

## Job Report

R.P. Hofstetter,  
Marine Biologist

Project No. M0-1-R-2 Date 1 August 1960.  
Project Name: Oyster Investigations, Galveston Bay.  
Period Covered: 1 July 1959 - 30 June 1960. Job No. B-3

## Survey of the Abundance and Condition of Market Oysters

Objectives: To determine the abundance of oysters available for the commercial harvest and to determine the condition of the oysters during the harvest season.

Procedures: Spot checks of the reefs were made during the oyster season to discover the concentrations of oyster boats. Talks with oyster dealers and fishermen provided additional information on the condition of the harvest.

Oyster samples were dredged from two reefs at frequent intervals and the number of market oysters per uncultured bushel was determined. Condition indices were calculated on certain samples. Ten oysters were selected as representative of each sample and condition factor, shell factor and percent solids were determined by standard methods.

Findings: The oyster season, as set by law, began on November 1, 1959, and closed on April 1, 1960. As in the previous season, all reefs in water over three feet in depth were opened to dredging. The sanitary quality of the water was not resurveyed by the State Health Department and there was no change in the extent of the approved oystering areas.

Figure I shows the major harvest areas in relation to the State Health Department sanitary survey. Commercial oystering was generally confined to two main reefs: Todd's Dump in middle Galveston Bay and Hanna's Reef at the mouth of East Bay. Red Fish Bar, which contained a fair quantity of market oysters, was worked infrequently because the oysters were clustered and required more culling than those on other reefs. Dollar Reef, which contained an excellent crop of oysters, was closed due to possible sewerage pollution. Other reefs between Todd's Dump and Dollar Reef produced excellent oysters but were not worked until late in the season.

A total harvest of 246,068 pounds of oyster meat was reported for Galveston Bay. This does not include oysters taken by out-of-state boats and shipped out of state. Since the local Galveston Bay fleet was augmented considerably by a number of Louisiana fishermen, the actual total is probably much higher. In comparison, the harvest during the previous (1958-59) season was 172,160 pounds of oyster meats.

Oyster samples were collected from Todd's Dump and Dollar Reef to determine the abundance of market oysters. The results, reported as number of market oysters per uncultured bushel, are summarized in Table 1. These figures indicate the availability of oysters for the commercial harvest.

Todd's Dump was fished consistently although the intensity was less than that during the previous season. Dollar Reef was not legally fished since the

State Health Department had closed the area due to possible sewerage pollution. A few boats were caught dredging the reef but their effect on the overall population was negligible.

The population figures indicate that fishing pressure did not decrease the availability of market oysters on Todd's Dump. The increase in number of market oysters during the season could be attributed to the action of oyster dredges in breaking up clusters and thus increasing the efficiency of the sample dredge. Dollar Reef oysters, which remained essentially unharvested, grew rapidly and were in abundance throughout the season. This is more clearly shown in the analysis of total populations in Job B-2.

Although Hanna's Reef was sampled infrequently, the population, both in growth rate and condition, was judged to be similar to that on Dollar Reef. Fishing pressure was greater on this reef than on any other but sampling was not sufficient to determine the effects of this intensive fishery. Early in the season game wardens had some difficulty with fishermen bringing in undersized oysters but the quantity of market oysters held up well through the later months. This would indicate that the fishery caused no serious depletion of the crop.

Condition indices are shown in Table 1. They indicate that Dollar Reef oysters were in better condition than those on Todd's Dump although the differences are slight. Preference of the oystermen for Hanna's Reef oysters was a possible indication that these oysters were in better condition as well. However, the preference was also due to other factors. Hanna's Reef oysters were generally singles and required little culling. The reef was also closer to ports used by Galveston and Louisiana fishermen.

Comments: There is no evidence that the 1959-60 harvest depleted the oyster crop and the supply of oysters should be ample for the coming season. Several large reef areas have suffered because they have not been worked enough. Since the oysters are clustered and require much culling, no incentive is offered for harvesting. Such reefs will not be worked until the better reefs are economically depleted.

Prepared by R.P. Hofstetter,

Marine Biologist

Accepted by

Howard T. Lee  
Howard T. Lee

Date

13 January 1961

Table 1  
Market Oyster Abundance and Condition  
Galveston Bay 1959-1960.

Date	Todd's Dump				Dollar Reef			
	N/B	ShF	%S	CF	N/B	ShF	%S	CF
January 1959	10.0				1.0			
February 1959								
March 1959								
April 1959	11.0	1.4	15.7	9.2	13.0			
May 1959	9.5							
June 1959					6.0			
July 1959	11.0				9.0			
August 1959	26.5				11.0			
September 1959	27.0	1.6	14.0	4.4	35.0	1.7	14.6	5.0
October 1959	15.0				20.5			
			Oyster Season					
November 1959					22.0	1.6	17.1	7.3
December 1959	17.5	1.5	18.0	7.9	40.0			
January 1960	21.0				36.0			
February 1960								
March 1960	32.2	1.6	17.1	7.6	49.0	1.6	18.7	9.1
April 1960					47.4			
May 1960	39.8	1.5	15.2	6.5				
June 1960	29.0				32.4			

N/B - Number of market oysters per uncultured bushel.

ShF - Shell factor: ratio of total shell volume to the volume of the valves.

%S - Percent solids: dry weight of meat divided by wet weight times 100

CF - Condition factor: ratio of dry weight of meat to cavity volume of shell times 100.

Figure I

Oyster Producing Areas in Galveston Bay, 1959-60.

