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A preliminary analysis of mackerel sampled in Newfoundland during 1976

by

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Introduction:

At the 1976 annual meeting of ICNAF no concensus could be reached as to the appropriate scientific advice on the mackerel TAC for 1977 resulting in a deferrment for analyses of new data at this meeting. The Newfoundland Biological Station regularly conducts a commercial sampling program of mackerel catches in the Newfoundland area and a preliminary analysis of the 1976 data is presented below.

Methods & Materials:

Mackerel samples were obtained from fishermen or from processing plants and were examined fresh or after being frozen for a period of several weeks. Data were obtained on fork length, whole weight, sex, maturity and the otoliths were removed for age determination.

Results:

Age-length distribution

The age-length distribution was compiled from samples collected from non-selective gears (ring-nets, bar seines, etc.). The year-class composition of the 1976 catches is almost identical to sampling data for the 1975 fishery (Fig. 1) with the ages being staggered one year to the right.

The 1971, 1972 and 1973 year-classes are still the main component of the fishery representing 64% of the fish sampled. Among the older fish (6+) the 1967 year-class is still dominant comprising

10% of the total. The 1976 samples suggest that either the 1974 and 1975 year-classes are very weak or that fishing mortality has been very high on those year-classes prior to the Newfoundland summer fishery.

The relative strengths of the 1971, 1972 and 1973 year-classes appear to be fairly equal with the 1972 year-class being slightly stronger although neither of these year-classes approaches the strength of the 1967 year-class.

The length frequency in 1976 ranged from 31-43 cm fork length with 78% between 34 and 38 cm fork length.

Newfoundland fishery:

According to preliminary statistics for 1976 (up to October 31, 1976) 1200 mt have been caught in the Newfoundland mackerel fishery as compared to 3863 mt in 1975. However the fishing pattern in 1976 was different from 1975. In 1976 large schools of mackerel were not encountered in any large quantity until September in the east coast bays. It is at this time of the year that the mackerel are congregating in dense schools for the annual migration to overwintering grounds off New England. The usual summer fishery along the west coast of Newfoundland (4R) and in St. Mary's Bay and the eastern Avalon (3L) did not materialize to any great extent. This would seem to indicate that the abundance of mackerel in the Newfoundland area was not as great in 1976 as in past years and only when they had schooled together for the southward migration were they readily available to the fishery.

Conclusion:

Mackerel appear to be less abundant in the Newfoundland area and sampling from this area does not indicate any substantial new recruitment into the population. Due to the depressed condition of this stock and the apparent lack of sustaining recruitment, a further decline in the abundance of mackerel in the Newfoundland area is anticipated in 1977.

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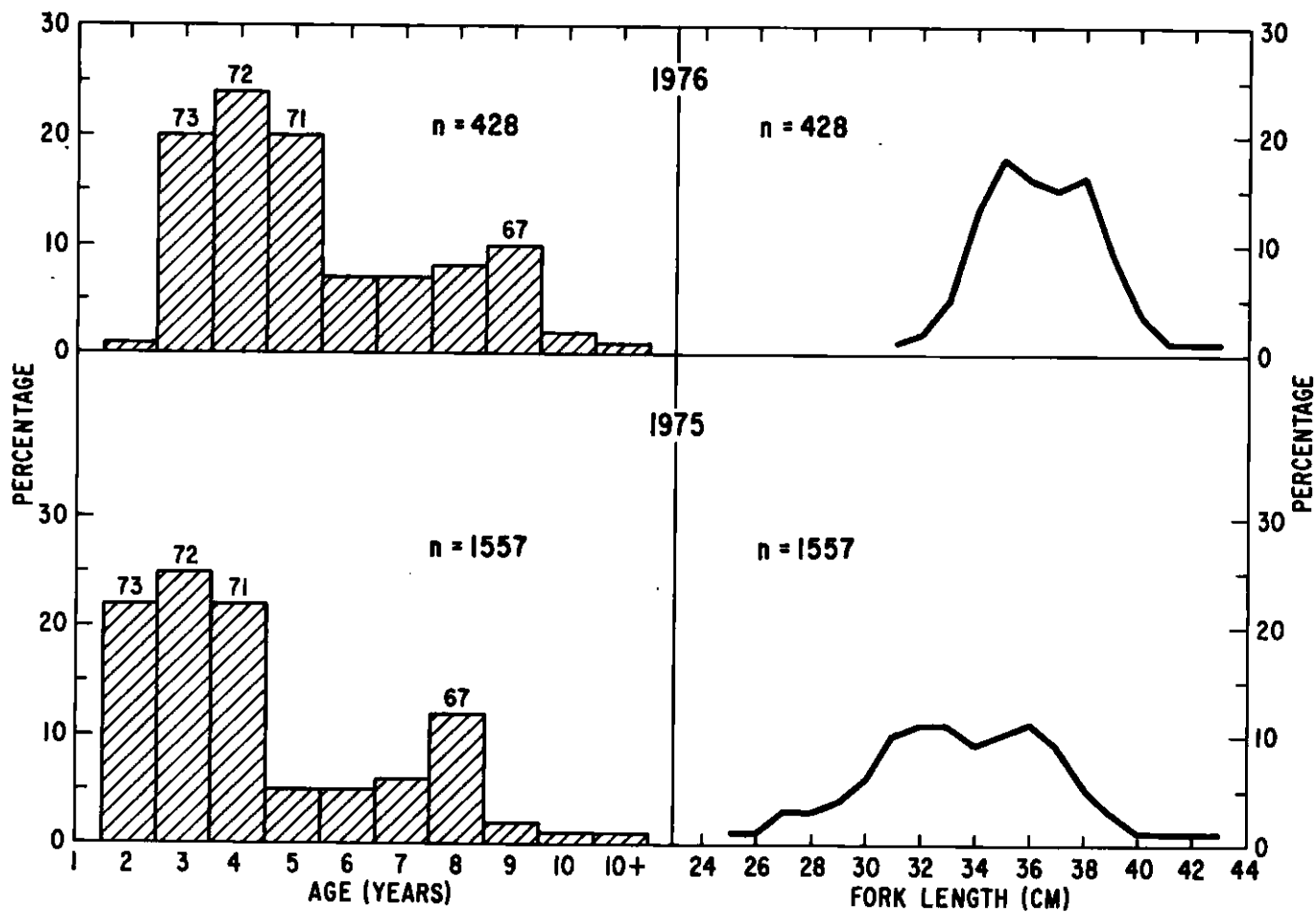


Fig. 1: Age and length distribution of mackerel from the Newfoundland area for 1975 and 1976.

