

2 Copies

File

FILE

STATE Texas

PROJECT NO. F-6-R-1, Job B-6

PERIOD 9/1/53 - 6/30/54

JOB COMPLETION REPORT

BY

Alvin Flury

TITLE:

Creel census and check of commercial catch of rough fish from Lake Corpus Christi.

OBJECTIVES:

To estimate the total catch by species and the relative abundance of each species in the catch. Also, to evaluate the commercial fishery as to earnings of netters and as to the control of rough and predacious fish.

PROCEDURE:

a. Creel Census

Two creel census stations were established, one at the Lake Corpus Christi State Park boat docks and one at Lacy's Camp. The other three fishing camps were small and were not used for the census. The stations were visited from approximately 6:00 a.m. to 6:00 p.m. on six days per month at approximately five day intervals. One man could usually cover both stations adequately except on week ends when one man stayed at each station.

Due to the small number of fishermen using the three smaller camps and the amount of effort needed to correctly fill out creel census cards, the cards were not left at the camps.

Soon after the start of creel census it was found that counting all the fishermen on the lake would be impossible. Although the lake is small (about 5,000 acres) much of the water is in a long channel and large, shallow bay. It would take a man in a boat almost a full day to cover the entire lake.

The large proportion of trotline fishing (with hidden, underwater lines) prevented an accurate count of fishermen. This part of the job was abandoned.

Data were collected on fish census cards and included the date, number of fishermen in party, approximate number of hours fished, kind of bait, method of fishing and size and number of fish caught. Trotlines were usually recorded as having been set from 6:00 p.m. the previous evening until 6:00 a.m. the morning of creel census unless a shorter time was involved.

b. Check on commercial catch of rough fish.

Commercial fishing is allowed on Lake Corpus Christi by permit only. Six permit holders were sent report sheets to be filled out and returned to the Game and Fish Commission office at the end of each month. These were in turn sent to Mathis, recorded, and returned to Austin. Of the 66 reports that should have been filed, only 25 were received and eight of these reported "no fish."

FINDINGS:

a. Creel census

A total of 458 sport fishermen was contacted during the ten month period from September 1953 through June 1954. Table I gives the general data taken from the creel census cards. Fishermen were separated for comparison into two groups: still fishing (rod and reel, cane pole and throw lines) and trotline fishing. Only one card was filled out for use of artificial bait. The kinds and numbers of fish taken are shown in Table II. One eel and seven gar are not included in this table. Kinds of baits used and the fish caught on them, when only one kind of bait was used is shown in Table III.

Although 61% of the fishermen recorded on creel census days were using trotlines, it is felt that a larger proportion of men using this method were missed than were bank fishermen. Trotline fishermen caught 68% of the fish recorded, expended 79% of the man-hours of fishing and were 77% successful (at least one fish per party). They expended an average of 6.53 man-hours per fish caught (man-hours calculated by multiplying the number of men fishing times the number of hours the line was set) or .15 fish per man-hour. In general, larger fish, mostly yellow (flathead), blue and channel catfish were taken by trotline than by stillfishing. The upper part of the lake, the impounded channel of the Nueces river, is accessible through private ranches and by boat, if water hyacinths don't block the passes. This area is reputedly the best trotline fishing in the lake and is used especially by a number of local fishermen. Many fishermen set trotlines and run and bait them once every one to four or more days. In practice it was found impossible to contact or even count accurately the fishermen using this system.

Still fishermen comprised 39% of the total recorded in creel census. They caught 32% of the fish taken, expended 21% of the man-hours and were 60% successful. In still fishing, an average of 3.76 man-hours were needed to catch a fish or .27 fish per man-hour. This method accounted for all the crappie, bass and sunfish taken, many of the channel catfish and most of the fresh water drum. All still fishermen were contacted in or near the Lake Corpus Christi State Park slough. Little still fishing is practiced on other parts of the lake; there are few suitable beaches, several piers furnishing most of the sites.

A total catch of 731 fish was recorded in creel census. Channel catfish were most numerous (41.9%) followed in order by blue catfish, drum, sunfish, yellow catfish, crappie, bass and bullhead in that order (Table II). Turbidity and changing water levels inhibit large populations of bass and sunfish.

Twenty-four kinds of bait were used by the fishermen contacted (Table III). Cut fish, notably buffalo with some shad was by far the most popular due to easy availability. Worms were used chiefly by still fishermen, shrimp was used in both methods while white laundry soap cut into one inch cubes was used mostly on trotlines set so the bait was just at the water surface. Among these four most popular baits, soap was the most consistent fish getter but the fish taken were usually the smaller channel and blue catfish.

b. Check on commercial catch of rough fish.

According to the seventeen rough fish catch reports turned in during the eleven months, the total catch of the six commercial fishermen from Lake Corpus Christi was as follows: 2821 buffalo at 13,259 lbs. (4.7 lbs. average), 3 carp at 44 lbs. (14.3 lbs average), 281 gar at 2477 lbs. (8.8 lbs. average), and 55 drum at 147 lbs. (2.8 lbs. average). These figures are certainly not complete as not even "no fish" reports were turned in in 41 instances. Neither are they accurate. Some of the fishermen came from rather distant towns on one or two trips lasting two or three days each; there was no way to check the accuracy of their reports. At least one fisherman had no scales and estimated the weights of his catch by adding one-half the dressed weight to get the total, explaining that the fish lost one-third their live weight when dressed. One man reported catching 710 suckers and 110 carpsuckers from the lake in one month; neither species has been otherwise recorded from this lake (this report was discarded). Soon after the beginning of the job, the market price on buffalo dropped from 17 cents to 10 cents per pound, "fleeced" (dressed) weight, and frequently the markets would not take any fish at any price. Buffalo were the primary marketable rough fish and the few carp in the catch were considered equivalent to buffalo. They were sold to markets for shipment to north and eastern states, to local fishing camps for bait or hawked on the streets of small towns. Gar and drum were sold by the latter method at about ten to fifteen cents per pound. Rough fish are bought for food in south Texas largely by farm laborers, especially during the Lenten season.

Fishing gear used by commercial fishermen was 3" or 3½" square mesh gill nets hung on a tight top line and hanging free. No weights or floats were used except to locate the net and to keep the top line tight. Nets four feet deep by 100 to 1,000 feet or more in length were set.

Following the figures here gathered, admittedly inaccurate, the commercial fishery on Lake Corpus Christi was valued at from one thousand to fifteen hundred dollars for the eleven months studied. If a regular market with a fair price was available, the lake could certainly produce a better crop of rough fish. Many gar are killed and discarded by the fishermen because their price does not usually compensate for the difficulty of marketing them. If more rough fish netting was done, it might, as a sideline, furnish an effective method of gar control. From my observations, I do not believe that any appreciable number of catfish or other game fish are removed from the lake by commercial fishermen.

SUMMARY

Creel census was held at two stations on Lake Corpus Christi every fifth day for the period September 1953 through June 1954. A total of 458 fishermen was contacted and their fish counted and measured. Fishing methods used were trotline and still fishing. The first method was used by 61% of the fishermen contacted who caught 68% of the fish. Still fishermen comprised 39% of the total and caught 32% of the fish. Tables were prepared from the data gathered to show man-hours spent fishing, fish caught per man-hour and percentage of successful fishermen (Table I), kinds and numbers of fish caught (Table II) and kinds and numbers of fish caught on different baits (Table III). Inaccurate figures reported by commercial fishermen gave an estimated value of the commercial fishery at from one thousand to fifteen hundred dollars for an eleven month period. Because it was impossible to estimate the total number of sport fishermen on the lake at any time and because of the failure of commercial fishermen to report catches, it was not possible to calculate a total catch from the lake. Considering the light fishing pressure on Lake Corpus Christi, it is not thought to be practical to continue creel census beyond the first segment.

TABLE I

Lake Corpus Christi Creel Census

General Data

Date	Still Fishing					Trotline Fishing					Totals			
	Men Fishing	% Successful	Man-Hours	No. Fish Caught	Fish Per Man-hour	Men Fishing	% Successful	Man-hours	No. Fish Caught	Fish per Man-hour	Men Fishing	Man-hours	No. Fish Caught	Fish Per Man-hour
9-10	5		9	1	.11	6		84	4	.05	11	93	5	.05
14	-		-	-	-	5		87	10	.11	5	87	10	.11
18	-		-	-	-	3		32	6	.19	3	32	6	.19
22	-		-	-	-	7		93	2	.02	7	93	2	.02
26	1		6	0	.00	14		111	30	.27	15	117	30	.26
30	2		6	0	.00	3		55	27	.49	5	61	27	.44
Sept.	8	37%	21	1	.05	38	55%	462	79	.17	46	483	80	.17
10-5	-		-	-	-	1		15	5	.33	1	15	5	.33
10	1		5	50	10.00	6		82	20	.24	7	87	70	.80
15	4		11	4	.36	4		67	1	.01	8	78	5	.28
20	1		1	2	2.00	1		14	0	.00	2	15	2	.13
25	-		-	-	-	10		75	5	.07	10	75	5	.07
30	-		-	-	-	5		72	8	.11	5	72	8	.11
Oct.	6	66%	17	56	3.29	27	66%	325	39	.12	33	342	95	.28
11-4	2		2	1	.50	1		16	6	.38	3	18	7	.39
9	1		4	0	.00	5		52	4	.08	6	56	4	.07
14	10		27	0	.00	10		26	12	.46	20	53	12	.23
19	-		-	-	-	1		12	9	.75	1	12	9	.75
24	-		-	-	-	1		12	1	.08	1	12	1	.08
30	1		2	0	.00	1		12	1	.08	2	14	1	.07
Nov.	14	14%	35	1	.03	19	73%	130	33	.25	33	165	34	.21
12-4	3		7	2	.29	-		-	-	-	3	7	2	.29
9	-		-	-	-	1		12	0	.00	1	12	0	.00
14	-		-	-	-	4		63	1	.02	4	63	1	.02
18	-		-	-	-	-		-	-	-	-	-	-	-
24	-		-	-	-	-		-	-	-	-	-	-	-
28	-		-	-	-	-		-	-	-	-	-	-	-
Dec.	3	100%	7	2	.29	5	60%	75	1	.01	8	82	3	.02
1-5	-		-	-	-	2		30	3	.10	2	30	3	.10
10	-		-	-	-	6		94	2	.02	6	94	2	.02
15	-		-	-	-	-		-	-	-	-	-	-	-
20	3		12	1	.08	2		1	5	5.00	5	13	6	.46
25	2		18	15	.88	-		-	-	-	2	18	15	.88
30	4		8	0	.00	2		2	0	.00	6	10	0	.00
Jan.	9	55%	38	16	.42	12	58%	127	10	.08	21	165	26	.16

Table 1

(continued)

Date	STILL FISHING					TROTLINE FISHING					TOTALS			
	Men Fishing	% Successful	Man Hours	No. Fish Caught	Fish Per Man Hour	Men Fishing	% Successful	Man Hours	No. Fish Caught	Fish Per Man Hour	Men Fishing	Man Hours	No. Fish Caught	Fish Per Man Hour
2-4	1		2	16	8.00	5		53	9	.17	6	55	25	.45
9	2		20	16	.80	5		60	6	.10	7	80	22	.28
14	7		11	2	.18	12		134	22	.16	19	145	24	.17
19	-		-	-	-	2		24	1	.04	2	24	1	.04
24	4		8	5	.63	-		-	-	-	4	8	5	.63
Feb.	14	100%	41	39	.95	24	91%	271	38	.14	38	312	77	.17
3-1	3		9	0	.00	2		24	9	.38	5	33	9	.27
6	10		9	2	.22	6		72	12	.17	16	81	14	.17
11	4		12	1	.08	7		120	7	.06	11	132	8	.06
16	5		49	21	.43	5		60	4	.07	10	109	25	.23
21	-		-	-	-	-		-	-	-	-	-	-	-
26	-		-	-	-	9		102	18	.18	9	102	18	.18
Mar.	22	54%	79	24	.30	29	86%	378	50	.13	51	457	74	.16
4-1	-		-	-	-	-		-	-	-	-	-	-	-
6	-		-	-	-	-		-	-	-	-	-	-	-
11	8		19	9	.47	4		32	2	.06	12	51	11	.22
15	2		4	8	2.00	-		-	-	-	2	4	8	2.00
21	2		14	10	.71	3		36	8	.22	5	50	18	.36
27	4		6	0	.00	4		48	0	.00	8	54	0	.00
Apr.	16	37%	43	27	.63	11	45%	116	10	.09	27	159	37	.23
5-1	11		36	9	.25	23		291	27	.09	34	327	36	.11
6	22		108	21	.20	7		88	9	.10	29	196	30	.15
11	3		26	1	.04	4		48	8	.17	7	74	9	.12
16	27		308	21	.07	9		108	14	.13	36	416	35	.08
21	2		13	4	.31	8		90	39	.43	10	103	43	.42
26	1		8	1	.13	24		285	39	.14	25	293	40	.14
May	66	75%	499	57	.11	75	90%	910	136	.15	141	1409	193	.14
6-2	7		57	0	.00	4		32	5	.16	11	89	5	.06
7	-		-	-	-	-		-	-	-	-	-	-	-
12	1		1	0	.00	12		134	22	.16	13	135	22	.16
17	1		4	0	.00	4		32	12	.38	5	36	12	.33
23	7		20	6	.30	6		72	7	.10	13	92	13	.14
27	-		-	-	-	18		216	60	.28	18	216	60	.28
June	16	43%	82	6	.07	44	86%	486	106	.22	60	568	112	.20
Total	174	60%	862	229	.27	284	77%	3280	502	.15	458	4142	731	.17

Table 11

Lake Corpus Christi Creel Census

Date	Channel Catfish	Blue Catfish	Bullhead Bullhead	Flathead Catfish	Black Bass	Sunfish	White Crappie	Drum	Total
9-10	-	5	-	-	-	-	-	-	5
14	2	8	-	-	-	-	-	-	10
18	4	2	-	-	-	-	-	-	6
22	-	2	-	-	-	-	-	-	2
26	15	14	-	1	-	-	-	-	30
30	11	16	-	-	-	-	-	-	27
Sept.	32	47	-	1	-	-	-	-	80
10-5	-	4	-	1	-	-	-	-	5
10	8	11	-	6	-	-	3	42	70
15	2	1	-	1	-	-	-	1	5
20	-	-	-	2	-	-	-	-	2
25	2	2	-	1	-	-	-	-	5
30	7	-	-	1	-	-	-	-	8
Oct.	19	18	-	12	-	-	3	43	95
11-4	3	3	-	-	-	-	-	1	7
9	-	3	-	-	-	-	-	1	4
14	7	5	-	-	-	-	-	-	12
19	8	1	-	-	-	-	-	-	9
24	-	1	-	-	-	-	-	-	1
30	-	1	-	-	-	-	-	-	1
Nov.	18	14	-	-	-	-	-	2	34
12-4	-	-	-	-	-	-	-	2	2
9	-	-	-	-	-	-	-	-	-
14	-	1	-	-	-	-	-	-	1
19	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-
Dec.	-	1	-	-	-	-	-	2	3
1-5	-	3	-	-	-	-	-	-	3
10	1	1	-	-	-	-	-	-	2
15	-	-	-	-	-	-	-	-	-
20	5	-	-	-	-	-	-	1	6
25	5	-	-	-	-	9	-	1	15
30	-	-	-	-	-	-	-	-	-
Jan.	11	4	-	-	-	9	-	2	26

Table 11
(continued)

Date	Channel Catfish	Blue Catfish	Bullhead	Flathead Catfish	Black Bass	Sunfish	White Crappie	Drum	Total
2-4	2	5	-	-	-	15	-	3	25
9	3	8	-	-	-	9	-	2	22
14	5	16	2	1	-	2	-	-	24
19	-	1	-	-	-	-	-	-	1
24	1	-	-	-	2	-	2	-	5
Feb.	11	30	2	1	2	26	2	5	77
3-1	3	2	-	-	-	-	-	3	9
6	4	3	-	5	-	-	2	-	14
11	2	2	-	2	-	-	-	2	8
16	13	9	-	1	-	-	1	1	25
21	-	-	-	-	-	-	-	-	-
26	10	8	-	-	-	-	-	-	18
Mar.	32	24	-	8	-	-	3	6	74
4-1	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-
11	-	3	-	-	-	-	-	8	11
15	1	-	-	1	-	2	1	3	8
21	3	3	-	-	-	3	7	2	18
27	-	-	-	-	-	-	-	-	-
Apr.	4	6	-	1	-	5	8	13	37
5-1	30	3	-	-	-	-	-	3	36
6	9	9	-	-	-	3	-	9	30
11	8	1	-	-	-	-	-	-	9
16	22	5	-	-	2	-	3	3	35
21	35	6	-	1	-	-	-	1	43
26	18	7	-	-	-	-	-	15	40
May	122	31	-	1	2	3	3	31	193
6-2	5	-	-	-	-	-	-	-	5
7	-	-	-	-	-	-	-	-	-
12	12	10	1	-	-	-	-	-	22
17	5	6	-	1	-	-	-	-	12
23	6	6	-	-	-	-	-	1	13
27	38	20	1	2	-	-	-	-	60
June	66	42	2	3	-	-	-	1	112
Total	315	217	4	27	4	43	19	105	731
Percentages	41.9	29.6	0.5	3.6	0.5	5.8	2.5	14.2	98.6

Table 111

Lake Corpus Christi Creel Census

Baits Used

Bait	Times Used	% Successful	*Channel Catfish	*Blue Catfish	*Flathead Catfish	*Black Bass	*Sun-fish	*White Crappie	*Drum	Total Fish
Cut Fish	100	65	86	42	3	-	-	-	13	144
Worms	37	70	1	1	3	-	18	-	7	30
Shrimp	37	57	12	8	-	-	18	-	4	42
Soap	32	84	40	25	-	-	-	1	-	66
Sunfish	24	75	2	15	4	-	-	-	-	21
Minnows	20	55	6	-	-	-	-	3	43	52
Crayfish	14	78	1	-	-	-	-	-	-	1
Liver	12	66	7	3	-	-	-	-	-	10
Chicken										
Guts	6	83	-	1	-	-	-	-	-	1
Beef Heart	6	50	1	-	-	-	-	-	-	1
Mussle	5	80	5	2	-	-	-	-	1	8
Kidney	4	100	-	-	-	-	-	-	-	-
Naked Hook	3	66	2	8	-	-	-	-	-	10
Small Shad	3	33	3	-	1	-	-	-	-	4
H e Meat	3	33	-	-	-	-	-	-	-	-
Grasshoppers	2	100	13	15	-	-	-	-	-	28
Frogs	2	100	-	-	-	-	-	-	-	-
Rabbit	2	100	-	-	-	-	-	-	-	-
Dough balls	2	50	-	-	-	-	-	-	-	-
Snails	2	50	-	-	-	-	-	-	-	-
Berries	1	100	-	-	-	-	-	-	-	-
Goldfish	1	100	-	-	-	-	-	-	-	-
Plugs	1	100	-	-	-	2	-	-	-	2
Cut Squid	1	0	-	-	-	-	-	-	-	-

* - When only one kind of bait was used.