

Northwest Atlantic



Fisheries Organization

Serial No. N1446

NAFO SCR Doc. 88/10

SCIENTIFIC COUNCIL MEETING - JUNE 1988

Mean Length at Age of Atlantic Halibut (Hippoglossus  
hippoglossus) in West Greenland

by

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Introduction.

Atlantic halibut (Hippoglossus hippoglossus) is found in the West Greenland area from Kap Farvel in the south to Upernavik in the north. There is little if any directed fishery for Atlantic halibut, but the species is caught as an additional catch mainly by trawlers and long-liners fishing for cod. The amount of halibut taken at West Greenland has been between 50-1000 tons annually in the last forty years. However, in the late twenties and early thirties there was a considerable international fishery for halibut with a peak catch in 1929 of nearly 7000 tons.

Little is known about the biology of Atlantic halibut in the West Greenland area. Hansen and Hermann (1953) describes hibernation in the deeper waters of the Davis Strait outside the banks and a summer migration to the shallower parts of the banks and to the coastal waters. Our paper presents data on mean length at age from samples taken in the thirties and from a sample taken in 1988.

Material and Methods.

Otoliths were sampled from commercial long-line fishery in 1935-38 and in 1988. A total of 1182 pairs of otoliths from the period 1935-38 sampled during the summer period and 103 otoliths from January 1988 are included in the analyses. The otoliths were examined without any prior treatment in transparent light under binocular microscope. The otoliths of big old halibut were rather difficult to read. In the sample from 1935-38 sex of fish was given in 996 cases only, while sex was reported for all fish in the 1988 sample. All fish were measured as total length to nearest centimeter below.

Results and Discussion.

Tables 1 and 2 show mean length at age for the material from 1935-38 and 1988, respectively. In Fig. 1 the mean length at age is shown by sex. The material from 1935-38 covers age groups from

4 to 28, while only age groups from 5 to 13 were found in the 1988 material.

There is a substantial variation in size within several age groups, especially the older ones. However, some of this variation could be due to difficulties in reading ages of the old fish.

Females are only slightly larger than males for the young age groups (5-14 years old) in the 1935-38 material, whereas for old age groups there are marked differences between mean size at age of females and males. In the 1988 material, differences in mean size at age between sexes cannot be seen, probably due to the sparse material. Differences in size at age between females and males is also found in other areas of the North Atlantic (McCracken, 1958).

Fig. 1 compares the mean size by age group of the two periods. However, the 1988 material was sampled in January while the material in 1935-38 was sampled during summer. Despite the difference in sampling seasons, mean size of the younger age groups (5-8 years old) generally seems to be smaller in the 1988 material than in that of 1935-38. Older fish (9-13 years old) show no such difference.

Atlantic halibut in the West Greenland area generally seems to grow more slowly, in comparison with Atlantic halibut stocks in other areas of the North Atlantic, northern Norway (Devold, 1938 and Haug & Tjemsland, 1986), the Canadian area (Subarea 4, McCracken 1958) and the Faroes (Joensen, 1954).

#### References.

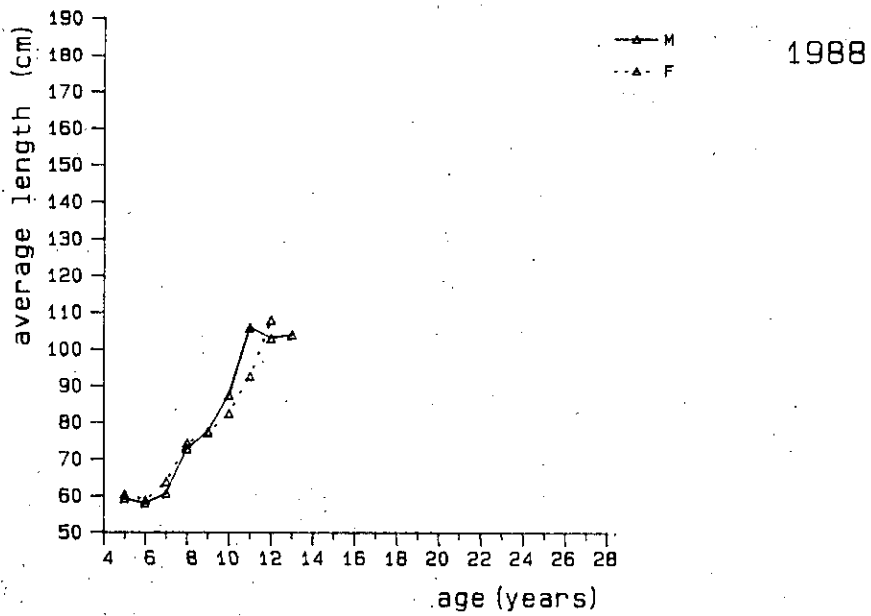
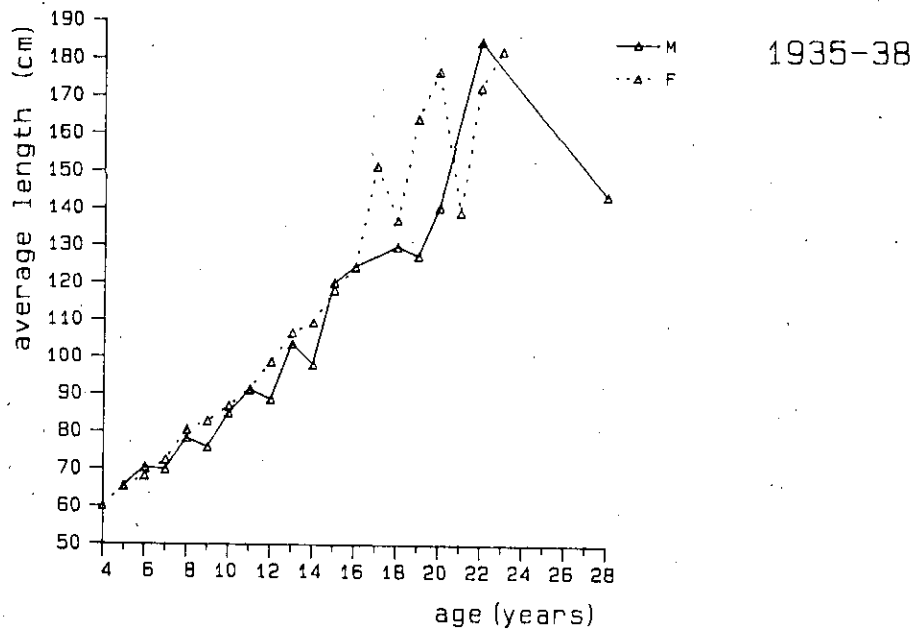
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Table 1. Mean length at age of Atlantic halibut in samples from 1935-38. L = mean length, S.D. = standard deviation (only given when n>4), n = number of fish.

age	total			males			females		
	L	S.D.	n	L	S.D.	n	L	S.D.	n
4	60.0		2				60.0		2
5	65.3	4.6	13	65.4	2.7	5	65.3	5.7	8
6	68.8	5.9	64	70.5	4.0	19	68.2	6.8	39
7	73.2	5.7	84	69.8	4.0	5	72.5	6.2	54
8	79.5	8.5	167	78.3	8.4	33	80.5	8.9	106
9	81.0	9.0	152	75.8	9.5	19	82.8	8.5	113
10	86.4	8.2	141	84.9	10.1	15	86.8	8.2	87
11	91.3	11.5	192	91.2	9.9	58	91.4	12.4	127
12	97.7	13.5	144	88.6	9.5	22	98.8	14.4	95
13	105.9	18.6	46	103.7	11.2	10	106.7	20.6	35
14	108.5	14.9	55	98.0	15.0	9	109.5	15.3	35
15	119.0	13.8	36	120.3	18.5	11	118.3	11.8	24
16	124.8	13.4	21	124.7	12.2	6	124.5	14.7	14
17	148.5		4				151.7		3
18	136.3	13.8	8	130.0		1	137.1	14.7	7
19	146.9	24.1	18	127.5		2	164.3	23.3	8
20	166.1	26.5	10	140.7		3	177.0	21.2	7
21	139.3		3				139.3		3
22	171.0	18.8	12	185.0		2	172.8	6.8	6
23	182.5		4				182.5		4
24	182.0		1						
25	190.0		1						
26	186.0		2						
27	203.0		1						
28	144.0		1	144.0		1			

Table 2. Mean length at age of Atlantic halibut in samples from 1988. L = mean length, S.D. = standard deviation (only given when n>4), n = number.

age	total			males			females		
	L	S.D.	n	L	S.D.	n	L	S.D.	n
5	60.0		4	59.2		2	60.5		2
6	58.2	3.9	22	57.9	4.3	14	58.8	3.4	8
7	61.8	3.2	34	60.7	2.9	22	63.9	2.7	12
8	73.8	4.6	17	72.9	4.2	7	74.4	5.1	10
9	77.4	2.8	9	77.6	3.2	5	77.3		4
10	85.8	7.7	6	87.5		4	82.5		2
11	98.0	8.3	5	106.0		2	92.7		3
12	104.7		3	103.0		2	108.0		1
13	104.0		3	104.0		3			



**Fig. 1.** Mean length at age for females and males of Atlantic halibut in the 1935-38 samples (above) and the 1988 sample (below).