 3M. Yellowtail flounder was sampled only in Div. 3N.

Since 1996, all commercial information is representative of the catch as a whole, although sampling continues to be carried out by sex, with the exception of cod, white hake, Atlantic halibut and haddock. Mean weight and mean weight in the catch are derived from the length-weight relationships calculated from the commercial sampling in 2017 and are presented in Table VI. However, for species/stock with a low sampling level in 2017, the length-weight relationships calculated in previous years were used.

2.1. Catch and by-catch composition of the 2017 trawl fishery (130mm codend mesh size).

The regular mesh size in the codend used by the monitored trawlers fishing groundfish was the 130mm and, when the mesh size is not mentioned it, means that the sample refers to the 130mm mesh size. However, in 2017, no sets were made with the 200 mm mesh size in the codend by the monitored vessels.

2.1.1. Cod Div. 3M

Information on length composition of the cod trawl catch in Div. 3M is available for January and February and from May to October (Table VII, Fig. 2), from 123 m to 592 m depth.

Lengths between 57 cm and 75 cm dominated the catch, with a modal class at 63 cm (mean length and weight of 65.7 cm and 2489 g).

2.1.2. Redfish (*S. mentella*) **Div. 3L**

Information on length composition of the redfish (*S. mentella)* trawl catches in Div. 3L is available only for September (Table VIII, Fig. 3), from 195 m to 443 m depth.

Lengths between 25 cm and 30 cm dominated the catch, with two modes at 27-28 cm and 33 cm (mean length and weight of 29.7 cm and 367 g).

2.1.3. Redfish (*S. mentella*) **Div. 3M**

Information on length composition of the redfish (*S. mentella)* trawl catches in Div. 3M is available for January and February and for June and July (Table IX, Fig. 4), from 63 m to 622 m depth.

Lengths between 24 cm and 31 cm dominated the catch, with a modal class at 27 cm (mean length and weight of 28.2 cm and 298 g).

2.1.4. Redfish (*S. mentella*) **Div. 3N**

Information on length composition of the redfish (*S. mentella)* trawl catches in Div. 3N is available only for September (Table X, Fig. 5), from 300 m to 380 m depth.

Lengths between 27 cm and 31 cm dominated the catch, with two modes at 20 cm and 28 cm (mean length and weight of 26.9 cm and 291 g).

2.1.5. Redfish (*S. mentella*) **Div. 3O**

Information on length composition of the redfish (*S. mentella)* trawl catches in Div. 3O is available for May, June and September (Table XI, Fig. 6), from 120 m to 522 m depth.

Lengths between 21 cm and 26 cm dominated the catches, with a modal class at 24 cm (mean length and weight of 23.0 cm and 167 g).

2.1.6. Redfish (*S. marinus*) **Div. 3M**

Information on length composition of the redfish (*S. marinus)* trawl catches in Div. 3M is available for January, February and July (Table XII, Fig. 7), from 455 m to 606 m depth.

Lengths between 27 cm and 35 cm dominated the catches, with a modal class around at 31 cm and 33 cm (mean length and weight of 31.5 cm and 427 g).

2.1.7. American plaice Div. 3M

Information on length composition of the American plaice by-catch in Div. 3M is available from June to October, except for July (Table XIII, Fig. 8), from 123 m to 357 m depth.

Lengths between 40 and 54 cm dominated the catch, with a modal class at 46 cm (mean length and weight of 48.4 cm and 1173 g).

2.1.8. American plaice Div. 3N

Information on length composition of the American plaice by-catch in Div. 3N is available only for July (Table XIV, Fig. 9), from 49 m to 57 m depth.

Lengths between 30 and 36 cm dominated the catch, with a modal class at 34 cm (mean length and weight of 34.2 cm and 373 g).

2.1.9. American plaice Div. 3O

Information on length composition of the American plaice by-catch in Div. 3O is available for May and June (Table XV, Fig. 10), from 136 m to 348 m depth.

Lengths between 38 and 48 cm dominated the catch, with a modal class at 44 cm (mean length and weight of 44.2 cm and 818 g).

2.1.10. Yellowtail flounder Div. 3N

Information on length composition of the yellowtail flounder by-catch in Div. 3N is available only for July (Table XVI, Fig. 11), from 49 m to 59 m depth.

Lengths between 24 cm and 28 cm dominated the catch, with a modal class at 26 cm (mean length and weight of 27.0 cm and 162 g).

2.1.11. Greenland halibut Div. 3L

Information on length composition of the Greenland halibut catches in Div. 3L is available for February, June, September and October (Table XVII, Fig. 12), from 412 m to 1400 m depth.

Lengths between 40 cm and 56 cm dominated the catch, with a modal class at 46 cm (mean length and weight of 48.4 cm and 940 g).

2.1.12. Greenland halibut Div. 3M

Information on length composition of the Greenland halibut catches in Div. 3M is available for February, June, September and October (Table XVIII, Fig. 13), from 883 m to 1172 m depth.

Lengths between 42 cm and 52 cm dominated the catch, with a modal class around 44 cm and 46 cm (mean length and weight of 47.5 cm and 870 g).

2.1.13. Roughhead grenadier Div. 3L

Information on length composition of the roughhead grenadier catches in Div. 3L is available for June and October (Table XIX, Fig. 14), from 890 m to 1266 m depth.

Anal fin lengths between 9 cm and 11 cm dominated the catch, with a very modal class at 10 cm (mean length and weight of 10.7 cm and 128 g).

2.1.14. Roughhead grenadier Div. 3M

Information on length composition of the roughhead grenadier catches in Div. 3M is available for June, September and October (Table XX, Fig. 15), from 917 m to 1131 m depth.

Anal fin lengths between 8 cm and 12 cm dominated the catch, with a modal class around 9 cm and 10 cm (mean length and weight of 10.5 cm and 116 g).

2.1.15. Witch flounder Div. 3M

Information on length composition of the witch flounder by-catch in Div. 3M is available only for June (Table XXI, Fig. 16), from 182 m to 227 m depth.

Despite the small sampling (1 sample, 60 fish measured), the data show that lengths between 34 cm and 44 cm dominated the catch (mean length and weight of 41.2 cm and 706 g).

2.1.16. Thorny skate Div. 3L

Information on length composition of the thorny skate catches in Div. 3L is available only for September (Table XXII, Fig. 17), from 195 m to 304 m depth.

Because the small sampling (1 samples, 34 fish measured) we not take any conclusion about the dominated lengths in the catch (mean length and weight of 69.9 cm and 4094 g).

2.1.17. Thorny skate Div. 3O

Information on length composition of the thorny skate catches in Div. 3O is available for May and June (Table XXIII, Fig. 18), from 125 m to 470 m depth.

Lengths between 64 cm and 74 cm dominated the catch, with a modal class at 72 cm (mean length and weight of 69.1 cm and 3895 g).

3. Acknowledgements

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4. References

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TABLE I-A: PORTUGUESE NOMINAL TRAWL CATCHES (mt) IN NAFO AREA, 2017
(data extracted from NAFO Database Statlant 21A on 17 May 2018).

	DIVISION				TOTAL
SPECIES	3L	3M	3N	3O	2017
Cod	61	5245	57	110	5473
Redfish	1654	3572	1023	4051	10300
American plaice	39	104	96	120	359
Yellowtail flounder			280		280
Witch flounder	9	131	23	124	287
Greenland halibut	1598	276	42	4	1920
Atlantic halibut	67	74	44	111	296
Roughhead grenadier	22	5			27
Roundnose grenadier	1				1
Anarhichas spp.		2			2
Hadocck		4		11	15
Pollock					
White hake		1	6	62	69
Red hake					
Silver Hake				149	149
Capelin					
Skates	27	17	145	57	246
Monkfish				12	12
Squid		3		9	12
Shrimp					
Unidentified					
TOTAL	3478	9434	1716	4820	19448

TABLE I - B: PORTUGUESE NOMINAL TRAWL CATCHES (mt) IN NAFO DIV. 3LMNO (data extracted from NAFO Database Statlant 21A on 17 May 2018).

SPECIES / YEAR	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003
Cod	5699	4889	5504	4814	2946	2832	1528	1003	434	255	177	105	281	602
Redfish	9093	8800	9509	9504	8953	9983	10904	9361	7768	7758	9155	8832	6637	9219
American plaice	322	291	275	407	468	198	160	298	355	443	376	371	517	748
Yellowtail flounder	13	35	31	94	267	71	27	71	145		134	188	68	287
Witch flounder	206	55	186	128	108	128	71	131	221	124	141	150	591	485
Greenland halibut	1583	1722	1938	2124	2051	2493	2257	2075	1976	1873	2326	2256	1888	4369
Atlantic halibut	207	200	133	96	70	46	56	469	23	32	43	20	59	89
Roughhead grenadier	41	90	293	88	488	251	83	266	50	34	77	262	381	302
Roundnose grenadier	19	13	42	10	39	48	27	198	29	37	54			
Anarhichas spp.	5	5	4	4	6	18	13	41	25	16	28	32	45	112
Hadocck	153	30	181	78	64	13	1	3	1	2		6	23	141
Pollock				1									4	114
White hake	109	133	109	81	19	25	17	24	55	62	102	157	1266	4090
Red hake		2		1	1	69	1		3	2	4	18	13	2
Silver hake	392	266	468	30	35								6	
Capelin														
Skates	359	360	452	496	427	435	304	1045	1252	1058	1003	576	1550	1942
Monkfish	20	10	24	7	4	1	11	3	13	35	34	6	73	165
Squid						1	2	29	5	2	17		11	
Shrimp					5		15	332					50	
Unidentified				110	279	68	11	77	2	1	216	6	15	13
TOTAL	18221	16901	19149	18073	16230	16680	15488	15426	12357	11734	13887	12985	13478	22680

TABLE I - B: cont.

SPECIES / YEAR	2002	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988
Cod	488	361	192	325	550	1545	1316	1670	2640	3657	5986	13362	15142	24130	12963
Redfish	6346	5561	5678	6082	2370	1126	2152	3297	8614	9831	6584	12165	17803	19032	19137
American plaice	634	636	400	718	361	389	289	170	346	323	453	1183	715	1821	1813
Yellowtail flounder	123	350	151	428	87					21			11	5	
Witch flounder	436	576	230	509	381	350	238	385	579	291	851	1980	2257	15	10
Greenland halibut	4318	5027	4688	3997	3245	3347	3313	1942	5970	8811	10547	13961	11171	3616	4194
Atlantic halibut	47	45	28	51	29	15	9	18	45	50	79	229	96		152
Roughhead grenadier	508	613	397	1302	1088	765	787	1377	2224	1996	2004	4053	3211	290	911
Roundnose grenadier															
Anarhichas spp.	88	142	61	552	139	184	121	1358	3219	2303	1697	2842	1941		
Hadocck	78	22	12	11	5	42		2	10	10	165	82	17		
Pollock									13	41	29	424	11		
White hake	1678														8
Red hake	1968	273	43	76	19	54	124	230	270	365	467	1010	469	104	
Capelin													14		
Skates	1362	883	672	2168	1105	908	796	2062	6239	7604	7019	23304	13557	652	1075
Monkfish	71										37	7		15	
Squid					1		4							47	
Shrimp	16	420	289	227	203	170		17							
Unidentified	322	40	1	115	38	115	23	15	12	245	325	725	779	158	6
TOTAL	18483	14949	12842	16561	9621	9010	9172	12543	30181	35548	36243	75327	67194	49885	40269

TABLE II : PORTUGUESE TRAWL EFFORT IN FISHING DAYS IN NAFO Div. 3LMNO (data extracted from NAFO. (Database Statlant 21B on 17 May 2018)

YEAR	3L	3M	3N	3O	Total geral
2000	519	248	297	329	1393
2001	770	477	361	262	1870
2002	607	263	532	490	1892
2003	503	257	783	753	2296
2004	435	400	406	464	1705
2005	492	407	218	359	1476
2006	408	454	106	517	1485
2007	295	359	162	421	1237
2008	307	464	179	213	1163
2009	512	727	237	188	1664
2010	495	643	214	242	1594
2011	432	770	320	233	1755
2012	235	400	337	299	1271
2013	395	681	350	258	1684
2014	454	791	194	361	1800
2015	374	570	162	336	1442
2016 (a)	346	698	132	347	1523
2017 (a)	282	564	213	278	1337

a) not extracted from Database Statlant 21B, provisional

TABLE III: Portuguese trawl fishery cpue's and bycatch by month and division for 2017.

DIVISION	TARGET SPECIES	MONTH	DEPTH RANGE (m) MIN.	DEPTH RANGE (m) MAX.	CPUE (ton/hour)	MAIN BYCATCH SPECIES	MAIN BYCATCH %	WITCH FLOUNDER BYCATCH (%)	TOTAL BYCATCH (%)
3M	COD	JAN	289	513	1.975	RED	5.0	0.0	5.3
3M	COD	FEB	318	632	2.595	RED	4.4	0.0	4.5
3M	COD	MAR	397	539	2.906	RED	3.0	0.2	3.3
3M	COD	MAY	243	437	2.313	RED	4.4	0.0	4.4
3M	COD	JUN	154	550	1.106	RED	2.3	0.7	5.1
3M	COD	JUL	274	459	0.668	RED	37.3	0.3	39.2
3M	COD	AUG	126	254	1.311	PLA	3.8	1.0	7.2
3M	COD	SEP	123	319	0.790	PLA	4.2	1.3	7.8
3M	COD	OCT	129	357	1.616	PLA	1.7	0.4	2.7
3L	RED	SEP	195	443	1.695	SKA	1.2	0.0	2.2
3L	RED	OCT	420	480	1.525	-	0.0	0.0	0.0
3M	RED	JAN	63	774	1.079	COD	3.6	0.6	6.1
3M	RED	FEB	447	675	1.559	COD	1.0	0.4	2.2
3M	RED	JUL	261	618	2.025	COD	8.6	0.1	9.3
3M	RED	SEP	223	225	0.023	PLA	52.3	15.0	67.3
3N	RED	SEP	243	450	2.206	SKA	0.5	0.0	1.4
3O	RED	MAY	123	560	1.111	SKA	5.0	0.4	17.2
3O	RED	JUN	97	522	1.716	SKA	1.5	0.0	5.4
3O	RED	SEP	115	577	1.967	HAL	1.1	0.0	2.3
3L	GHL	FEB	825	1403	0.844	RNG	1.3	0.0	2.2
3L	GHL	JUN	835	1355	0.715	RHG	1.8	0.0	2.7
3L	GHL	SEP	412	1416	0.525	RHG	0.1	0.0	0.1
3L	GHL	OCT	887	1213	0.536	RHG	9.7	0.0	10.6
3M	GHL	FEB	910	1120	0.352	RNG	7.1	0.0	13.8
3M	GHL	JUN	886	1110	0.870	RHG	2.1	0.0	2.6
3M	GHL	SEP	922	1106	0.410	RHG	18.9	0.0	18.9
3M	GHL	OCT	883	1172	0.501	RHG	9.8	0.0	9.8

TABLE IV - A: GREENLAND HALIBUT TRAWL CATCH RATES, 1988-2017: mean annual cpue's corrected for the month, division and vessel of each observation.

	3L			3M			3N			3LMN			
	CPUE	ST.ERROR	C.V.	CPUE	ST.ERROR	C.V.	CPUE	ST.ERROR	C.V.	CPUE	ST.ERROR	C.V.	
1988	0.443	0.098	44.4							0.395	0.095	48.1	1988
1989	0.421	0.072	51.1							0.370	0.073	59.0	1989
1990	0.370	0.039	36.6	0.139			0.173			0.308	0.037	44.4	1990
1991	0.222	0.042	42.1				0.127	0.031	42.2	0.185	0.034	51.7	1991
1992	0.151	0.028	57.7				0.258	0.032	42.8	0.248	0.035	67.3	1992
1993	0.157	0.002	1.6				0.172	0.021	41.8	0.243	0.025	38.1	1993
1994	0.128	0.003	3.3				0.111	0.017	36.9	0.178	0.031	49.2	1994
1995	0.123	0.017	39.0	0.142	0.018	29.0	0.123	0.024	50.9	0.150	0.020	60.9	1995
1996	0.171	0.021	45.1	0.199	0.023	35.3	0.172	0.019	29.6	0.171	0.014	44.7	1996
1997	0.195	0.016	27.1	0.238	0.028	33.6	0.130	0.009	9.2	0.185	0.018	43.4	1997
1998	0.270	0.015	20.6	0.236	0.022	32.4	0.210	0.019	30.4	0.259	0.012	29.9	1998
1999	0.300	0.020	21.5	0.341	0.040	35.6	0.261	0.020	23.0	0.310	0.019	33.6	1999
2000	0.258	0.025	25.7	0.279	0.024	19.4	0.303	0.043	28.2	0.275	0.028	40.4	2000
2001	0.215	0.029	35.6	0.209	0.012	15.3	0.193	0.017	20.1	0.214	0.018	37.2	2001
2002	0.229	0.016	23.0	0.224	0.028	41.6	0.269	0.032	23.6	0.225	0.019	44.1	2002
2003	0.211	0.033	49.0	0.209	0.028	38.3	0.205	0.021	24.6	0.215	0.022	50.8	2003
2004	0.123	0.013	32.0	0.100	0.021	63.4	0.142	0.010	19.5	0.143	0.016	61.8	2004
2005	0.226	0.006	3.5	0.310	0.101	46.2				0.227	0.032	27.9	2005
2006	0.458	0.049	26.2	0.244	0.033	23.6				0.347	0.041	35.3	2006
2007	0.648	0.084	31.9	0.397	0.078	39.3				0.513	0.065	40.2	2007
2008	0.431	0.027	15.6	0.432	0.017	7.9				0.395	0.018	14.6	2008
2009	0.719	0.100	41.9	0.637	0.050	22.2				0.652	0.052	34.2	2009
2010	0.422	0.036	26.7	0.380	0.012	5.4	0.474			0.398	0.030	28.1	2010
2011	0.786	0.081	25.6	0.630	0.080	28.7				0.685	0.061	29.7	2011
2012	0.378	0.054	20.5	0.308						0.331	0.041	21.8	2012
2013	0.465	0.045	24.6	0.286	0.017	12.6	0.387	0.040	14.9	0.392	0.031	28.7	2013
2014	0.455	0.067	40.2	0.266	0.030	20.4	0.416	0.205	88.8	0.408	0.063	57.5	2014
2015	0.596	0.061	33.7	0.646	0.127	46.3				0.578	0.058	40.5	2015
2016	0.828	0.182	73.6	0.812						0.786	0.164	73.6	2016
2017	0.589	0.095	42.5	0.570	0.113	42.4				0.549	0.071	43.8	2017

TABLE IV - B: GREENLAND HALIBUT TRAWL CATCH RATES,
1988-2017 mean cpue's by division corrected for the year, month and vessel of each observation.

	CPUE	ST.ERROR	C.V.	
3L	0.365	0.011	45.8	3L
3M	0.313	0.009	33.5	3M
3N	0.209	0.008	38.4	3N
3LMNO	0.312	0.006	45.0	3LMNO

TABLE V: Intensity of the trawl sampling during 2017, by species, division and month.

SPECIES	DIV.	MONTH	Nº OF SAMPLES	Nº FISH MEASURED	SAMPLING WEIGHT(Kg)	OTOLITHS Nº	OTOLITHS LENGTH RANGE (cm)
COD	3M	JAN	11	1080	2480	-	-
COD	3M	FEB	18	1872	3851	-	-
COD	3M	MAY	1	99	231	-	-
COD	3M	JUN	15	1467	2635	185	44-94
COD	3M	JUL	4	288	545	-	-
COD	3M	AUG	10	1012	2060	103	41-73
COD	3M	SEP	20	1989	3191	99	45-75
COD	3M	OCT	15	1485	2560	82	47-81
REDFISH (*S. mentella*)	3L	SEP	14	1446	438	78	25-38
REDFISH (*S. mentella*)	3M	JAN	16	2108	656	-	-
REDFISH (*S. mentella*)	3M	FEB	12	1318	455	-	-
REDFISH (*S. mentella*)	3M	JUN	2	173	99	100	25-53
REDFISH (*S. mentella*)	3M	JUL	11	1215	367	104	26-35
REDFISH (*S. mentella*)	3N	SEP	4	486	115	-	-
REDFISH (*S. mentella*)	3O	MAY	8	884	206	85	20-26
REDFISH (*S. mentella*)	3O	JUN	24	2736	433	139	19-28
REDFISH (*S. mentella*)	3O	SEP	7	845	190	-	-
REDFISH (*S. marinus*)	3M	JAN	10	1364	546	-	-
REDFISH (*S. marinus*)	3M	FEB	6	760	299	-	-
REDFISH (*S. marinus*)	3M	JUL	11	1347	411	-	-
AMERICAN PLAICE	3M	JUN	1	65	39	-	-
AMERICAN PLAICE	3M	AUG	4	315	351	-	-
AMERICAN PLAICE	3M	SEP	2	172	175	-	-
AMERICAN PLAICE	3M	OCT	2	135	169	-	-
AMERICAN PLAICE	3N	JUL	8	953	507	-	-
AMERICAN PLAICE	3O	MAY	3	187	121	-	-
AMERICAN PLAICE	3O	JUN	1	64	39	-	-
YELLOWTAIL FLOUNDER	3N	JUL	12	1405	308	-	-
GREENLAND HALIBUT	3L	FEB	6	683	602	-	-
GREENLAND HALIBUT	3L	JUN	7	744	809	116	36-61
GREENLAND HALIBUT	3L	SEP	11	1091	1296	191	39-72
GREENLAND HALIBUT	3L	OCT	7	870	448	-	-
GREENLAND HALIBUT	3M	FEB	7	887	860	-	-
GREENLAND HALIBUT	3M	JUN	1	97	113	-	-
GREENLAND HALIBUT	3M	SEP	1	110	56	-	-
GREENLAND HALIBUT	3M	OCT	5	619	330	-	-
ROUGHHEAD GRENADIER	3L	JUN	2	124	67	-	-
ROUGHHEAD GRENADIER	3L	OCT	2	267	25	-	-
ROUGHHEAD GRENADIER	3M	JUN	1	73	42	-	-
ROUGHHEAD GRENADIER	3M	SEP	1	119	9	-	-
ROUGHHEAD GRENADIER	3M	OCT	2	250	21	-	-
WITCH FLOUNDER	3M	JUN	1	60	30	-	-
THORNY SKATE	3L	SEP	1	34	78	-	-
THORNY SKATE	3O	MAY	3	122	518	-	-
THORNY SKATE	3O	JUN	3	144	610	-	-

TABLE VI: Length-weight relationship by species, stock and sex in 2017.

Species	Stock	Sex	a	b	n	*r2*	Length interval (cm)
COD	3M	T	0.0095	2.9687	461	0.993	41-85
GHL	2J3KLMNO	F	0.0039	3.1821	200	0.992	36-72
GHL	2J3KLMNO	M	0.0113	2.9014	105	0.987	38-59
GHL	2J3KLMNO	T	0.0040	3.1774	305	0.993	36-72
REB	3LN	F	0.0388	2.7007	43	0.972	25-38
REB	3LN	M	0.0244	2.8122	32	0.957	25-35
REB	3LN	T	0.0279	2.7896	75	0.989	25-38
REB	3M	F	0.0154	2.9418	102	0.980	26-53
REB	3M	M	0.0178	2.9026	99	0.976	25-46
REB	3M	T	0.0168	2.9204	201	0.983	25-53
REB	3O	F	0.0727	2.4617	112	0.994	20-28
REB	3O	M	0.2285	2.0937	111	0.955	19-26
REB	3O	T	0.1175	2.3121	223	0.978	19-28

TABLE VII: COD, DIV. 3M, 2017: length composition (0/000) of the 130mm trawl catches.

LENGTH GROUP	JAN	FEB	MAY	JUN	JUL	AUG	SEP	OCT	1st Q.	2nd Q.	3rd Q.	4th Q.	YEAR	LENGTH GROUP
36					14.3	0.9					1.6		0.5	36
39					20.7	10.2	3.6				7.7		2.4	39
42		0.7	30.3	6.0	11.4	39.1	6.0		0.5	8.4	19.3		7.2	42
45	4.3	15.9	10.1	31.7	20.7	28.5	12.6	6.1	12.6	29.6	19.5	6.1	15.0	45
48	15.7	20.0	70.7	36.3	160.7	52.6	16.7	13.4	18.8	39.7	43.4	13.4	27.5	48
51	54.1	31.8	111.1	36.2	88.1	70.0	20.0	13.4	38.0	43.6	45.4	13.4	34.2	51
54	116.7	50.7	262.6	64.1	63.1	98.9	46.8	22.7	69.1	83.6	68.4	22.7	57.7	54
57	104.1	88.5	131.3	95.9	85.6	108.6	76.3	48.1	92.8	99.4	89.7	48.1	80.2	57
60	183.8	75.6	131.3	191.5	107.3	212.2	122.4	102.3	105.7	185.6	155.9	102.3	129.9	60
63	142.6	134.9	90.9	165.1	141.9	211.3	160.7	136.7	137.1	157.8	178.7	136.7	152.5	63
66	100.7	146.2	90.9	135.8	168.1	111.5	125.6	125.4	133.5	131.4	123.9	125.4	128.0	66
69	128.8	196.5	30.3	115.1	33.2	41.5	97.9	136.0	177.6	106.8	70.3	136.0	124.0	69
72	88.2	138.9	30.3	32.9	43.4	12.9	116.4	158.0	124.8	32.7	69.8	158.0	105.9	72
75	31.2	52.4	10.1	32.3	13.4		110.8	176.6	46.5	30.1	59.2	176.6	84.7	75
78	15.7	26.0		32.6	18.9	1.7	56.6	37.7	23.1	29.4	32.0	37.7	30.7	78
81	4.7	13.2		11.5	9.3		14.7	16.4	10.8	10.4	8.5	16.4	11.6	81
84	3.1	4.7		9.8			6.5	7.3	4.3	8.8	3.4	7.3	5.3	84
87	2.6	3.4		1.6			2.4		3.2	1.5	1.3		1.5	87
90	3.2	0.8		1.0			3.3		1.4	0.9	1.7		1.1	90
93	0.1			0.4			0.8		0.04	0.4	0.4		0.2	93
96	0.2								0.1				0.02	96
99														99
102														102
105	0.1								0.02				0.01	105
TOTAL	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	
No. SAMPLES	11	18	1	15	4	10	20	15	29	16	34	15	94	
SAMPLING WEIGHT(kg)	2480	3851	231	2635	545	2060	3191	2560	6331	2866	5795	2560	17552	
No. F.MEASURED	1080	1872	99	1467	288	1012	1989	1485	2952	1566	3289	1485	9292	
MEAN LENGTH(cm)	64.1	66.6	58.6	63.9	59.8	59.8	67.1	69.0	65.9	63.3	63.6	69.0	65.7	
MEAN WEIGHT (g)	2295	2571	1757	2286	1924	1869	2641	2830	2494	2234	2278	2830	2489	
DEPTH RANGE (m)	299/592	361/498	243/437	154/405	274/457	140/241	123/274	201/357	299/592	154/437	123/457	201/357	123/592	

TABLE VIII: REDFISH (*S. mentella*), DIV. 3L, 2017: length composition (0/000) of the 130mm trawl catches.

LENGTH GROUP	SEP = YEAR	LENGTH GROUP
22	5.3	22
23	16.9	23
24	54.1	24
25	75.7	25
26	103.5	26
27	130.9	27
28	131.2	28
29	95.5	29
30	66.5	30
31	43.4	31
32	48.7	32
33	68.6	33
34	54.8	34
35	44.4	35
36	32.9	36
37	15.7	37
38	8.3	38
39	1.8	39
40	1.8	40
TOTAL	1000	
No. SAMPLES	14	
SAMPLING WEIGHT(kg)	438	
No. F.MEASURED	1446	
MEAN LENGTH(cm)	29.7	
MEAN WEIGHT (g)	367	
DEPTH RANGE (m)	195/443	

TABLE IX: REDFISH (*S. mentella*), DIV. 3M, 2017: length composition (0/000) of the 130mm trawl catches.

LENGTH GROUP	JAN	FEB	JUN	JUL	1st Q.	2nd Q.	3rd Q.	YEAR	LENGTH GROUP
19	0.8	1.7			1.3			0.8	19
20	6.8	10.0			8.4			5.5	20
21	15.5	23.4			19.5			12.7	21
22	21.6	30.7		2.4	26.2		2.4	17.9	22
23	69.9	46.9		18.9	58.2		18.9	44.5	23
24	91.5	55.4		54.5	73.3		54.5	66.7	24
25	103.2	105.4	34.6	91.0	104.3	34.6	91.0	99.6	25
26	97.4	88.2	29.0	145.1	92.7	29.0	145.1	110.8	26
27	97.3	120.4	52.1	144.1	109.0	52.1	144.1	121.1	27
28	124.5	113.6	52.0	108.7	119.0	52.0	108.7	115.3	28
29	113.2	127.0	40.4	99.2	120.2	40.4	99.2	112.8	29
30	106.9	109.7	40.6	76.9	108.3	40.6	76.9	97.3	30
31	64.3	82.7	46.0	87.6	73.6	46.0	87.6	78.4	31
32	49.2	49.6	127.1	67.6	49.4	127.1	67.6	55.8	32
33	19.6	11.6	57.9	54.1	15.6	57.9	54.1	29.0	33
34	8.4	10.6	162.3	32.3	9.5	162.3	32.3	17.6	34
35	4.4	5.0	74.7	16.2	4.7	74.7	16.2	8.8	35
36	3.9	5.6	92.7	1.3	4.8	92.7	1.3	3.7	36
37	1.2	2.0	63.5		1.6	63.5		1.1	37
38			5.8			5.8		0.01	38
39	0.4	0.6	46.0		0.5	46.0		0.4	39
40			5.8			5.8		0.01	40
41			11.5			11.5		0.02	41
42			17.1			17.1		0.03	42
43			11.7			11.7		0.02	43
44									44
45			5.8			5.8		0.01	45
46			11.5			11.5		0.02	46
47									47
48									48
49									49
50			5.8			5.8		0.01	50
51									51
52									52
53			5.8			5.8		0.01	53
TOTAL	1000	1000	1000	1000	1000	1000	1000	1000	
No. SAMPLES	16	12	2	11	28	2	11	41	
SAMPLING WEIGHT(kg)	656	455	99	367	1111	99	367	1577	
No. F.MEASURED	2108	1318	173	1215	3426	173	1215	4814	
MEAN LENGTH(cm)	27.8	28.0	33.9	28.8	27.9	33.9	28.8	28.2	
MEAN WEIGHT (g)	285	291	520	315	288	520	315	298	
DEPTH RANGE (m)	63/622	361/607	245/405	280/484	63/622	245/405	280/484	63/622	

TABLE X: REDFISH (*S. mentella*), DIV. 3N, 2017: length composition (0/000) of the 130mm trawl catches.

LENGTH GROUP	SEP = YEAR	LENGTH GROUP
15	1.8	15
16	1.8	16
17	11.4	17
18	49.3	18
19	45.2	19
20	75.3	20
21	71.1	21
22	37.8	22
23	12.0	23
24	8.5	24
25	30.5	25
26	38.3	26
27	88.0	27
28	118.4	28
29	101.7	29
30	113.0	30
31	92.4	31
32	35.8	32
33	39.3	33
34	8.3	34
35	17.7	35
36		36
37	2.5	37
TOTAL	1000	
No. SAMPLES	4	
SAMPLING WEIGHT(kg)	115	
No. F.MEASURED	486	
MEAN LENGTH(cm)	26.9	
MEAN WEIGHT (g)	291	
DEPTH RANGE (m)	300/380	

TABLE XI: REDFISH (*S. mentella*), DIV. 3O, 2017: length composition (0/000) of the 130mm trawl catches.

LENGTH GROUP	MAY	JUN	SEP	2nd Q.	3rd Q.	YEAR	LENGTH GROUP
15		1.4		1.1		0.9	15
16		5.1	9.0	4.2	9.0	5.3	16
17		18.2	34.4	14.9	34.4	19.2	17
18	3.0	58.9	49.3	48.8	49.3	48.9	18
19	0.6	79.4	115.0	65.1	115.0	76.2	19
20	16.6	100.9	114.0	85.6	114.0	92.0	20
21	62.8	118.5	106.1	108.4	106.1	107.9	21
22	107.8	103.1	131.5	104.0	131.5	110.1	22
23	203.7	136.3	132.3	148.6	132.3	144.9	23
24	230.2	147.1	107.2	162.2	107.2	149.9	24
25	197.1	113.7	95.9	128.9	95.9	121.5	25
26	132.0	66.0	57.9	78.0	57.9	73.5	26
27	29.9	30.5	38.7	30.4	38.7	32.3	27
28	13.5	13.5	6.4	13.5	6.4	11.9	28
29	2.7	5.7	2.4	5.1	2.4	4.5	29
30		1.3		1.1		0.8	30
31		0.4		0.3		0.3	31
TOTAL	1000	1000	1000	1000	1000	1000	
No. SAMPLES	8	24	7	32	7	39	
SAMPLING WEIGHT(kg)	206	433	190	639	190	829	
No. F.MEASURED	884	2736	845	3620	845	4465	
MEAN LENGTH(cm)	24.4	22.9	22.5	23.2	22.5	23.0	
MEAN WEIGHT (g)	189	165	160	170	160	167	
DEPTH RANGE (m)	133/348	120/522	145/518	120/522	145/518	120/522	

TABLE XII: REDFISH (*S. marinus*), DIV. 3M, 2017: length composition (0/000) of the 130mm trawl catches.

LENGTH GROUP	JAN	FEB	JUL	1st Q.	3rd Q.	YEAR	LENGTH GROUP
22	4.4	5.9		5.0		3.0	22
23	7.3	8.5		7.8		4.6	23
24	27.5	35.4		30.6		18.0	24
25	60.6	71.8		65.1		38.2	25
26	56.1	93.7	3.0	71.2	3.0	43.0	26
27	101.1	109.8	11.1	104.6	11.1	66.0	27
28	145.9	118.7	4.3	135.0	4.3	81.0	28
29	120.6	107.8	24.1	115.4	24.1	77.7	29
30	146.9	126.5	52.7	138.7	52.7	103.2	30
31	128.6	112.4	85.4	122.1	85.4	106.9	31
32	76.2	86.1	121.2	80.2	121.2	97.1	32
33	52.9	40.1	187.8	47.8	187.8	105.6	33
34	39.8	34.8	189.5	37.8	189.5	100.4	34
35	19.4	17.8	125.4	18.8	125.4	62.8	35
36	8.6	13.4	102.6	10.5	102.6	48.5	36
37	3.3	8.5	41.2	5.4	41.2	20.2	37
38	0.8	7.4	25.3	3.5	25.3	12.5	38
39		1.5	14.6	0.6	14.6	6.4	39
40			10.5		10.5	4.3	40
41			1.4		1.4	0.6	41
42			0.01		0.01	0.01	42
TOTAL	1000	1000	1000	1000	1000	1000	
No. SAMPLES	10	6	11	16	11	27	
SAMPLING WEIGHT(kg)	546	299	411	845	411	1256	
No. F.MEASURED	1364	760	1347	2124	1347	3471	
MEAN LENGTH(cm)	29.8	29.6	34.1	29.7	34.1	31.5	
MEAN WEIGHT (g)	354	351	533	353	533	427	
DEPTH RANGE (m)	505/606	490/574	455/505	490/606	455/505	455/606	

TABLE XIII: AMERICAN PLAICE, DIV. 3M, 2017: length composition (0/000) of the 130mm trawl catches.

LENGTH GROUP	JUN	AUG	SEP	OCT	2nd Q.	3rd Q.	4th Q.	YEAR	LENGTH GROUP
34			11.3			3.6		2.1	34
36	46.2	8.6	11.3	6.2	46.2	9.4	6.2	16.0	36
38	76.9	4.5		44.3	76.9	3.1	44.3	26.8	38
40	230.8	77.0	11.9	12.4	230.8	56.1	12.4	81.3	40
42	153.8	77.4	40.8	23.3	153.8	65.6	23.3	73.9	42
44	169.2	92.1	100.1	133.9	169.2	94.7	133.9	118.1	44
46	230.8	137.9	221.7	145.2	230.8	164.8	145.2	173.7	46
48	46.2	142.5	80.8	88.6	46.2	122.7	88.6	100.0	48
50		139.5	180.6	222.1		152.7	222.1	137.4	50
52	15.4	101.1	255.1	150.4	15.4	150.6	150.4	123.6	52
54	30.8	157.5	22.5	99.9	30.8	114.2	99.9	94.5	54
56		46.8	46.1	8.6		46.6	8.6	29.0	56
58		11.3	6.0	44.3		9.6	44.3	15.2	58
60		3.7	11.9	20.9		6.4	20.9	8.3	60
TOTAL	1000	1000	1000	1000	1000	1000	1000	1000	
No. SAMPLES	1	4	2	2	1	6	2	9	
SAMPLING WEIGHT(kg)	39	351	175	169	39	525	169	733	
No. F.MEASURED	65	315	172	135	65	487	135	687	
MEAN LENGTH(cm)	44.0	49.3	49.6	49.8	44.0	49.4	49.8	48.4	
MEAN WEIGHT (g)	849	1238	1252	1281	849	1243	1281	1173	
DEPTH RANGE (m)	163/195	140/226	123/167	204/357	163/195	123/226	204/357	123/357	

TABLE XIV: AMERICAN PLAICE, DIV. 3N, 2017: length composition (0/000) of the 130mm trawl catches.

LENGTH GROUP	JUL =YEAR	LENGTH GROUP
24	15.1	24
26	19.2	26
28	44.3	28
30	165.4	30
32	203.6	32
34	282.6	34
36	166.1	36
38	77.6	38
40	23.5	40
42	2.7	42
TOTAL	1000	
No. SAMPLES	8	
SAMPLING WEIGHT(kg)	507	
No. F.MEASURED	953	
MEAN LENGTH(cm)	34.2	
MEAN WEIGHT (g)	373	
DEPTH RANGE (m)	49/57	

TABLE XV: AMERICAN PLAICE, DIV. 3O, 2017: length composition (0/000) of the 130mm trawl catches.

LENGTH GROUP	MAY	JUN	2nd Q. =YEAR	LENGTH GROUP
36	17.9	78.1	35.7	36
38	104.7	62.5	92.2	38
40	263.6	78.1	208.7	40
42	224.8	93.8	186.0	42
44	215.5	296.9	239.6	44
46	34.7	187.5	80.0	46
48	56.2	93.8	67.3	48
50	34.0	31.3	33.2	50
52	8.4	31.3	15.2	52
54	35.2		24.7	54
56		46.9	13.9	56
58				58
60				60
62	4.9		3.5	62
TOTAL	1000	1000	1000	
No. SAMPLES	3	1	4	
SAMPLING WEIGHT(kg)	121	39	159	
No. F.MEASURED	187	64	251	
MEAN LENGTH(cm)	43.7	45.3	44.2	
MEAN WEIGHT (g)	792	880	818	
DEPTH RANGE (m)	136/348	175/199	136/348	

TABLE XVI: YELLOWTAIL FLOUNDER, DIV. 3N, 2017: length composition (0/000) of the 130mm trawl catches.

LENGTH GROUP	JUL = YEAR	LENGTH GROUP
20	14.2	20
22	67.4	22
24	281.1	24
26	345.9	26
28	184.3	28
30	76.0	30
32	27.5	32
34	3.0	34
36	0.6	36
TOTAL	1000	
No. SAMPLES	12	
SAMPLING WEIGHT(kg)	308	
No. F.MEASURED	1405	
MEAN LENGTH(cm)	27.0	
MEAN WEIGHT (g)	162	
DEPTH RANGE (m)	49/59	

TABLE XVII: GREENLAND HALIBUT, DIV. 3L, 2017: length composition (0/000) of the 130mm trawl catches.

LENGTH GROUP	FEB	JUN	SEP	OCT	1st Q.	2nd Q.	3rd Q.	4th Q.	YEAR	LENGTH GROUP
24		0.8				0.8			0.2	24
26										26
28		2.5				2.5			0.5	28
30		14.4				14.4			2.6	30
32		24.2				24.2			4.4	32
34		20.3		1.7		20.3		1.7	4.3	34
36	1.6	40.5	8.9	21.9	1.6	40.5	8.9	21.9	17.1	36
38	1.5	51.4	14.9	88.7	1.5	51.4	14.9	88.7	43.9	38
40	16.2	122.8	36.4	125.6	16.2	122.8	36.4	125.6	78.0	40
42	45.2	107.3	64.7	178.2	45.2	107.3	64.7	178.2	107.2	42
44	96.2	110.8	80.7	147.0	96.2	110.8	80.7	147.0	114.2	44
46	153.7	63.9	111.8	155.5	153.7	63.9	111.8	155.5	130.6	46
48	166.7	65.4	67.6	105.4	166.7	65.4	67.6	105.4	109.0	48
50	90.4	66.6	90.9	68.4	90.4	66.6	90.9	68.4	78.3	50
52	119.4	148.7	145.7	49.8	119.4	148.7	145.7	49.8	104.6	52
54	171.8	72.6	111.3	27.2	171.8	72.6	111.3	27.2	91.7	54
56	114.6	61.6	126.2	16.5	114.6	61.6	126.2	16.5	72.2	56
58	10.1	17.0	50.9	10.1	10.1	17.0	50.9	10.1	18.6	58
60	6.2	9.2	37.9	4.0	6.2	9.2	37.9	4.0	11.5	60
62	5.3		24.5		5.3		24.5		5.8	62
64	1.1		12.3		1.1		12.3		2.5	64
66			7.6				7.6		1.3	66
68			1.3				1.3		0.2	68
70			3.7				3.7		0.7	70
72			2.7				2.7		0.5	72
TOTAL	1000	1000	1000	1000	1000	1000	1000	1000	1000	
No. SAMPLES	6	7	11	7	6	7	11	7	31	
SAMPLING WEIGHT(kg)	602	809	1296	448	602	809	1296	448	3155	
No. F.MEASURED	683	744	1091	870	683	744	1091	870	3388	
MEAN LENGTH(cm)	50.7	46.7	51.8	45.6	50.7	46.7	51.8	45.6	48.4	
MEAN WEIGHT (g)	1066	865	1163	767	1066	865	1163	767	940	
DEPTH RANGE (m)	893/1349	872/1355	412/1400	891/1213	893/1349	872/1355	412/1400	891/1213	412/1400	

TABLE XVIII: GREENLAND HALIBUT, DIV. 3M, 2017: length composition (0/000) of the 130mm trawl catches.

LENGTH GROUP	FEB	JUN	SEP	OCT	1st Q.	2nd Q.	3rd Q.	4th Q.	YEAR	LENGTH GROUP
26		30.9				30.9			2.3	26
28		30.9				30.9			2.3	28
30		51.5				51.5			3.8	30
32		61.9				61.9			4.6	32
34	1.2	61.9			1.2	61.9			4.9	34
36	9.2	92.8	9.1	11.5	9.2	92.8	9.1	11.5	16.6	36
38	14.1	144.3	9.1	40.0	14.1	144.3	9.1	40.0	37.4	38
40	60.7	20.6	36.4	45.5	60.7	20.6	36.4	45.5	46.4	40
42	106.7	41.2	154.5	101.7	106.7	41.2	154.5	101.7	104.9	42
44	137.1		218.2	180.0	137.1		218.2	180.0	160.4	44
46	146.0	20.6	345.5	147.9	146.0	20.6	345.5	147.9	161.9	46
48	186.9	61.9	118.2	133.7	186.9	61.9	118.2	133.7	140.0	48
50	143.4	51.5	36.4	163.3	143.4	51.5	36.4	163.3	134.6	50
52	62.3	123.7	45.5	81.4	62.3	123.7	45.5	81.4	75.3	52
54	58.6	144.3	27.3	47.9	58.6	144.3	27.3	47.9	55.2	54
56	58.5	41.2		19.2	58.5	41.2		19.2	28.5	56
58	13.4			23.2	13.4			23.2	16.2	58
60	1.8	20.6		4.8	1.8	20.6		4.8	4.6	60
TOTAL	1000	1000	1000	1000	1000	1000	1000	1000	1000	
No. SAMPLES	7	1	1	5	7	1	1	5	14	
SAMPLING WEIGHT(kg)	860	113	56	330	860	113	56	330	1360	
No. F.MEASURED	887	97	110	619	887	97	110	619	1713	
MEAN LENGTH(cm)	48.3	43.9	46.4	47.9	48.3	43.9	46.4	47.9	47.5	
MEAN WEIGHT (g)	903	774	797	884	903	774	797	884	870	
DEPTH RANGE (m)	910/1120	917/1110	941/1100	883/1172	910/1120	917/1110	941/1100	883/1172	883/1172	

TABLE XIX: ROUGHHEAD GRENADIER, DIV. 3L, 2017: length composition (0/000) of the 130mm trawl catches.

LENGTH GROUP	JUN	OCT	2nd Q.	4th Q.	YEAR	LENGTH GROUP
8		56.3		56.3	54.5	8
9		251.5		251.5	243.8	9
10		415.6		415.6	402.9	10
11		216.9		216.9	210.2	11
12	25.3	29.9	25.3	29.9	29.8	12
13	43.5	26.1	43.5	26.1	26.6	13
14	89.7	3.7	89.7	3.7	6.4	14
15	101.0		101.0		3.1	15
16	158.5		158.5		4.8	16
17	89.7		89.7		2.7	17
18	80.1		80.1		2.4	18
19	73.6		73.6		2.3	19
20	117.8		117.8		3.6	20
21	45.9		45.9		1.4	21
22	94.5		94.5		2.9	22
23	48.3		48.3		1.5	23
24						24
25	32.2		32.2		1.0	25
TOTAL	1000	1000	1000	1000	1000	
No. SAMPLES	2	2	2	2	4	
SAMPLING WEIGHT(kg)	67	25	67	25	91	
No. F.MEASURED	124	267	124	267	391	
MEAN LENGTH(cm)	18.4	10.5	18.4	10.5	10.7	
MEAN WEIGHT (g)	578	114	578	114	128	
DEPTH RANGE (m)	1104/1266	890/945	1104/1266	890/945	890/1266	

TABLE XX: ROUGHHEAD GRENADIER, DIV. 3M, 2017: length composition (0/000) of the 130mm trawl catches.

LENGTH GROUP	JUN	SEP	OCT	2nd Q.	3rd Q.	4th Q.	YEAR	LENGTH GROUP
7			11.7			11.7	7.8	7
8			160.5			160.5	107.1	8
9		42.0	402.1		42.0	402.1	282.0	9
10	54.8	285.7	293.7	54.8	285.7	293.7	289.7	10
11	68.5	403.4	89.8	68.5	403.4	89.8	192.2	11
12	54.8	226.9	34.1	54.8	226.9	34.1	97.2	12
13	68.5	25.2	8.1	68.5	25.2	8.1	14.0	13
14	54.8	16.8		54.8	16.8		5.8	14
15	95.9			95.9			0.6	15
16	68.5			68.5			0.4	16
17	68.5			68.5			0.4	17
18	41.1			41.1			0.2	18
19	68.5			68.5			0.4	19
20	27.4			27.4			0.2	20
21	82.2			82.2			0.5	21
22	95.9			95.9			0.6	22
23	41.1			41.1			0.2	23
24	41.1			41.1			0.2	24
25	41.1			41.1			0.2	25
26								26
27	27.4			27.4			0.2	27
TOTAL	1000	1000	1000	1000	1000	1000	1000	
No. SAMPLES	1	1	2	1	1	2	4	
SAMPLING WEIGHT(kg)	42	9	21	42	9	21	72	
No. F.MEASURED	73	119	250	73	119	250	442	
MEAN LENGTH(cm)	17.9	11.5	9.9	17.9	11.5	9.9	10.5	
MEAN WEIGHT (g)	587	145	98	587	145	98	116	
DEPTH RANGE (m)	917/1110	922/1106	932/1131	917/1110	922/1106	932/1131	917/1131	

TABLE XXI: WITCH FLOUNDER, DIV. 3M, 2017: length composition (0/000) of the 130mm trawl catches.

LENGTH GROUP	JUN =YEAR	LENGTH GROUP
34	100.0	34
36	83.3	36
38	116.7	38
40	266.7	40
42	266.7	42
44	100.0	44
46	50.0	46
48	16.7	48
TOTAL	1000	
No. SAMPLES	1	
SAMPLING WEIGHT(kg)	30	
No. F.MEASURED	60	
MEAN LENGTH(cm)	41.2	
MEAN WEIGHT (g)	706	
DEPTH RANGE (m)	182/227	

TABLE XXII: THORNY SKATE, DIV. 3L, 2017: length composition (0/000) of the 130mm trawl catches.

LENGTH GROUP	SEP =YEAR	LENGTH GROUP
46	58.8	46
48		48
50	29.4	50
52		52
54		54
56		56
58	29.4	58
60	117.6	60
62	58.8	62
64	88.2	64
66		66
68	58.8	68
70	29.4	70
72	88.2	72
74	58.8	74
76	117.6	76
78	58.8	78
80	117.6	80
82	29.4	82
84		84
86	58.8	86
TOTAL	1000	
No. SAMPLES	1	
SAMPLING WEIGHT(kg)	78	
No. F.MEASURED	34	
MEAN LENGTH(cm)	69.9	
MEAN WEIGHT (g)	4094	
DEPTH RANGE (m)	195/304	

TABLE XXIII: THORNY SKATE, DIV. 3O, 2017: length composition (0/000) of the 130mm trawl catches.

LENGTH GROUP	MAY	JUN	2nd Q. =YEAR	LENGTH GROUP
46	5.2		3.4	46
48				48
50	10.5		6.9	50
52	10.5	10.9	10.6	52
54	26.1	68.9	40.8	54
56	5.2	35.5	15.6	56
58	75.0	83.5	77.9	58
60	52.2	44.6	49.6	60
62	41.1	98.1	60.7	62
64	81.5	85.6	82.9	64
66	78.3	82.3	79.7	66
68	78.9	96.9	85.1	68
70	71.1	96.6	79.8	70
72	131.2	71.8	110.8	72
74	92.6	50.9	78.3	74
76	27.3	39.2	31.4	76
78	62.7	38.0	54.2	78
80	39.1	30.0	36.0	80
82	50.9	29.2	43.4	82
84	47.5	16.3	36.8	84
86	6.6	21.7	11.8	86
88	6.6		4.3	88
TOTAL	1000	1000	1000	
No. SAMPLES	3	3	6	
SAMPLING WEIGHT(kg)	518	610	1128	
No. F.MEASURED	122	144	266	
MEAN LENGTH(cm)	70.0	67.5	69.1	
MEAN WEIGHT (g)	4024	3647	3895	
DEPTH RANGE (m)	140/261	125/470	125/470	

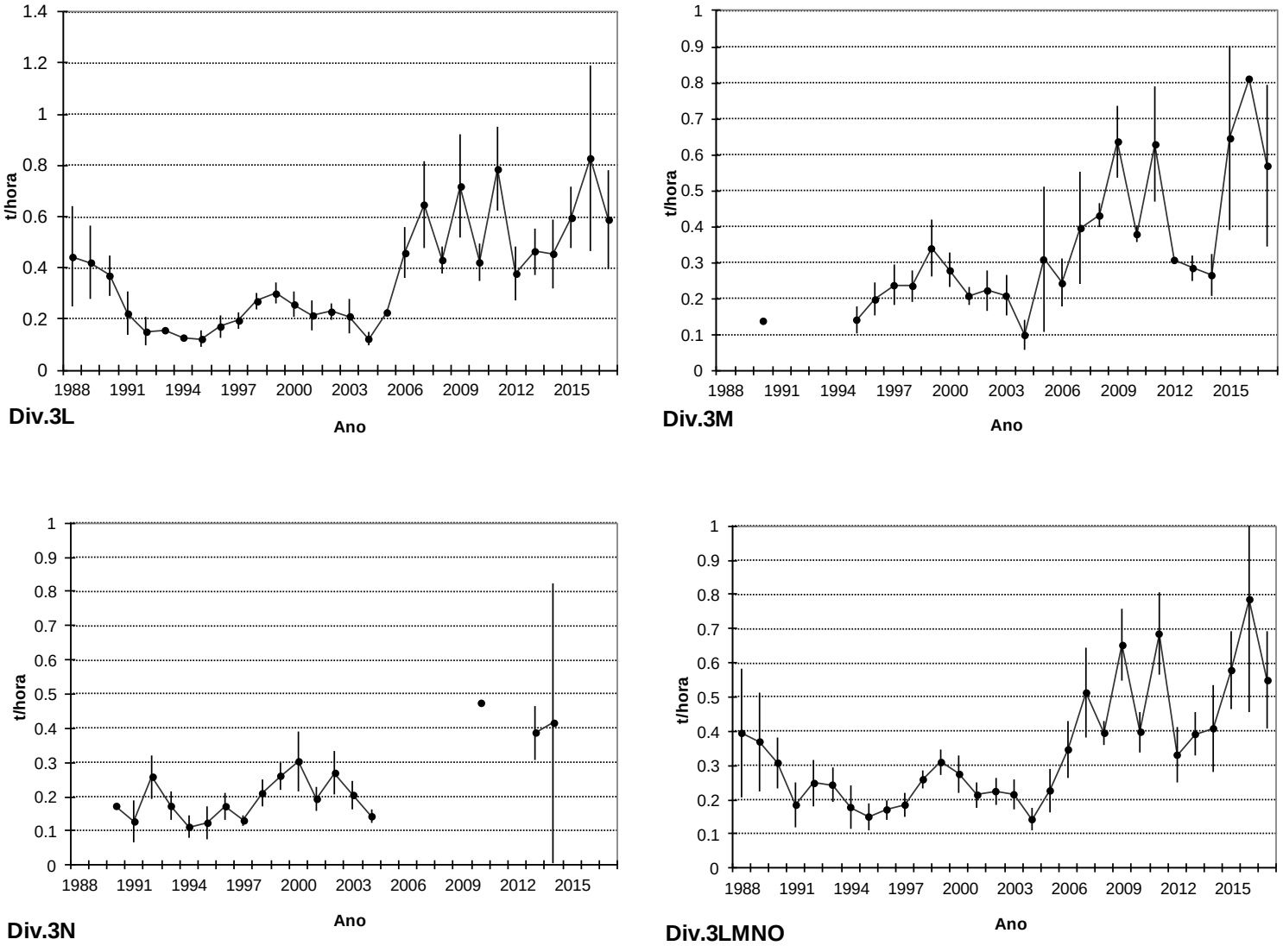

Fig. 1: Greenland halibut trawl catch rates by division, 1988 - 2017.

Fig. 2 - Annual length composition of Cod on Division 3M 130mm trawl fishery in 2017

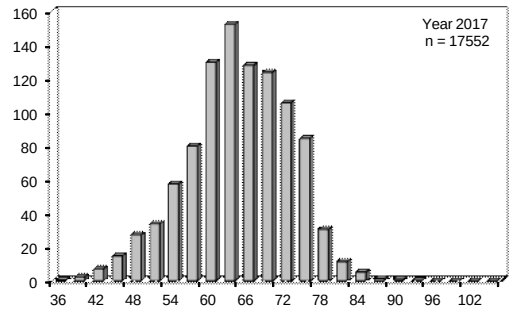

Fig. 3 - Annual length composition of redfish (*Sebastes mentella*) on Division 3L 130mm trawl fishery in 2017

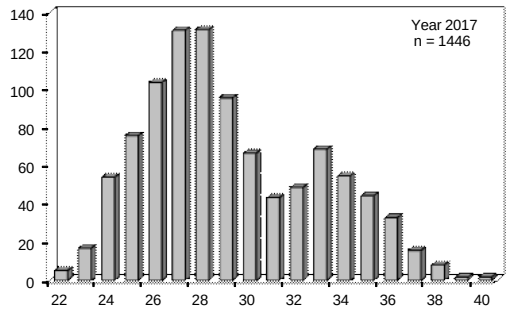

Fig. 4 - Annual length composition of redfish (*Sebastes mentella*) on Division 3M 130mm trawl fishery in 2017

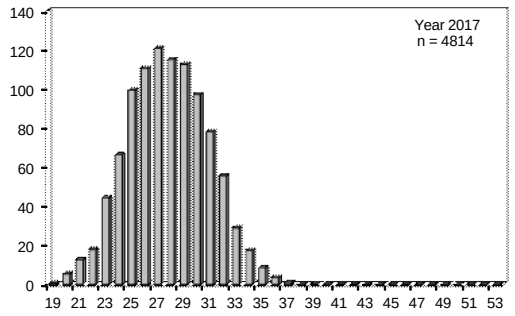

Fig. 5 - Annual length composition of redfish (*Sebastes mentella*) on Division 3N 130mm trawl fishery in 2017

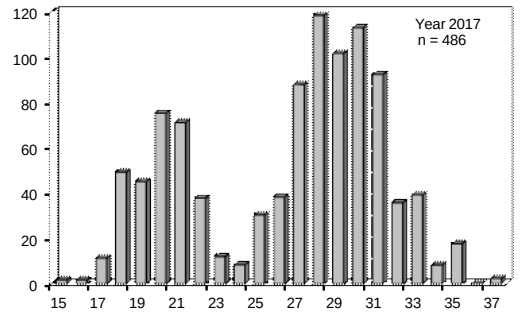

Fig. 6 - Annual length composition of redfish (*Sebastes mentella*) on Division 3O 130mm trawl fishery in 2017

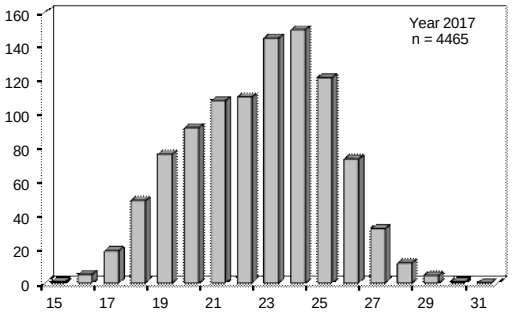

Fig. 7 - Annual length composition of redfish (*Sebastes marinus*) on Division 3M 130mm trawl fishery in 2017

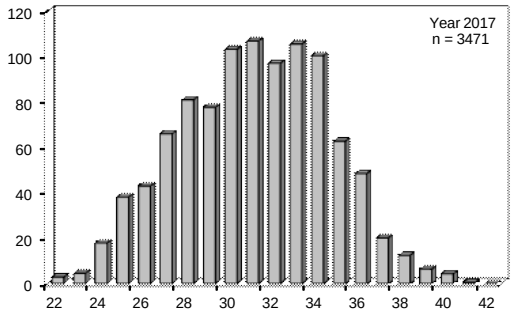

Fig. 8 - Annual length composition of American plaice on Division 3M 130mm trawl fishery in 2017

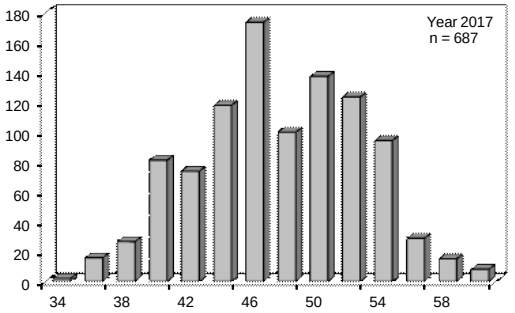

Fig. 9 - Annual length composition of American plaice on Division 3N 130mm trawl fishery in 2017

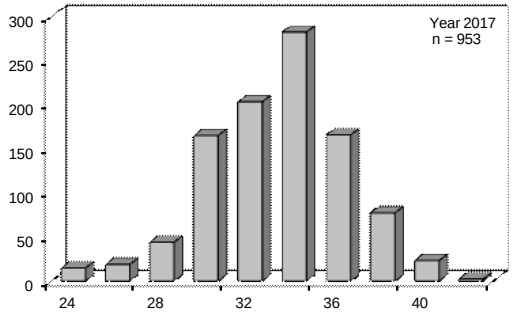

Fig. 10 - Annual length composition of American plaice on Division 3O 130mm trawl fishery in 2017

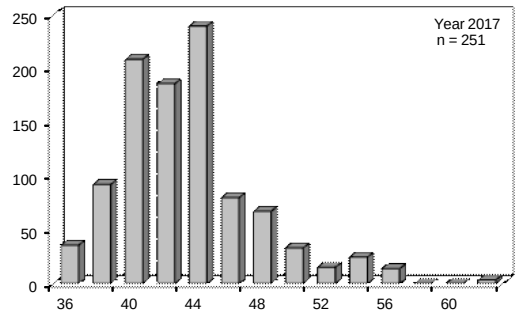

Fig. 11 - Annual length composition of yellowtail flounder on Division 3N130mm trawl fishery in 2017

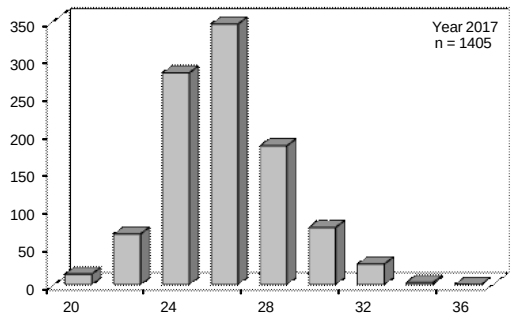

Fig. 12 - Annual length composition of Greenland halibut on Division 3L 130mm trawl fishery in 2017

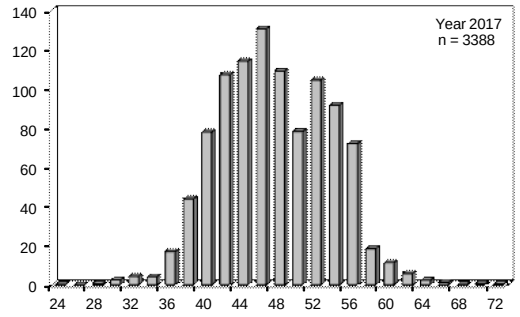

Fig. 13 - Annual length composition of Greenland halibut on Division 3M 130mm trawl fishery in 2017

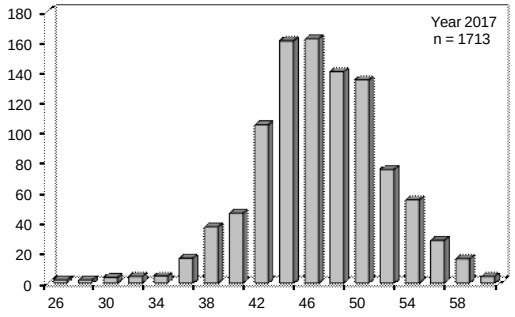

Fig. 14 - Annual length composition of roughhead grenadier on Division 3L 130mm trawl fishery in 2017

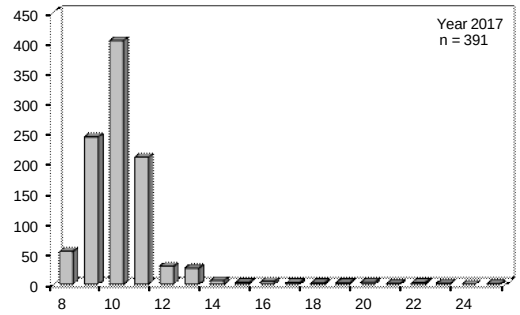

Fig. 15 - Annual length composition of roughhead grenadier on Division 3M 130mm trawl fishery in 2017

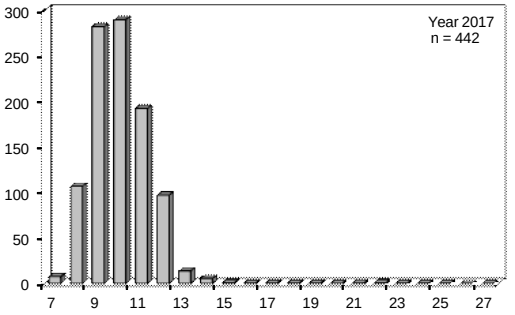

Fig. 16 Annual length composition of witch flounder on Division 3M 130mm trawl fishery in 2017

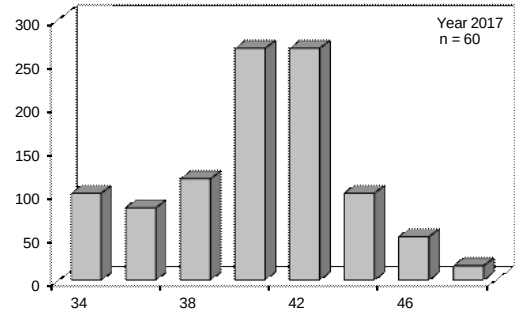

Fig. 17 - Annual length composition of skates on Division 3L 130mm trawl fishery in 2017

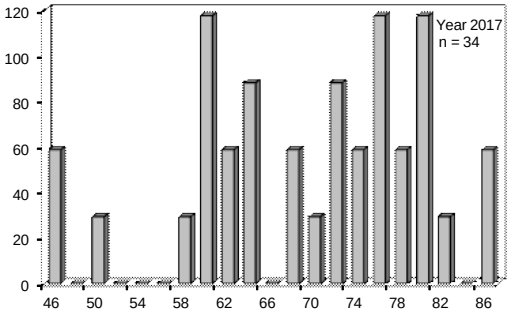

Fig. 18 - Annual length composition of skates on Division 3O 130mm trawl fishery in 2017