

Northwest Atlantic



Fisheries Organization

Serial No. N1205

NAFO SCR Doc. 86/83

SCIENTIFIC COUNCIL MEETING - JUNE 1986

Declines in the Average Length at Ate of Cod in Divisions 2J and 3K During 1977-85

by

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Introduction

Average length at age in Division 2J and Division 3K were examined to determine if the recent declines in such values derived from commercial fishery samples were reflected in the research vessel samples.

Methods and Materials

All material was taken from research vessel surveys conducted in the fall during 1977-85 in Division 2J and during 1978-85 in Division 3K. Length frequencies were invariably taken from each fishing set. Samples of otoliths were taken so that up to 25 or 30 specimens were taken at each 3 cm group.

Results

Age-length keys were constructed and applied to the corresponding length frequencies so that average length at age could be derived.

Growth of groups of year-classes were compared so that trends in average length could be discerned. It is clear that average length at age has declined in Division 2J (Fig. 1) and in Division 3K (Fig. 2), and that the trend is continuing. The course of the decline is not as yet clearly known but is probably not directly affected by abundance of capelin which have not shown a decline over the same period. Water temperatures lower than normal in the 1980's would presumably act to reduce the metabolic rate and thus growth. The increase in biomass of cod in Division 2J+3KL since the late 1970's would also tend to reduce the growth rate provided that the food supply were limiting.

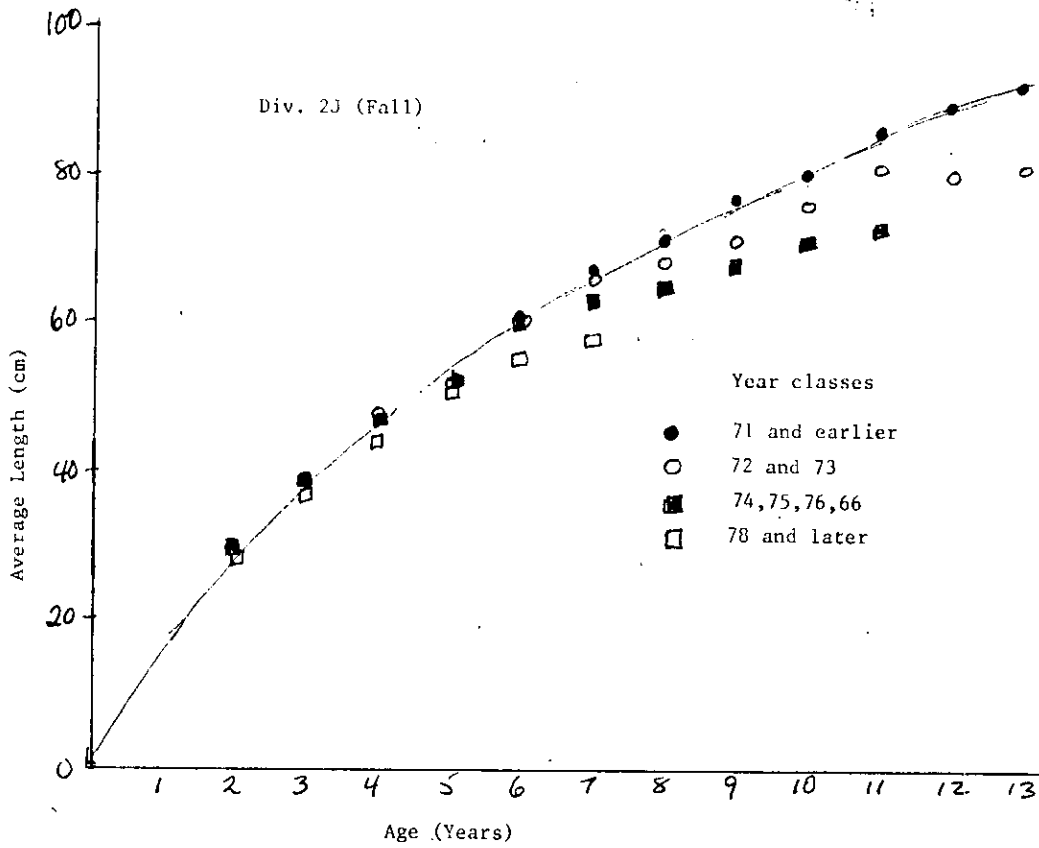


Fig. 1. Average length at age for various groups of year-classes present in the Canadian research vessel catches in Div. 2J in the period 1977-85.

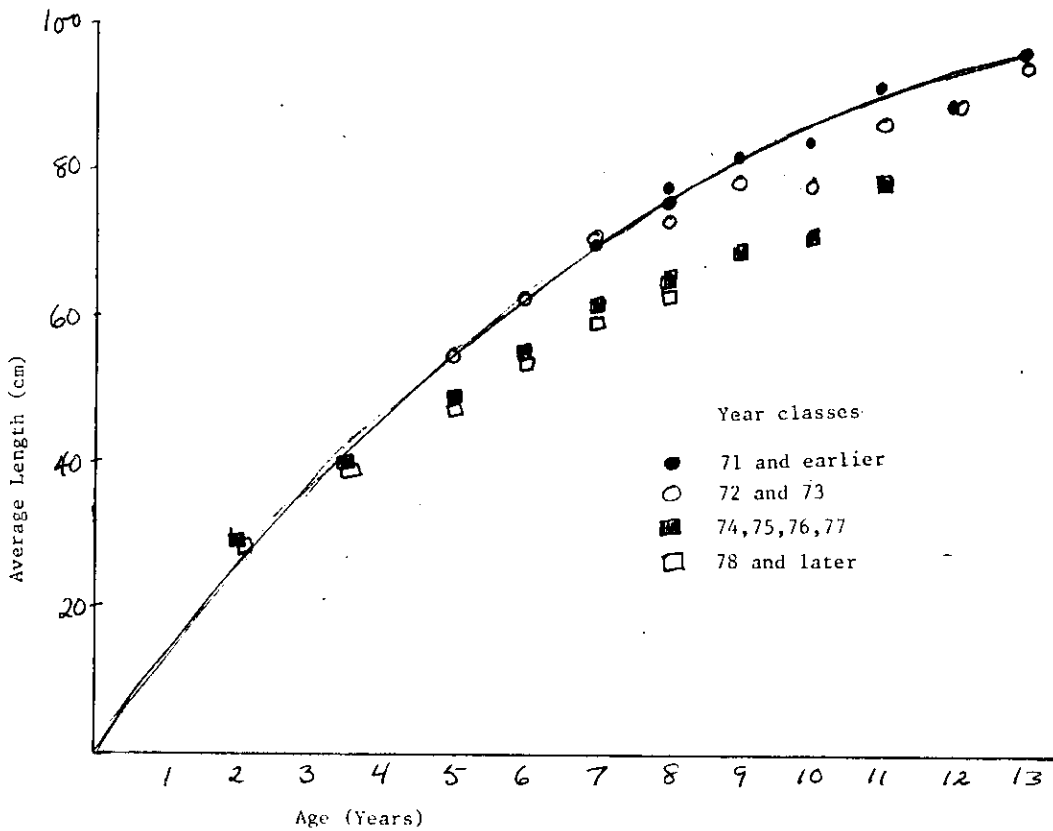


Fig. 2. Average length at age for various groups of year-classes present in the Canadian research vessel catches in Div. 3K in the period 1978-85.