

Of all other broods to enter the fishery since 1931, three were really outstanding. The large 1936 brood was primarily responsible for increased catches of haddock in the late 1930's and the successful 1939 and 1940 broods provided good catches of haddock in the early 1940's. These three (1936, 1939, and 1940) yielded respectively 181, 181, and 145 percent more 2- and 3-year-olds than the average brood. The 1948 brood has contributed 250 percent more 2- and 3-year-olds than the average brood, far exceeding the yield of any other for which we have records.

## LITERATURE CITED

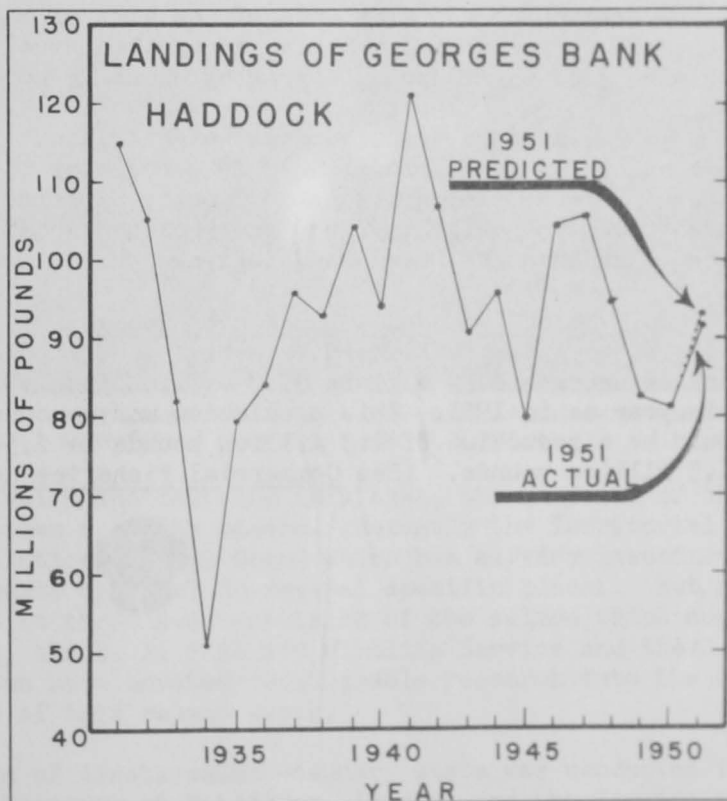
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## Part II--Accuracy of 1951 Prediction

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A method of predicting the catch of haddock from Georges Bank a year in advance has been developed by the U. S. Fish and Wildlife Service's Woods Hole Fishery Laboratory. This method is dependent on the analysis of detailed data which have been collected routinely by the Service since 1931. Required for this analysis are the statistics of catch (including especially measures of the effort expended in making these catches) and data on the age composition and on the lengths and weights of the haddock landed over a period of years. The method depends on establishing the relation of the decline in abundance of each age group between succeeding years, together with establishing the variations in abundance of the several age groups contributing to the fishery. Once these relations have been established, it is possible to predict the landings for any year, providing data on the landings and on the age composition of the year preceding are available.



Although it has not yet been possible to present the full details of this method, it has been used to predict the Georges Bank haddock catch. This prediction was made by Dr. William F. Royce to the National Fisheries Institute at their 1951 annual meeting in Boston, and excerpts of it were subsequently printed in the Food Field Report of April 1951. The prediction was for the "haddock year" of 1951, which differs by one month from the calendar year. The 1951 haddock year began February 1, 1951, and ended January 31, 1952.

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It was predicted that a considerably greater catch would be made from Georges Bank in 1951 than the 80.5 million pounds landed in 1950. Just how much increase could be expected over 1950 obviously depended upon how much fishing would be done on Georges Bank in 1951. Thus, predictions were made for each of several fishing intensities.

If, in 1951, the amount of fishing on Georges Bank were the same as in 1950, the catch to be expected was set at 88 million pounds; for a 10 percent increase in fishing effort, the prediction was set for 93 million pounds; and for a 10 percent decrease in effort, a catch of 83 million pounds was anticipated.

Now that the 1951 haddock year is over, it is possible to make an evaluation of the prediction.

The records show that there were 9.7 percent more days fished in 1951 than in 1950. With this increase in fishing, the catch was predicted to be 92.8 million pounds. Actually, 91.3 million pounds were landed. Thus the landings differed from the predicted by only 1.5 million pounds. The prediction proved 98.4 percent accurate.

The Georges Bank landings of haddock for a 20-year period (1931 through 1950) and the predicted and actual 1951 landings are shown in figure 1.

A prediction was also made of the size of haddock to be expected in the landings. It was predicted that "a larger than usual percentage of the 1951 catch would be good-sized scrod, averaging about  $2\frac{1}{4}$  pounds."

In the average year, haddock weighing about  $2\frac{1}{4}$  pounds (2- to  $2\frac{1}{2}$ -pound range) have accounted for approximately 29 percent of the landings. For 7 trips to sea made by Service biologists in 1951 fully 43 percent of the landings were composed of 2- to  $2\frac{1}{2}$ -pound fish. Thus, as predicted, considerably more of this size group were taken than are taken in an average year.

EDITORS' NOTE: Haddock Catch on Georges Bank to Decrease in 1952: The Service's North Atlantic Fishery Investigations predicts that the 1952 catch of haddock on Georges Bank will be 89.0 million pounds if the fishing effort is the same this year as in 1951. This prediction was announced on April 29 this year. This would be a reduction of 2.3 million pounds or 2.5 percent of last year's catch of 91.3 million pounds. (See Commercial Fisheries Review, May 1952, p. 20.)

