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## GEORGES BANK HADDOCK FISHERY -- CHANGES IN SCROD ABUNDANCE IN RECENT YEARS

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Georges Bank (fig. 1) has become a scrod <sup>1/</sup> haddock fishing ground during recent years due to an increased abundance of young haddock. Annual landings of scrod exceeded landings of large haddock in the Georges Bank fishery (fig. 2) for the first time in 1950, and have continued to do so every year since. Figure 3 shows how scrod landings have increased in relative importance.

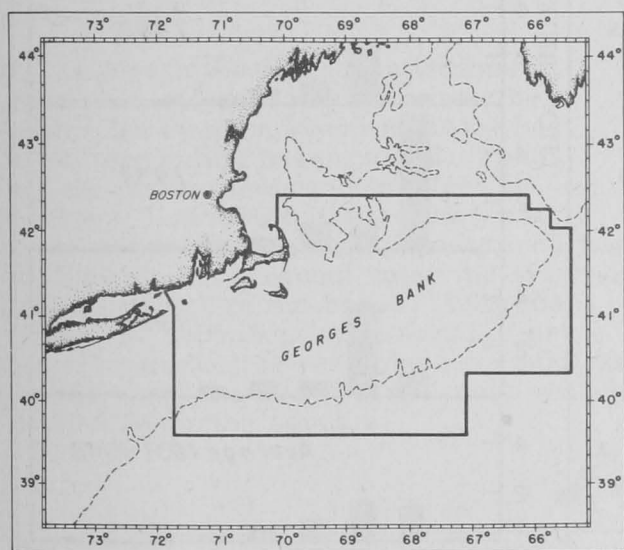


Fig. 1 - The area referred to as Georges Bank in this report.

In the 1951 fishery the 1948 year-class continued to dominate the landings and provided a great abundance of large scrod. <sup>3/</sup> The fish of the 1948 brood were three years old in 1951 and having added another year's growth by then were of a more desirable size.

Scrod have continued to dominate the fishery since 1951 due to a series of strong-year classes in alternate years, yielding large catches first of two-year-olds, then of three-year-olds. This phenomenon is demonstrated in figure 4, which shows the number of each age caught during an average day's fishing. The dominance of the 1948 year-class as two-year-olds in 1950 and as three-year-olds in 1951 is evident. The pattern is repeated for the 1950 and 1952 year-classes which dominated

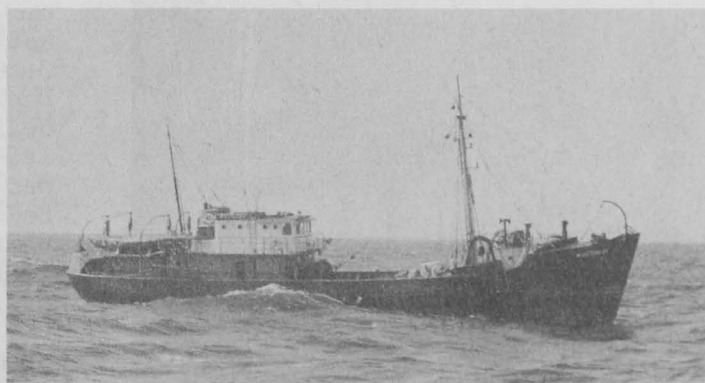


Fig. 2 - Typical otter trawler employed in the Georges Bank Fishery

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1/ Haddock weighing  $1\frac{1}{2}$ - $2\frac{1}{2}$  pounds are scrod.  
2/ Commercial Fisheries Review, June 1951.  
3/ Commercial Fisheries Review, August 1952.

the landings as two-year-olds in 1952 and 1954 and as three-year-olds in 1953 and 1955, respectively. The catch per day of two- and three-year-olds from the 1948,

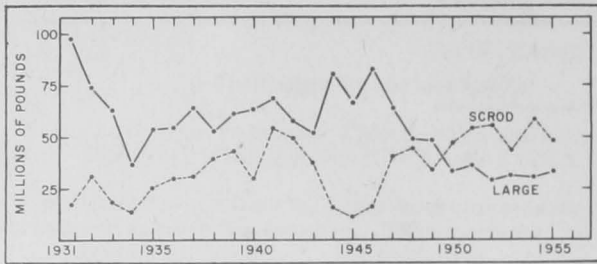


Fig. 3 - Landings of large and scrod haddock from Georges Bank.

1950, and 1952 year-classes was considerably higher than from the average year-class of the base period, 1931-1948. The catch per day of four-year-old and older fish was somewhat lower during 1950-1955. From the age of four years on, haddock move rapidly into the "large" category. As their abundance is being reduced at the rate of about 50 percent each year by the present intensive fishery, the yield of even the most abundant year-classes, such as the 1948, 1950, and 1952 broods, diminishes rapidly from four years of age on.

Whether scrod will continue to dominate the landings depends on the abundance of two-



Fig. 5 - Biologist measuring discarded haddock aboard Boston trawler.

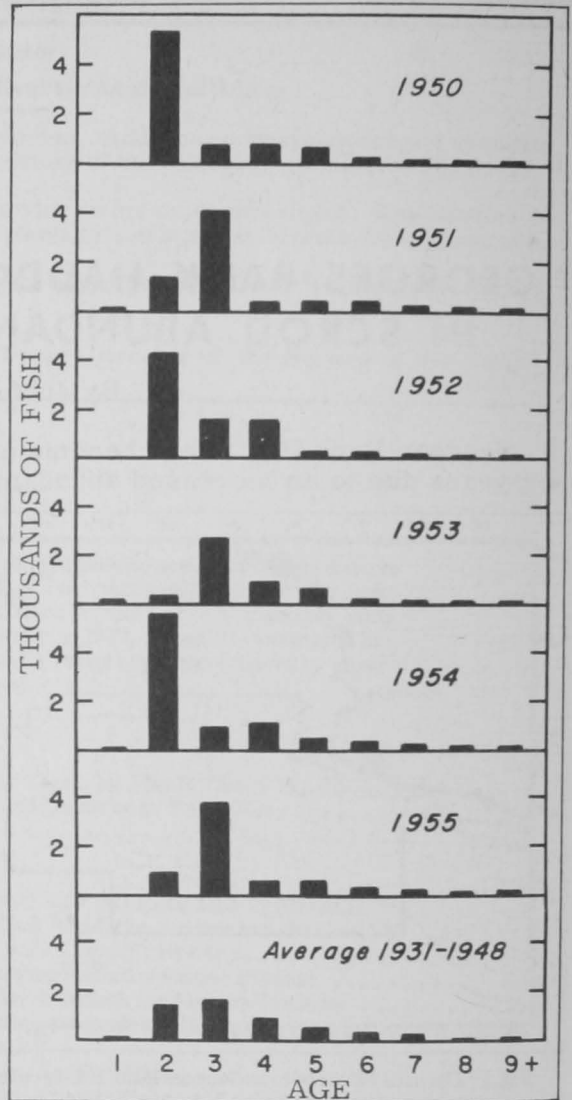


Fig. 4 - The catch per day of haddock from Georges Bank.

year-old haddock in the future. Because the 1953 year-class showed up so poorly as two-year-olds last year, we expect few three-year-olds in 1956 landings. Preliminary examination of 1956 records bears out this belief. The success of the 1954 brood cannot be accurately determined until next year, after the complete 1956 records have been analyzed. An accurate measurement of the 1955 year-class cannot be obtained until 1958. It is, however, possible to obtain an indication of the strength of year-classes from data on the quantity of one-year-old fish discarded in the fall of the year, a measure of which is obtained by Service biologists

aboard Boston trawlers (fig. 5). We are also able to judge the success of a year-class from catches of young of the year and one-year-old haddock taken in special small-mesh nets on the Service's research vessel Albatross III (fig. 6).

If our observations on abundance of young fish are correct, the abundance of scrod will be low during this current year. In the 1956 landings the quantity of large haddock landed is thus expected to surpass the quantity of scrod for the first time since 1949. It is likely that the scarcity of scrod will continue through 1957. More limited observations on the occurrence of the 1955 year-class indicate that it will be somewhat stronger than the brood of 1954 but not as strong as those of 1948, 1950, and 1952. Thus the scarcity of scrod could continue through 1958.

Although the large fluctuations in abundance of year-classes cannot be controlled by man, we can make the best use of what nature has provided. To this end the mesh regulation in effect on Georges Bank will increase the yield from each year-class as it passes through the fishery, but it cannot raise the original abundance of the brood. With the fishery so dependent upon scrod, a series of unproductive year-classes could cause a reduction in landings in spite of the regulation. The use of large mesh will, however, reduce the possibility of such a decline becoming serious.

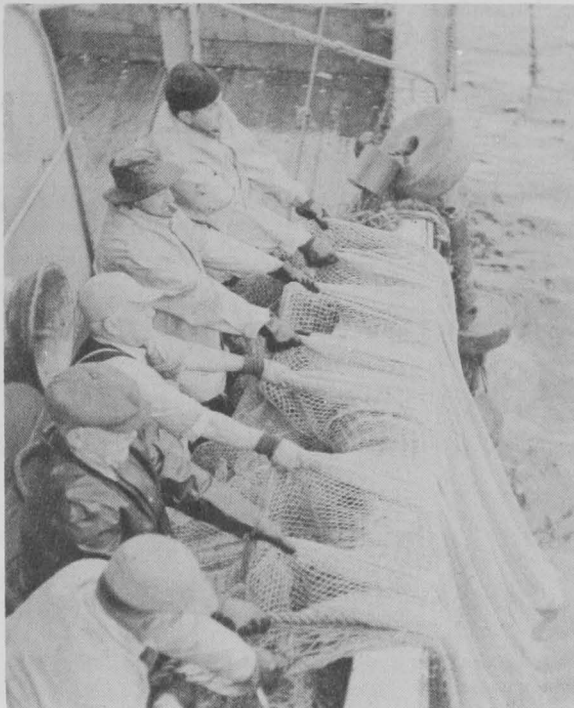


Fig. 6 - Hauling trawl aboard the U. S. Fish and Wildlife Service's research vessel Albatross III on a small haddock survey.



#### SPINY LOBSTER ALONG THE FLORIDA KEYS TRAVELS

Spiny lobsters were tagged by scientists from the Miami Marine Laboratory at various locations along the coast from Hillsborough to Key West. Over 5,000 tagged individuals were released from 1945 to 1949 and of these 251 were recovered. Some of the longest distances from point of release to point of reported recovery were from Pacific Light to near Key West, about 120 miles south, and from Upper Matecumbe to Hillsborough Light, about 130 miles north. In 1947 one lobster tagged at Cudjoe Key was recovered 123 days later near Loggerhead Key, a distance of 100 miles. The other long migrations took over a year.

Most recoveries were from less than 6 miles from the point of release after being free an average of 71.5 days.

Seasonal movements between inshore and offshore waters have been associated with the breeding habits and changes in water temperature.

During the months of February to April, the lobsters tend to collect in certain inshore waters while mating. From April to June the females move into deeper water, where the eggs are laid, and return again to the inshore waters during July and August. Spiny lobsters also tend to move offshore during the cold months of December and January.

--Sea Secrets, The Marine Laboratory,  
University of Miami, Coral Gables, Fla.