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State of the Cod Stocks off Labrador

by

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Abstract

Indexes of abundance and biomass of Labrador cod for 1980-1981
were calculated on the basis of a long-term mean coefficient of abun-
dance changes for cod of each year class from one year of life to the
next, data on age composition and the number of fish at different
age in the mean catch per trawling hour in the first half of the year.

In 1980-1981 abundance and biomass indexes for Labrador cod are
expected to be higher than those in 1978-1979. Specimens of the highly
abundant 1972 and 1973 year classes and average 1974 year class are
supposed to make up the bulk of catches in off shore areas of South
Labrador in the first half of 1980-1981.

Introduction

Labrador cod are known to inhabit following areas: the North,
Central and South Labrador (Divs. 2 G,H,J) , North Bank of Newfound-
land (3 K) and northern part of the Grand Newfoundland Bank (north
of Div.3 L) (Postolaky, 1962, 1963; Templeman, 1962).

The South Labrador and North Bank of Newfoundland are the most
important fisheries areas among all the others where Labrador cod
distribute. Commercial fishing vessels of European countries fish
in the North and Central Labrador areas from time to time because of
severe ice conditions in the first half of the year (the period
when the most dense cod concentrations are registered).

This paper is aimed at pre-calculating the indexes of abundance
and biomass of Labrador cod in the South Labrador area in 1980-1981
(first halves of these years).

Material and methods

Data on the age composition of cod in the South Labrador area for every first half of the year, mean catch per trawling hour by Murmansk BMRT (large refrigerator trawler), long-term mean coefficient (K) of changes in the year class abundance from one year of life to the next are used in the paper.

Abundance and biomass indexes were calculated according to efficiency of Murmansk commercial BMRT in 1978-1979. The method of calculation was presented in one of the previous papers (Postolaky, 1978).

Results

Cod of the 1972-1974 year classes made up the bulk of catches at South Labrador in 1979 (77,6% by abundance and 77,1% by biomass in total catch). The 1972-1973 year classes may be estimated as abundant and the 1974 year class as average (Table 1).

The efficiency of cod trawl fishery by BMRT in 1978-1979 was higher in comparison with previous years. Mean catch per trawling hour was 3,9 t in 1978 and 4,2 t in 1979.

In 1980-1981 specimens of the 1972-1974 year classes are expected to make up the bulk of cod trawl catches at South Labrador.

On the basis of regularities on changes in the abundance of cod year classes from one year of life to the next (Postolaky, 1978) abundance and biomass indexes for 1980-1981 were determined (Table 2).

In 1980-1981 abundance and biomass indexes for cod at age 5-13 years are supposed to be higher than those in previous years.

A reduction in the efficiency of cod trawl fishery at South Labrador (the main area in Labrador cod fishery) from 1980-1981 will result from the 1975-1976 year classes being less abundant than the 1972-1974 year classes (Table 2).

References

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Table 1. Age composition of cod in South Labrador for the first

        half of the year (recalculated data), $^{0}/00$

Age Years	Year				
	1975	1976	1977	1978	1979
3	–	145	39	I	5
4	I2	236	458	I82	68
5	40	7I	368	404	207
6	I66	39	57	273	275
7	258	94	I7	99	294
8	328	I08	27	28	I03
9	I05	155	I8	6	I7
IO	45	45	9	3	IO
II	I8	3I	6	2	8
I2	I3	I5	I	I	7
I3	6	6	–	I	3
I4	4	2	–	–	I
I5	2	–	–	–	I
I6	2	–	–	–	I
I7	–	3	–	–	–
Mean age,years	7,7	6,3	4,8	5,4	6,4

Table 2. Actual (1976–1979) and predicted (1980–1981) indexes of cod abundance and biomass at age 5 - 13 years in mean catch per trawling hour in the first half of the year in South Labrador area (numerator - number,spec.; denominator - biomass, kg).

Year of fishery	Age, years									Age 5-13 years
	5	6	7	8	9	10	11	12	13	
1976	28/20	79/75	169/204	326/455	304/338	81/152	23/47	4/9	7/16	921/1136
1977	1445/1035	234/224	67/81	106/148	71/117	35/66	24/49	4/9	1/2	1987/1731
1978	1960/1325	1324/1264	480/653	136/215	29/59	15/33	10/24	5/13	5/14	3964/3600
1979	870/618	1156/1107	1236/1493	433/604	71/117	42/79	34/69	29/59	13/30	3884/4176
1980	300/215	1218/1167	1040/1256	989/1380	260/430	36/68	17/34	12/27	12/28	3884/4605
1981	300/215	420/402	1096/1324	832/1161	593/980	130/244	14/28	7/16	5/12	3397/4382

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