

Northwest Atlantic  Fisheries Organization

Serial No. N128

NAFO SCR Doc. 80/VI/75

SCIENTIFIC COUNCIL MEETING - JUNE 1980

Assessment of Total Allowable Catch of Red Hake from Georges Bank (5Ze) for 1981

by

V. A. Rikhter
AtlantNIRO
Kaliningrad, USSR

In 1979 the USSR did not fish for the Georges Bank red hake.

According to the preliminary statistics submitted to the ICNAF Secretariat on a monthly basis, the total catch was about 0.9 thous. tons. Thus, in 1979 the fishing mortality was close to zero. The extremely low fishing intensity in the recent two years permitted to suppose that the natural mortality rate on the red hake has restored to its previous level, and in 1978-1979 it was 0.54, 0.54, 0.69, 1.32 and 1.32 for age groups 2, 3, 4, 5 and 6 respectively. (Rikhter, 1972).

The calculations were made based on the assumption that the fishing mortality was completely absent in 1979, and the fishing intensity would rise to the optimum level in 1980-1981. Moreover, it was assumed that the resumption of the intensive fishing resulted in a decreased natural mortality rate on 3-year old and older fish by a factor of two. Thus, the natural mortality rate in 1980-1981 was taken as 0.54, 0.27, 0.35, 0.66 and 0.66 for age groups 2, 3, 4, 5 and 6 respectively.

The recruitment size was estimated from the data on abundance of 2-year olds obtained by means of virtual population analysis and from abundance indices of the young-of-the-year, 1979 inclusive (table 1). The estimated 1976, 1977, and 1978 year class abundance indices were taken as the arithmetical means of the 1963-1975 year class abundance (212 mill. sp.). The 1979 year class which is the strongest was considered to be

equal to 1969 year class (250 mill. sp.).

The estimates are given in table 2. The abundance indices and the values of F for 1978 were the initial estimates used for calculations (Rikhter, 1979). From the available data the total allowable catch of 19 thous. tons can be recommended for 1981. However, if the 1980 fishing intensity maintains on the low level the biomass of the commercial stock in early 1981 will outnumber the calculated estimate.

References

1. RIKHTER V.A., 1972. Estimates of total and natural mortality rates for red hake (Urophycis chuss Walbaum) from the Northwest Atlantic. ICNAF Redbook 1972, part 3, p. 55-58.
2. RIKHTER V.A., 1979. An estimate of total allowable catch of red hake from Georges Bank (5Ze) for 1980. Ann. Meet. Int. Comm. Northw. Atlant. Fish. 1979. Res. Doc. 79/55 (mimeographed).

TABLE 1. Data used for estimation of red hake recruitment on Georges Bank (52e)

Year classes	2-year olds abundance (10 ⁶)	Youngs-of-the-year abundance indices*
1963	321	-
1964	188	-
1965	110	-
1966	214	-
1967	222	-
1968	266	0.02
1969	250	6.2
1970	241	1.8
1971	233	5.4
1972	149	1.9
1973	112	8.5
1974	270	20.6
1975	182	3.0
1976	-	4.3
1977	-	3.2
1978	-	4.5
1979	-	6.4

*Youngs-of-the-year abundance indices were estimated from the data of trawl surveys conducted by RV "Albatross IV" and "Delaware" of the USA Northeast Fisheries Center.

TABLE 2. Estimates of the Georges Bank red hake commercial stock and total allowable catch for 1981

Indices	AGE					TOTAL	
	2	3	4	5	6	Abundance, mill. sp.	Weight, thous. t
1979	212.0	123.5	58.0	43.4	0.4	437.3	78.5
1980	212.0	123.5	72.0	28.5	6.7	442.7	79.8
1980	0.13	0.70	0.70	0.70	0.70		
1980	20.08	55.34	31.20	10.90	2.56	120.08	25.6
1981	250	108.5	46.8	10.9	2.8	444.2	64.2
1981	0.13	0.70	0.70	0.70	0.70		
1981	23.69	48.62	20.28	4.17	1.07	97.83	19.1