

Northwest Atlantic



Fisheries Organization

Serial No. N1814

NAFO SCR Doc. 90/88

SCIENTIFIC COUNCIL MEETING - JUNE 1990

Survey Biomass and Abundance Estimates for Redfish

Sebastes marinus and S. mentella) off West Greenland (NAFO Subarea 1, 1989

by

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Introduction

The stratified-random bottom trawl surveys conducted yearly in late autumn by the Federal Republic of Germany off West Greenland in Divisions 1B-F are primarily designed for cod. In view of the different distribution patterns of redfish, especially of *Sebastes mentella*, the allocation of trawling positions was therefore not optimal. Nevertheless the survey results indicate at least trends in survey biomass and abundance estimates for *Sebastes marinus* since 1988 as the area of distribution is more closely related to that of cod.

Results

For the survey period 1982-88 biomass and abundance estimates were presented in detail separately for *Sebastes marinus* and *S. mentella* in NAFO SCR Doc. 89/51. The corresponding survey estimates for 1989 are given in the table below:

Sebastes marinus

Year	NAFO-Div.	Biomass (tonnes)	Confid. interval + %	Abundance ('000)	Confid. interval + %	Mean weight (g)
1989	1 B-D	1,084	23.5	23,395	42.6	77
	E-F	5,669	46.1	12,803	44.9	443
	Total	6,753	38.2	36,198	31.5	187

Sebastes mentella

Year		Biomass (tonnes)	Confid. interval + %	Abundance ('000)	Confid. interval + %	Mean weight (g)
1989	Total	1,069	37.6	19,203	43.1	55

In contrary to the years before the area of distribution of small juvenile *Sebastes marinus* was found to be extended further south in 1989, i.e. including Division 1D, whereas the fishable stock of predominantly adult fish was only abundant in Divisions 1E and 1F. Regarding *Sebastes mentella* almost only juvenile fish were obtained in the whole survey area (Div. 1B-F) in 1989 and the total biomass estimate was the lowest observed since 1982.

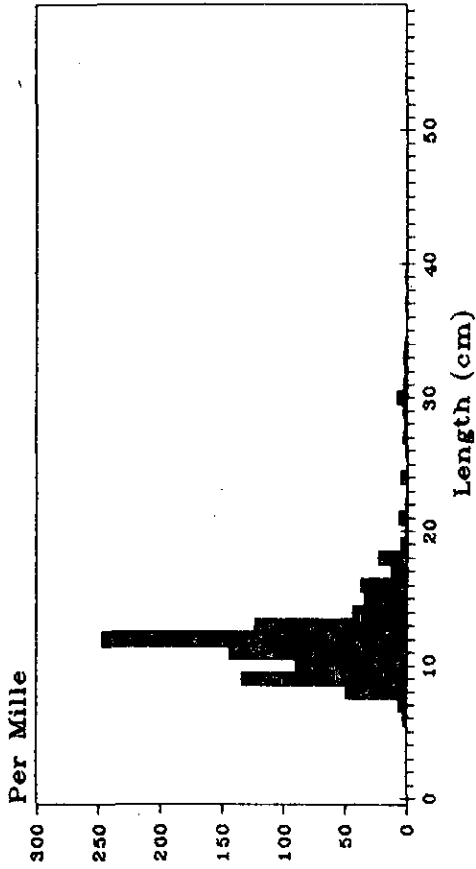
The survey results for the fishable stock component of *Sebastes marinus* in Divisions 1D-F (1E+F in 1989) reveal a continuous decline in biomass and abundance since 1982 as tabulated below:

Year	Biomass estimate '000t.	Abundance estimate million fish
1982	74	129
1983	55	77
1984	31	53
1985	35	53
1986	31	51
1987	28	36
1988	10	17
1989	6	13

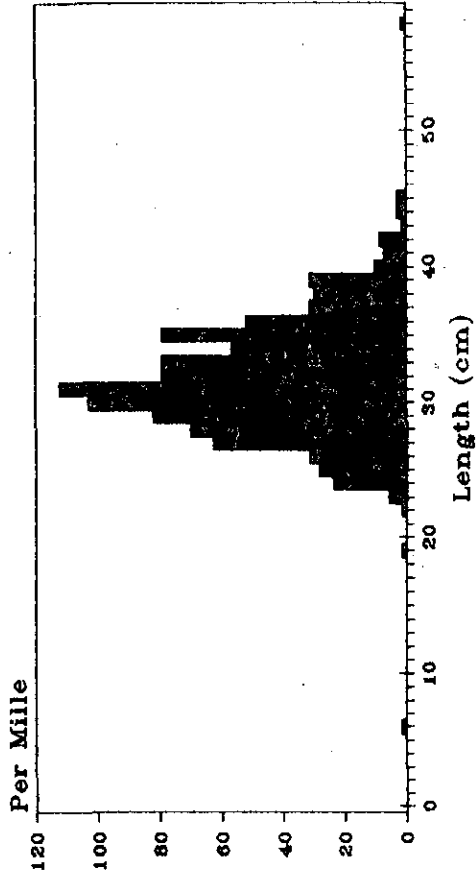
Survey length distributions (per mille) of *Sebastes marinus* as obtained in 1989 in Divisions 1B, C, E and F are illustrated in figure 1. The small juvenile fish (mode 10 cm) observed in Division 1E may have immigrated from East Greenland.

Figure 2 shows the survey length distributions (per mille) of *Sebastes mentella* in 1989 for Divisions 1B and C.

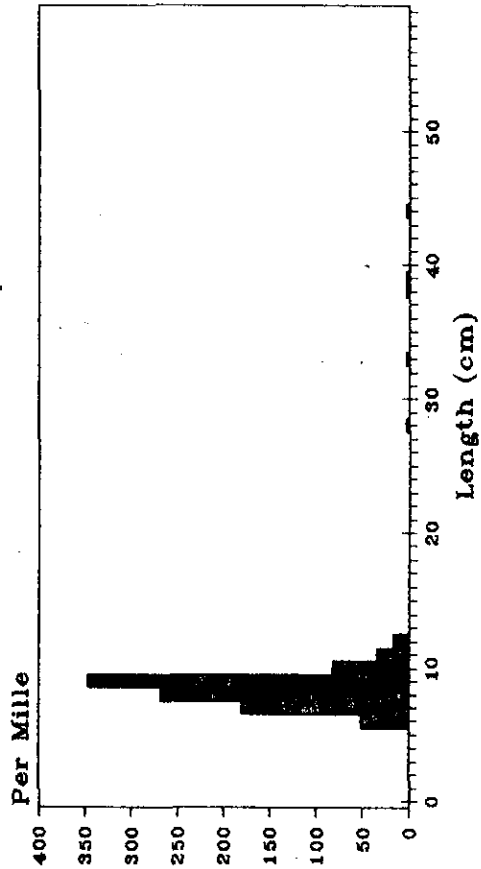
Sebastes marinus
Subarea I Division 1B



Sebastes marinus
Subarea I Division 1E



Sebastes marinus
Subarea I Division 1C



Sebastes marinus
Subarea I Division 1F

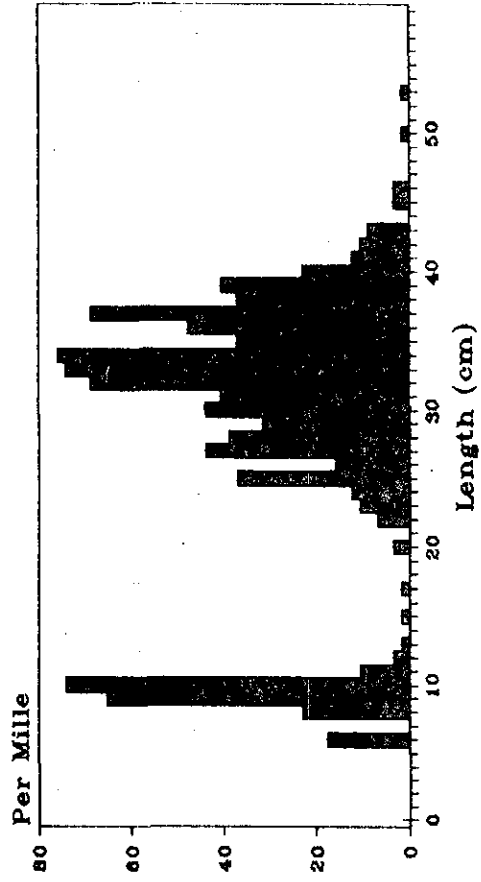
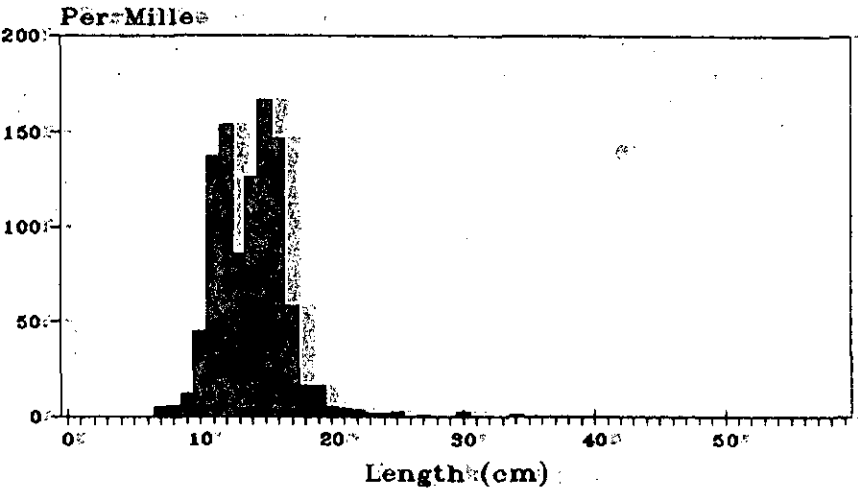


Figure 1.

Sebastes mentella
Subarea I, Division 1B



Sebastes mentella
Subarea I, Division 1C

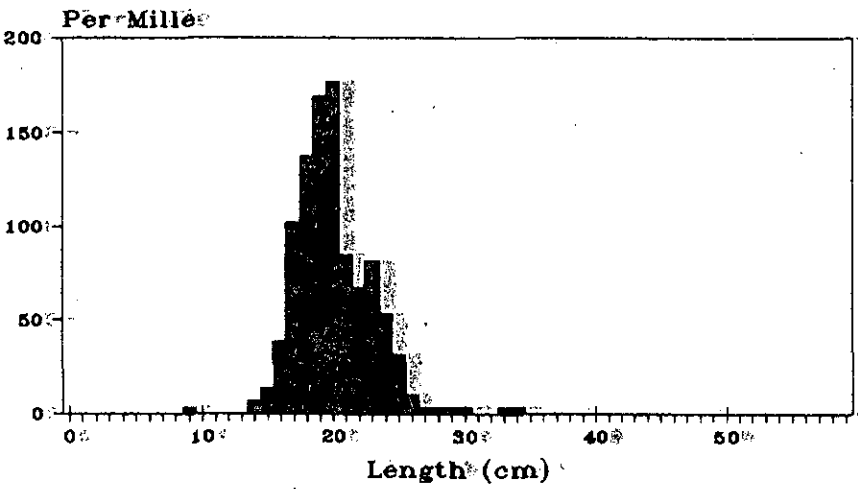


Figure 2.