

Charleston

TAGGING STUDIES TO DETERMINE
THE OFFSHORE-INSHORE EXCHANGE
OF GROUND FISH OFF OREGON AND WASHINGTON

PROGRESS REPORT NO. 1

March 1, 1962 - September 15, 1962

UNITED STATES ATOMIC ENERGY COMMISSION
CONTRACT NO. AT (45-1) 1731

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November 1962

INTRODUCTION

On March 1, 1962 a cooperative study was begun by the Atomic Energy Commission (AEC), the U. S. Bureau of Commercial Fisheries (BCF), and the Oregon Fish Commission (OFC) to determine the offshore-inshore movements of Dover sole (Microstomus pacificus) and blackcod (Acanlogadus fimbria). Prior to this, however, tagged Dover sole were released on cooperative cruises by the BCF and the OFC on the AEC stations southwest of the Columbia River. Tagged fish were released from the vessel M/V Comandante (under charter to the BCF) and the BCF vessel John N. Cobb.

In June 1962 an Aquatic Biologist I was assigned to the project and a sustained effort has been made to recover tags from the commercial landings at Oregon ports.

METHODS

The tagged fish were released in depths ranging from 50-400 fathoms at 25-fathom intervals on about a 40-mile line extending in a southwesterly direction from the Columbia River. Fish to be tagged were taken with a 400-mesh commercial otter-trawl net with a 1-1/2-inch mesh liner in the cod-end, and the tows were of 30 or 60 minutes duration. At the end of a tow the catch was spilled on the deck and 100-300 viable Dover sole or 50-150 blackcod were sorted into a live tank. Fresh sea water was supplied by the vessel's pump. Several types of tags were used including plastic dart tags of vinyl tubing and Petersen discs attached to the fish with stainless steel pins. Tag recoveries were made at Oregon ports by interviewing fishermen at the docks and by visiting the filleting plants at regular intervals. A reward system was established in 1962 as an added incentive to the fishermen to return tagged fish with more complete recovery data.

TAGGING

Dover sole

A total of 4,433 Dover sole was tagged on six cooperative cruises made on the AEC track line during the period June 1961-September 1962. The length-frequency distributions of the tagged Dover sole are shown in Figure 1. The winter cruises have not been productive primarily because bad weather limited fishing time, and fish have not been caught in numbers at the shallower depths. The tagged Dover sole released at 25-fathom depth intervals and subsequent recoveries are shown in Figure 2. Fairly good numbers of releases have been made in 100-250 fathoms. Dover sole have not been found abundantly in depths greater than 275 fathoms.

Blackcod

The tagging of blackcod was begun in June 1962 and will be continued on future cruises. On the June and September cruises in 1962 a total of 1,400 blackcod was tagged. The length-frequency distributions of the tagged blackcod are shown in Figure 3. The blackcod tagged at 25-fathom depth intervals are shown in Figure 4. Blackcod have been most abundant between 200-400 fathoms, and most of the tag releases have been made in this depth range.

TAG RECOVERIES

Dover sole

As indicated in Figure 2, 63 tagged Dover sole released on the AEC track line have been recovered through September 15, 1962. These recoveries have been made by Oregon trawlers fishing near the track line in 25-150 fathoms. The limited amount of commercial fishing effort deeper than 150 fathoms has restricted recoveries beyond this depth. An example of the inshore movement is shown in Figure 5 from Dover sole released in 225 fathoms. Subsequently,

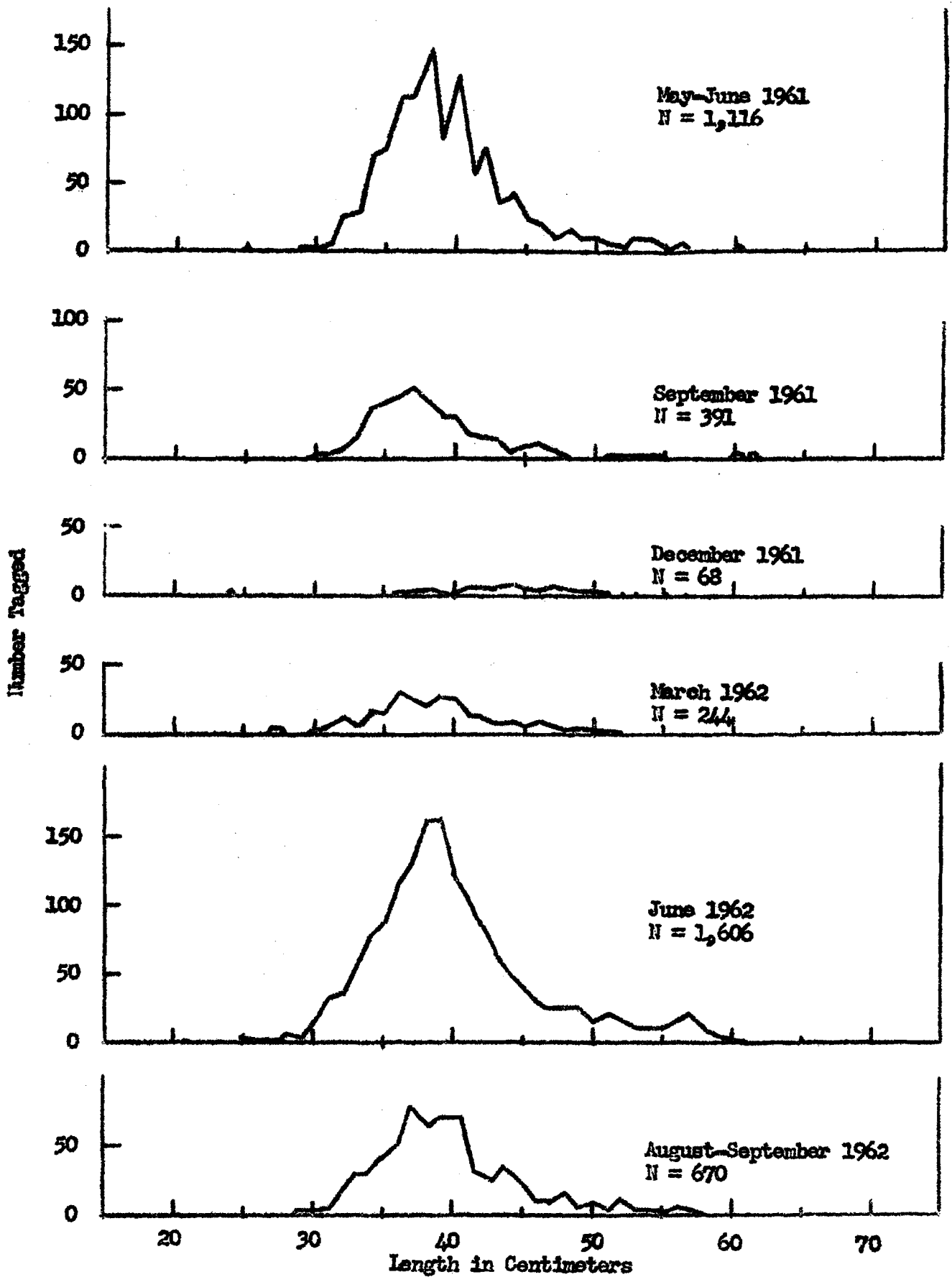


Figure 1. Length-Frequency Distributions of Dover Sole Tagged, 1961-62.

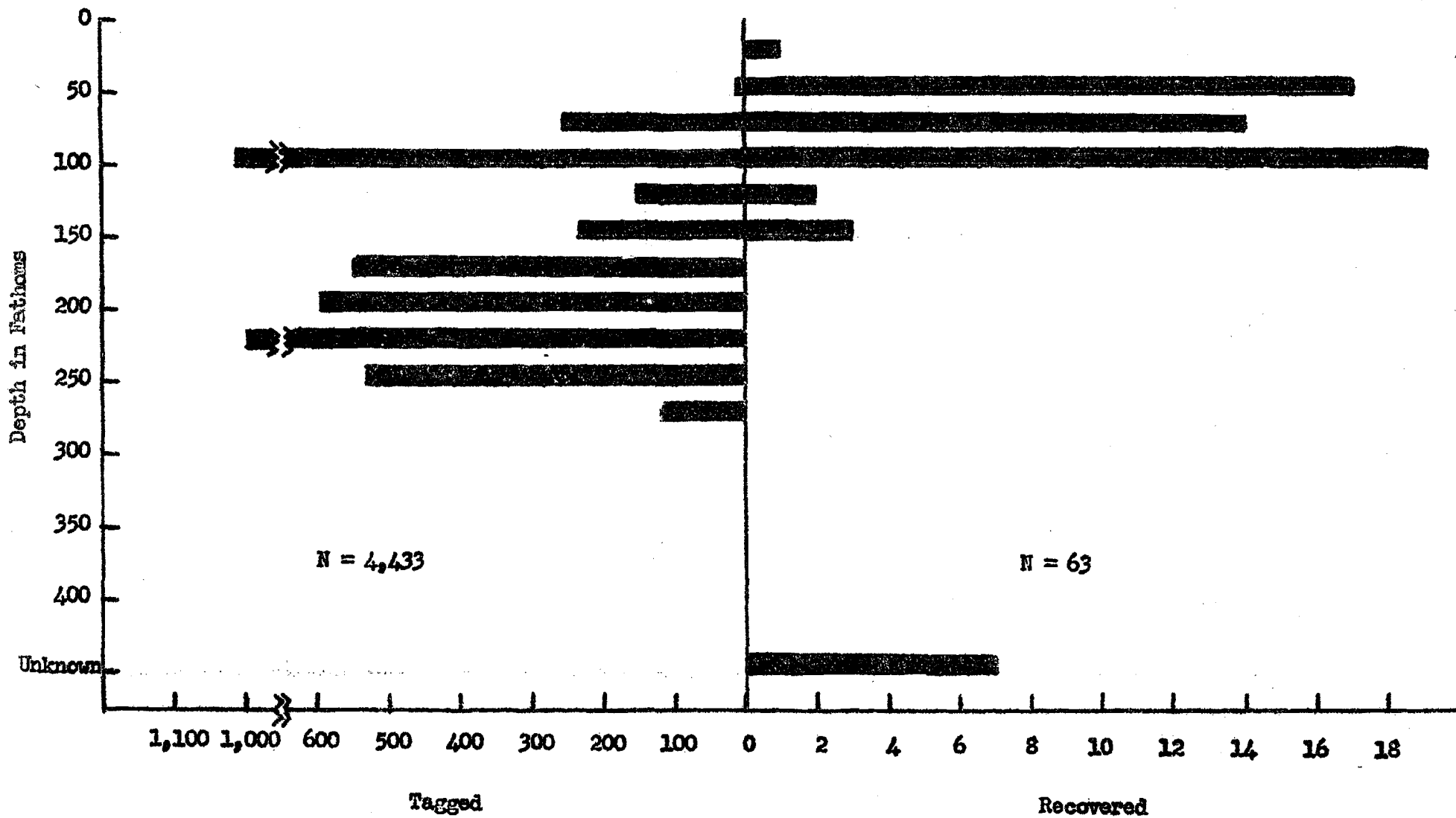


Figure 2. Numbers of Dover Sole Tagged and Recovered at 25-Fathom Depth Intervals.

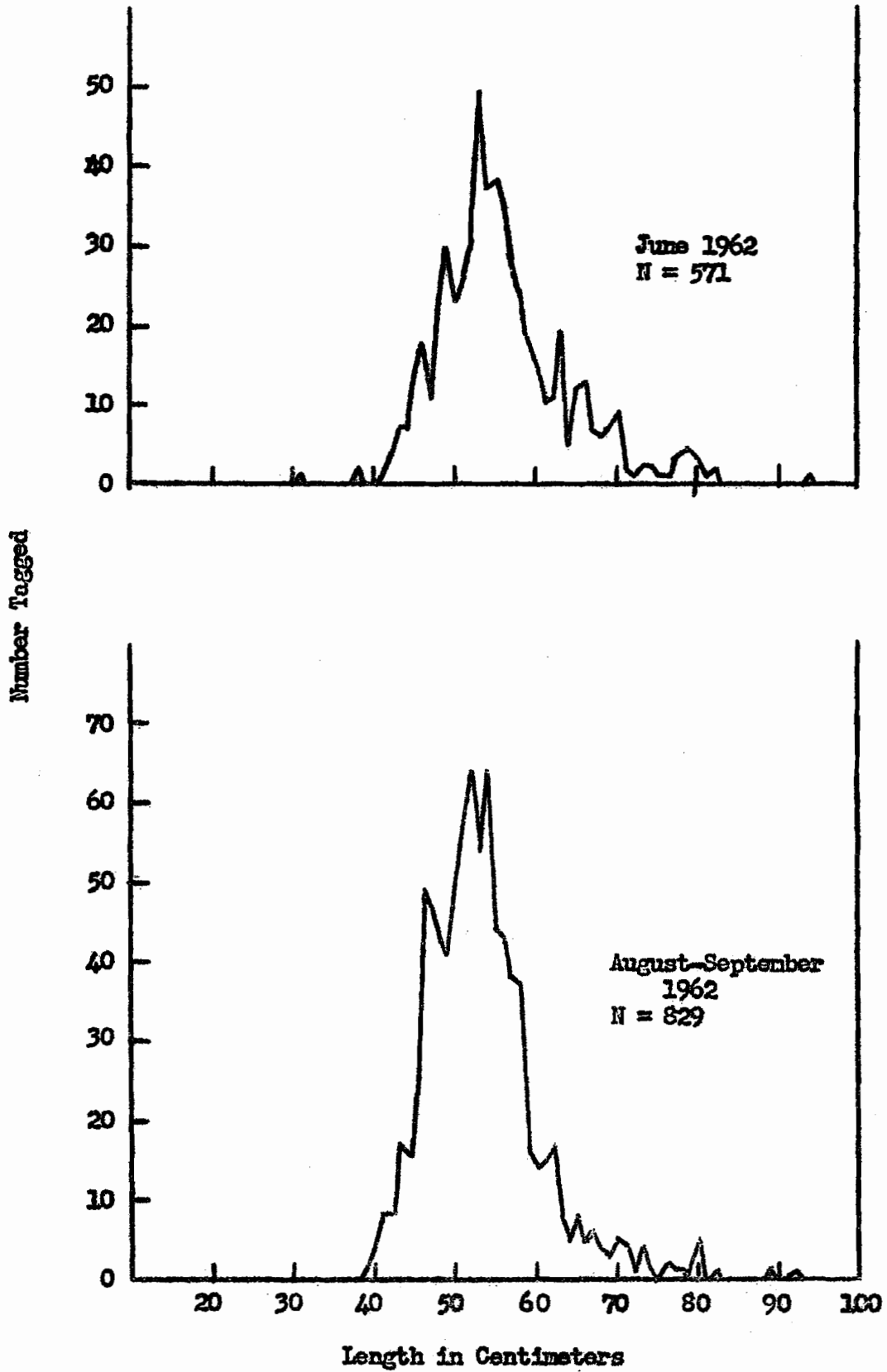


Figure 3. Length-Frequency Distributions of Blackcod Tagged, 1962.

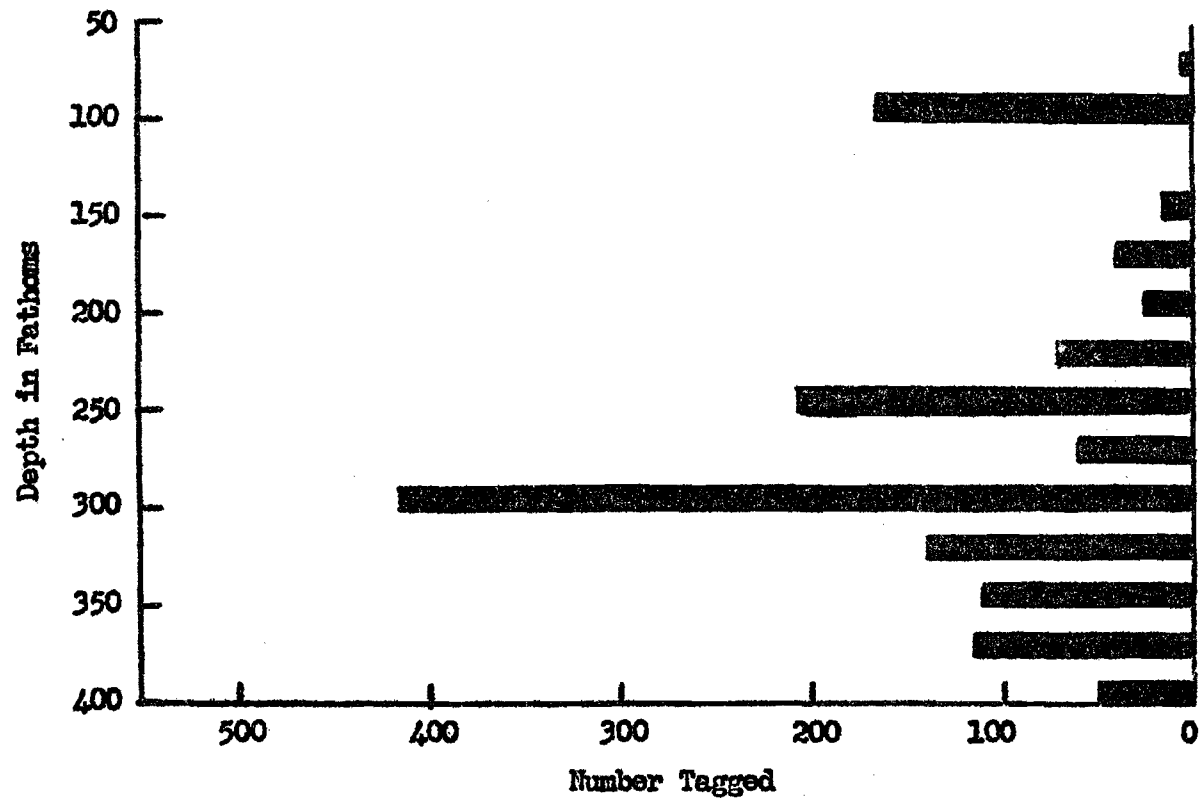


Figure 4. Numbers of Blackcod Tagged at 25-Fathom Intervals, 1962.

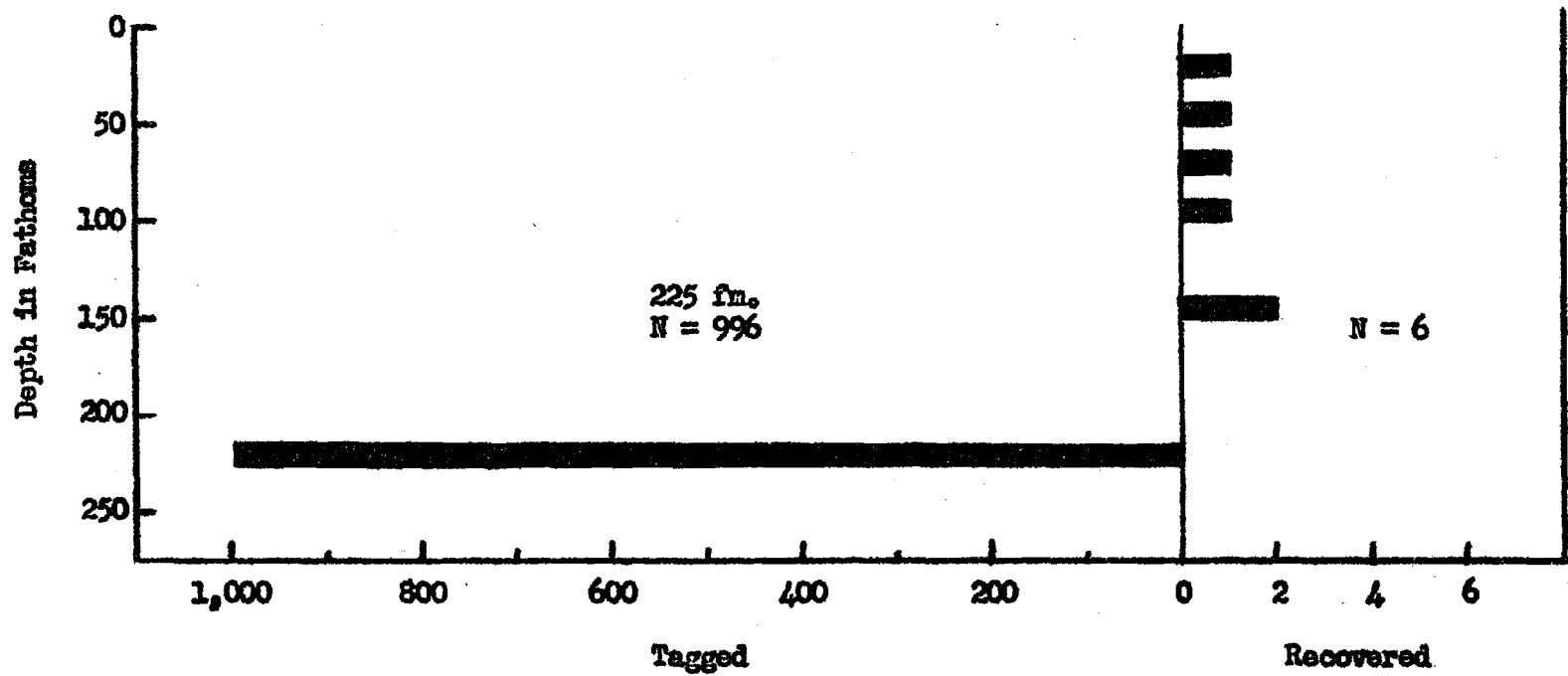


Figure 5. Numbers of Dover Sole Released at 225 Fathoms and Recoveries Made at Other Depths.

recoveries were made by the trawl fleet at 150, 100, 75, 50, and 25 fathoms. Although the number of recoveries is small, a definite inshore movement can be observed from nearly all of the other tagging areas. As the total number of tagged fish is increased in the future, the research vessels can be expected to recover tagged fish in depths beyond the areas sampled by the commercial trawl fishery to give a more complete picture of Dover sole movements.

Blackcod

To date no recoveries of blackcod have been made. This can be attributed to the relatively few tagged and to the lack of fishing effort in the depths where the blackcod have been released.