

Job Report

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Project No.: MC-R-3 Date: December 9, 1965
Project Name: Studies of the Blue Crab Populations of the Texas Coast
Period Covered: January 1, 1964 through December 31, 1964 Job No.: 5

Population Studies of the Blue Crab Callinectes sapidus Rathbun,
in the Aransas Bay System

Abstract: In 1964 10-foot trawl samples, blue crabs (Callinectes sapidus) were 92 per cent less abundant than in 1961, while bar seine samples showed a 56 per cent decrease in abundance over 1962 figures. Bar seine samples in 1964 showed an increase in crab abundance by 25 per cent as compared to 1963. The decrease in crab landings since March 1962 may be contributed to a reduction of river flow and runoff which have induced higher salinities throughout the bay system.

Objectives: To determine the seasonal abundance and movements of the blue crab as related to environmental conditions. To determine the spawning success of the blue crabs in the near shore gulf.

Procedure: Blue crabs were sampled twice monthly at four stations with a 10-foot trawl (Figure 1). The 10-foot trawl was constructed of one and one-fourth inch stretch mesh webbing with a one-fourth inch bar mesh liner in the cod end. Crabs were also sampled with a 60-foot seine and a 6-foot bar seine. The seine was 6-feet deep and was constructed of three-fourth-inch stretch mesh webbing. The bar seine was made of one-fourth inch bar mesh webbing. Hydrographic and climatological data were recorded at the time of sampling. Water temperatures were measured in degrees centigrade and salinities were determined with specific gravity hydrometers and Knudsen's Hydrographic tables. All crabs caught were measured in mm (distance between the lateral spines), sexed and examined for external parasites.

Findings & Discussion: The following table gives catch per unit of effort for

1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100

Since 1961 blue crab catches in the 10-foot trawl have decreased 92 per cent while 60-foot seine catches in 1963 and 1964 showed increases in the number of blue crabs per acre. An evaluation of the effectiveness of each gear type for catching blue crabs is needed to explain conflicting differences in catch rates.

Commercial Landings

Large commercial catches of blue crabs were made in 1961 and 1962 (Figure 5). Increased fishing pressure was believed responsible for these increases in landings. A decline in crab landings in 1963 and 1964 was accompanied by a reduction of fishing effort, due mainly to a decrease in the availability of crabs.

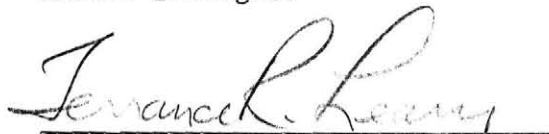
Comments: During 1960, 1961 and in the winter of 1962 when salinities in this area were in the twenties (ppt), good catches of juvenile and sub adult crabs were made with the 10 foot trawl.

In 1963 and 1964, salinities climbed into the high thirties and low forties and a subsequent decline in the number of juvenile and sub-adult crabs caught in the 10 foot trawl was noted in most bay areas. Evidently high salinities limit blue crab abundance.

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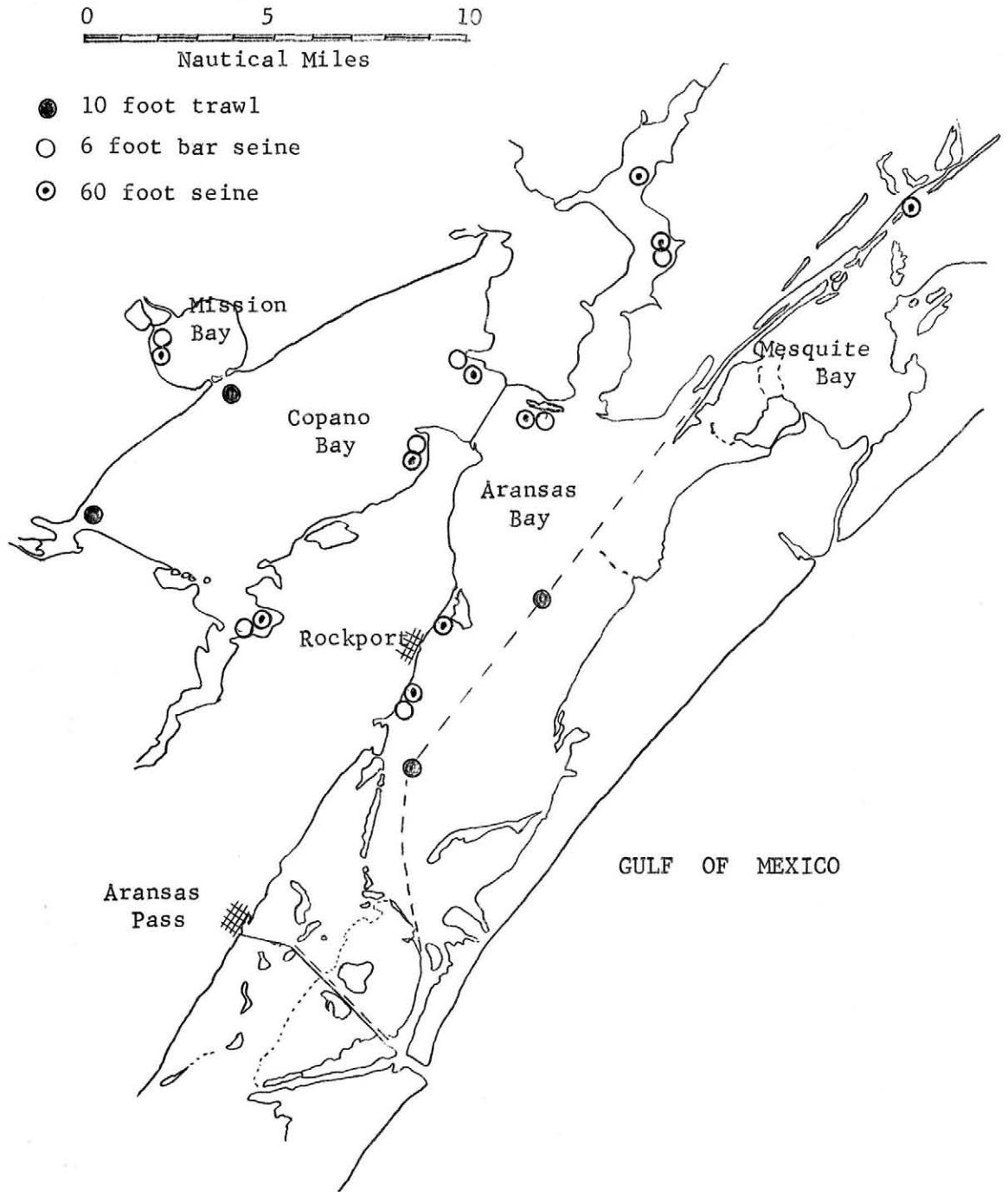
U. R. Childress
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Approved by:


Coordinator

Ernest G. Simmons
Regional Supervisor

Figure 1: Blue Crab Sampling Stations - Aransas Area (1964).



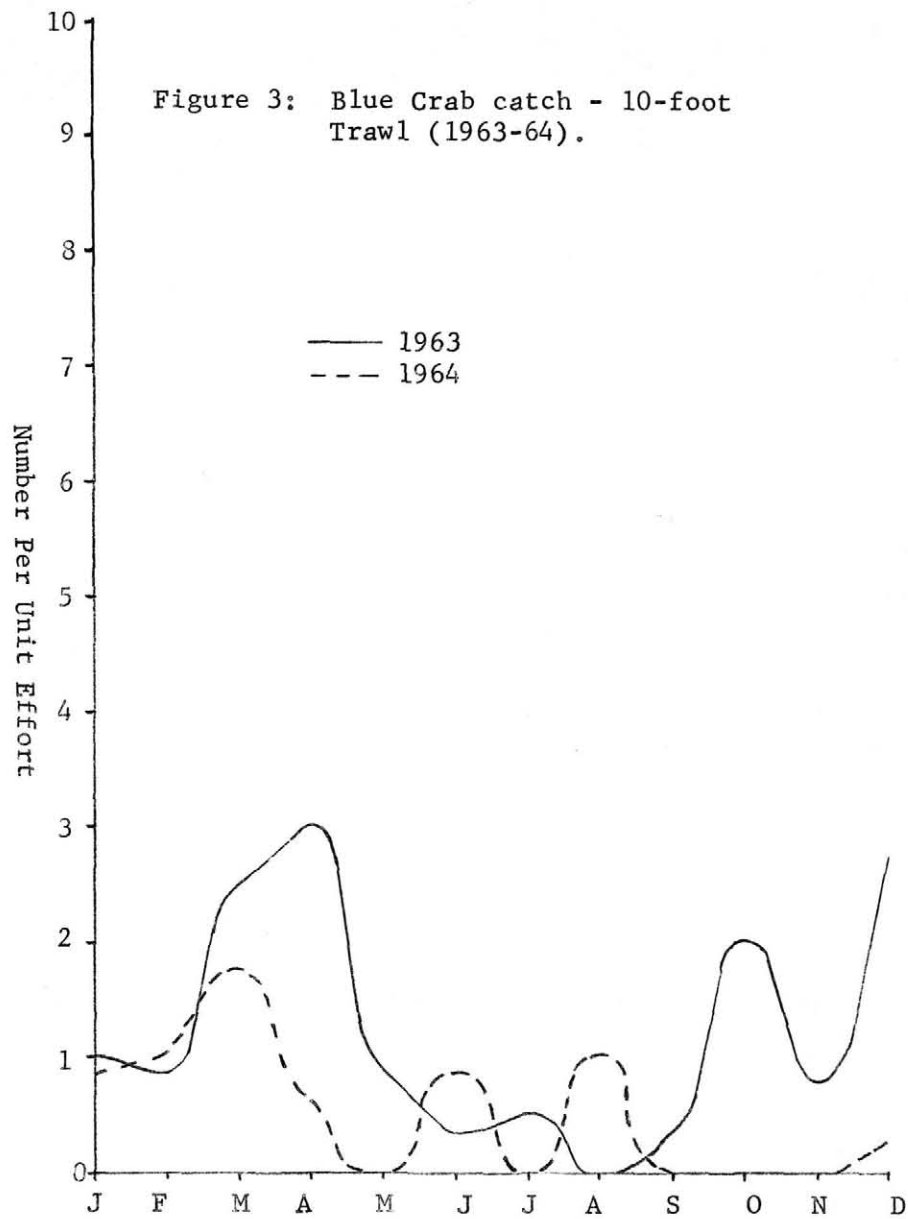
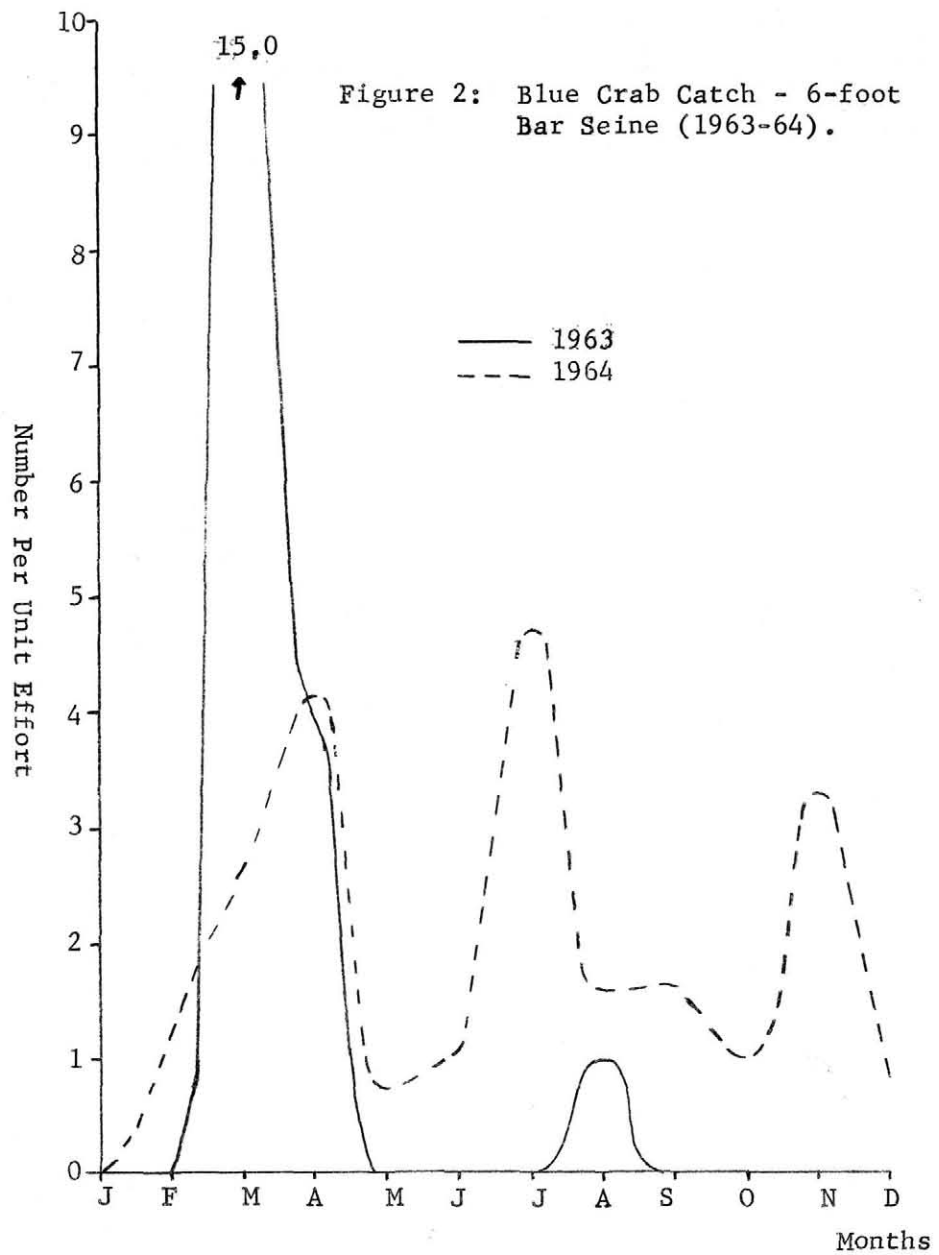


Figure 4: Blue Crab Catch Per Acre - 60 Foot Seine (1963-64).

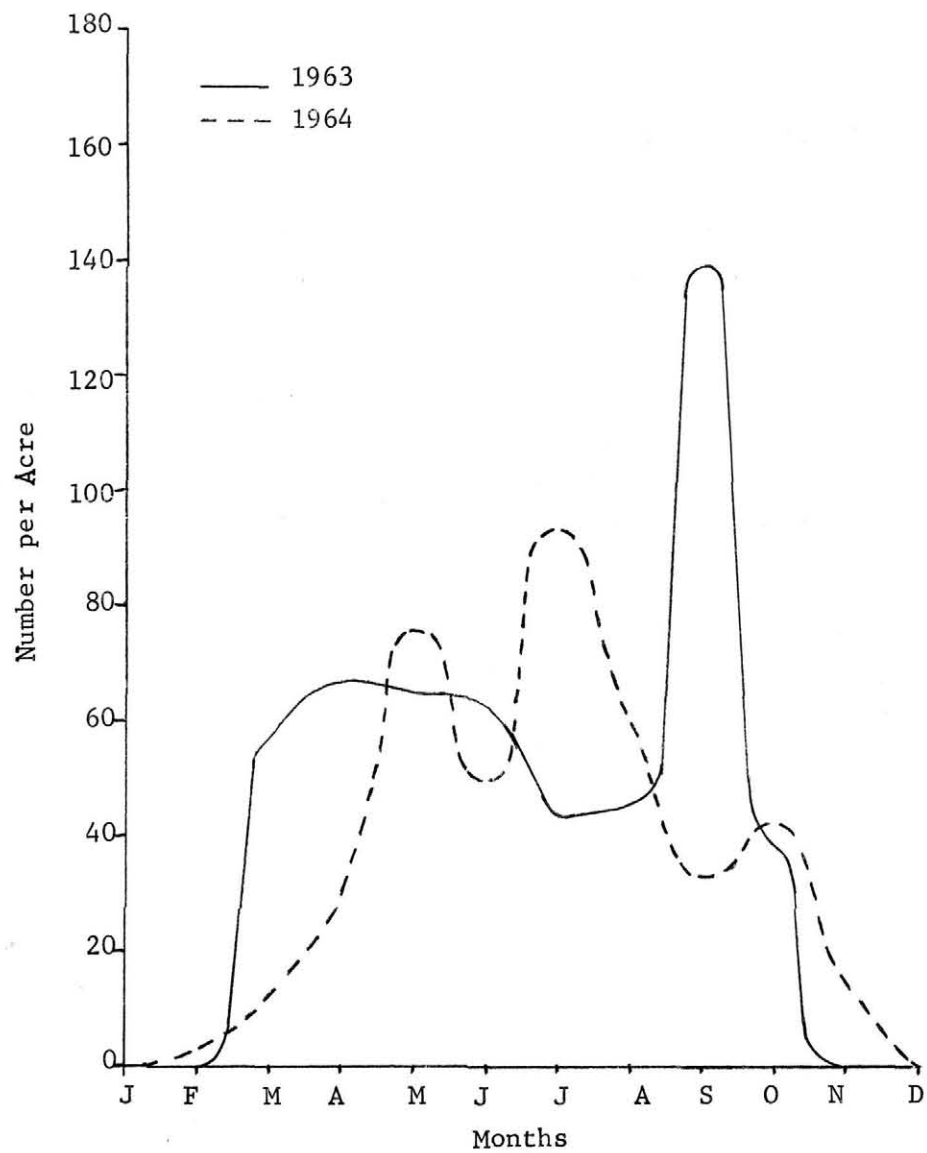


Figure 5: A Comparison of Commercial Blue Crab Landings From the Aransas Area (1961-64).

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