

Meeting of Scientific Advisers to Panel 5

Commission Headquarters
St. Andrews, N. B., Canada
January 27, 1953

Present: Messrs. A.W.H. Needler, W. Templeman, W.R. Martin, H.B. Hachey, G.F.M. Smith, of Canada; L.A. Walford (Chairman), H.W. Graham, C.C. Taylor, J. Clark, G. Kelly, of United States; E.M. Poulsen, J. Cote, of the International Commission for the Northwest Atlantic Fisheries.

Method of Measuring Meshes for Purpose
of Regulation of Haddock Fishery

It was agreed to recommend approval of the attached proposed amendment to the mesh regulation already adopted by the Commission for the haddock fishery of Subarea 5 with the following reservations:

(a) It was agreed to recommend a definition of the term "cod-end" in some such words as the following: "For purposes of this measurement the cod-end shall be considered to include not more than the last fifty meshes." Such a definition might be added to the attached proposed amendment and would obviate the necessity of measuring an unnecessarily large number of meshes, and also avoid the possibility of an undesirably small mesh in the cod-end being offset legally by large meshes in a lengthening piece.

(b) It was reported that some improvement of the mesh gauge would be required to make it meet Government standards. It was recommended that the pressure with which the gauge must be inserted into the meshes be changed from "12 pounds" to "10 to 15 pounds".

Vessels to Continue Fishing with Present Small-Meshed Gear

It was reported by the United States scientists that arrangements had been made with the New England fishing industry to have six "study groups" of six trawlers each continue to fish with gear of the meshes which have been in use hitherto in such a manner that six trawlers would be using this gear at all times. Present arrangements are adequate to continue such fishing with the small-meshed gear for three years, but the probable need for extending the arrangement for a considerably longer period was emphasized.

Measurement of the Effects of the Experimental Mesh Regulation

It had been proposed in earlier meetings that the effects of the experimental mesh regulation be measured by comparing the relationship between relative abundance of year-class and total poundage taken from that year-class before the

regulation comes into effect with the same relationship after. In support of the value of this criterion it was reported that during the recent stable condition of the fishery there has been a correlation of .96 between the relative abundance of two-year-old haddock as indicated by catch per effort and the total number of fish taken from the age class concerned, and that there was a correlation of about .76 between the relative abundance of two-year-olds and the total weight.

With this degree of correlation it will still be necessary to have complete data on a number of year classes if the effects of the regulation are to be estimated. It was further pointed out that it will be about five years before we shall know reasonably well the yield from the first year class which has the full benefits of the regulation. It seems, therefore, that it will be necessary to continue the comparison for at least ten years, and probably twenty.

Other Criteria of Relative Abundance of Two-Year-Old Haddock

In addition to the continued fishing with the present small-meshed gear in order to obtain an estimate of the relative abundance of two-year-old haddock comparable with similar estimates made before the regulation comes into effect it is recommended that estimation of the relative abundance of two-year-olds be attempted in two other ways. It is proposed that the catch per effort of two-year-old haddock by the old small-meshed gear and by the larger-meshed gear required by the regulation be compared in the hope that the new gear will catch enough two-year-old haddock to give a reliable comparable estimate of relative abundance. It is further recommended that fishing be conducted with small-meshed gear by a research vessel to obtain figures for the relative abundance of two-year-old and of smaller haddock. Data of this kind are available for three of the years before the regulation comes into effect.

Research Program by United States in Subarea 5

The group reviewed the program for 1953 of the Woods Hole Laboratory of the United States Fish and Wildlife Service, an outline of which is attached. The group approved of this program as far as it goes but noted that operation of the research vessel is contemplated for only three or four months in each fiscal year, and considers year-round operation of the vessel necessary if the needs of the Commission are to be met.

Program of Redfish Research

In accordance with the request of Panel 5 that special attention be given to research on redfish, the group considered the research program on this species. Its views are included in a report to the Special Committee on the Commission's Research Program.

Research Program by United States for 1953

The Research Program of the Woods Hole Laboratory for 1953 in the Convention Area is here presented in outline.

1. Analysis of landings of haddock. The analysis of the Georges Bank landings which has been conducted for many years will be continued. The accumulated records of landings from Nova Scotian banks will be used in initiating a study of variations in abundance on those banks.
2. Sampling at Sea. The program initiated in 1951 designed primarily to determine sizes and ages of haddock destroyed at sea will be continued. Much valuable information on haddock stocks supplementing landings data is being obtained from these observations.
3. Food habits of groundfish. An investigation of the food habits of haddock in Subarea V will be started in an attempt to determine whether the fluctuations in year class strength are related to availability of food.
4. Biology of Whiting. A study of the biology of the whiting in Subarea 5 waters has been started. Interest is directed not only to the whiting itself which is a commercially valuable fish but to its predatory relation to haddock and other groundfish.
5. Redfish studies. This investigation will be expanded a little during the year. The study of aging of redfish will be intensified. More work will be done on racial studies. The work on identity of stocks and relative abundance will be continued.
6. Effect of Mesh Regulation. Assessment of the effect of the experimental mesh regulation will require the analysis of haddock landings outlined above and in addition will require that certain vessels be licensed to fish with small-mesh gear in order to obtain a suitable measure of the abundance of two-year-old fish. Steps are being taken to provide for such "study boats" throughout the experimental period.

Studies to be conducted on Research Vessel.

- A. Selectivity of nets. Further experiments are to be conducted to determine the selectivity of larger meshes than those already tested. This is necessary in connection with any increase in mesh size which may be made later. Other experiments are necessary to refine our knowledge of the escapement of fish through various parts of the net.
- B. Census techniques. Recent census surveys of the banks indicate that improved techniques of sampling must be used to improve the accuracy of the population estimates. Various hypotheses regarding sampling will be tested. Adequate sampling with a research vessel can greatly improve predictions of catch by revealing strengths of year classes before they are large enough to be taken by commercial vessels.

C. Egg and larvae surveys. Three rapid surveys of Georges Bank and the Gulf of Maine will be made in the spring and summer to determine the distribution and abundance of haddock eggs and larvae and another survey will be made in the fall in an attempt to follow the planktonic stages as they settle to the bottom. These studies are designed to determine when in the life history of the haddock the strength of year class is determined. The value of such surveys depends upon repeating them for many years.

Hydrographic observations made concurrently with the plankton collections will yield valuable information on the effect of water movements, temperature, and other factors on the fate of the planktonic stages.

D. Cooperation with the Woods Hole Oceanographic Institution. The W.H.O.I. has expressed keen interest in cooperating with the Woods Hole Laboratory of the Fish and Wildlife Service in its surveys of Subarea 5. Members of this institution have participated in joint planning for longterm research in the area. The Institution will contribute both equipment and personnel for some of the cruises planned.

E. Ways and Means. The program outlined above will require the operation of the Albatross III from the last of February until the end of September. However, funds are now available for operation only until June 30 when the fiscal year 1953 ends. It is expected that an allotment for vessel operation in fiscal 1954 will be made in an amount equal to that for fiscal 1953. It is planned to use this allotment to extend the Albatross cruises from July 1 to September 30. This will consume all funds for vessel operations in fiscal 1954 so that no spring cruises can be made in 1954. Annual year-round operations of a vessel in Subarea 5 is impossible with present appropriations.

65-2-6-53

Proposed Paragraph for Amendment to Mesh Regulation *

"For the purpose of this regulation the size of the mesh in the cod end of the net after reasonable use shall be the average of any single series of consecutive meshes extending the full length of the cod end measured at least 10 meshes from the lacings; the size of the mesh in any part of the net other than the cod end after reasonable use shall be the average of any twenty or more consecutive meshes measured at least 10 meshes from lacings; the meshes to be measured while wet with a flat wedge-shaped gauge having a taper of two inches in nine inches and a thickness of three thirty-seconds of an inch, inserted into the mesh under a pressure of twelve pounds."

* Proposed by the U.S. Industry Advisory Committee at Boston, December 2, 1952.

62-2/6/53

Proposed Paragraph for Amendment to Mesh Regulation *

For the purpose of this regulation the size of the mesh in the cod end of the net after reasonable use shall be the average of any single series of consecutive meshes extending the full length of the cod end measured at least 10 meshes from the lacings; the size of the mesh in any part of the net other than the cod end after reasonable use shall be the average of any twenty or more consecutive meshes measured at least 10 meshes from lacings; the meshes to be measured while wet with a flat wedge-shaped gauge having a taper of two inches in nine inches and a thickness of three thirty-seconds of an inch, inserted into the mesh under a pressure of 10 to 15 pounds.

For purposes of this measurement the cod end shall be considered to include not more than the last 50 meshes.

* This draft incorporates the modifications suggested by the Scientific Advisors to Panel 5 at their meeting in St. Andrews, New Brunswick, January 27-28, 1953.

67-2-9-53

