

Northwest Atlantic



Fisheries Organization

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Fisheries Commission's Request for Scientific  
Advice on Management in 1993 of Certain Stocks in Subareas 3 and 4

1. The Fisheries Commission with the concurrence of the Coastal State as regards the stocks below which occur within its jurisdiction, requests that the Scientific Council, at a meeting in advance of the 1992 Annual Meeting, provide advice on the scientific basis for the management of the following fish and invertebrate stocks or groups of stocks in 1993:

Cod (Div. 3NO; Div. 3M)  
Redfish (Div. 3LN; Div. 3M)  
American plaice (Div. 3LNO; Div. 3M)  
Witch flounder (Div. 3NO)  
Yellowtail flounder (Div. 3LNO)  
Capelin (Div. 3NO)  
Squid (Subareas 3 and 4)

2. The Commission and the Coastal State request the Scientific Council to consider the following options in assessing and projecting future stock levels for those stocks listed above:

- a) For those stocks subject to analytical dynamic-pool type assessments, the status of the stock should be reviewed and management options evaluated in terms of their implications for fishable stock size in both the short and long term. In those cases where present spawning stock size is a matter of scientific concern in relation to the continuing productive potential of the stock, management options should be evaluated in relation to spawning stock size. As general reference points the implications of fishing at  $F_{0.1}$ ,  $F_{1990}$  and  $F_{max}$  in 1993 and subsequent years should be evaluated. The present stock size and spawning stock size should be described in relation to those observed historically and those expected in the longer term under this range of options.

Opinions of the Scientific council should be expressed in regard to stock size, spawning stock sizes, recruitment prospects, catch rates and TACs implied by these management strategies for 1993 and the long term. Values of  $F$  corresponding to the reference points should be given and their accuracy assessed.

- b) For those stocks subject to general production-type assessments, the time series of data should be updated, the status of the stock should be reviewed and management options evaluated in the way described above to the extent possible. In this case, the general reference points should be the level of fishing effort or fishing mortality ( $F$ ) which is calculated to be required to take the MSY catch in the long term and two-thirds of that effort level.

- c) For those resources of which only general biological and/or catch data are available, no standard criteria on which to base advice can be established. The evidence of stock status should, however, be weighed against a strategy of optimum yield management and maintenance of stock biomass at levels of about two-thirds of the virgin stock.
- d) Spawning stock biomass levels that might be considered necessary for maintenance of sustained recruitment should be recommended for each stock.
- e) Presentation of the result should include the following:
- i) for stocks for which analytical dynamic-pool type assessments are possible:
    - a graph of yield and fishing mortality for at least the past 10 years.
    - a graph of spawning stock biomass and recruitment levels for at least the past 10 years.
    - a graph of catch options for the year 1993 over a range of fishing mortality rates (F) at least from  $F_{0.1}$  to  $F_{max}$ .
    - a graph showing spawning stock biomass at 1.1.1994 corresponding to each catch option.
    - graphs showing the yield-per-recruit and spawning stock per-recruit values for a range of fishing mortality.
  - ii) for stocks for which advice is based on general production models, the relevant graph of production on fishing mortality rate or fishing effort.

In all cases the three reference points, actual F,  $F_{max}$  and  $F_{0.1}$  should be shown.

The Fisheries Commission with the concurrence of the Coastal State requests that the Scientific Council continue to provide information, if available, on the stock separation in Div. 2J+3KL and the proportion of the biomass of the cod stock in Div. 3L in the Regulatory Area and a projection if possible of the proportion likely to be available in the Regulatory Area in future years. Information is also requested on the age composition of that portion of the stock occurring in the Regulatory Area.

The Scientific Council should analyze the various technical measures which could permit the elimination of massive catches of juvenile flatfishes in the NAFO area. This should cover the implementation of minimum legal sizes and the introduction of a single basic mesh size. Special attention should be paid to multispecies analyses and especially technical interactions.

With respect to cod in Div. 3M, the Scientific Council is requested to provide advice on means of improving the utilization (yield-per-recruit) of the resource.

With respect to redfish in Div. 3M, the Scientific Council is requested to provide advice on means of reducing the harvest of juvenile fish, including such factors as seasonality of fishing.

7. With respect to squid in SA 3 and 4, the Scientific Council is asked to examine all data available to it and if possible to present options for the management of the stock that are based on the NAFO principles of optimum utilization and conservation. The Council is asked also to provide information on the distribution throughout the year of the stock and on the factors that determine whether the resource becomes available within the NAFO area.
8. With respect to capelin in Div. 3NO, the Scientific Council is requested to advise on the most rational level of management, on the basis of the main principles of NAFO: optimum utilization and conservation of stocks. The Council should evaluate the importance of capelin at different stages of their life history to the marine ecosystem and in particular, given the mass mortality following spawning, the significance of a management option that refers to harvesting during the period immediately prior to spawning. Management options such as maintaining minimum spawning biomass, a 10% and a 20% exploitation rate should be evaluated in terms of both maintaining stock size and the impact on the ecosystem.
9. The Scientific Council is asked to review further the question of a standard 130 mm mesh size for otter trawling in the Regulatory Area, and particularly to consider the species for which derogation would be required. The Council is asked to include consideration of area and season in this review, to advise on appropriate mesh sizes for fisheries for which the 130 mm would be too large, to advise on appropriate by catch limits for other species (in aggregate or individually) in fisheries using small mesh sizes and to report on any interactions between the various fisheries.
10. The Scientific Council is asked to consider the question of a minimum fish size for cod in the different parts of the Regulatory Area, both in terms of the current regulation of mesh size in otter trawls and in terms of increasing yield per recruit.