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Recruitment Prospects for Greenland Halibut in Statistical Area 0

by

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INTRODUCTION

Statistical area "0" has been of interest to certain segments of the international fleet for the past few years with the development of the deepwater fishery for grenadiers. Most landings have been taken by the Soviet Union and Denmark in this area. Statistical Area "0" is part of the Statistical Area 0 and Subarea I stock area with regards to Greenland halibut although there is increasing evidence that whole area from Subarea 1-3 is a single stock.

Although little research work has been carried out in this area in the past, research work in this area is beginning to increase mainly because of the very important shrimp fishery in the Greenland area which has now moved offshore.

MATERIALS AND METHODS

In 1977, a research biomass survey for groundfish was conducted in the statistical area "0" region and the results presented by Bowering (1978) at the 1978 Assessments Meeting of ICNAF. In 1978 a research survey for shrimp was conducted by Canada (N) mostly concentrated in statistical area "0". The vessel used was a Canadian commercial stern trawler "Canso Condor" and the gear used was a Sputnik 1600 shrimp trawl with a lined codend. All Greenland halibut caught were sexed and measured for all catches from the 94 successful fishing stations. A representative sample of otoliths was collected by length categories to determine the age composition of the catches.

RESULTS AND DISCUSSION

Length distributions are plotted for the 1977 survey in Fig. 1 and for the 1978 survey in Fig. 2. Both are standardized at numbers caught per 5 hours fished. For both surveys, very few fish were caught in the commercial

fishing range. The peaks of the catches in the 1977 data are also seen in the 1978 data only moved along by the increase in growth. A huge peak occurred in 1978 at 8-10 cms. which is a possible indicator of good recruitment. Unpublished data from the Newfoundland Environment Center indicated from shrimp research surveys in Ungave Bay and even as far south as ICNAF Divisions 2GH that very high numbers of small fish in the same size range were also caught.

The age distributions for both surveys are presented in Figs. 3 and 4 and are also standardized at numbers caught per 5 hours fished. In both surveys the catch per unit of effort is much the same with very high numbers of prerecruits. The major difference is the huge peak of one year old fish seen in the 1978 survey. Because of the smaller mesh gear used in the shrimp surveys however, it is probably not appropriate to do direct comparisons between the two gears. Nevertheless, the trends in both surveys are obvious. These high numbers of 1 year old fish were not entirely unexpected since very high numbers of 0-group Greenland halibut were taken from the stomachs of larger ones in the 1977 survey. Numbers of 0-group found in a stomach ran as high as 100 in some larger Greenland halibut (unpublished data). Unfortunately, it is next to impossible to do quantitative estimates of recruitment because of different gears and little knowledge of actual mortality on these pre-recruits. However, considering the huge peaks of prerecruits (particularly 1-year olds) occurring all over the northern area in 1978 and previous prospects of recruitment (Bowering 1977, 1978a, 1978b), it looks to be very promising for the Greenland halibut fishery over the next few years especially when one considers the improvement in landings and catch rates over the past few years.

REFERENCES

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ICNAF Res. Doc. 77/VI/11, Serial No. 5031.
1978a. The distribution of Greenland halibut in Statistical Area "O".
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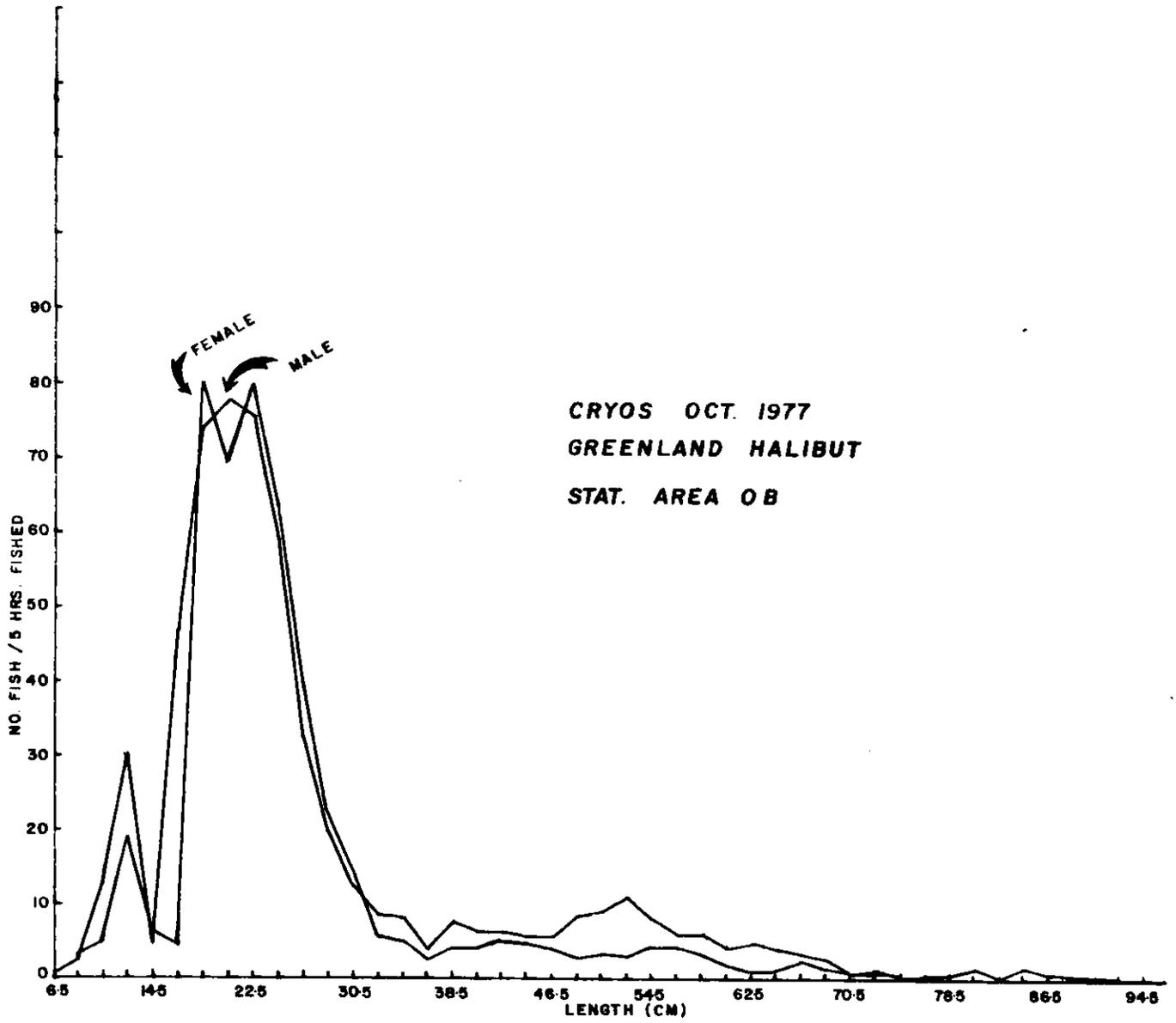


Fig. 1. Length distributions for male and female Greenland halibut in Statistical Area OB from a French research survey in 1977.

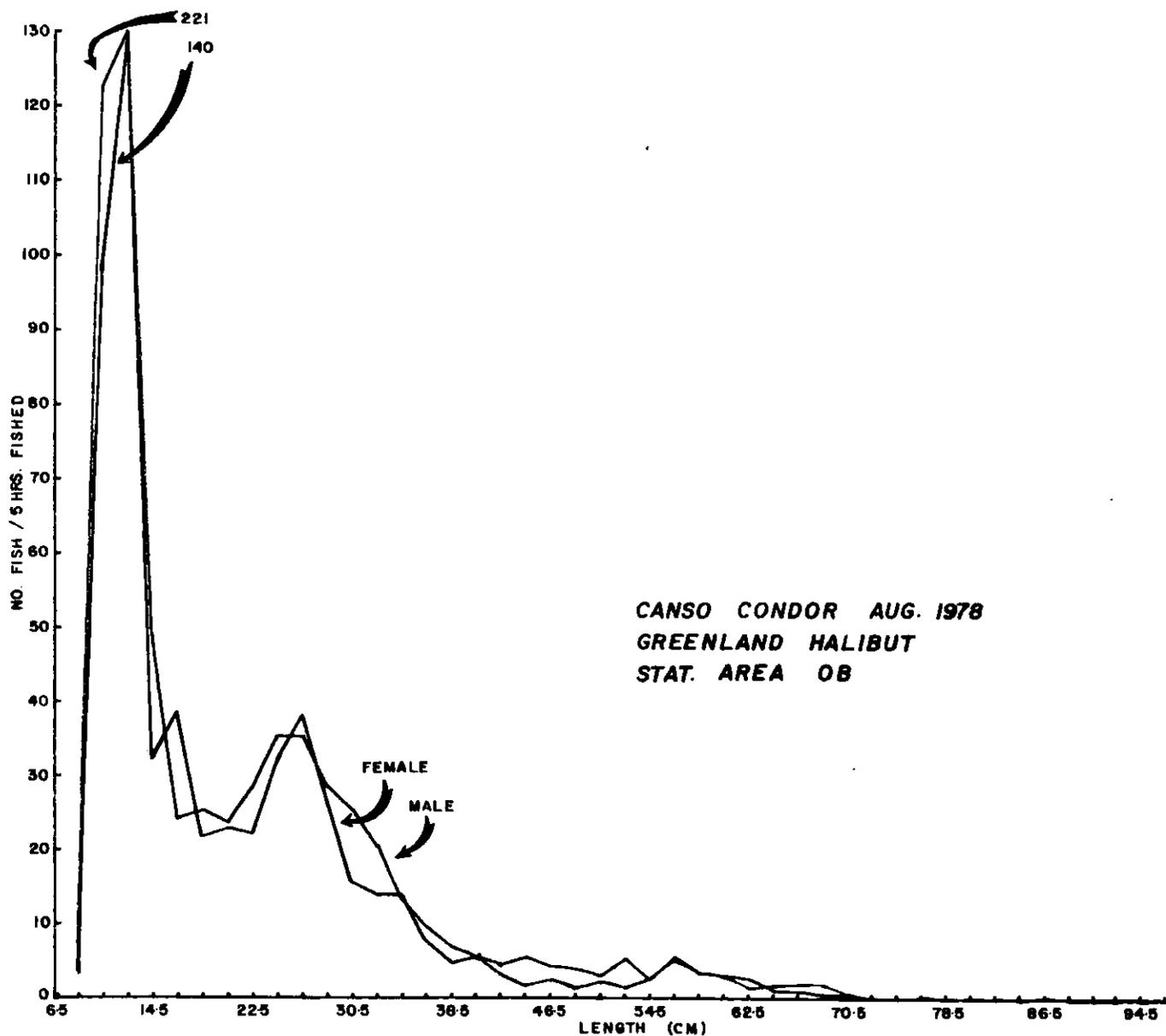


Fig. 2. Length distributions of male and female Greenland halibut in Statistical Area OB from a Canadian exploratory survey in 1978.

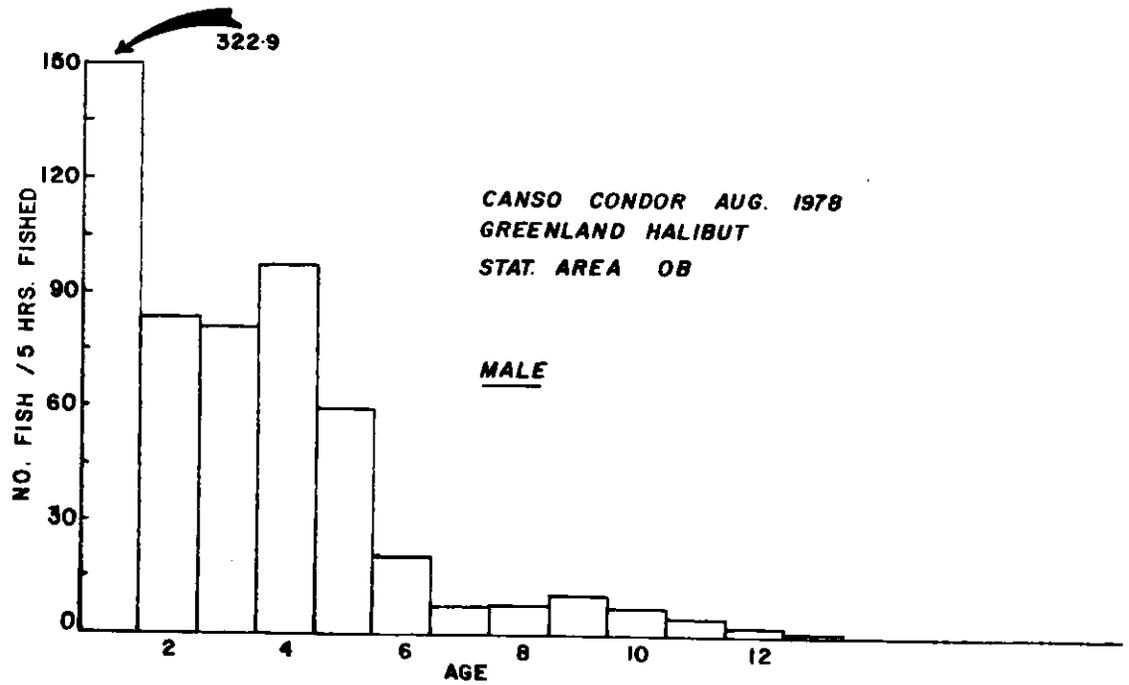
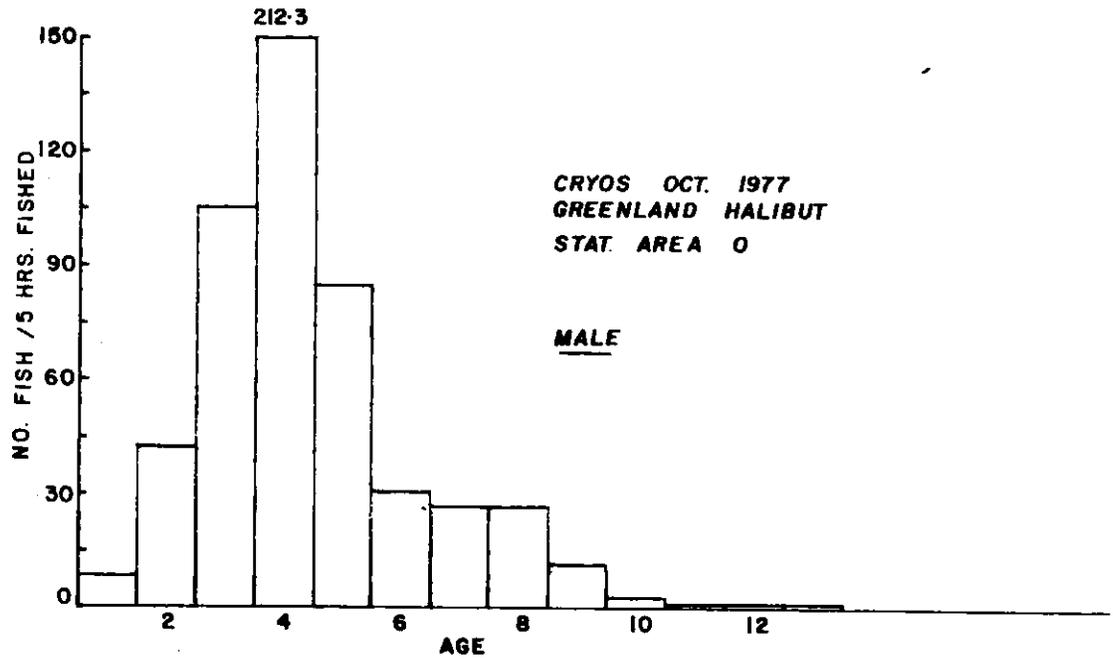


Fig. 3. Age distribution of male Greenland halibut from the 1977 and 1978 surveys in Statistical Area 0B.

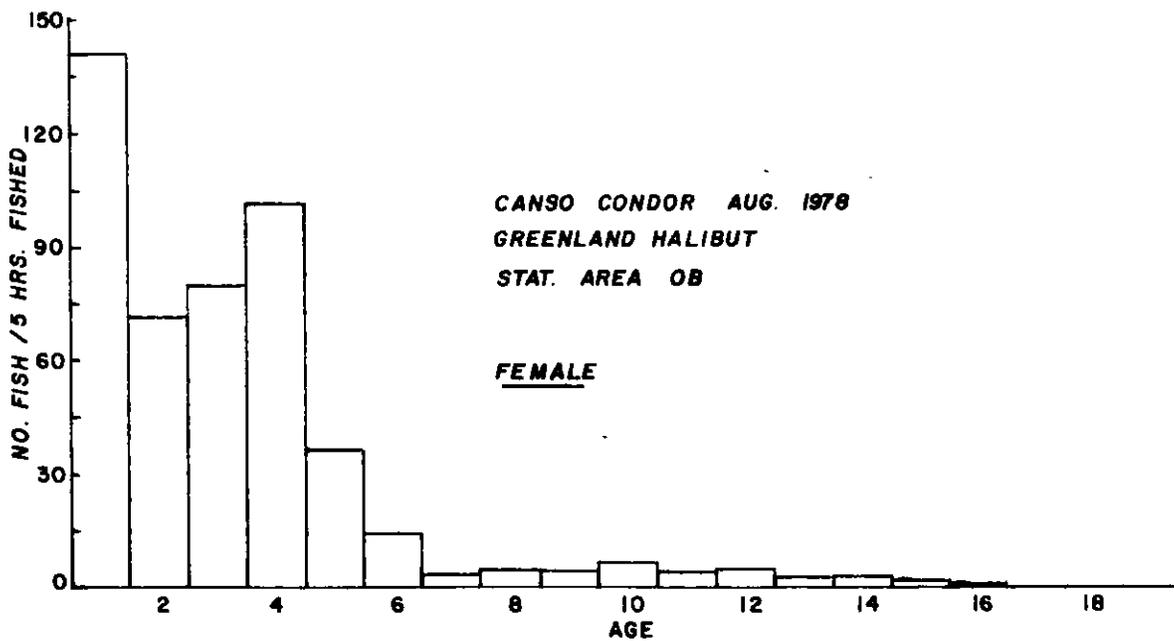
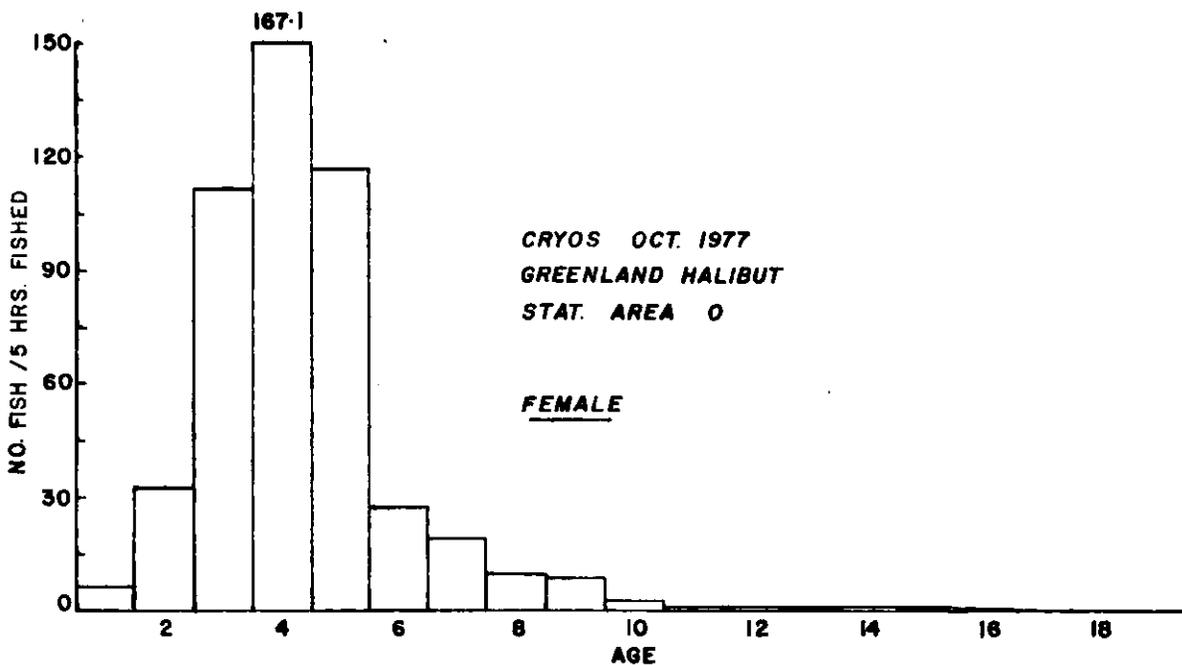


Fig. 4. Age distribution of female Greenland halibut from the 1977 and 1978 surveys in Statistical Area 0B.