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Extracts from
Report of ICES Liaison Committee to
North-East Atlantic Fisheries Commission¹ 1967

REGION 1 FISHERIES

North-eastern Arctic Fisheries

The total catch of cod in the north-eastern Arctic in 1965, at 480,000 tons, was at the same level as in 1964. These two years have recorded the lowest catches since 1934 (excluding the war years). Whilst this was partly due to a lower level of fishing effort than in earlier years of high production, the catch-per-unit-effort data show that the abundance of the exploited stock is still at a low level.

If the fishing effort continued at its present reduced level it would be expected that there would be some improvement in stock abundance and in the total catch (see Arctic Fisheries Working Group Report, 1965). This improvement would, however, also depend upon the abundance of the year-classes that will recruit to the exploited stock in the near future, and studies of the abundance of 0-group cod to this area suggest that the 1965 and 1966 year-classes are weak.

Arrangements were made during the ICES Meeting for the North-eastern Arctic Working Group to meet in April 1967 in order to review the present state of the fisheries for cod and other demersal species in this area. Although it will not be possible to report in detail at the May meeting of NEAFC, the Secretary of the Committee will provide a statement of the Working Group's findings for the Chairman to present informally.

North-western Arctic Fisheries

No new assessments have been made of the fisheries in this area since the last meeting of the Commission, but further information was presented at the ICES Meeting on the factors governing the observed changes in the abundance of the cod stock at Iceland and in the yields of the fisheries based on them. This showed that, as in other cod fisheries, a major factor governing the short-term changes in catches is the wide fluctuations in strength of successive year-classes recruiting the exploited stocks. Another factor which may contribute substantially to the wide fluctuations in abundance of maturing cod recruiting to the Iceland stock is the variation in their immigration from Greenland waters.

No further plans were made to convene a meeting of the North-western Working Group, but a close watch will be kept in the coming years on changes in the fisheries and exploited stocks in this area in relation to changes in fishing intensity and to the new mesh-regulations at Iceland, East-Greenland and the Faroes.

REGION 2 FISHERIES

North Sea Haddock

A review of the North Sea haddock fishery during the post-war period showed that, in 1964 landings increased sharply to nearly 200,000 tons and that they increased further to 230,000 tons in 1965. This was about three times more than the average annual landings for post-war years up to 1963 and more than twice the previous highest post-war level of just over 100,000 tons in 1957. While the haddock landings of all countries with substantial haddock fisheries

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The complete Report was presented to the 5th Meeting of NEAFC as Document NC 5/57

in the North Sea increased in these two years, the largest increase took place in the Danish fishery, in which haddock landings amounted to 72,000 tons in 1964 and 65,000 tons in 1965.

This large increase in total haddock landings was the result of an increase in stock abundance, due to the very rich 1962 year-class, the strength of which was the highest on record. The analysis of data for earlier post-war years, during which the total fishing effort remained fairly constant, also showed a close relation between the variations in annual landings and stock abundance, generated mainly by fluctuations in year-class strength. Thus, landings, stock abundance and year-class strengths in the exploited stock were relatively low during the period 1948-1952; they increased during the years 1953-1957, decreased again between 1958 and 1963 and then rose sharply once more in 1964 and 1965.

Age composition data indicate that the exploited haddock stock during the post-war period was composed mainly of fish less than five years of age.

North Sea Cod

Results of British cod tagging experiments in the southern, central and northern North Sea indicate a high rate of exploitation in the cod fisheries off the English and Scottish east coasts. They also point to the presence of more than one cod stock in the North Sea. In particular, there seems to be relatively little movement eastwards into the open sea of cod exploited in the Scottish coastal areas.

SELECTIVITY AND RELATED ITEMS

Mesh Gauge for Inspection and Enforcement

In last year's report, the Committee drew attention to the wide variations in mesh-size obtained by different operators with the use of wedge or other non-pressure gauges compared with the ICES gauge, and it recommended the use of the latter for international inspection and as a standard for national enforcement. While the Committee still considers this gauge the most efficient of the gauges available for these purposes and for routine measurement it recognises the difficulties involved in its adoption for enforcement purposes in some member countries. It, therefore, takes note of the findings of the special meeting of the Commission in October 1966 on the question of mesh gauges for international enforcement and of the ICNAF Working Group on Mesh Problems. It considers that, if the use of the ICES gauge is found to be impracticable for national or international inspection and enforcement, the most satisfactory alternative gauge for these purposes would be the simplest flat, wedge-shaped gauge that will comply with the Convention regulations. The Committee wishes to draw the Commission's attention once again, however, to the importance for assessment purposes, as well as in legal procedures, of obtaining measurements of the mesh-sizes at sea.

While such simple gauges have been shown to have certain disadvantages, chief of which are the large variations in measurements between operators and the generally larger measurements taken with this than with the ICES gauge, the Committee considers that these deficiencies can be lessened by the adoption of appropriate training measures for inspectors and enforcement officers.

Topside Chafers

New information was presented at the ICES meeting from English and Norwegian experiments in the Barents Sea, and around the Faroe Islands on the effect on selectivity of topside chafers with mesh-sizes approximately double those used in the cod-ends. The results of these experiments indicated that the reduction in the cod-end selectivity for cod and haddock with the use of such large-meshed chafers was less than 10%. These results are in general accord with those of Polish experiments with large-meshed chafers reported to ICNAF at its 1966 annual meeting, and with those of more recent German experiments off south-west Greenland.

Verbal reports at the ICES meeting indicated that topside chafers are used in the commercial trawl fishery for two purposes:

- a) for protecting cod-ends from chafing against the ship's hull, the splitting strap and the sea-bed,
- b) re-inforcing the cod-end, to prevent it splitting with large catches.

While these reports indicated that large-meshed chafers would be less effective in these respects than smaller-meshed ones, the possible value of constructing chafers and cod-ends of stronger twine was mentioned.

Further research work on the topside-chaffer problem was recommended to ICES, with special reference to chafers with large mesh-sizes relative to the cod-end mesh-size and on possible methods of eliminating the need to use chafers altogether.

The Committee wishes to stress once more the importance of having information on the types of topside chafers in use in the trawl fisheries in the Commission area and of their effects on cod-end selectivity. It, therefore, recommends to the Commission that such information, with particular reference to the design of and mesh-size in the topside chafers in use, should be reported by mid-December each year by all member countries. It further recommends that attention should continue to be given to determining the effects of chafers on selectivity as well as to possible ways of eliminating the use of chafers altogether.

OTHER ITEMS

Stock and Recruitment

As pointed out in last year's report, most fishery assessments undertaken hitherto have been based on the assumption that recruitment is not related to the spawning potential of the stock. The scientific evidence for this assumption is not very substantial and since any departure from it might greatly affect the results of assessments it is essential that the assumptions should be investigated further. Information relating to this problem was presented to the ICES meeting for Arctic and Iceland cod and North Sea herring. The analyses presented in these contributions depended on the interpretation of statistical data, but complementary studies have been commenced to elucidate the biological mechanisms determining recruitment. In particular, international surveys of 0-group fish in the north-east Arctic have this as one of their objectives; information on aspects of the natural mortality rate of juvenile plaice was also presented to the ICES meeting.

This work is being continued. It is a problem of considerable logistic magnitude. In any field of study aimed at determining the factors influencing natural mortality during the first months of life, it is necessary to monitor continuously the entire area of distribution of the eggs and larval fish subject to investigation. This implies a considerable commitment in facilities and research vessel time, and the work must be expected to continue for a large number of years before giving a significant result. It is also desirable that complementary work should be concerned with experimental studies of the mechanisms involved.

Regulation of Fishing Effort

At the meeting of the Commission in 1966 consideration was given to the need for, effects of and possible methods of regulating fishing effort in the principal fisheries in the Commission area. While the Commission made no specific requests of the Committee for advice on this subject, it will recall that the Committee has previously drawn attention to the implications for one area of the North Atlantic of regulations established in another, and it may wish to have its attention drawn to steps taken by ICNAF at its last meeting to assess the need for and effects of such measures on the fisheries in its area.

At that meeting it set up a working group of biologists and economists, to examine "the problems of assessing the economic effects of possible conservation measures". This Working Group will be meeting in April and it is expected that copies of its report will be available at the 1967 meeting of the Commission.

North Sea Stock Assessment

In the reports presented to the Commission in 1965 and 1966 the results of assessments were given of the fisheries and exploited stocks in the north-eastern Arctic and north-western Arctic areas respectively. The Committee has previously undertaken that similar assessments would be made for certain of the fisheries and stocks of demersal species in the North Sea and it wishes, therefore, to inform the Commission of its plans for these studies. Owing to the complex nature of the fisheries in the North Sea and the large number of exploited species involved, the Committee considers that the assessments should be restricted in the first instance to the stocks of the most important protected species exploited in this area. It further expects that because of the magnitude of this task it will not be possible to complete the work in time to report its findings to the Commission before its Annual Meeting in 1969. Every effort will be made to meet this date, but the Committee also wishes to inform the Commission that the acquisition of a permanent Secretary, attached to the ICES Secretariat, would greatly facilitate the work involved in this and other tasks, requiring the collection, compilation and analysis of large quantities of scientific data.

North Atlantic Salmon

The Report of the Joint ICES/ICNAF Working Party on North Atlantic Salmon appointed to assess the possible effects on salmon catches in European and North American river systems of the recent development of salmon fishing off the West Greenland coast, was presented to the meeting of the Salmon and Trout Committee. No final conclusions as to the magnitude of these effects can yet be given, owing to important gaps in knowledge, especially of inter-relations between the salmon stocks fished at West Greenland and those fished in the home rivers. Research programmes have been drawn up to study these problems on a co-operative basis, and these results will be followed closely.