

Job Report

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Project Name: A Study of the Texas Shrimp Populations

Period Covered: January 1, 1964 to December 31, 1964 Job. No. 7

A Study of the Juvenile Shrimp Populations of the
Upper Laguna Madre

Abstract: Brown shrimp (Penaeus aztecus) were present in the lagoon from March through November of 1964 with the largest concentrations appearing in June and September. Pink shrimp (Penaeus duorarum) declined from the previous year and white shrimp (Penaeus setiferus) remained scarce.

Objectives: To determine the seasonal abundance, growth rate and size of juvenile shrimp populations in the upper Laguna Madre.

Procedures: Shrimp samples were collected within three days of the first and fifteenth of each month from March through November. A complete set of shrimp samples consists of: three 15-minute drags with a 10-foot trawl of $1\frac{1}{4}$ -inch stretched mesh webbing lined with $\frac{1}{2}$ -inch stretched mesh net, and 4 seine hauls made with a 60-foot bag seine of $\frac{3}{4}$ -inch stretched mesh webbing covering 4000 square feet. One trawl station was located at Pita Island in three to four feet of water and the other two stations were in the Intracoastal Waterway at Marker 23 and Marker 201 (Figure 2). Seine stations were located at: (1) Tyler's Point, (2) Marker 65, (3) Point of Rocks, and (4) the landcut near Marker 201 (Figure 2). Measurements of water temperature and salinity were recorded at each station visited (Job Report No. 18, "Hydrographic and Meteorological Study of the Upper Laguna Madre", 1965). Shrimp were measured, to the nearest millimeter, from the rostrum tip to the tip of the telson.

Findings: Data collected for this report are summarized in Table 1 and graphically compared to 1963 data in Figure 1. A map showing station locations is presented in Figure 2.

Seining and trawling operations were hindered at times by dense vegetation and mud lumps. However, these same problems were encountered in 1963 so the data collected during the past two years are comparable.

Penaeus aztecus - Brown shrimp were the dominant shrimp in the lagoon during 1964. They were present in the area from April through November and most abundant in June and September. They ranged in size from 28 mm. to 100 mm. but most of those caught were between 60 and 90 mm. long. Figure 1 shows a slight increase in the 1964 brown shrimp sample catch over the 1963 samples.

Penaeus duorarum - Pink shrimp were found in the lagoon during the 1964 sampling period. This species decreased in numbers from the previous year as indicated by the 39.6 pink shrimp per trawl caught during May 1963 compared with 0.4 pink shrimp per trawl in 1964.

Penaeus setiferus - White shrimp prefer water less saline than the Gulf for nursery grounds. For this reason almost no white shrimp have been caught in the Laguna during the past three years. The few white shrimp that were caught in the 1964 sampling were evidently stragglers that wandered in.

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Table 1: Shrimp Data Collected in the Upper Laguna Madre during 1964.

TRAWL SAMPLES	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.
No. Samples	6	7	6	6	3	5	3	3	6
No. Whites per Samples	0	0	0	0	0	0	1.33	1.00	0.33
No. Browns per Samples	0	0.43	1.50	20.83	0	6.20	39.33	0	2.67
No. Pinks per Samples	0.16	0.14	0.67	0	0	0	0	0	0
SEINE SAMPLES									
No. Samples	0	8	8	8	5	6	8	4	8
No. Whites per Samples		0	0	0	0.80	0	1.50	0.50	1.50
No. Browns per Samples		1.00	48.00	51.75	13.60	3.00	8.12	0.25	4.62
No. Pinks per Samples		0.38	0.62	0	0	0	0	0	0.88

BROWN SHRIMP SIZES

DATE	SIZE RANGE IN MM.	MODAL SIZE
May 1	33-69	55-60
May 15	28-81	60-65
June 1	43-100	80-85
June 15	32-97	75-90
July 1	42-93	80-90
Sept. 1	30-85	60-65
Sept. 15	27-85	60-70
Nov. 15	48-92	70-75

Note: Maximum and minimum lengths and modal sizes in millimeters given only in those periods during which enough shrimp were measured to indicate their modal size.

Figure 1: Number of shrimp collected per trawl sample by species and month (1963-64)

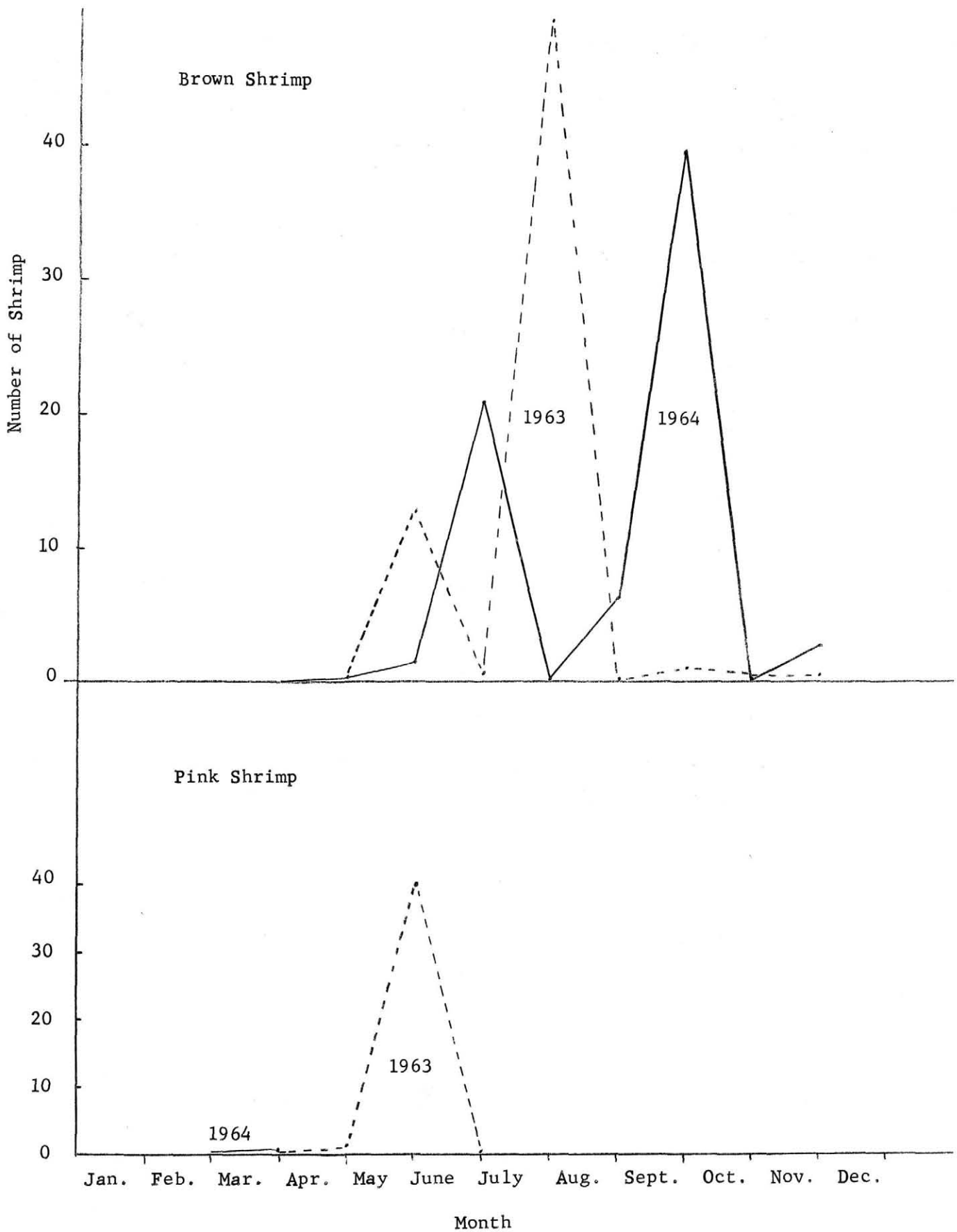


Figure 2: Locations of shrimp stations in the Upper Laguna Madre

