

Job Report

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Project Name: Fisheries Survey of Area M-1.
Period Covered: February 1, 1959 to January 31, 1960. Job No. B-3

Study of the Commercial Shrimp of Area M-1

Objectives: To determine the species of commercial shrimp present in Sabine Lake and to gather information concerning their size and abundance throughout the year.

Procedure: Collecting stations, thirteen in number, were set up in Sabine Lake for the gathering of information concerning commercial shrimp. These were so placed as to give equal sampling of all portions of the Lake. Their location is indicated in Figure I.

Collections were made at each of these stations once a month except in cases of equipment failure and severe weather and more often during the summer months. These collections were made by means of a 10 foot otter trawl with a 1.5 inch stretch mesh. The doors used on the trawl measured 17 x 20 inches. The trawl was pulled at a standard speed of 1,300 rpm by the Boat Drum during times of collection. The exact rate in miles per hour is not known.

All shrimp captured were measured to the nearest mm except in a few cases where the catch was extremely large. In these cases, a large sample taken at random was taken and measured while the remainder was counted.

Length frequency curves were prepared for each species during months in which the catch was large enough to make such a curve valid. See Figure II.

Figure III shows the average length per month and the average catch per ten minute collection per month for the white and brown shrimp.

The per cent of the total catch per month that was of legal size was also noted on Figure II.

The publication, "Length-Weight Count for Shrimp" written by Mr. Ed Chin of the Fish and Wildlife Service, was used to determine the length considered to be legal for each species.

Findings:

Penaeus setiferus (Linnaeus) - White Shrimp - The white shrimp was the most numerous of the commercial species present. The population of the white shrimp did not reach the proportions this year that it has in the past. The data obtained from the collections during the year indicate that the population of white shrimp did not reach a level suitable for economic harvest except for use as bait.

FIGURE I
Collecting Stations in Sabine Lake

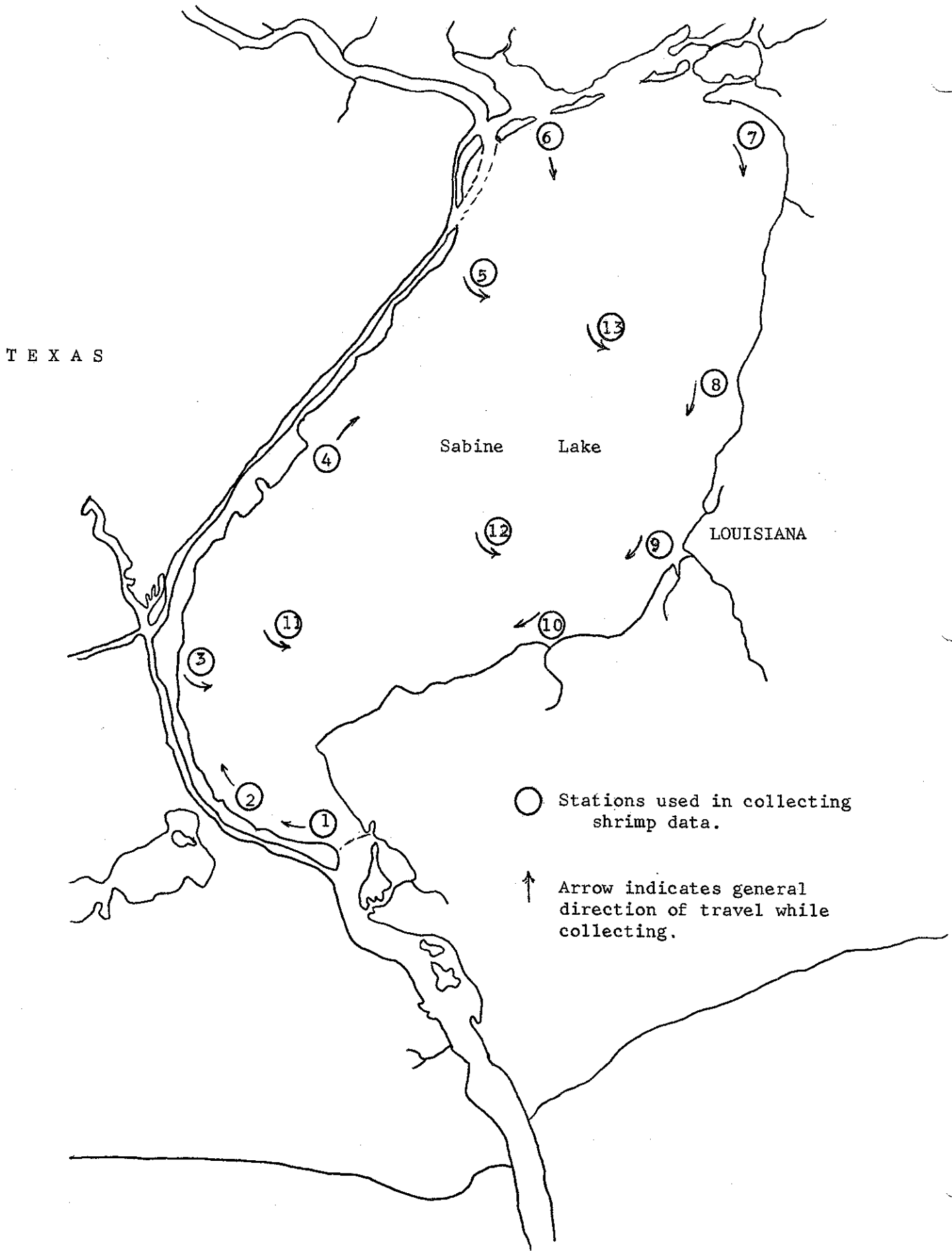
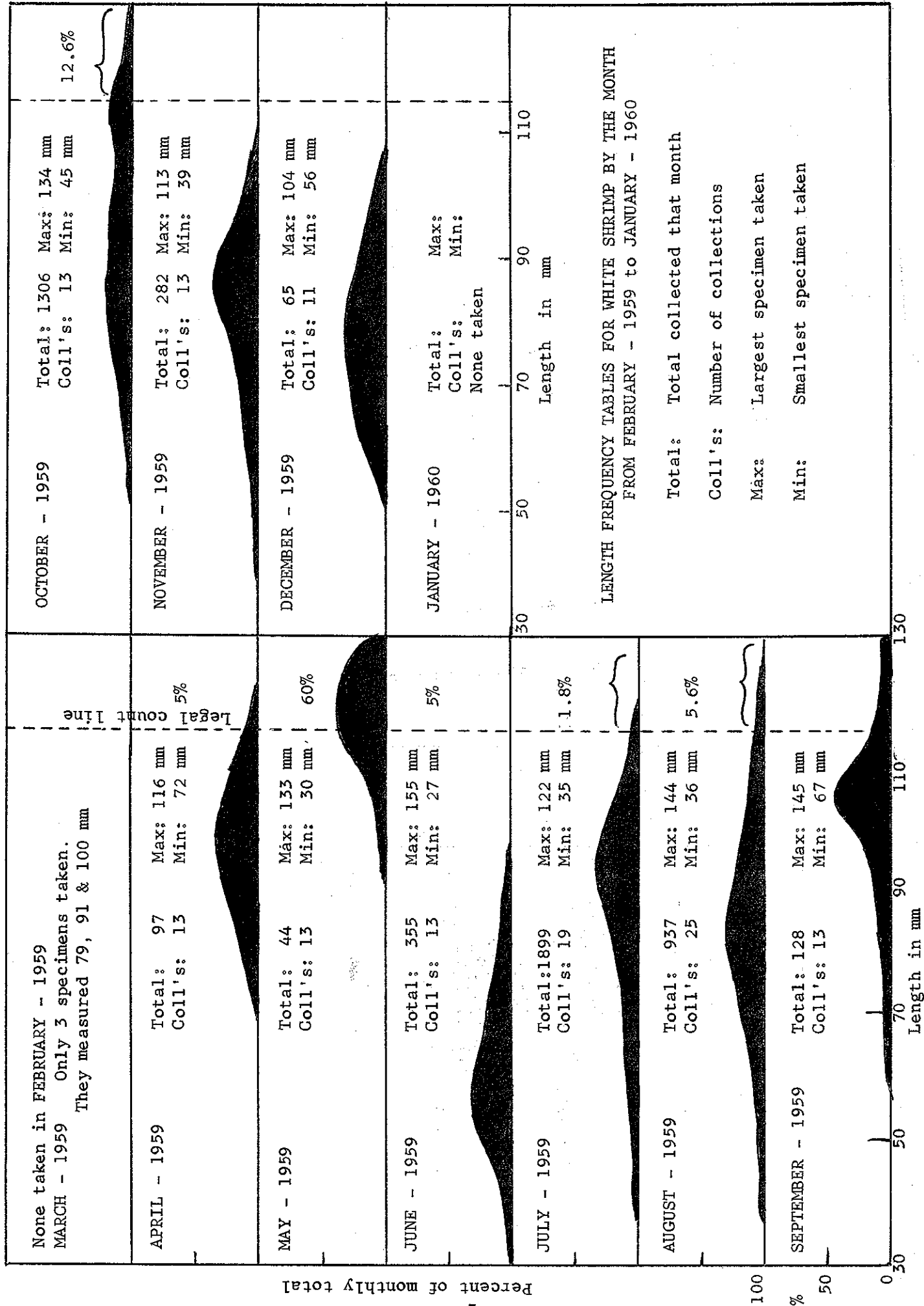


FIGURE II



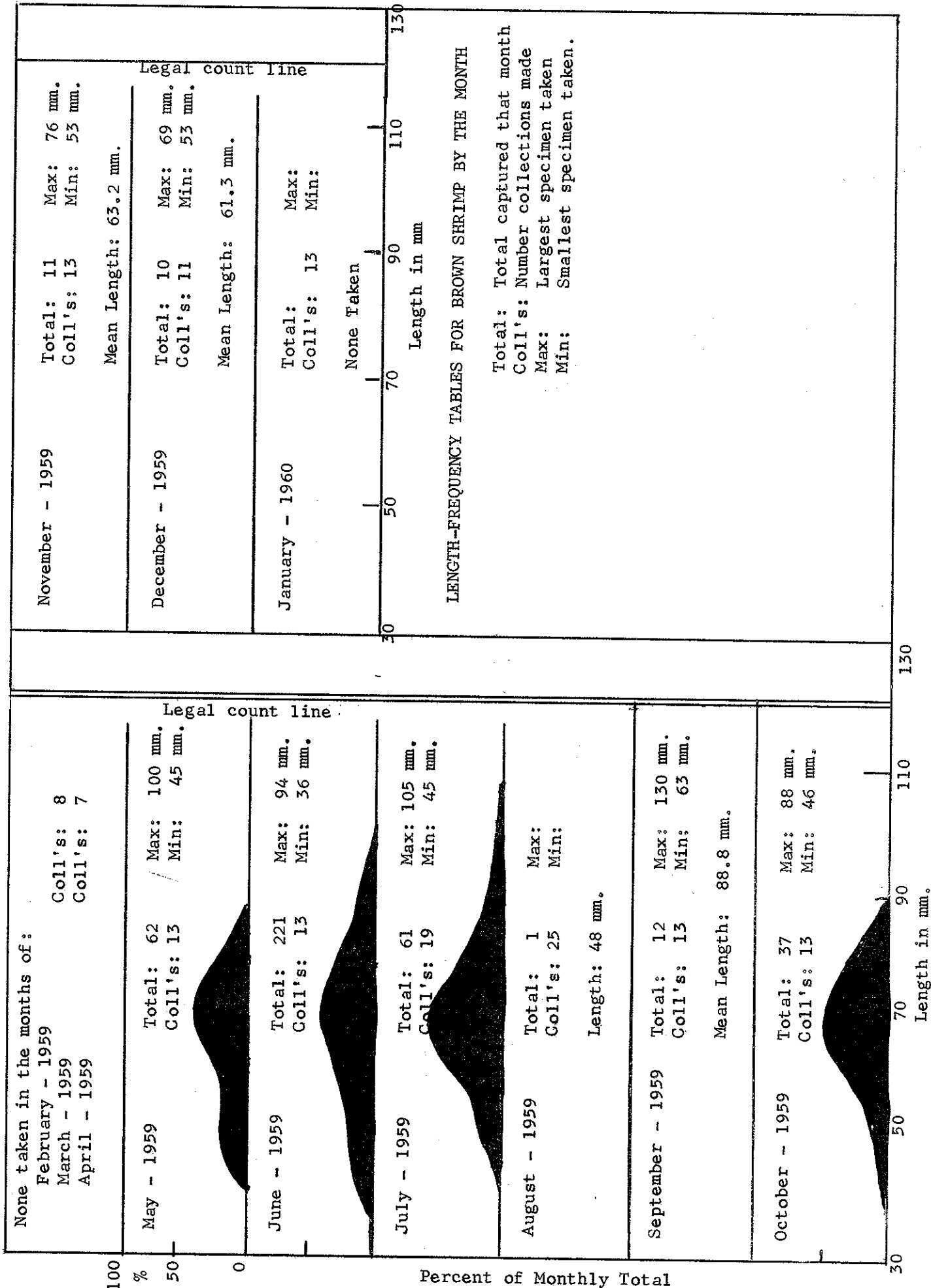
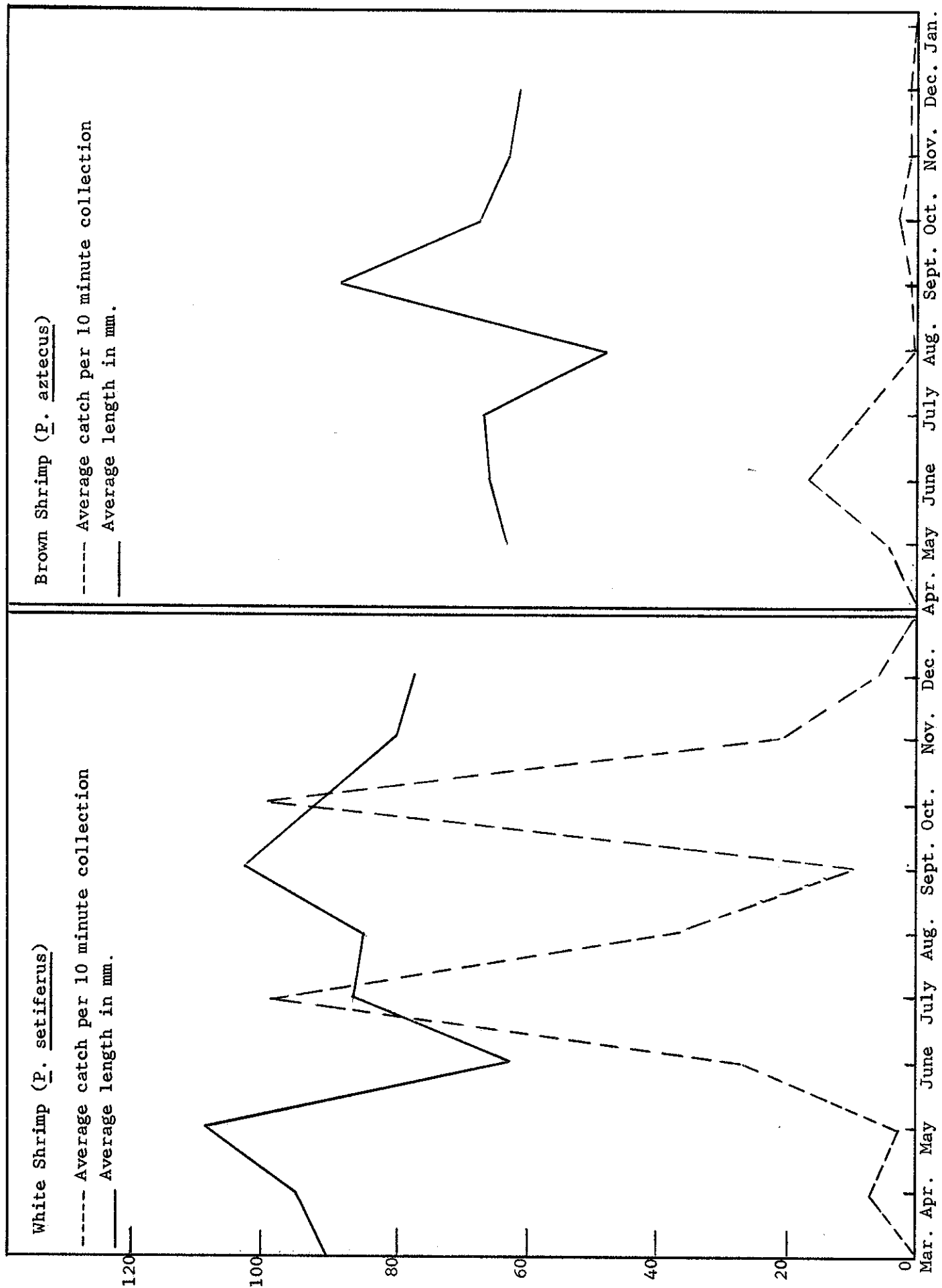


FIGURE III



The highest per cent of the monthly total to reach the legal size occurred in May, 1959. This high was 60%; however, only 44 white shrimp were collected that month in thirteen collections. In August, when the Lake was opened to commercial shrimping, only 5.6% of the total catch was of legal size. In September the figure rose to 17.1%. In October it was 12.6%. No legal size shrimp were taken during the remainder of the season which closed the 15th of December.

Penaeus aztecus Ives - Brown Shrimp - The brown shrimp was also found to be present in Sabine Lake, but it occurred in smaller numbers and sizes than did the white shrimp.

Only one brown shrimp was captured of legal size. This one was taken in September, and it was 130 mm long.

Xiphopenaeus kroyeri (Heller) - Sea Bob - The sea bob was only a straggler in Sabine Lake. In the late fall and early winter, the sea bob is sought commercially in the shallow Gulf near Sabine Pass and is taken in large numbers.

Only three individuals of this species were captured, and all three were taken the same day and at the same station. They were collected at station 1 on October 30 in water with a salinity of 18.7 ppt. This station is located at the lower end of the Lake and there was a strong tidal flow into the Lake at the time of capture. The three specimens measured 47, 65, and 75 mm.

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