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Commercial data from the Greenland halibut fishery in the Upernavik area

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Abstract

Although the commercial fishery for Greenland halibut inshore in West Greenland started around 1910, the first available catch statistics from the Upernavik area are from the 1960s. The fishery is traditionally performed with longlines from small open boats, small vessels, or from dog sledges through a hole in the sea ice. This document presents catch statistics and data from the commercial catches collected from the fishery targeting Greenland halibut in the fjords in the Upernavik district. The document includes statistics of commercial sampling effort collected by the Greenland Institute of Natural Resources (GINR), i.e., length frequency calculations of mean size in the landings and preliminary catch-at-age (CAA). Also provided are three commercial CPUE indices. Two CPUE indices are based on logbook data (one for longline logbooks and one for gillnet logbooks) and one CPUE index is based on factory landings data (from longline catches).

Introduction

The first available catch statistics from the Upernavik area are from 1964. The area consists of deep branching fjords separated from Baffin Bay by a shallower archipelago. The fishery is traditionally performed with longlines from small open boats, small vessels, or through a hole in the sea ice and transported with dog sledge. Gillnets are also allowed in certain areas and during the winter. License requirements were introduced in 1998 and in 2008 TAC and quota regulations were introduced for the inshore fishery. Logbooks have been mandatory for vessels larger than 30^{ft} since 2008. In 2012, the TAC was split in two components with ITQs for vessels and a shared quota for open boats. The ITQ system currently does not specify catch to a certain district which causes a discrepancy between the ITQ and total quota set for each district. In the 1980s, small vessels entered the fishery and the use of gillnets increased in the following years. In the late 1990s, the first regulations limiting areas open to gillnet fishery were introduced, limiting gillnet fishery to the winter season. Authority to regulate seasons and areas open to gillnet fishery, was transferred to municipalities in 2004, and areas open to gillnet fishery have expanded since. In 2017, the minimum mesh-size in the Greenland halibut gillnet fishery was reduced from 110 mm to 95 mm, which enables catches of Greenland halibut as small as 50 cm with a maximal selection in the interval 55-70 cm. The inshore stock in division 1A is considered to mainly recruit from the stock in Davis Strait, although adults appear somewhat resident in the fjords, possibly isolated from the offshore spawning stock due to the shallower banks in between.

Materials and methods

Recent catch statistics (factory landing and logbooks) are available from a centralized database managed by the Greenland Fisheries and Hunting Control Authority (GFJK). Both logbook (haul by haul) and factory landings (daily individual landings) are reported as individual fishing events containing dates, field code or position, effort, sorting categories and more.

Commercial sampling

Commercial samples are collected by the Greenland Institute of Natural Resources (GINR). During surveys or sampling campaigns, factories are visited and the size of the landed fish by species and gear is registered. However, due to the logistic challenges in Greenland (size of Greenland and mainly transport by air or sea), sampling catch is challenging. In this regard, Upernavik poses a special challenge due to the many settlements with factories in the area. Factories are located in Upernavik Kujalleq, Upernavik, Aappilattoq, Inarsuit, Tasiusaq, Nuussuaq, and Kullorsuaq. Fish landed to the different factories are, however, often taken in the same areas leading to biased sampling locations being a smaller problem. Only Kullorsuaq is rarely or never visited. To ensure sufficient length information from the commercial catches is available, GINR used to conduct commercial length measurements in factories during the winter fishery. Factories are also visited during the gillnet survey conducted with the GINR research vessel RV Sanna. If individual fish weights from automated sorting machines (graders) are available these data are preferred to the opportunistic sampling from factories. In recent years many of these factories have installed graders (a sorting machine weighing each individual fish), providing a valuable data source for fish stock assessment. However, no data has been provided by the industry since August 2023.

Due to low survey activity with the old and now sold research vessel RV Adolf Jensen (effort directed to Disko Bay and Uummannaq) a gap exists in the sampling around 2002 to 2007. Individual weights collected by Upernavik seafood from 2001-2014 have now been recalculated to length frequencies and it is thus now possible to complete the data for this period.

Age-length key (ALK)

Age information is occasionally obtained from commercial landings, but most otoliths in the area are collected through biological surveys with GINR research vessel RV Sanna during summer gillnet surveys. No otoliths are available from 2002 to 2007.

Logbook CPUE calculation

Three different commercial CPUEs are calculated for the inshore stocks. A general linear model (GLM) with year, month, and boat as factors is applied to the longline and gillnet fishery logbook data since 2010. Only longline sets with more than 200 hooks and gillnets with catches between 0 and 1000 kg/gillnet are included to omit obvious outlier values and limit the influence of potential data errors on the analysis. CPUE observations are log-transformed prior to the GLM analysis. Least-mean square estimates were used as standardized CPUE series. Lastly, a longline CPUE based on factory landings catch data is calculated using the same procedures as for the logbook CPUE (see details in Riget and Nygaard, 2018 & Bjare and Nygaard, 2022).

Results

Catches

The first available catch statistics from the Upernavik area are from 1964. Total catch remained at a low level until the beginning of the 1980s (Fig. 1, Table 1). Catches decreased from 1998 to 2002, but gradually increased until 2019. Factory vessels receiving catch from small boats have occasionally supplemented the factories located in settlements to increase the factory capacity and increase competition and prices in the area. Total catch reached a record high of 8,955 t in 2019. Since then, catches have decreased and in 2025 only 4,329 t were caught in the area.

Typically, around 90% of the catches are from longline fishery and 10 % from gillnet fishery. The catch statistics are aggregated by gear (longline or gillnet) and month (Table 2). Official databases often lack sufficient area or gear information prior to 2012. The catch by gear and month is used to calculate mean size in the landings and estimate catch-at-age (CAA). The Upernavik area consists of several large ice fjords, but the main fishing grounds are the deep Ikeq fjord (Upernavik Icefjord) and Gulteqarffik (Gulteqarffik is the Inuit word for "where the gold is collected"). Since the large icefjords are often not accessible due to glacier ice, the fishery is sometimes restricted to the shallower fjords near Upernavik and the settlements in the area or less active icefjords like Tasiusaq Bay located between Gulteqarffik and Ikeq (Fig.2). A breakdown of catch by gear and month is provided in Table 2.

Length information

Due to the logistical challenges in Greenland commercial length information is not available for all months or even years (Table 3). Grader data from the area is available in 2020 and 2021 and can replace the lacking data in these years. In 2022 and 2023 grader data was used as part of the CAA calculations, but no data has been received by the industry since October 2023.

In Upernavik there is little difference between summer and winter fishing grounds and only small differences in the summer and winter length distributions are observed. Mean individual length in the commercial landings decreased from 1993 to 1998 (Fig. 3). From 1999 to 2012 the mean length in the longline fishery remained constant with little change from year to year. However, a decrease in the size of the landed fish has been observed gradually since 2013 (Fig. 3). Length distributions of the landed fish are shown in Fig. 4. It should be noted that the estimates of mean length and the length distribution was based on only 1,245 Greenland halibut in 2024 and 2,694 Greenland halibut measured during surveys in August 2025.

Age-length key (ALK)

Age reading of Greenland halibut was suspended from 2011 to 2017 at GINR due to low quality of the age readings and lack of an internationally agreed method. However, age readings have since been reinitiated and an ALK is currently being constructed back in time. Until 2020 CAA was created with an ALK constructed using age readings from whole frozen otoliths from all three inshore areas collected from 2008, 2009 and 2010. From 2021 CAA was constructed with individual year's ALK from otolith readings from Upernavik supplemented by the other inshore areas as a backup of missing length and age combinations. Although the CAA should be treated with caution due to uncertainty in the age readings, the CAA indicates a shift in the age composition of Greenland halibut in the area. From 2008 to 2011 the fishery was based on older Greenland halibut (ages 7-11) (Fig. 5). After 2020 the fishery is dominated by younger fish between 5 and 9 years. The CAA estimates for 2024 and 2025 may be influenced by poor length information and lack of grader data in these years.

Factory landings CPUE (longline)

The CPUE based on factory landings data consists of more than 10,000 observations in all years and covers all longline fishery and >90% of the yearly catch (Table 6). The CPUE shows a decrease since 2012 (Fig. 6).

Logbook CPUE (longline)

Longline CPUE based on logbooks from vessels >30ft show a gradual decrease from the beginning of the timeseries (Table 7 and Fig. 7). In 2020 the CPUE decreased but returned to previous levels in 2021. However, in 2025 the logbook CPUE decreased again. Although the CPUE is based on only the larger vessels and a different data source, the CPUE shows an almost identical trend as the factory landings longline CPUE.

Logbook CPUE (gillnet)

The gillnets CPUE gradually decreased from 2009 to 2019 with a sudden drop in 2013 and 2014 (Table 8 and Fig. 8). However, the index may be influenced by a shift in the minimum allowed mesh size in the gillnets from

110 mm gillnets to 95 mm in 2017. The reduction in mesh size in the gillnets should, however, lead to a greater overlap with the stock and therefore an increase in fishing efficiency. And yet, the gillnet CPUE decreased substantially since 2009, and even more pronounced since 2019.

Discussion

The catches have decreased since 2021, although they are generally high in the past decade compared to earlier. The CAA and length frequencies and mean length in the landings may, however, all be influenced by the low number of length measured Greenland halibut in 2024 and 2025. The CAA can still be improved with more age readings from the area and unused length information is still available. Therefore, it is vital that the industry supplies data from graders in the area. CPUE indices are often heavily criticized for being untrustworthy. However, the CPUEs presented here are based on a very large number of observations. The CPUE index from the factory landings are based on all individual landings and typically constitute more than 10,000 observations per year. Furthermore, longlines used in this fishery have been optimized for decades and are difficult to improve further. And finally, Greenland halibut is not a schooling species with a patchy distribution, improving the ability of the CPUE to track changes in the stock. The gillnet CPUE based on logbooks should be treated with caution, due to the reduction of the allowed mesh size in 2017 from 110 mm half mesh to 95 mm half mesh. Despite these issues making the gillnets more "effective" the CPUE has gradually decreased, further substantiating that the different CPUEs altogether reflect a strong signal of stock decline in this area.

References

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Table 1. Catches (t) of Greenland halibut in the Upernavik area by gear.

	Upernavik				Notes
Year	Longline	Gillnet	Unknown	Catch	
1964	9			9	
1965	33			33	
1966	20			20	
1967	2			2	
1968	1			1	
1969	1			1	
1970	6			6	
1971	3			3	
1972	3			3	
1973	3			3	Guess due to lack of data
1974	3			3	Guess due to lack of data
1975	5			5	
1976	7			7	Guess due to lack of data
1977	10			10	
1978	7			7	
1979	3			3	
1980	14			14	
1981			57	57	
1982			138	138	
1983			123	123	
1984			111	111	
1985			244	244	
1986			500	500	Guess - due to lack of data
1988			777	777	
1989			1253	1253	
1990			1245	1245	
1991			1495	1495	
1992			2156	2156	
1993			3805	3805	
1994			4844	4844	
1995			3269	3269	
1996			4846	4846	
1997			4879	4879	
1998			7012	7012	
1999			5258	5258	
2000	3764	0	0	3764	
2001	3239	0	0	3239	
2002			3019	3019	
2003	2509	1378	0	3884	
2004	2476	2097	0	4573	
2005	3096	1743	0	4839	
2006	3535	1598	0	5132	
2007	4218	659	0	4877	
2008			5478	5478	
2009			6497	6497	
2010	5443	411	0	5941	
2011	6176	362	0	6538	Total corrected 2024
2012	6204	514	0	6718	
2013	5606	433	0	6039	
2014	6964	409	0	7374	

Table 1 continued. Catches (t) of Greenland halibut in the Upernavik area by gear.

	Upernavik				Notes
Year	Longline	Gillnet	Unknown	Catch	
2015	5491	783	0	6274	
2016	6954	408	0	7362	
2017	6365	418	0	6783	
2018	7230	319	0	7549	
2019	8277	688	0	8966	Catch corrected in 2020
2020	6884	690	0	7574	
2021	7269	1211	0	8480	
2022	6939	799	0	7738	
2023	6553	782	0	7335	
2024	5003	376	0	5379	
2025	3978	351	0	4329	

Notes.
1998 License requirements introduced.
2002 Offshore shrimp trawlers equipped with grid separators.
2008 First Quota regulations introduced.
2009 Logbooks mandatory for vessels larger than 30^{ft}.
2011 Inshore shrimp trawlers equipped with grid separators.
2012 Separate TAC set for vessels and small boats.
2014 Quota free areas outside TAC placed by the fisheries minister.
2017 Minimum mesh size in gillnets reduced from 110 halfmesh (220mm) to 95mm half mesh (190mm).
2019 Error in total catch due to change in reporting practice. Corrected in 2020.

Table 2. Greenland halibut catch (t) in the Upernavik area by gear, year and month.

	Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OKT	NOV	DEC	Total
Longline	2011	243	99	579	571	407	538	830	1292	942	323	352	0	6176
	2012	391	517	448	328	379	657	1026	987	597	547	217	111	6204
	2013	198	493	492	400	320	490	927	1018	821	313	71	61	5606
	2014	222	432	570	490	260	871	1369	853	870	665	314	48	6964
	2015	209	376	626	392	241	537	937	769	650	557	99	98	5491
	2016	502	590	424	343	555	801	1023	1026	740	427	270	255	6954
	2017	366	453	408	309	184	545	957	1053	1089	593	160	247	6365
	2018	460	532	472	534	327	763	918	1068	1021	514	290	331	7230
	2019	454	578	513	345	538	908	1120	1349	1364	636	277	195	8277
	2020	207	555	498	359	436	759	951	1234	1002	495	183	208	6884
	2021	281	446	552	256	338	913	1090	1398	1023	512	149	314	7269
	2022	180	502	645	534	393	594	841	1125	1090	656	200	179	6939
	2023	277	458	623	407	342	524	811	1011	1011	598	263	228	6553
	2024	171	349	403	240	388	576	757	555	618	684	196	66	5003
	2025	110	321	379	341	221	443	647	431	455	333	145	152	3978

	Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OKT	NOV	DEC	Total
Gillnet	2011	48	129	60	66	13	40	0	0	0	0	6	0	362
	2012	1	70	87	131	2	0	0	0	31	55	45	92	514
	2013	21	14	37	84	19	0	0	0	0	0	172	85	433
	2014	22	64	61	72	9	0	0	0	0	0	50	131	409
	2015	12	12	2	56	32	0	51	289	167	0	108	53	783
	2016	10	87	89	99	4	0	0	0	1	0	97	22	408
	2017	16	33	43	88	105	13	1	0	14	0	51	55	418
	2018	7	24	30	70	9	0	0	0	0	0	136	43	319
	2019	3	20	72	116	11	0	0	0	7	11	181	268	688
	2020	31	33	41	158	34	0	0	0	0	0	215	177	690
	2021	144	39	74	82	214	39	3	1	0	275	309	31	1211
	2022	61	4	24	71	148	10	0	0	0	0	338	144	799
	2023	25	0	16	66	246	18	7	2	0	0	230	173	782
	2024	15	0	7	54	73	0	0	0	0	0	110	118	376
	2025	19	3	15	17	94	7					86	109	351

	Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OKT	NOV	DEC	Total
Total	2011	291	228	639	637	420	578	830	1292	942	323	358	0	6538
	2012	392	587	535	459	380	657	1026	987	628	602	262	204	6718
	2013	220	507	530	484	339	490	927	1018	821	313	244	146	6039
	2014	244	495	632	562	269	871	1369	853	870	665	364	179	7374
	2015	221	388	628	448	273	537	988	1058	817	557	207	152	6274
	2016	512	677	513	442	559	801	1023	1026	740	427	366	277	7362
	2017	382	485	451	397	289	558	958	1053	1103	593	211	302	6783
	2018	467	556	502	603	336	763	919	1068	1021	514	426	374	7549
	2019	457	598	585	461	549	908	1120	1349	1371	647	458	463	8966
	2020	238	588	540	517	469	759	951	1234	1002	495	398	385	7574
	2021	424	485	626	337	552	952	1093	1399	1023	786	458	345	8480
	2022	241	506	669	605	541	604	841	1125	1090	656	537	323	7738
	2023	302	458	639	473	588	543	818	1012	1011	598	493	401	7335
	2024	186	349	410	294	461	577	757	555	618	684	305	184	5379
	2025	128	324	394	358	314	450	647	431	455	333	231	262	4329

Table 3 Number of length measured Greenland halibut by gear, division and month from the inshore areas in 2019. Blocks indicates the use of length distributions in the CAA calculation.

	Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Longline	2010	736	669	1920				1939					
	2011		474	5721					6462	1250			
	2012			3551				3378	1743				
	2013			117	3892			1820		101			
	2014		3268	1250	86					4729	777		
	2015	108	5752	480	462	77	245	195	2823	516		158	
	2016			616	892			2101	2871				
	2017												
	2018		611						3385			1415	
	2019								2860				
	2020								3265				
	2021								1333				
	2022							977	2349				
	2023							399					
	2024								1245				
	2025								2694				

	Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Gillnet	2010			517									
	2011		238	257									
	2012	-	1803	-	-	-	-	-	-	-	-	-	-
	2013		651	1464									553
	2014		475	338	2144								
	2015		1144									301	
	2016			632									
	2017												
	2018	76	1038									484	
	2019												
	2020												
	2021		958										
	2022												
	2023												
	2024												
	2025												

Table 4. Number of Greenland halibut individual weighed individuals on automated sorting machines (grader data) recalculated to individual lengths by GINR. (samples for length frequencies, gear unknown). No data received by the industry since august 2023.

Individual weighed individuals on automated sorting machines (Grader data recalculated to individual lengths)												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2022	9379	72301	77329	4135	-	4128	35686	5561	4120	-	2747	-
2023	21239	39482	36631	22880	16215	14678	11793	58829	-	-	-	-
2024	No data											
2025	No data											

Table 5. Catch-at-age (CAA) for Greenland halibut in the Upernavik district. Length information 2002-2007 is now available. The CAA can be finalized for these years.

age/year	3	4	5	6	7	8	9	10	11	12	13	14	15+	16+	Total
1988	0	0	0	0	0	6	33	55	80	74	68	62	31	22	431
1989	0	0	0	0	0	2	16	34	59	66	69	73	40	31	390
1990	0	0	0	0	0	2	17	41	62	57	52	48	25	17	321
1991															
1992															
1993	0	0	0	0	0	2	16	86	252	268	143	95	40	46	948
1994	0	0	0	2	51	188	316	217	239	154	155	51	23	0	1396
1995	0	0	0	0	13	55	84	128	133	147	117	103	45	42	867
1996	0	0	3	0	16	114	359	275	238	206	151	90	48	39	1539
1997	0	0	4	25	142	428	500	430	278	175	67	37	19	8	2111
1998	0	0	0	116	343	538	535	505	410	275	112	84	39	10	2968
1999	0	14	55	172	449	619	566	343	229	138	51	36	16	5	2693
2000	0	0	2	108	420	446	302	160	133	116	48	38	17	9	1800
2001	0	0	28	144	404	422	258	103	104	87	36	14	9	3	1611
2002															
2003															
2004															
2005															
2006															
2007															
2008	0	0	4	65	197	429	274	788	372	135	10	6	0	6	2284
2009	0	0	5	51	333	579	465	421	262	187	112	65	94	7	2579
2010	0	0	3	47	376	707	471	484	242	126	70	27	15		2568
2011	0	5	51	175	555	772	468	484	260	141	80	31	18		3040
2012	0	2	28	111	375	620	445	504	312	188	117	50	27		2778
2013	0	12	42	107	387	581	368	401	259	161	113	55	34		2520
2014	3	31	177	349	773	919	483	475	243	131	88	45	27		3743
2015	5	25	98	205	574	752	405	388	200	117	92	52	43		2957
2016	2	17	138	308	736	867	460	452	251	142	103	52	34		3566
2017	2	30	188	325	679	799	423	406	214	122	97	51	32		3368
2018	4	58	332	546	990	1015	477	441	217	107	76	30	19		4310
2019	1	24	167	281	641	806	454	477	285	177	124	64	38		3539
2020	4	65	429	626	1177	1093	444	380	169	81	68	36	21		4593
2021	3	100	685	1218	1304	597	450	195	163	91	37	41	2	35	4923
2022	14	85	912	599	1563	1130	410	116	66	22	11	7	4	6	4945
2023	4	11	419	714	1000	952	348	343	139	72	23	27	20	11	4083
2024	6	270	1400	1262	968	468	143	33	19	6	5	3	2	0	4584
2025	0	164	871	644	576	451	300	76	29	53	8	3	9	1	3186

T**able 6.** Upernavik longline CPUE based on factory landings data.

Year	GLM LogCPUE	SE	df	lower.CL	upper.CL	Kg/100 hooks
2012	-0.5632	0.0213	186131	-0.6049	-0.5216	56.9
2013	-0.6344	0.0197	186131	-0.6730	-0.5958	53.0
2014	-0.6355	0.0197	186131	-0.6740	-0.5969	53.0
2015	-0.6925	0.0196	186131	-0.7309	-0.6541	50.0
2016	-0.7235	0.0194	186131	-0.7616	-0.6854	48.5
2017	-0.8062	0.0195	186131	-0.8444	-0.7680	44.7
2018	-0.6894	0.0195	186131	-0.7276	-0.6512	50.2
2019	-0.8019	0.0194	186131	-0.8399	-0.7639	44.8
2020	-0.9288	0.0195	186131	-0.9669	-0.8906	39.5
2021	-0.7964	0.0195	186131	-0.8346	-0.7582	45.1
2022	-0.7886	0.0195	186131	-0.8267	-0.7504	45.4
2023	-0.9155	0.0194	186131	-0.9536	-0.8774	40.0
2024	-1.1582	0.0194	186131	-1.1963	-1.1201	31.4
2025	-1.2868	0.0195	186131	-1.3250	-1.2487	27.6

Table 7. Upernavik longline CPUE based on logbook data by vessels >30 ft.

Year	GLM LogCPUE	SE	df	lower.CL	upper.CL	Kg/100 hooks
2006	6.617	0.050	26479	6.520	6.714	74.79
2007	6.401	0.022	26479	6.358	6.445	60.27
2008	6.348	0.023	26479	6.304	6.392	57.12
2009	6.371	0.022	26479	6.328	6.415	58.47
2010	6.262	0.020	26479	6.223	6.302	52.44
2011	6.148	0.021	26479	6.108	6.189	46.78
2012	6.367	0.021	26479	6.325	6.409	58.23
2013	6.255	0.023	26479	6.209	6.300	52.04
2014	6.328	0.022	26479	6.284	6.371	55.98
2015	6.152	0.025	26479	6.103	6.201	46.98
2016	6.151	0.026	26479	6.101	6.201	46.92
2017	6.129	0.026	26479	6.079	6.179	45.89
2018	6.114	0.026	26479	6.064	6.164	45.21
2019	6.187	0.024	26479	6.140	6.233	48.63
2020	5.804	0.024	26479	5.756	5.851	33.15
2021	6.117	0.025	26479	6.067	6.167	45.35
2022	6.079	0.026	26479	6.027	6.130	43.64
2023	6.135	0.028	26479	6.081	6.189	46.17
2024	6.083	0.027	26479	6.031	6.136	43.85
2025	5.869	0.031	26479	5.809	5.930	35.40

Table 8. Upernavik gillnet CPUE based on logbook data.

Year	GLM LogCPUE	SE	df	lower.CL	upper.CL	Kg/gillnet
2009	4.3605	0.0296	13136	4.3025	4.4185	78.30
2010	4.4522	0.0354	13136	4.3828	4.5216	85.82
2011	4.3277	0.0367	13136	4.2557	4.3997	75.77
2012	4.4618	0.0357	13136	4.3919	4.5318	86.65
2013	4.0209	0.0342	13136	3.9539	4.0879	55.75
2014	4.0838	0.0335	13136	4.0182	4.1494	59.37
2015	4.3296	0.0400	13136	4.2513	4.4080	75.92
2016	4.3556	0.0350	13136	4.2870	4.4241	77.91
2017	4.2455	0.0344	13136	4.1780	4.3130	69.79
2018	4.3184	0.0394	13136	4.2413	4.3956	75.07
2019	4.3377	0.0346	13136	4.2698	4.4055	76.53
2020	3.8358	0.0326	13136	3.7719	3.8997	46.33
2021	3.7123	0.0296	13136	3.6543	3.7704	40.95
2022	3.8935	0.0330	13136	3.8289	3.9581	49.08
2023	3.6914	0.0353	13136	3.6222	3.7606	40.10
2024	3.5292	0.0378	13136	3.4551	3.6032	34.10
2025	3.4045	0.0367	13136	3.3327	3.4764	30.10

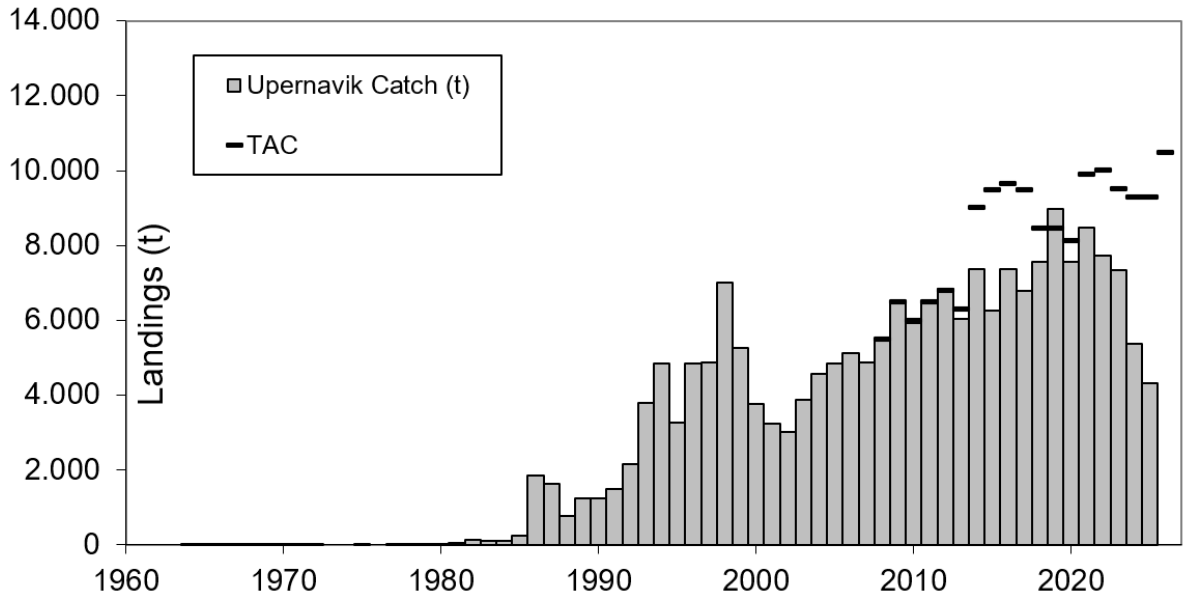

Figure 1. Greenland halibut catch and TAC set by the Government of Greenland in the Upernavik management area.

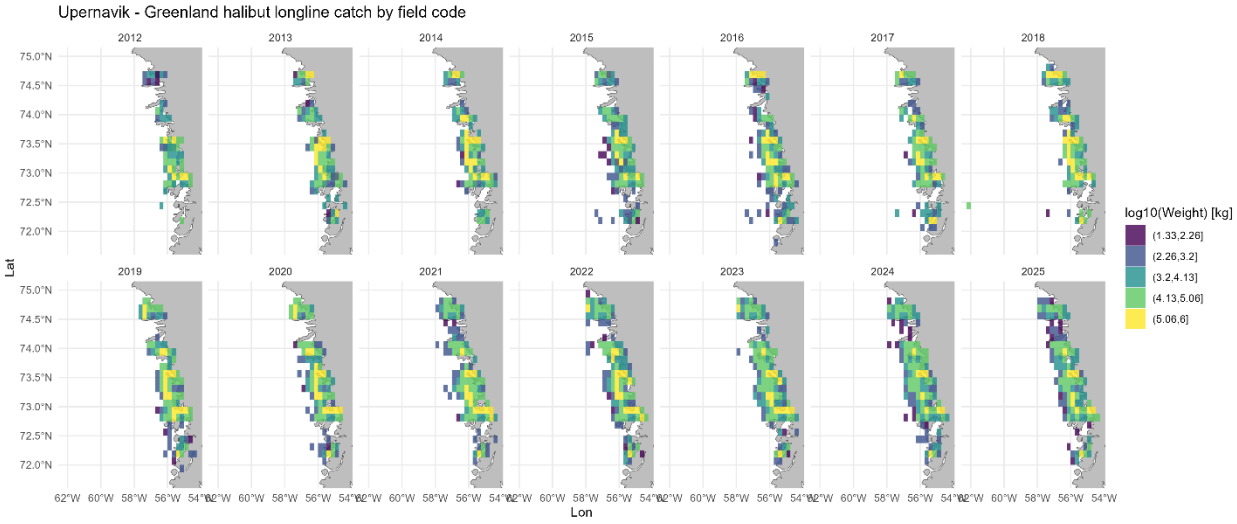

Figure 2. Greenland halibut longline catch by statistical square in the Upernavik area.

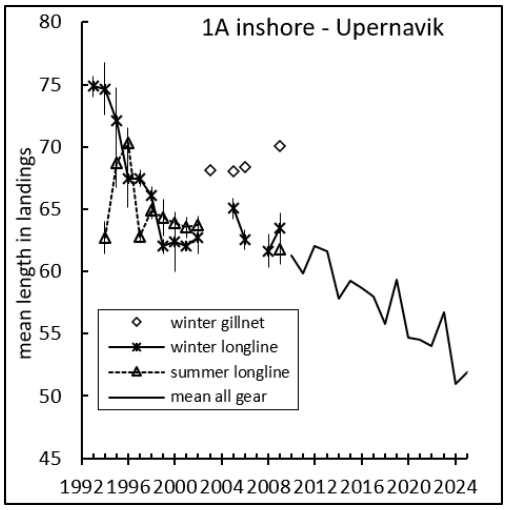

Figure 3. Upernavik mean lengths in the landings: longline summer, and winter, and overall mean weighted by season and gear and in the gillnet fishery and weighted by catch proportions from all gear after 2010.

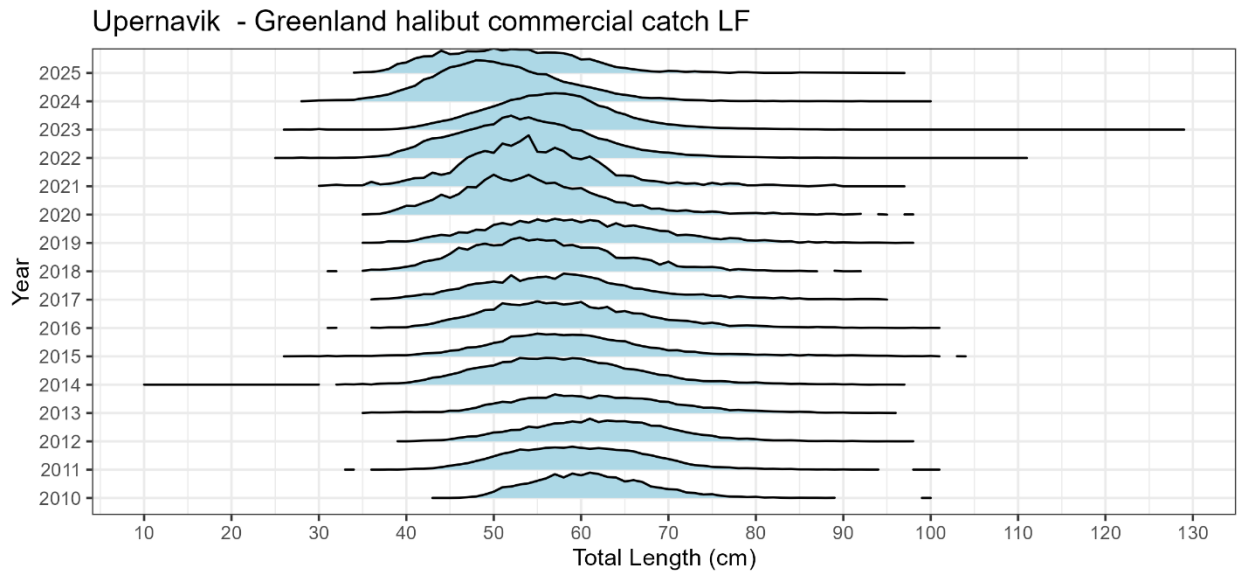

Figure 4. Greenland halibut length distributions in the commercial catch from Upernavik.

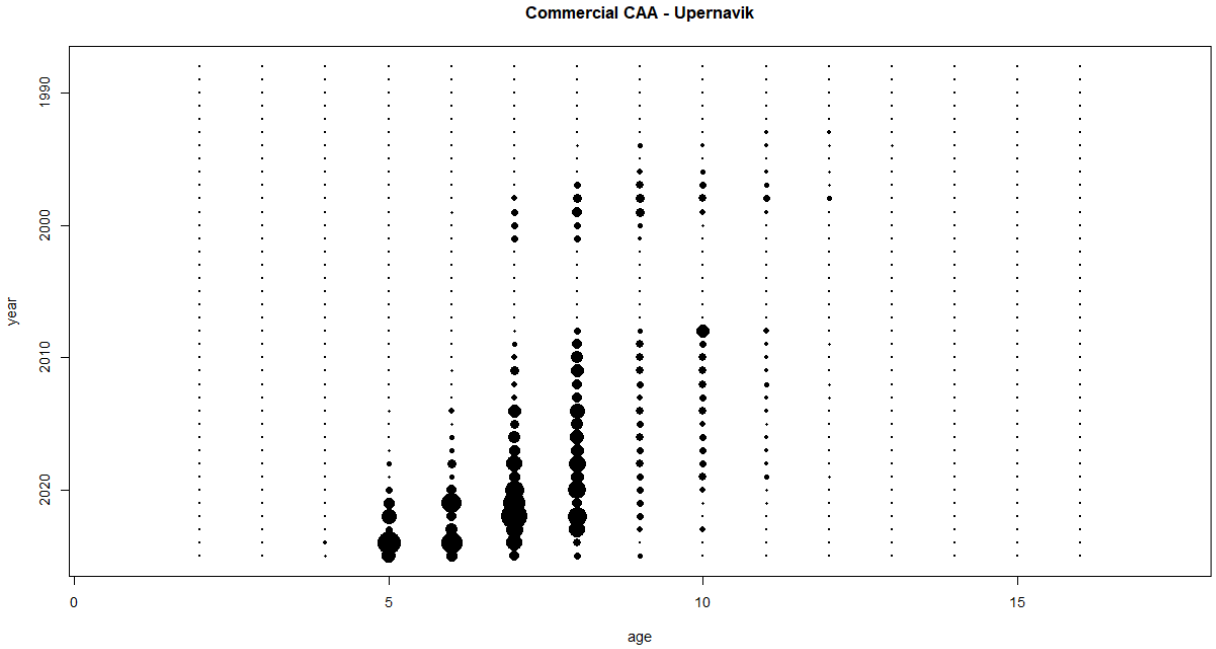

Figure 5. Catch-at-age (CAA) bubble plot for the commercial landings in Upernavik. Years with missing data: 1991, 1992, 2002-2007.

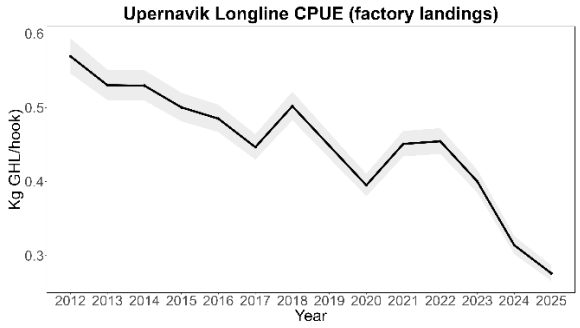

Figure 6. Commercial CPUE (kg/hook) based on factory landing reports from all factories in Upernavik.

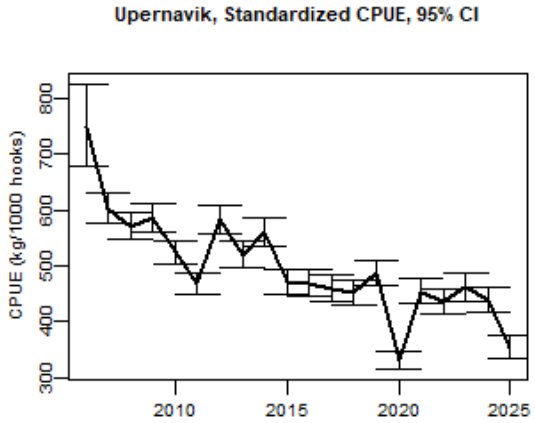

Figure 7. Commercial CPUE (kg/1000 hooks) from longline logbook data in Upernavik. Standardized mean and 95% CI CPUE based on logbooks from vessels larger than 30ft since 2006.

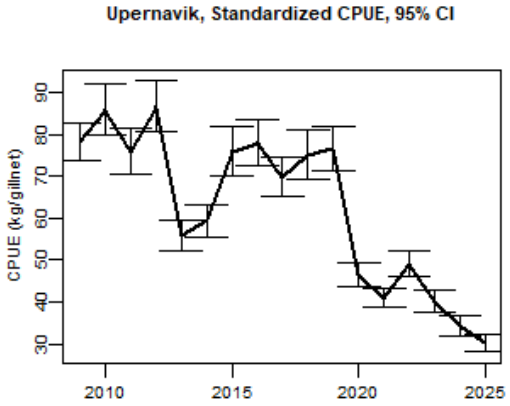

Figure 8. Commercial CPUE (kg/gillnet) from gillnet logbook data in Upernavik. Standardized mean and 95% CI CPUE based on logbooks from vessels larger than 30ft.