SEGMENT COMPLETION REPORT

State of TEXAS

Project No. F-4-R-5 Name: Fisheries Investigations and Surveys of the Waters of Region 4-B.

Job No. E-4 Title: A Study of Crappie in Lake Whitney

Period Covered: November 1, 1957 through October 31, 1958

OBJECTIVES:

To determine the population of crappie in Lake Whitney and the reasons for the recent small harvest. Study the pattern and extent of travel of tagged or marked crappie and the ecological factors influencing their distribution. To develop satisfactory methods of sampling crappie fry and study the effects of a bacterial type of infection found on some of the crappie.

ABSTRACT:

The trapping and marking of crappie in Lake Whitney has been continued along the same general lines as during the 1956-57 segment with the trapping stations expanded to cover the entire lake. The Monel Metal jaw tags were used and returns of the tags taken by fishermen was encouraged through publicity.

The same type of poultry wire trap was used and the card system of recording data was augmented by a permanent ledger on which the trap catches of species other than crappie was recorded along with the data on tagged crappie and their recapture.

The most numerous species taken in the traps was bluegill sunfish which made up 59.3 percent of the total followed by crappie with 16.48 percent. The gill net catch was dominated by gizzard shad which provided 57.66 percent, with crappie comprising only 4.41 percent.

None of the five tagged crappie returned during this segment had been released during the previous segment. The returns represented 2.1 percent of the number tagged which is a smaller percentage than the 4 percent return of the previous segment

PROCEDURE:

The trapping and marking of crappie in Lake Whitney was continued along the same general lines as during the previous segment except that the trapping was extended to cover the entire lake. The same traps were used as well as the Monel Metal jaw tags. Latex marking was not attempted since the material was not obtained.

Publicity was given to this work in an effort to obtain maximum information regarding tagged fish taken by fishermen. Card forms were distributed to the camps around the lake that when filled out, would provide data wanted on recaptured tagged fish. These cards were picked up at intervals and the data was recorded and filed.

Data from these cards enabled the biologist to determine the days of freedom and distance between points of tagging and recapture.

The traps used were constructed of one-inch mesh poultry wire over a frame of six-gauge concrete reinforcement wire, having 6 by 6 inch mesh. These traps were 5 feet long and 27 inches in diameter. They were of both single and double throat construction but there appeared to be little difference in the effectiveness of the two. These traps were constructed with a door to facilitate the removal of the fish.

Crappie taken in traps were tagged and returned to the water in the vicinity of the trap. The data were recorded and all recaptures were noted. Data on other fish taken in the traps were tabulated and filed.

A 5" by 8" card was used to record data in the field but a ledger was kept in the office to which field data was transfered for permanent record. This ledger provided space for all data concerning the tagged crappie as well as the other species taken in traps.

Gill net collections were made in the vicinity of the traps to provide comparative information on the relative abundance of crappie in the area and to serve as a check on the efficiency of the trap as a means of taking this species.

RESULTS:

The trapping work of the previous segment was confined to the middle one-third of the lake with the exception of one trap station in Kings Creek, which was used for a short period. These trapping stations were increased in number during the present segment with stations added in both the upper and lower portions of the lake. (Figure 1).

It will be noted that large areas of the lake have not been trapped and an effort will be made to include these areas in the next segment.

In Table 1, the data concerning the number of each species taken in traps is given together with the percentage of the total trap catch represented by each species It will be noted that bluegill sunfish made up the bulk of the trap catch with 59.30 percent of the1978 fish taken. They were followed by white crappie with 16.48 percent and carp with 8.34. The remaining 15.88 percent was divided among 16 species with none making up as much as 3.00 percent.

The traps were set in conjunction with gill nets in an effort to determine the effectiveness of the trap in the taking of crappie. The results of the gill netting shows that only 59 of the 1,339 fish taken were crappie for 4.41 percent. The gill net collections were dominated by gizzard shad with 772 specimens making up 57.66 percent of the total catch (Table 2).

The comparison of the trap and gill net catches indicates that the traps are no less effective in the taking of crappie but nuch work is needed with regard to baits or other attractors in increasing the catch of crappie.

Table 3 includes data concerning the recovery of tagged crappie from the previous segment but it will be noted that none of the tags returned during the 1957-58 segment were from the previous year. The longest period of freedom among

the five tags recovered during present segment was 19 days and the shortest period was one day. Four of the recaptured fish were taken at the place of release while one moved from Lakeside Village to the mouth of Mesquite Creek a distance of one mile. This fish was recaptured after four days of freedom.

The recaptured crappie from the previous segment were free from less than one day to 149 days between tagging and recapture, with the average period of freedom being 19 days. The distance traveled by individual tagged crappie varied widely. Nine or 26.4 percent, failed to move at all while two crappie moved 9.75 miles down the lake. The average distance traveled was 1.02 miles from the point of release.

A total of 39 tagged crappie have been recaptured during the life of this job with 18 or 46 percent being recaptured in the traps. These fish showed a minimum of travel and were recaptured after an average of 7.2 days of freedom and 300 yards from the point of release. They ranged in days of freedom from none to 36 days and moved a maximum distance of one mile. Nine out of the eighteen failed to move at all. One crappie was recaptured in a trap one mile from the point of release on the day following the tagging.

Of 850 crappie tagged during the 1956-57 segment, 34 or 4 percent, were recaptured while of the 237 tagged during the 1957-58 segment only 5, or 2.1 percent, were recaptured. This indicates that some changes in methods are needed in both trapping crappie for tagging and in their recapture.

Prepared by Leonard D. Lamb, Project Leader Approved by Marion Toole, Director Inland Fisheries Division

Date December 23, 1958

Table 1. Number of each Species of Fish captured by wire traps, Lake Whitney, November 1957 through October 1958.

Species	No. of Fish Trapped	Percent of Total Number Trapped
White crappie	326	16.48
Black crappie	5	0.25
Largemouth bass	25	1.26
White bass	42	2.13
Bluegill sunfish	1,173	59.30
Carp	165	8.34
Channel catfish	35	1.77
Warmouth	58	2.93
Longnose gar	5	0.25
Spotted gar	3	0.16
Flathead catfish	12	0.60
Texas gray redhorse	1	0.05
Gizzard shad	42	2.13
Spotted bass	1	0.05
Longear sunfish	15	0.76
Carpsucker	29	1.46
Buffalo	8	0.41
Drum	32	1.62
Green sunfish	1	0.05
Totals	1,978	100.00

Table 2. Tabulation of data from gill net collections from Lake Whitney, November 1, 1957 -- October 31, 1958.

Species	No. Caught	Percent of Total No.	Lbs. Caught	Percent Total Wt.	Avg. Wt. Lbs.	No. Fish 100' Net	Lbs.Fish 100'Net
Spotted gar	8	.59	21.30	2.61	2.66	0.15	0.39
Longnose gar	19	1.42	58.09	7.13	3.06	0.35	1.08
Gizzard shad	772	57.66	375.21	46.06	0.49	14.30	6.95
Buffalo	67	5.00	42.50	5.22	0.63	1.24	0.79
Carpsucker	39	2.91	38.80	4.76	0.99	0.72	0.72
Carp	120	8.96	62.12	7.62	0.52	2.22	1.15
Channel catfish	121	9.04	104.24	12.80	0.86	2.24	1.93
White bass	51	3.81	33.07	4.06	0.65	0.94	0.61
Spotted bass	3	0.22	2.64	0.32	0.88	0.06	0.05
Largemouth bass	32	2.39	39.23	4.82	1.23	0.59	0.73
Redear sunfish	3	0.22	0.89	0.11	0.30	0.06	0.02
Bluegill sunfish	38	2.84	8.92	1.09	0.23	0.70	0.17
White crappie	59	4.41	24.80	3.05	0.42	1.09	0.46
Drum	7	0.53	2.84	0.35	0.41	0.13	0.05
Totals	1,339	100.00	814.65	100.00		24.79	15.10

Table Tagged Crappie Captured in Lake Whitney, from N mber 1, 1956 through October 31, 1958

Tag No.	Date Tagged	Where Tagged	Date Caught	Where Caught	Days of Freedom	Description of Travel
15	2-14-57	Cedar Cr.Dock	3-22-57	Mouth Jun. Cv.	37	300 yards
62	4- 3-57	Above TL Dock	4- 4-57	Above TL Dock	1	No. travel
63	4- 3-57	Above TL Dock	4-18-57	Bl. Hole Ce.Cr.	15	1½ miles
73	4- 4-57	Opp. Wanns Dock	4- 5-57	Above Cher. Dk.	1	250 yards
80	4- 5-57	Juniper Cove	6- 1-57	Mouth Big Rky.	58	9 3/4 mi. dn. lake
90	4- 5-57	Cher. Bt. Dock	4-22-57	Below Cher. Dk.	17	50 yards
93	4- 5-57	Cher. Bt. Dock	9- 1-57	Bee Bluff	149	4½ miles dn. lake
97	4- 5-57	Cher. Bt. Dock	6- 1-57	Mouth Big Rky.	58	9 3/4 mi. dn. lake
98	4- 5-57	Cher. Bt. Dock	4- 7-57	Below Ce. Cr. Dk.	2	3/4 mi. up lake
115	4-11-57	Waldocks Dock	4-11-57	Waldocks Dock	0	No travel
116	4-11-57	Waldocks Dock	4-11-57	Waldocks Dock	0	No travel
128	4-11-57	Above TL Dock	4-12-57	Above TL Dock	1	No travel
130	4-11-57	Below Cher. Dock	4-23-57	Wanns Dock	12	300 yards
135	4-11-57	Below Cher. Dock	4-23-57	Juniper Cove	12	1 mi. up lake
161	4-12-57	Juniper Cove	5-12-57	Dp. Canyon Dk.	31	1¼ mi. dn. lake
163	4-12-57	Juniper Cove	4-22-57	Waldocks Dk.	10	50 yards
174	4-12-57	Cher. Ramp	4-15-57	Cher. Ramp	3	No travel
176	4-12-57	Cher. Ramp	4-24-57	Dp. Canyon Dk.	12	½ mi. dn. lake
177	4-12-57	Wanns Canyon	4-15-57	Wanns Canyon	3	No travel
181	4-15-57	Juniper Cove	4-16-57	Juniper Cove	1	No travel
185	4-15-57	Juniper Cove	4-22-57	Below Cher. Dk.	7	1 mi.dn. lake
203	4-17-57	Waldocks Ramp	4-24-57	Below Gays Dk.	7	200 yards
219	4-22-57	Waldocks Ramp	4-23-57	Below Cher. Dk.	1	1 mile
225	4-22-57	Waldocks Ramp	4-23-57	Waldocks Ramp	1	No travel
306	7-22-57	Waldocks Ramp	8- 7-57	Waldocks Dk.	16	100 yards

Abbreviations--Cher.-Cherokee Dk.-Dock Ce.-Cedar Cr.-Creek Dp.-Deep Bl.-Blue Dn.-Down Mi.-Mile Jun.-Juniper Cv.-Cove Rky.-Rocky

Table 3. Continued Tagged Crappie Captured in Lake Whitney, from November 1, 1956 through October 31, 1958

Tag No.	Date Tagged	Where Tagged	Date Caught	Where Caught	Days of Freedom	Description of Travel
336	7-30-57	Cedar Cr.Dock	8- 7-57	Cedar Cr. Dock	9	No travel
341	7-30-57	Above Cher.Dock	8-17-57	Wanns Bt. Hse.	18	200 yards
372	8- 5-57	Wanns Boat Dock	8-22-57	Ce. Cr. Pier	17	3/4 mi. up lake
390	8- 6-57	Bluff #8 Marker	9- 9-57	Ce. Cr. Pier	34	$\frac{1}{4}$ mi. across chan.
391	8- 6-57	Bluff #8 Marker	8-13-57	Helm Cove	8	300 yards
442	7- 1-57	TL Boat Dock	7-12-57	Juniper Cove	20	3/4 mile
450	7- 2-57	Waldocks Dock	8- 7-57	Waldocks Dock	36	50 yards
537	8- 7-57	Waldocks Dock	8-15-57	Bluff #8 Marker	8	3/4 mi. across chan.
600	8-19-57	Below Gays Dock	9-28-57	Ce. Cr.Dk.	40	500 yards
872	2-18-58	Nolan View Dock	3- 2-57	Nolan View Dk.	12	No travel
919	4-1 -58	Lakeside Village	4- 5-57	Mouth of Mosquite	4	1 mile up lake
926	4-1 -58	Lakeside Village	4-20-57	Lakeside Village	19	No travel
941	4-15-58	Lakeside Village	4-26-57	Lakeside Village	11	No travel
947	4-16-58	Cedar Creek Lodge	4-17-57	Cedar Cr.Pier	1	No travel

Abbreviations--Cher.-Cherokee Dk.-Dock Ce.-Cedar Cr.-Creek Dp.-Deep Bl.-Blue Dn.-Down Mi.-Mile
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Segment Completion Report

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Attached is Figure 1 (Map of Lake Whitney Showing Trapping Stations) which was not attached to this report when it was distributed. Please attach this map to your report for this job.

Figure 1. Map of Lake Whitney showing trapping stations.