

STATE Texas

DATE April 1, 1951

OYSTER INVESTIGATION

Quarterly Report

From: January 1, 1951 to March 31, 1951
Biologist: Robert H. Parker
Boat: Narwhale
Crew: Saturnino Garcia

INTRODUCTION

This investigation is designed to search out the reasons for oyster mortality in the past decade, and to find means of rehabilitating the industry on the Texas coast. A survey is being made of both live and dead oyster reefs in the coastal waters.

STATUS OF PROJECT AT TIME OF LAST REPORT

Since the project had changed hands in the middle of the period covered by the last report, little had been done concerning new experimental work. The present investigator was primarily concerned with familiarizing himself with the oyster literature, methods of obtaining data, and a preliminary survey of nearby oyster reefs. Hydrographical and ecological data were obtained, however, throughout the months covered by the last quarterly report.

AREAS WORKED ON

Surveys of reefs in Aransas, Redfish, Copano, Carlos, Mesquite, and San Antonio Bays were made. Most of the work

was carried out on Long and Bird Reefs in Aransas Bay, Copano and Lap Reefs in Copano Bay, and on Cedar Reef in Mesquite Bay. Checks were made at least twice a month on reefs mentioned above and in the other bays mentioned.

ACTIVITIES

Ecological and hydrographical data were taken from the reefs of nearby bays at least once to twice a week, with an attempt to get hydrographical data at least once a week from Long Reef, which is one of the only typical commercial reef in Aransas Bay. These data consisted of plankton samples, water samples for salinity, turbidity, and pH, and weather observations on water temperature, air temperature, current and wind direction and velocity.

Random samples of the oyster population from all the reefs were taken to determine their general appearance, gonadal condition and feeding. Also samples of many of the organisms associated with a natural reef were collected so as to determine the exact composition of a natural reef.

Spat collectors were set out on live reefs in Aransas, Mesquite and Copano Bays as soon as it was determined that the oysters were spawning.

Oyster seed was planted in front of the Marine Laboratory by the boat "K.T.", utilizing 4 crewmen. Three hundred and fifty-five barrels of seed oysters have been planted so far.

OTHER ACTIVITIES

The author attended a three day session of the Gulf States Marine Fisheries Commission at Brownsville, Texas in the company of the rest of the biologists. Several trawl trips were made in the Gulf and surrounding bays for the purpose of acquainting various visitors with the marine fauna.

Considerable time was also spent in the evaluation of the number of fish killed by the hard freeze of early February. Assistance was given to collecting specimens and general administration of the annual Spring Seminar, and some time was spent writing a paper on the worms in trout for Texas Game and Fish.

BIOLOGICAL DATA ACCUMULATED

Sampling of old oysters from the natural reefs showed growth of from one to three inches in about four months. This is the first time in two years that any growth has occurred in old oysters, that was at all noticeable. Ninety-five percent of the oysters examined during this period (up to March 1, 1951) were in good market condition, and were feeding prior to examination. However, after March 1st, the majority of oysters were in a milky condition, containing gonadal products, and thus were in a poor marketable condition. One oyster was observed to be milky on February 27, 1951, 50% were milky by March 7, 1951, and 100% were milky by March 21st. Water temperatures were above 20 degrees C. from February 27 until March 14, when temperatures dropped below 20 degrees C., giving about a two week period of spawning temperatures. Water temperature rose above 20 degrees C. again around the 28th of March.

Plankton samples taken March 8, 1951, showed large numbers of straight-hinge oyster larvae, which could denote the fact that oyster spawning took place at least two weeks earlier than last year.

Salinities in the bays for this period were generally higher than at any other time covered by this investigation, with salinities running as high as 37 in Copano Bay, 34.2 in Aransas Bay, and 28.4 in San Antonio Bay. The lowest recorded salinity was in San Antonio Bay, that of 19.

Fouling organisms in Aransas Bay have been disappearing in the last month and a half, with the shell cleaning up remarkably fast. Much of the sponge, algae, and barnacles have disappeared, and no Thais have been found on any of the reefs during this period.

A map of the oyster reefs surveyed during this period accompanies the report.

UTILIZATION OF TIME

Project	Biologist Hours	Crew Hours
Oyster Investigation (Field)	200	200
Oyster Investigation (Laboratory)	213	
Oyster Planting		199
Drift Card Survey	8	
Marine Products Report	25	
Meetings (Gulf States Marine Fisheries)	84	

Project	Biologist Hours	Crew Hours
Annual Spring Seminar	164	
Investigation of Freeze Kill	34	
Preparation of Paper for Game and Fish	24	
Preparation of Quarterly Report	20	
Public Relations	24	
Total	796	399

SUMMARY

1. Samplings of old oysters from natural reefs showed from 1 to 3 inches new growth over about a 4 month period, representing the greatest growth activity in the last several years.

2. Gonadal development was evident as early as February 27, 1951, when one oyster was milky. By March 7, 50% were milky, and by March 21, 100% were milky.

3. Straight-hinge larvae were observed in plankton tows taken on March 8, which showed a spawning two weeks earlier than last year.

4. Oyster market condition was generally excellent up to March 8th, which is a considerable change from last season.

5. Salinities were observed to be far higher than usual, with Copano Bay the highest at 37, and San Antonio Bay the lowest at 19.

6. Seed oysters were planted in front of the Marine Laboratory for the purpose of starting a permanent experimental plot.

7. Fouling organisms were observed to have decreased considerably. No Thais, or oyster drill, were observed in any of the bays. Oyster shell was cleaning up considerably in the last month and a half.

8. Hydrographic and ecological data were regularly collected throughout the period covered by this report.

9. Assistance was rendered in; preparation for the annual spring seminar, marine products reports, drift card survey, and the investigation of the hard freeze kill in February.

10. Time was also spent in writing a paper on wormy trout for the TEXAS GAME AND FISH, and in attendance of the meeting of the Gulf States Marine Fisheries Commission at Brownsville, Texas