

STATE Texas  
DATE July 1, 1951

A SURVEY OF THE EFFECTS OF A NATURAL PASS ON  
FISH POPULATIONS

Quarterly Report

From: April 1, 1951 to June 30, 1951  
Biologist: Ernest G. Simmons  
Boats: Ada Lee, Skipjack, Small Barge  
Crew: Angelo Flores, Boat Captain  
Seferino Cortiniz  
David Mejorado  
Jose Soliz

INTRODUCTION

The primary objectives of the fish trap have been listed in previous reports. Briefly, the trap was installed to determine the what, when, where and why of the movement of fish and other organisms.

STATUS OF PROJECT AT TIME OF LAST REPORT

The fish trap was in successful operation at the time of the last report.

AREA WORKED ON

Cedar Bayou has become extremely shallow in the area just south of Mud Slough and near the Gulf entrance. The main channel by the fish trap is now 14 feet deep in spots.

## ACTIVITIES

The trap has been in continuous operation during the quarter. New diving gear has enabled the biologist to keep the fences in very good condition. The trap box in the center spiral proved infeasible; therefore the box was moved into the first spiral near the shore. As in the past, the north trap was raised at 0700 and 1630 each day and the south trap at 0800 each day. An accurate count was made of all species from either trap. Records were kept on fish, crabs and shrimp. Meteorological and hydrographical data were recorded and trammel net strikes were made in the bayou and in Mesquite Bay. Tagging was intensified. Stomach analysis of the southern flounder (Paralichthys lethostigma) and a study of the young of the year fish was continued.

## BIOLOGICAL DATA ACCUMULATED

The movement of organisms through the pass has intensified as was the case in 1950. Once again huge numbers of croakers (M. undulatus) and catfish (G. felis) have moved through the pass toward the gulf and smaller numbers of trout (C. nebulosus), redfish (S. ocellatus), drum (Pogonias cromis) and southern flounder (Paralichthys lethostigma) passed through toward the bays. The heaviest movement of trout and redfish occurred in late April. Flounders moved to and from the Gulf in equal numbers.

The following fish were taken in the trap during the period. It is worth noting that while the north trap caught many more fish than did the south trap, the latter secured most of the game fish taken.

1. Croaker ( <u>Micropogon undulatus</u> )	122,599
2. Sea catfish ( <u>Galeichthys felis</u> )	21,107
3. Pin perch ( <u>Lagodon rhomboides</u> )	1,579
4. Yellowtail ( <u>Bairdella chrysura</u> )	2,083
5. Spotted sea trout ( <u>Cynoscion nebulosus</u> )	84
6. Flounder ( <u>Paralichthys lethostigma</u> )	115
7. Redfish ( <u>Sciaenops ocellatus</u> )	16
8. Drum ( <u>Pogonias cromis</u> )	16
9. Menhaden ( <u>Brevoortia</u> sp.)	1,448
10. Mullet ( <u>Mugil cephalus</u> )	706
11. Sand trout ( <u>Cynoscion arenarius</u> )	496
12. Bonnethead shark ( <u>Sphyrna tiburo</u> )	
13. Midshipmen ( <u>Nautopaedium porosissimus</u> )	
14. Pig fish ( <u>Orthopristis chrysopterus</u> )	
15. Spanish mackerel ( <u>Scomberomorus maculatus</u> )	2

to the Gulf; the total caught in the South trap which secures organisms going from the Gulf to the bays and the number caught per hour of operation diurnally and nocturnally in each trap for each month and for the quarter.

#### APRIL

Trap	Total Hrs.	Hours Diur.	Hours Noc.	Fish Total Hrs.	Fish Diur.	Fish Noc.	Total Fish
North	245	70	175	13.8	2.5	18.3	3374
South	168	56	112	2.4	1.8	2.7	407
Total	413	126	287	9.2	2.1	11.8	3781

Crabs 5,167

#### MAY

Trap	Total Hrs.	Hours Diur.	Hours Noc.	Fish Total Hrs.	Fish Diur.	Fish Noc.	Total Fish
North	316	124	192	205.2	12.6	371.0	64,842
South	304			5.9			1,779
Total	620	124	192	107.5			66,641

Crabs 15,187

#### JUNE

Trap	Total hrs.	Hours Diur.	Hours Noc.	Fish Total Hrs.	Fish Diur.	Fish Noc.	Total Fish
North	317	101	216	141.7	27.5	346.4	76,616
South	333			15.1			5,013
Total	650			125.6			81,629

Crabs 22,422

#### APRIL 1 - JUNE 30

Trap	Total Hrs.	Hours Diur.	Hours Noc.	Fish Total Hrs.	Fish Diur.	Fish Noc.	Total Fish
North	878	295	583	166.1	15.3	242.4	144,832
South	805			8.9			7,219
Total	1683			90.8			152,051

\*Crabs 42,776

\* 95% of crabs were taken in the north trap

\*\*Of the total number of crabs:

81% were mature females, 10% were sponge crabs and 9% were male or female immatures.

## OTHER ACTIVITIES

Trammel net strikes were made throughout Cedar Bayou and Mesquite Bay. A strike in Mud Slough April 22, 1951 secured 76 large sea trout and redfish. A strike made April 24, 1951 just south of Mud Slough secured 180 sea trout, redfish, flounder and drum. The sea trout weighed up to 8 pounds. Many of these fish were retaken in the south trap as they worked toward the bays and were released again north of the trap. Six of these fish have been recovered by sports-fishermen in Cedar Bayou.

Drum, tag No. 1054, was returned from the Laguna Madre. This was the first fish to be tagged in the program and was recaptured 13 months after the date of tagging. During this period it moved 40 miles, grew 2 inches (19" - 21") and gained 2.1 pounds (3.9 pounds - 6.0 pounds).

Otoliths have been collected from all southern flounders available and are being ground down as an aid in the study of the growth rate of this species. Small flounder have been captured with cheese cloth seines, minnow seines, in the fish trap, and by gigging.

A report on fish tagging was written for publication in the Texas Game and Fish Magazine.

A report on the return of fish tag 1054 was prepared for publication in the Texas Game and Fish Magazine.

## UTILIZATION OF TIME

Job	Biologist	Crew	Total
I. 1a, 1b Analysis of Movement of Fish	240	480	720
II. 1a, 1b Tagging Operations	60	0	60
III. 1a, 1b Stomach Analysis	5	0	5
IV. 1a, 1b Sex Determination	10	0	10
V. 1a, 1b Age Determination	10	0	10
VI. 1a, 1b Meteorological and Hydrograph.	7	0	7

## INCIDENTALS AND LABORATORY TIME

	Biologist	Crew	Total
Running traps	120	480	600
Running Time	80	273	353
Seining	20	80	100
Otoliths	30	0	30
Reports etc.	20	0	20
Maintenance	22	88	110
Vacation	64	0	64

A total of 574 hours was spent in the field by the biologist and 1401 hours were utilized by the crew, giving a total of 1975 hours in the field. Total time for biologist on project 1250 hours, for crew 5000 hours. In the laboratory the biologist spent 50 hours and the crew 0 hours.

Thus a total of 624 hours was utilized by the biologist and 1975 by the crew, giving a total of 2599 hours on the job.

### SUMMARY

1. Both fish traps are operating properly.
2. Results of the quarter April 1 - June 30, 1951 nearly duplicated the results of the quarter April 1 - June 30, 1950;
3. Sea trout, redfish, drum, and flounder went through the pass into the bays during the quarter.
4. Sea catfish (Galeichthys felis) and croaker (Micropogon undulatus) went out to the Gulf in large numbers.
5. Large numbers of female blue crabs went out to the Gulf.
6. The project is now complete. The trap is to be torn out.