

## JOB REPORT

William Hawley  
Marine Biologist

Project No.: MCR-2 Date: April 24, 1964  
Project Name: A Study of the Texas Crab Population  
Period Covered: January 1, 1963 to December 31, 1963 Job No. 7

### A Study of the Blue Crab Population of the Upper Laguna Madre

Abstract: Blue crab, Callinectes sapidus, catches taken in conjunction with fish sampling in the Upper Laguna Madre, show that there was a sharp decrease in the crabs available in the lagoon during 1963. This near absence of crabs is related directly to the increase in bay salinity to 46 ppt and higher.

Objectives: To determine the seasonal abundance, growth rate, and size of crabs in the Upper Laguna Madre.

Procedure: All blue crabs, Callinectes sapidus, caught in conjunction with finfish sampling were separated according to sex, the distances between the tips of the carapace were measured, and the data was recorded on a separated sheet for each sample made. These samples included 15-minute drags with a 10-foot otter trawl of 1 1/4 inch stretched mesh with an inner liner of one half of an inch stretched mesh, seine hauls made with a 60-foot bag seine of three fourth of an inch stretch mesh, drags made with a 2400-foot drag seine of 3 inch stretched mesh and crabs caught in gill net sets. Plans were also made to work some crab traps in the area, and two traps were purchased to capture crabs during the spring crab migration into the lagoon. However, the spring migration did not occur, and the traps were never used.

Findings: Table 1 shows the crabs caught during 1963. No samples were taken in January and no crabs were caught after April.

There were practically no commercial crabs in the Upper Laguna Madre in 1963. The average size of the crabs caught was between 30 and 40 mm. Sponge crabs were not taken.

1962 was also a poor year for blue crabs in the area, but they were found in the lagoon until late June, and were the most concentrated in March and April of that year. Sponge crabs were present in small numbers during March 1962. Most crabs found in 1963 were caught in March, but these were nearly all juveniles.

In 1962 the average salinity for the lagoon did not reach 46 ppt until July, but in 1963 it was 46 ppt in May. (MF-R-5, Job No. 18, Hydrographic and Meteorological Study of the Upper Laguna Madre, 1963). Blue crabs population apparently limited by high salinity (Simmons 1957). The fact that blue crabs were not found in the lagoon in 1962 and 1963 after the salinities reached 46 ppt indicates that blue crabs do not stay in water containing a salt concentration as high as 46 ppt. This conclusion is further substantiated by the fact that monthly salinity averages were never less than 40 ppt between May 1962 and December 1963.

There has never been a substantial commercial crab fishery in the Upper Laguna Madre.

Prepared by: William Hawley  
Marine Biologist

Ray Childress  
Project Leader

Ernest Simmons  
Regional Supervisor

Approved by:

Terrance R. Leary  
Coordinator

Simmons, Ernest G. 1957. An ecological survey of the Upper Laguna Madre of Texas. Publ. Inst. Mar. Science, Univ. of Texas IV: 2, 1957

Table 1

## Crab Data Collected in the Upper Laguna Madre in 1963

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Total Crabs	0	13	26	2	0	0	0	0	0	0	0	0
% Females -		0	4	50	-	-	-	-	-	-	-	-
Modal Size in mm	-	25-35	30-40	-	-	-	-	-	-	-	-	-
Salinity	42.5	40.6	41.8	-	46.5	42.1	45.2	52.6	53.1	50.7	52.6	45.8

Noet: Salinity is the average monthly salt content of the water expressed in parts per thousand.