

ANNUAL MEETING - JUNE 1961Summary of the Research Carried out in Subarea 4 during 1960

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COD

Observations reported in the Canadian Research Report for 1960 (Document No. 10) show that in the western Gulf of St. Lawrence, cod appear to be a well-defined population living in the western Gulf (4T) in summer, and along the western side of the Laurentian Channel off Cape Breton Island (eastern 4T and 4V north) in winter. The observations further show that market size Gulf cod are concentrated in narrower depth and temperature ranges in winter than in late spring or early fall. There are vertical migrations of smaller cod at night, and vertical migrations of food appear to affect movement of cod off the bottom. Discards on commercial draggers appear to be 2 to 8% by weight.

The report deals with a major change in the age of landed fish which has occurred between 1959 and 1960. In the earlier years, up to 1952, the ages of the fish were well spread out between ages 3 and 14. Since 1955, there have been few individuals over 10 years of age and in 1960, there were few over 7; so the abundance of large cod is decreasing.

These changes are believed to have resulted from greatly increased fishing effort by Canadian and European fleets in this population. (Landings doubled to about 100 thousand metric tons by year, and catch by unit effort by Canadian draggers cut in half in 10 years.) These problems are also reported in Document No. 3.

Mortality rate for 4T cod has been estimated. Forecasts were reported for the 1961 fishery. Document No. 17 gives observations on cod in Subarea 4 (February to April) where the predominating year classes were 53, 54, and 55 as the preceding year. The same report gives size distribution for divisions 4Vn and 4R, and age at first maturity which was found to be between the 5th and 9th year. For most individuals maturity is reached in the 7th year, the corresponding size being 55-56 cm. in length. Document No. 15 gives size of cod for Subdivision 4R, 4Vn, and 4W obtained on board various trawlers in February, March, and April.

Document No. 18 on age and growth of cod from the fishery in the Northwest Atlantic gives age frequencies and growth rates for divisions 4R and 4V and shows by comparison a lesser growth in this region and a more restricted range of the age frequencies than in Subarea 1.

Some other documents report various observations made on board cod fishing vessels, among those: Document No. 26 and Document No. 33. The latter, concerning observations on the French fishery in the Gulf of St. Lawrence made in March and April 1961 (trawler of 68 meters), indicates that the catch by haul of 2-3 hours was about 6-12 tons (round, fresh fish), and the discarded cod can be estimated to a maximum of about 5-10% in weight.

Document No. 32 concerns the validation study of Subarea 4 cod otolith age determinations and concludes that good confidence may be placed in the validity of otolith ageing methods.

HADDOCK

Document 10 shows that, in winter, catches of haddock were small and confined to deeper water along the Laurentian Channel and the gully between Sable Island and Banquereau. Largest catches were obtained from depths of about 45 to 70 fathoms in the vicinity of Western and Emerald Banks.

For the subdivision 4W, mean lengths at ages have shown a marked decrease over the past 12 years. The forecasts for the following years are not very good according to the low availability of pre-recruit sizes and lack of strong year classes.

HYDROGRAPHY

Following the same Document (Doc. No. 10) and Document 21, hydrographic observations have been made off Halifax in Cabot Strait and around the Magdalen Islands.

Study of the seasonal and long-term variations of the water temperatures was continued, and it is estimated that the cooling trend experienced during the last few years is continuing in most areas for the surface and bottom waters.

Document No. 8 mentions the "Gulf Stream '60'" working a network of hydrographic stations from the latitude off Bermuda to the Continental Shelf off North America, including the southern part of Subareas 3, 4, and 5.

REFERENCES

Research Reports 1960

- Canada - 1961 Annual Meeting Document No. 10
 - Germany - 1961 Annual Meeting Document No. 26
 - Italy - 1961 Annual Meeting Document No. 5
 - Portugal - 1961 Annual Meeting Document No. 17
 - Spain - 1961 Annual Meeting Document No. 15
 - U. S. A. - 1961 Annual Meeting Document No. 8
- Report of Regional Meeting of ICNAF Scientists, Woods Hole, Mass.,
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- Figueras, A. Age and growth of cod from fisheries in the Northwest Atlantic,
1960 - 1961 Annual Meeting Document No. 18
- Lauzier, L. M. Oceanographic observations by Fisheries Research Board of
Canada in the ICNAF Area during 1960 - 1961 Annual Meeting Document
No. 21
- Kohler, A. C. Validation studies of Subarea 4 cod otoliths and age determina-
tions - 1961 Annual Meeting Document No. 32
- Ancellin, J. Observations on the French cod fishery in the Gulf of St. Lawrence,
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