

STATE Texas

DATE January 1, 1951

OYSTER INVESTIGATION

Quarterly Report

From: October 1, 1950 to December 31, 1950
Biologist: Robert H. Parker
Boat: Narwhale
Crew: Saturnino Garcia

INTRODUCTION

This investigation is now being conducted for the purpose of rehabilitating the oyster industry in Texas, and to promote or determine the advisability of commercial oyster cultivation. Information is also being obtained as to the effects of environment upon growth, mortality, and spawning of Ostrea virginica Gmelin.

STATUS OF PROJECT AT TIME OF LAST REPORT

Check of experimental plots at Bird, Spaulding, Turtle Pen and California Hole were made to determine environmental effects on planted oysters, where it was thought that the environment may be detrimental. Particular emphasis was placed on spat setting on cultch bags, and to quality analysis of the oysters. This work had been carried out by Mr. Byron B. Baker, the present biologist having assumed the duties of oyster biologist on November 1, 1950.

AREAS WORKED ON

Due to the unfamiliarity of the area and problems of the oyster industry in Texas, the writer made a survey of bottoms and reefs in Aransas, Copano, Redfish, and Mesquite Bays, one

trip having been made to San Antonio Bay in order to compare oyster quality. Particular emphasis was paid to the experimental reefs, California Hole (Redfish Bay), Spaulding Reef (Carlos Bay), Cedar Reef (Mesquite Bay), Turtle Pen Reef (Copano Bay), and Bird and Long Reefs (Aransas Bay).

OYSTER ACTIVITIES

Oyster samplings were made on 17 reefs in the aforementioned bays, in order to determine oyster quality, growth, spawning and feeding.

Sampling of water for salinity, temperature, turbidity, and pH was carried out, as well as plankton sampling and observations on wind weather and current flow. Attempts were made to determine the quality of the oysters by means of laboratory analysis.

In order to get an idea of the oyster situation over the past few years, the author made several visits to private oyster growers and oyster shucking houses.

BIOLOGICAL DATA

Oyster larvae were observed in plankton samples up through October 20, 1950; however, samples from the same area on November, 19, when the temperature had dropped to 19.4°C ., showed no evidence of oyster larvae. None of the oysters observed in November or December showed evidence of gonadal activity, nor did the water temperatures rise much above 20°C .

In October and early November, oyster condition in the field was poor with no evidence of growth. Only 50% of the oysters had crystalline styles (an evidence of feeding). Checks were again made in December of all reefs that had been visited before. A definite change in oyster condition had taken place by the 14th of December, as the majority of the oysters were in good condition. Also, a large amount of growth had taken place (1 to 1-1/4 inches), and according to the local oyster men, the largest growth observed in many years so early in the growing season.

Fouling organisms were in great abundance in Aransas, Copano, Mesquite and Redfish Bays, although Thais, or oyster

drill, had disappeared in all places but Redfish Bay which had a very high incidence.

Dry weight oyster meat analysis showed a below average percentage for oysters from Bird, Long and Cedar Reefs. The physical appearance of these oysters was in most cases, fair to poor.

Data were collected on reef composition and environmental factors. The factor which showed the most change was the salinity, which has risen from 27 and 28 to as high as 36.7 in the surrounding bays.

OTHER ACTIVITIES

Assistance was rendered to the trout-redfish investigation, when the author replaced Mr. A. W. Anderson for a month prior to assuming the oyster investigation. This time was utilized in compiling the fish table statistics, working at the fish table, and assisting on several field trips.

The assimilation of the marine products report (Texas Landings), and compilation and dissemination of fishery statistics was also assumed from the duties of the departed biologists.

Other activities of some importance were the carrying on of the drift, or current, test card survey, several fish kill investigations, preparation for the fall seminar, and photo-copying work for the laboratory.

UTILIZATION OF TIME

Description of Work	Biologist Hours	Crew Hours
Oyster Investigation (Field)	111	111
Oyster Investigation (Laboratory)	107	
Compilation of Notes and Data	80	
Trout-Redfish Survey	65.5	
Preparation for Fall Seminar	57	
Photo-copying for Laboratory	32	
Current Test-Card Survey	30	
Correspondance and Public Relations	27	
Compilation of Marine Products Report	24.5	
Fish Kill, Conn Brown Harbor	6	
Total	540	III

SUMMARY

1. Both umbo and straight hinge larvae were observed in plankton samples up through October 20th; after which no more larvae were observed.
2. Gonadal development in the oysters ceased by the end of October, when temperatures dropped below 20° Centigrade.
3. In October and early November, oyster market condition was very poor to fair, with no observable growth.
4. From December 14th on, oyster condition improved considerably, some showing more growth than has been observed in several years (1 to 1-1/4 inches in less than a month).
5. Fouling organisms have generally increased in abundance, although the oyster drill has disappeared in some localities.
6. Environmental data were taken in all bays throughout October, November and December. The factor showing the greatest change was salinity which steadily increased from 27 to 36.7 (very high salinity for these areas).
7. Assistance was given to the trout-redfish investigation in October, before assuming oyster investigation duties.
8. Assistance was given to the assimilation and compilation of marine products reports (Texas Landings) for October, November and December.
9. Administration of the current test card survey was taken over, with the addition of 5,000 test cards furnished by the Fish and Wildlife Service.
10. Other activities carried on were two fish kill investigations at Aransas Pass (Conn Brown Harbor), preparation for the fall seminar, and photo-copying work for the laboratory.