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**Survey results of the German bottom trawl survey 1982-2019 with special reference to years
2016 - 2019**

by

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Abstract

Technical problems with the FRV Walther Herwig III in 2016-2018 limited the capacity to carry out a sufficient survey with the long-term minimum of 22 hauls in 2016 and 7 in 2017 in West Greenland and no survey in 2018. In 2019, 39 hauls were conducted, but survey coverage was confined to NAFO SA 1E and 1F, most of the effort carried out in NAFO SA 1F (Table 2).

This constraint is confounding the calculation of respective survey indices for American plaice (*Hippoglossoides platessoides*), Atlantic and spotted wolffish (*Anarhichas lupus* and *A. minor*), and Starry ray (*Amblyraja radiata*) in Division 1C to 1F.



Results

American plaice (*Hippoglossoides platessoides*)

Table 3 shows that American plaice has a strong presence in NAFO SA 1D. This stratum was not covered in the last 4 years. Accordingly, a survey index cannot be calculated for this period.

The relative length composition indicates a significant portion of incoming cohorts in 2016 and 2017. In 2019, size classes > 20 cm dominated, indicating the propagation of growth for the cohort observed in 2016 at 12 cm at age 1 now at age 4.

Atlantic and spotted wolffish (*Anarhichas lupus* and *A. minor*)

Data for *A. lupus* indicate a decline in abundance 2010 to 2015. The length distribution indicates a high proportion of specimens > 50 cm in 2019 (Fig. 2).

Biomass for *A. minor* increased from 2010 to 2015, the value for 2014 being the second highest value in the time series after 1983.

Starry ray (*Amblyraja radiata*)

In 2019, the lowest stock size in the time series was measured, considering NAFO SA 1E and 1F only. However, it is unclear whether a northward shift in distribution has occurred.

Tables and Figures

Table 1. Trawl parameters of the German bottom trawl survey off West Greenland.

	German survey
Gear	140-foot bottom trawl
Horizontal net opening	22 m
Standard trawling speed	4.5 kn
Towing time	30 minutes
Coefficient of catchability	1.0

Table 2. Survey areas and effort (hauls) of the German bottom trawl survey off West Greenland by stratum, 1982-2019. Strata 1.1 – 4.2 refer to West Greenland, corresponding NAFO SA's indicated.

NAFO SD Stratum Area (sqnm)	1C 6805	1.2 1881	1D 2350	2.2 1018	1E 1938	3.2 742	1F 2568	4.2 971	Sum	YEAR
N	20	11	16	7	9	6	13	2	84	1982
	26	11	25	11	17	5	18	4	117	1983
	25	13	26	8	18	6	21	4	121	1984
	10	8	26	10	17	5	21	4	101	1985
	27	9	21	9	16	7	18	3	112	1986
	25	11	21	4	18	3	21	3	117	1987
	34	21	28	5	18	5	18	2	131	1988
	26	14	30	9	8	3	25	3	118	1989
	19	7	23	8	16	3	21	6	103	1990
	19	11	23	7	12	6	14	5	98	1991
	6	6	6	5	6	6	7	5	47	1992
	9	6	9	6	10	8	7		56	1993
	16	13	13	8	10	6	7	5	78	1994
			3		10	7	10	5	35	1995
	5	5	8	5	12	5	10	5	55	1996
	5	6	5	5	6	5	8	5	45	1997
	9	5	10	7	11	6	10	5	63	1998
	8	6	14	8	13	6	9	3	68	1999
	13	6	14	7	14	5	9	5	73	2000
			15	7	15	5	11	6	59	2001
			7	2	5	6	8	4	32	2002
			7	6	7	7	6	5	39	2003
	9	7	11	9	9	6	9	5	65	2004
			9	7	8	6	6	5	41	2005
	6	5	7	5	7	7	8	5	50	2006
	5	5	7	5	6	5	9	6	47	2007
	5		7	7	8	9	8	6	50	2008
	2		5	5	6	6	5	5	34	2009
	5	5	10	5	7	9	10	6	57	2010
			5	5	5	5	6	6	32	2011
	5	5	10	8	9	7	10	6	60	2012
	6	6	8	6	10	7	9	6	58	2013
	5	5	10	8	10	7	10	6	61	2014
	7	7	7	4	5	5	8	6	49	2015
	.	.	.	.	3	2	11	6	22	2016
							7		7	2017
					9	7	16	7	39	2018
										2019

Table 3 *Hippoglossoides platessoides*, abundance ('1000) and biomass indices (tons) for West Greenland by stratum and total, 1982-2019. Confidence intervals (CI) are given in per cent of the stratified mean at 95% level of significance for West Greenland. Survey totals are not calculated for years with overall low stratum coverage.

Abundance										
Year	Str1.1	Str1.2	Str2.1	Str2.2	Str3.1	Str3.2	Str4.1	Str4.2	Total	CI
1982	15949	2756	15277	2874	1283	1250	494	112	39995	31
1983	18948	3015	23106	1251	3753	229	803	292	51397	44
1984	9741	2989	28310	2309	1792	1133	693	210	47177	52
1985	9616	2627	11253	3560	1289	118	1425	1078	30966	28
1986	10024	6178	26557	4647	1336	1131	2036	401	52310	47
1987	12368	1505	13387	5853	1200	552	496	245	35606	30
1988	5267	1746	4260	2799	1870	436	540	635	17553	21
1989	4433	2406	6386	1993	4384	630	639	328	21199	24
1990	4811	4143	4467	1674	635	1016	888	336	17970	30
1991	4327	2503	2625	1086	782	404	737	424	12888	21
1992	4284	2938	1835	1731	817	1136	873	86	13700	24
1993	3471	1930	799	867	380	463	219	.	8129	20
1994	1035	1787	725	725	307	137	819	103	5638	28
1995	.	.	468	.	452	581	526	654	2681	44
1996	2010	744	526	770	1033	448	840	277	6648	21
1997	4272	1649	1303	1747	1508	700	1268	57	12504	24
1998	3276	2106	3124	1517	929	598	1210	106	12866	27
1999	2845	1258	2692	1570	959	221	733	188	10466	25
2000	1235	2161	1073	1924	567	198	682	21	7861	28
2001	.	.	6224	2139	614	211	2011	213	11412	41
2002	.	.	3841	6360	618	1191	882	272	13164	47
2003	.	.	10804	6371	601	1131	1124	10	20041	46
2004	10326	4647	9932	3541	524	657	940	35	30602	29
2005	.	.	9080	4663	780	621	542	436	16122	43
2006	2649	2733	5325	4182	614	643	649	27	16822	34
2007	4981	2876	2005	1563	340	224	112	21	12122	32
2008	2760	.	1591	2386	248	434	227	19	7665	45
2009	4087	.	1425	1614	410	320	424	29	8309	38
2010	11875	3051	2618	4037	319	258	428	0	22586	34
2011	.	.	1569	3871	276	485	268	15	6484	63
2012	1549	1933	1890	2261	84	309	341	0	8367	34
2013	3370	2101	1367	1905	44	375	32	4	9198	35
2014	706	894	614	3639	41	550	16	0	6460	57
2015	2133	936	905	2660	71	752	87	0	7544	37
2016	.	.	.	.	68	0	150	22	.	.
2017	.	.	.	.	.	.	570	.	.	.
2018	.	.	.	.	.	.	.	.	.	.
2019	.	.	.	.	25	324	51	23	.	.
Biomass										
Year	Str1.1	Str1.2	Str2.1	Str2.2	Str3.1	Str3.2	Str4.1	Str4.2	Total	CI
1982	3102	504	3888	582	405	225	74	42	8822	34
1983	3035	544	4962	263	1609	44	140	57	10654	41
1984	888	366	4514	425	357	197	129	48	6924	58
1985	878	266	1889	602	252	24	149	280	4340	33
1986	987	609	3827	676	324	214	205	129	6971	47
1987	1669	156	2832	703	319	82	107	60	5928	37
1988	443	150	875	396	426	73	117	220	2700	31
1989	253	161	837	195	1051	97	128	75	2797	35
1990	236	262	661	200	123	174	186	124	1966	42
1991	188	218	252	152	145	79	111	76	1221	26
1992	308	232	136	131	106	165	79	13	1170	27
1993	193	147	53	72	41	48	14	.	568	22
1994	70	215	65	69	32	16	55	15	537	41
1995	.	.	44	.	36	74	64	48	266	52
1996	116	56	37	89	84	45	81	22	530	27
1997	242	134	105	169	179	92	98	3	1022	30
1998	160	135	193	130	97	83	98	10	906	26
1999	127	75	178	145	95	20	48	12	700	25
2000	68	184	77	180	58	20	30	3	620	34
2001	.	.	357	166	52	24	82	12	693	36
2002	.	.	218	474	63	112	59	14	940	49
2003	.	.	768	587	65	136	93	2	1651	40
2004	639	383	897	426	71	98	119	3	2636	28
2005	.	.	1175	780	128	76	85	56	2300	45
2006	148	256	574	612	70	64	118	5	1847	45
2007	300	250	347	216	45	33	27	4	1222	41
2008	183	.	202	264	30	49	29	3	760	51
2009	247	.	155	128	46	39	26	5	646	37
2010	819	202	204	347	46	31	40	0	1689	34
2011	.	.	172	343	38	59	36	2	650	63
2012	208	245	257	252	14	54	35	0	1065	33
2013	274	252	170	215	7	72	5	0	995	35
2014	97	131	90	461	5	99	3	0	886	55
2015	227	100	115	408	13	186	14	0	1063	47
2016	.	.	.	.	1	0	18	1	.	.
2017	.	.	.	.	.	.	21	.	.	.
2018	.	.	.	.	.	.	.	.	.	.
2019	.	.	.	.	7	70	9	3	.	.

Table 4. *Hippoglossoides platessoides*. Length composition by year ('1000), 2013-2019, all available values considered

Length	2011	2012	2013	2014	2015	2016	2017	2019
0.5	0	0	0	0	0	0	0	0
1.5	0	0	0	0	0	0	0	0
2.5	0	0	0	0	0	0	0	0
3.5	2	0	0	0	0	0	0	0
4.5	4	4	0	3	21	0	0	0
5.5	12	8	0	8	0	0	0	0
6.5	38	38	0	0	0	0	0	0
7.5	9	14	0	11	0	0	0	0
8.5	6	17	0	0	7	0	0	0
9.5	27	38	0	8	15	4	22	0
10.5	102	74	23	5	33	4	37	0
11.5	135	75	33	8	31	13	66	0
12.5	88	116	114	13	129	28	44	3
13.5	132	192	224	56	144	29	30	0
14.5	244	210	435	202	242	42	37	0
15.5	409	210	418	218	310	9	82	0
16.5	475	294	522	342	488	31	86	0
17.5	449	400	786	445	531	0	42	3
18.5	490	444	849	475	466	0	35	2
19.5	292	428	771	408	507	9	26	7
20.5	305	294	496	464	488	7	36	24
21.5	279	374	589	350	423	11	13	24
22.5	336	299	362	377	313	4	0	40
23.5	219	371	362	360	296	8	7	29
24.5	165	324	573	286	295	4	0	37
25.5	226	300	386	266	229	0	0	41
26.5	192	288	438	296	319	0	0	29
27.5	221	234	425	165	294	0	0	36
28.5	198	196	272	239	263	0	0	29
29.5	161	211	214	246	238	0	0	6
30.5	164	246	370	173	296	9	7	5
31.5	105	235	178	252	210	0	0	10
32.5	138	221	57	231	204	9	0	10
33.5	132	145	97	160	168	0	0	14
34.5	80	167	71	186	143	9	0	12
35.5	85	166	36	61	125	4	0	12
36.5	54	183	39	58	99	0	0	10
37.5	29	159	52	54	48	0	0	12
38.5	41	187	4	10	60	0	0	7
39.5	18	154	0	3	44	5	0	11
40.5	19	173	10	9	29	0	0	5
41.5	32	131	0	2	13	0	0	0
42.5	24	103	0	0	13	0	0	0
43.5	20	100	0	5	6	0	0	3
44.5	26	62	0	0	6	0	0	0
45.5	23	87	0	0	0	0		0
46.5	22	47						
47.5	13	23						
48.5	31	40						
49.5	39	21						
50.5	12	28						
51.5	30	19						
52.5	10	11						
53.5	8	17						
54.5	11	10						
55.5	6	19						
56.5	10	2						
57.5	2	15						
58.5	7	3						
59.5	13	8						
60.5	1	4						
61.5	1	6						
62.5	5	3						
63.5	2	5						
64.5	1	12						

Table 6. *Anarhichas lupus*. Length composition by year ('1000), 2013-2019, all available values considered.

Length	2013	2014	2015	2016	2017	2019
0.5	0	0	0	0	0	0
1.5	0	0	0	0	0	0
2.5	0	0	0	0	0	0
3.5	0	0	0	0	0	0
4.5	0	0	0	0	0	0
5.5	0	29	9	0	0	0
6.5	11	141	0	3	0	0
7.5	0	7	24	0	0	5
8.5	37	29	25	7	7	5
9.5	41	0	27	0	0	0
10.5	35	8	0	11	0	2
11.5	66	4	11	22	0	7
12.5	20	83	21	36	0	0
13.5	24	7	6	44	0	15
14.5	30	27	17	14	0	7
15.5	41	37	51	42	0	6
16.5	65	96	47	48	0	12
17.5	55	53	67	20	0	14
18.5	89	48	45	62	0	3
19.5	20	26	44	66	0	0
20.5	93	36	48	88	0	11
21.5	112	32	43	93	0	3
22.5	83	59	75	74	0	6
23.5	70	78	47	24	0	0
24.5	79	10	33	34	0	5
25.5	54	63	49	56	0	0
26.5	75	64	27	43	0	0
27.5	55	51	47	35	0	0
28.5	60	14	84	39	0	0
29.5	72	42	14	11	0	0
30.5	12	15	45	33	0	0
31.5	51	74	9	7	0	8
32.5	62	33	22	14	0	0
33.5	61	37	47	19	0	8
34.5	57	14	44	0	0	9
35.5	46	15	33	3	0	0
36.5	65	39	48	10	0	0
37.5	7	35	22	12	0	0
38.5	10	24	44	14	0	0
39.5	25	8	39	7	0	3
40.5	32	36	7	3	0	0
41.5	58	31	26	21	0	6
42.5	25	31	39	0	0	0
43.5	46	6	48	11	0	0
44.5	47	6	12	3	0	0
45.5	44	19	44	14	0	4
46.5	44	6	7	15	0	0
47.5	21	12	6	3	7	0
48.5	60	7	35	0	0	0
49.5	19	22	7	16	0	0
50.5	46	15	19	31	0	0
51.5	25	9	15	20	0	6
52.5	6	19	4	7	0	0
53.5	15	12	22	7	0	2
54.5	16	28	18	10	0	6
55.5	19	19	25	3	0	9
56.5	52	4	48	0	0	4
57.5	13	14	7	22	0	14
58.5	32	10	19	33	0	12
59.5	4	10	6	10	0	22
60.5	0	26	18	14	0	5
61.5	26	3	9	4	0	2
62.5	6	12	21	9	0	11
63.5	17	4	0	3	0	0

Table 8. *Anarhichas minor*. Length composition by year ('1000), 2014-2019, all available values considered.

Length	2014	2015	2016	2017	2019
10.5	0	0	0	0	0
11.5	0	0	0	0	0
12.5	0	0	26	0	0
13.5	0	0	0	0	0
14.5	0	0	0	0	0
15.5	0	7	0	0	0
16.5	0	0	0	0	0
17.5	0	0	7	0	0
18.5	0	0	13	0	0
19.5	0	0	0	0	0
20.5	0	0	0	0	0
21.5	0	0	13	0	0
22.5	0	0	0	0	0
23.5	0	0	13	0	0
24.5	0	0	13	0	0
25.5	0	0	0	0	0
26.5	0	0	0	0	0
27.5	0	0	0	0	0
28.5	0	0	0	0	0
29.5	0	0	0	0	0
30.5	0	6	0	0	0
31.5	3	0	13	0	0
32.5	0	0	0	0	0
33.5	0	0	0	0	0
34.5	0	0	0	0	0
35.5	8	0	13	0	0
36.5	3	0	0	0	0
37.5	0	0	0	0	0
38.5	0	0	0	0	0
39.5	0	0	0	0	0
40.5	0	0	0	0	0
41.5	0	0	0	0	0
42.5	0	0	0	0	0
43.5	0	0	0	0	0
44.5	3	0	0	0	0
45.5	0	0	0	0	0
46.5	0	0	0	0	0
47.5	0	0	0	0	0
48.5	0	0	0	0	0
49.5	0	0	0	0	0
50.5	0	0	0	0	0
51.5	0	0	0	0	0
52.5	0	0	0	0	0
53.5	2	0	0	0	0
54.5	0	0	9	0	0
55.5	0	0	0	0	0
56.5	0	0	0	0	0
57.5	28	0	9	0	0
58.5	3	0	0	0	0
59.5	0	5	7	0	0
60.5	5	6	0	0	0
61.5	0	7	0	0	0
62.5	5	0	0	0	0
63.5	0	0	0	0	0
64.5	18	0	5	0	6
65.5	0	6	0	0	2
66.5	8	7	0	0	0
67.5	17	8	4	0	0
68.5	28	0	0	0	0
69.5	5	0	13	0	0
70.5	9	3	0	0	0
71.5	9	24	0	7	2
72.5	3	0	0	0	0
73.5	9	5	0	0	0
74.5	4	0	0	0	0
75.5	0	7	0	0	0
76.5	4	0	0	0	0
77.5	0	23	0	0	5
78.5	0	5	7	0	5
79.5	5	26	4	0	3
80.5	5	24	0	0	5
81.5	10	7	4	0	0
82.5	35	18	11	0	2
83.5	31	0	0	0	0
84.5	14	0	4	7	0
85.5	9	14	12	0	13
86.5	6	7	0	0	7
87.5	4	5	0	0	0
88.5	13	3	0	0	0
89.5	21	0	4	0	11
90.5	15	7	7	0	4
91.5	22	12	4	0	24
92.5	15	0	4	0	6
93.5	16	27	12	0	11
94.5	14	16	9	8	9
95.5	34	19	4	0	5
96.5	9	25	17	0	0
97.5	3	8	12	8	7
98.5	17	20	9	0	9
99.5	10	21	15	0	0
100.5	17	14	4	15	7
101.5	0	3	16	0	9
102.5	27	9	7	8	7
103.5	0	4	20	0	2
104.5	13	0	3	0	4
105.5	5	4	13	0	11
106.5	21	0	13	8	3
107.5	8	19	4	0	9
108.5	6	0	17	0	0
109.5	0	0	0	0	0
110.5	11	0	0	0	3
111.5	0	0	0	8	3
112.5	4	0	5	0	8
113.5	0	0	4	15	0
114.5	10	0	0	0	0
115.5	11	3	0	0	0
116.5	0	8	0	0	0
117.5	17	0	3	0	0
118.5	5	0	3	0	2
119.5	6	0	0	0	0
120.5	0	0	0	0	0

Table 9. *Amblyraja radiata*, abundance (1 000) and biomass (tons) for West Greenland by stratum and total, 1982-2019. Confidence intervals (CI) are given in per cent of the stratified mean at 95% level of significance.

Abundance											
Year	Str1.1	Str1.2	Str2.1	Str2.2	Str3.1	Str3.2	Str4.1	Str4.2	Total	CI	
1982	2709	965	773	234	258	61	76	47	5123	28	
1983	1882	293	371	151	345	14	29	96	3181	54	
1984	1617	931	401	271	76	241	81	32	3650	34	
1985	1041	1066	900	361	186	29	122	70	3775	32	
1986	945	1302	358	158	133	60	93	5	3054	36	
1987	859	171	298	174	137	30	30	14	1713	22	
1988	1953	523	572	380	170	21	39	0	3658	30	
1989	6411	1099	2071	364	272	57	66	81	10421	26	
1990	4872	1491	1337	345	166	92	334	193	8830	36	
1991	1087	251	637	145	329	81	77	32	2639	22	
1992	2068	332	1707	826	304	342	102	28	5709	38	
1993	1374	251	399	191	122	176	58		2571	27	
1994	1163	192	411	127	113	38	197	8	2249	31	
1995	.	.	872	.	90	141	53	13	1169	74	
1996	680	77	232	43	61	62	30	17	1202	24	
1997	2431	253	426	23	62	68	93	0	3356	31	
1998	894	290	251	106	135	27	26	8	1737	24	
1999	1134	107	365	105	151	108	118	22	2110	27	
2000	383	107	265	507	135	72	125	9	1603	42	
2001	.	.	262	53	46	71	351	16	799	39	
2002	.	.	353	95	60	109	66	12	695	40	
2003	.	.	224	200	33	154	112	0	723	52	
2004	501	50	339	125	60	539	105	13	1732	28	
2005	.	.	415	121	113	196	132	0	977	39	
2006	193	44	350	242	20	212	271	21	1353	43	
2007	298	72	190	106	42	35	63	0	806	28	
2008	116	.	311	110	86	111	76	4	814	43	
2009	1434	.	865	133	66	116	93	0	2707	51	
2010	553	40	412	134	18	91	15	0	1263	37	
2011	.	.	254	117	42	53	16	0	482	55	
2012	276	8	278	59	27	349	15	20	1032	88	
2013	172	28	135	120	4	81	18	0	558	40	
2014	292	8	15	22	0	7	5	0	349	42	
2015	123	18	22	51	0	26	56	0	296	56	
2016	.	.	.	.	13	0	35	14			
2017	.	.	.	.	.	.	51				
2018	.	.	.	.	.	.	.
2019	.	.	.	.	0	7	13	0			

Biomass											
Year	Str1.1	Str1.2	Str2.1	Str2.2	Str3.1	Str3.2	Str4.1	Str4.2	Total	CI	
1982	1548	496	733	168	194	43	73	33	3288	28	
1983	405	92	326	58	333	14	27	72	1327	25	
1984	412	178	217	52	67	64	69	41	1100	27	
1985	224	189	395	104	73	25	26	43	1079	27	
1986	226	272	193	40	56	29	17	3	836	27	
1987	199	54	141	25	68	12	-84	15	430	39	
1988	320	49	282	121	45	9	16	0	842	27	
1989	1081	217	542	55	129	17	40	73	2154	24	
1990	705	204	280	38	55	11	68	116	1477	34	
1991	148	41	94	22	127	26	10	16	484	28	
1992	167	55	84	85	128	55	13	13	600	30	
1993	194	86	47	20	19	19	2		387	23	
1994	108	37	67	15	45	7	28	6	313	22	
1995	.	.	124	.	35	17	20	0	196	49	
1996	51	14	20	13	11	9	4	7	129	26	
1997	173	49	87	3	8	16	18	0	354	31	
1998	93	49	50	24	29	7	5	8	265	29	
1999	79	31	76	35	34	14	30	13	312	30	
2000	59	27	71	177	55	7	15	7	418	54	
2001	.	.	45	18	22	13	72	10	180	40	
2002	.	.	75	30	13	18	7	11	154	35	
2003	.	.	40	31	14	28	51	0	164	43	
2004	40	11	78	26	19	93	18	6	291	34	
2005	.	.	84	31	40	34	39	0	228	32	
2006	14	8	84	76	4	39	82	6	313	46	
2007	42	12	39	12	14	2	9	0	130	35	
2008	5	.	23	10	15	14	4	3	74	56	
2009	30	.	37	21	8	13	2	0	111	59	
2010	32	17	68	20	3	9	4	0	153	45	
2011	.	.	45	14	5	9	6	0	79	59	
2012	30	2	49	9	3	45	6	11	155	78	
2013	26	3	35	29	0	12	1	0	106	44	
2014	27	6	3	7	0	0	0	0	43	48	
2015	8	4	5	15	0	2	5	0	39	61	
2016	.	.	.	.	0	0	11	5			
2017	.	.	.	.	.	.	7				
2018	.	.	.	.	.	.	.
2019	.	.	.	.	0	0	3	0			



Table 10. *Amblyraja radiata*. Length composition by year ('1000), 2013-2019, all available values considered.

Length	2013	2014	2015	2016	2019
0.5	0	0	0	0	0
1.5	0	0	0	0	0
2.5	0	0	0	0	0
3.5	0	0	0	0	0
4.5	0	0	0	0	0
5.5	0	0	0	0	0
6.5	0	0	0	0	0
7.5	0	0	0	0	0
8.5	0	0	0	0	0
9.5	0	0	0	0	0
10.5	29	3	21	7	5
11.5	48	0	28	0	8
12.5	15	0	0	13	0
13.5	18	37	5	0	0
14.5	25	34	7	0	0
15.5	15	0	27	0	0
16.5	16	29	35	0	3
17.5	20	71	21	0	0
18.5	5	2	31	4	0
19.5	44	61	6	0	0
20.5	38	0	7	9	0
21.5	42	0	0	0	0
22.5	6	0	14	0	0
23.5	29	5	0	4	0
24.5	35	0	7	0	0
25.5	5	3	11	4	0
26.5	24	48	26	0	0
27.5	16	0	0	4	0
28.5	7	0	0	0	0
29.5	7	5	6	0	0
30.5	2	5	0	0	0
31.5	14	0	0	0	0
32.5	0	0	0	3	0
33.5	15	0	6	0	0
34.5	0	3	0	0	0
35.5	4	29	7	0	0
36.5	0	0	6	0	0
37.5	7	0	0	0	0
38.5	2	0	7	0	0
39.5	25	0	0	0	0
40.5	0	11	6	0	0
41.5	10	0	6	0	0
42.5	0	3	0	0	0
43.5	18	0	0	4	0
44.5	4	0	0	5	0
45.5	11	0	6	3	3
46.5	4	0	0	0	0
47.5	0	0	0	0	0
48.5	0	0	0	0	0
49.5	0		0	0	0

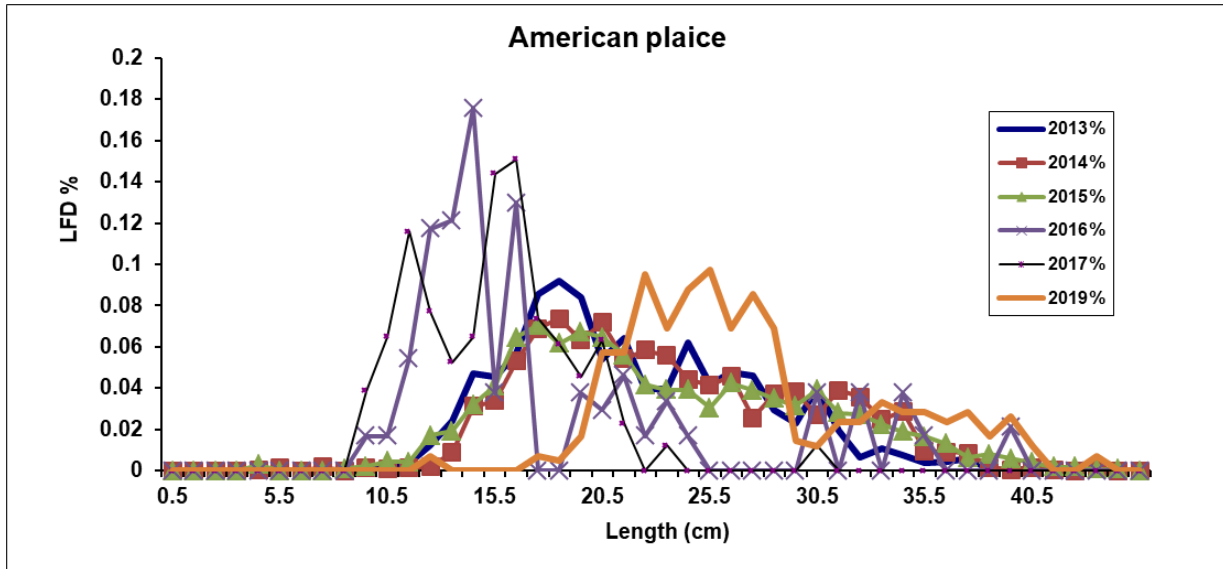


Figure 1. LFD proportional for *Hippoglossoides platessoides* off West Greenland, 2013-2019. Respective raw values are listed in Table 4.

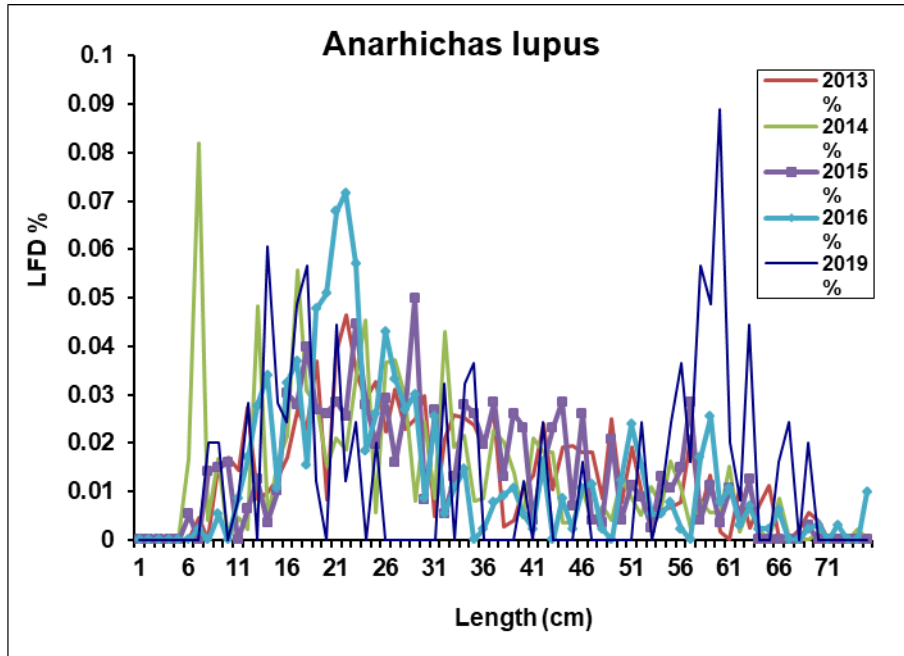


Figure 2. LFD proportional for *Anarhichas lupus* off West Greenland, 2013-2019. Respective values are listed in Table 6.

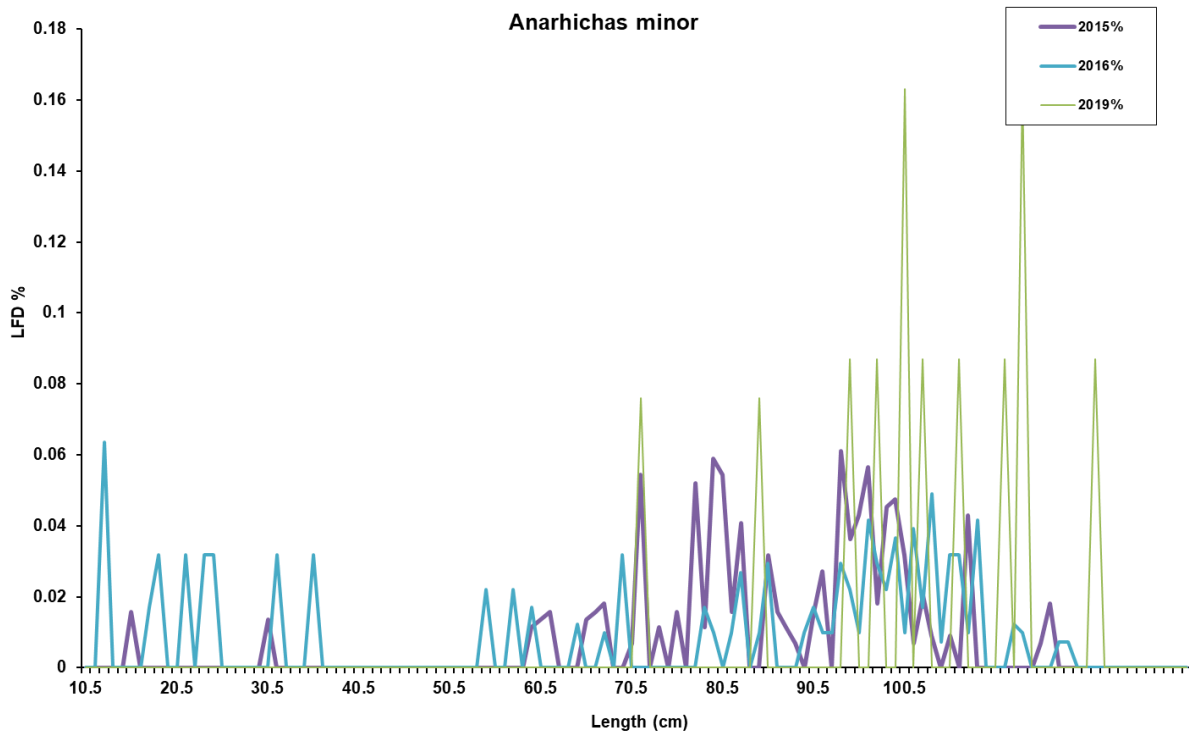


Figure 3. LFD proportional for *Anarhichas minor* off West Greenland, 2015-2019. Respective values are listed in Table 8.

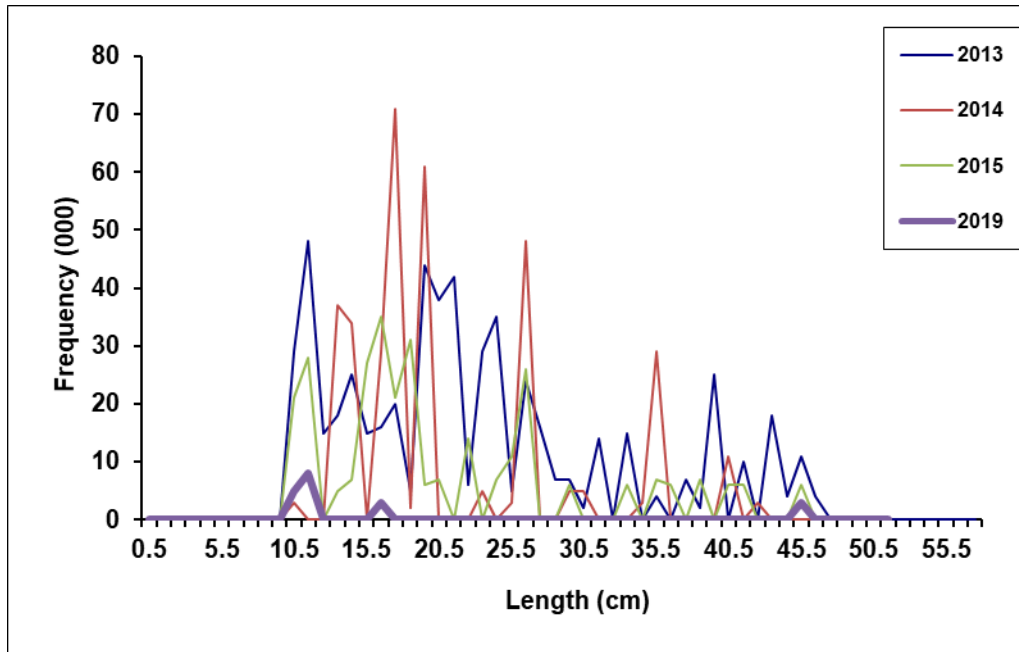


Figure 4. LFD proportional for *Raja radiata* off West Greenland, 2009-2013. Respective values are listed in Table 10.