

Northwest Atlantic



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The Fisheries Commission Request on the Appropriateness
of Indicator Fisheries in Providing Information
on the Stock Status of Cod in Div. 3M

by

Scientific Council

The Council noted that indices of stock abundance as provided by commercial catch-rate data, are important to the understanding of stock status. Where data on catch and on age composition are suitable for virtual population analysis (VPA), a commercial catch-rate series can be important for tuning the analysis, particularly if it represents fishing in most of the stock area. When a VPA is not possible due to factors such as poor catch statistics (a situation thought to exist for 3M cod), a commercial catch-rate series may still provide useful information on trends in stock size.

With respect to cod in Division 3M, the last VPA was conducted in 1984, but this was tuned on abundance indices from research surveys, because data were not available either to update the trawl catch rate data after 1980, or the longline catch rate data after 1981, except for the small Norwegian longline fishery. It is unlikely that addition of Faroese longline data for 1981-87, which is now known to be available, would alter this situation, as there is considerable doubt about the completeness of total catch statistics in recent years.

The Scientific Council has available the data from the annual USSR bottom-trawl survey, and while highly variable from year to year, these have provided some indication of stock size. The initiation in 1988 of an annual EEC survey, and the addition of acoustic capability to the USSR survey, should enhance the ability of the Council to monitor trends in stock abundance.

The latest review of stock status (June 1989) indicates that the total biomass remains very low compared to historical values, and likely below 30,000 tons for all age groups with only 5-10% older than 3 years in 1988. The 1986 year-class appears, however, to be relatively strong.

The Council has advised that there should be no commercial fishery in 1990 in order to allow recent year-classes to contribute to the rapid rebuilding of the biomass. This poses the question as to the level of biomass at which a fishery may be safely reintroduced, and thus also the ability of the Scientific Council to determine the actual value of the stock size. The Council agrees that once the stock is rebuilding, additional indices of abundance could be useful in the quantitative evaluation of the extent of rebuilding. Such indices might be provided by new values for catch-rate series that existed up to the introduction of the moratorium. The Council considers, however, that given the expected higher cod by-catch rates in 1990 due to the growth of cod in the 1986 year-class, and the increase in fishing effort in the redfish fishery due to the much higher (2-1/2 fold) redfish TAC, the likely levels of removal of cod as by-catch (perhaps 2,000 tons) in the redfish and American plaice fisheries, together with catches by non-members, will represent a significant level of fishing mortality. Adding mortality as a result of introducing an indicator fishery that would have to take in excess of 2,000 tons would therefore likely result in total fishing mortality approaching target levels used in managing directed fisheries for other stocks. The Council considers that fishing mortality on this stock should be kept as low as possible, at least until the 1986 year-class has spawned. It is noted, however, that this conclusion can be reviewed on an annual basis as additional research surveys provide information as to the strength of year-classes subsequent to 1986, and also provide further data on the 1986 and earlier year-classes. In the mean time, the Council would welcome receipt of data that have not been previously made available on the commercial fishery prior to the moratorium, and will consider further the extent to which the resultant catch-rate series appears to have been indicative of stock status.