JOB COMPLETION REPORT

As required by

FEDERAL AID IN FISHERIES RESTORATION ACT

TEXAS

Federal Aid Project No. F-4-R-11

FISHERIES INVESTIGATION AND SURVEYS OF THE WATERS OF REGION 2-A

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

Project Leader: Dwane Q. Smith

J. Weldon Watson
Executive Director
Parks and Wildlife Department
Austin, Texas

Marion Toole
D-J Coordinator

Eugene A. Walker
Assistant Director for Wildlife

August 30, 1965

ABSTRACT

The study of White crappie, Pomoxis annularis, in Lake Whitney has been continued in order to tag a sufficient number of crappie to determine their pattern of movement and travel.

The crappie were taken with the use of gill nets, wire traps and hook-and-line. Each fish was given a cursory examination, weighed, measured, tagged and released at point of capture.

All data were recorded on field forms and then transferred to a permanent record in the Fort Worth Fisheries Headquarters. Return-tag data were recorded on a card form and was transferred to the permanent file.

A total of 1,468 crappie was tagged during this segment. Only 13 or 0.08 per cent were recaptured. The longest distance of travel was one and one-fourth mile. Three crappie traveled one mile each and all others traveled less than one mile each or showed no travel.

The longest period of freedom was 165 days and the next longest period of freedom was 108 days.

From these data it appears that tagged crappie do not move far from the point of tagging.

Since this job has been in progress for 8 years, it is felt that sufficient data have been collected. Therefore, this job will be terminated, and a publication in the Inland Fisheries Series will be prepared on its findings.

JOB COMPLETION REPORT

State of Texas

Project No. F-4-R-11 Name: Fisheries Investigations and Surveys of the Waters of Region 2-A

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

Period Covered: November 1, 1963 - October 31, 1964

Objectives:

To determine the populations of crappie in Lake Whitney and the reasons for the recent small harvest. To 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.

Procedure:

Tagging and recovery of crappie was continued along the same general lines as had been followed during prior segments. The traps used were constructed of one-inch mesh galvanized poultry wire, stretched on a frame of No. 10 welded wire reinforcement netting. Traps were five feet long and 23-inches in diameter, with a funnel shaped throat in one end and a release door in the other. Traps were set at various depths which corresponded with the depth at which crappie were being taken by hook-and-line fishing.

The hook-and-line method proved very successful during the previous segment and was utilized as a supplement to trapping. This method proved to be more effective than the traps, and if crappie were not abundant near the trapping area, a move to a spot where they could be taken was quickly made.

Various models of small wire traps were used in an effort to locate crappie fry.

Gill net collections were taken from Lake Whitney in order to offer comparable data on the fish population. Fish were collected with experimental type gill nets which are 150 feet long, 6 feet deep with mest size ranging from 1 to 3½ inches.

The same method of tagging crappie was continued. A strap type monel-metal jaw tags were placed on the left premaxillary of all crappie tagged. Data recorded for each tagged specimen were: total length in millimeters, tag number, date and place of capture and release.

Findings:

The results of gill netting collections show the predominance of gizzard shad (Table No. 2). Gizzard shad constituted 35.45 per cent of the total number.

Smallmouth buffalo and freshwater drum showed an increase in both per cent by number and per cent by weight compared with the 1962-63 results (Table No. 3).

White crappie showed a considerable decrease both in per cent by number and per cent by weight (Tables 2 and 3). Netting results from the 1962-63 segment showed the crappie to constitute 9.63 per cent by number but only 3.96 per cent during 1963-64 segment. Also, a decrease is noted in the per cent by weight; from 4.17 per cent in 1962-63 to 0.57 per cent during this segment.

The apparent decrease in the per cent by number and per cent by weight of crappie does not necessarily indicate a definite reduction of the species, but it does indicate an increase in the number of smallmouth buffalo and freshwater drum, which was attributed to the use of the new type of gill nets used during this segment.

All told, 1,468 crappie were tagged during this segment; only 13, or 0.08 per cent, were recaptured. An attempt was made to tag 5,000 crappie during this segment. Due to the very low lake level trapping was greatly hindered; therefore, a majority of the crappie were taken by hook-and-line. This condition is also reflected in the small number of recaptures (Table No. 1).

The longest distance of travel by a tagged crappie was one and one-fourth mile. This crappie was tagged and released into the Mesquite Creek area and was recaptured at Hill's barge two days after release. Three crappie traveled one mile each and all others traveled less than one mile each, or showed no travel.

Crappie Tagged Number 124 remained at large for 165 days, the longest period of freedom. Crappie Tagged Number 11525 was at large for 108 days, the next longest period of freedom. It is apparent that the tagged crappie do not move far from the place where they were tagged and released.

Soon after the initiation of this segment of work, Project Leader Leonard D. Lamb went to the hospital with a malignant tumor; therefore, he was unable to execute, to the fullest extent, all objectives and procedures outlined in the Job Description.

Recommendation:

It is recommended that the crappie study on Lake Whitney be terminated. All data will be tabulated and published in the Texas Parks and Wildlife Inland Fisheries Series.

Prepared by: Dwane Q. Smith
Project Leader

Approved by: Marion Toole

Date: August 30, 1965

John E. Tilton
Regional Supervisor

Table Number 1 Tagged Crappie Recaptures in Lake Whitney, November 1, 1963 through October 31, 1964

Tag No.	Date	Location	Date	Location	Days of Freedom	Distance Traveled
11691	11/26/63	Lakeside Village	2/24/64	Smith Barge	61	¼ mile
11508	12/03/63	Hill Barge	12/15/63	Lakeside Village	12	1 mile
11525	12/04/63	Hill Barge	3/21/64	½ mile East Hill Barge	108	½ mile
11596	1/08/64	Hill Barge	2/23/64	Hill Barge	46	0
11727	1/29/64	Smith Barge	2/25/64	¼ mile from Smith Barge	29	¼ mile
801	3/02/64	Big B Barge	3/04/64	Big B Barge	2	0
802	3/02/64	Big B Barge	3/04/64	Big B Barge	2	0
32	3/10/64	Shoreline near Hill Barge	4/05/64	Circle D Dock	25	1 mile
124	4/01/64	100 yds. above Parvin Barge	10/15/64	Lakeside Village	165	1 mile
201	5/18/64	Mouth of Mesquite Creek	6/19/64	Hill Barge	31	1¼ miles
329	9/15/64	Smith Barge	9/17/64	Lakeside Village	2	¼ mile
11646	11/25/63	Hill Barge	2/25/64	Smith Barge	61	1 mile
11325	10/09/63	Hill Barge	11/12/64	Hill Barge	33	0

Table No. 2 Results of gill net collections, Lake Whitney November 1, 1963 through October 31, 1964

Species	Number	Per Cent of Total Number	Weight in Pounds	Per Cent of Total Weight	Average Weight in Grams	Fish Per 150 Feet of Net	Pounds Per 150 Feet of Net
Spotted gar	1	.11	1.18	.08	539	.02	.02
Longnose gar	77	8.72	185.03	13.97	1090	1.85	4.46
Gizzard shad	313	35.45	231.39	17.47	335	7.55	5.58
Smallmouth buffalo	115	13.02	487.57	36.82	1924	2.77	11.75
River carpsucker	72	8.15	123.20	9.30	776	1.73	2.97
Carp	50	5.67	155.99	11.78	1460	1.21	3.75
Channel catfish	12	1.36	31.02	2.34	1173	.29	.75
Flathead catfish	2	.22	13.05	.98	2962	.04	.32
Largemouth bass	2	.23	.94	.07	215	.05	.02
White bass	12	1.36	7.12	.54	269	.29	.17
Bluegill sunfish	3	.34	.37	.03	56	.07	.01
White crappie	35	3.96	7.61	.57	98	.85	.18
Drum	189	21.41	80.00	6.05	192	4.55	1.93
Totals	883	100.00	1324.47	100.00		21.27	31.91

Table No. 3 Results of gill net collections, Lake Whitney November 1, 1962 through October 31, 1963

Species	Number	Per Cent of Total Number	Weight in Pounds	Per Cent of Total Weight	Average Weight in Pounds	Fish Per 100 Feet of Net	Pounds Per 100 Feet of Net
Spotted gar	9	0.86	10.09	1.16	1.12	0.20	0.22
Longnose gar	84	8.09	222.32	25.62	2.65	1.91	5.06
Gizzard shad	567	54.63	273.87	31.56	0.48	12.89	6.22
Smallmouth buffalo	23	2.21	76.59	8.83	3.33	0.52	1.74
River carpsucker	29	2.80	46.00	5.30	1.59	0.66	1.05
Carp	9	0.87	28.07	3.23	3.12	0.20	0.64
Channel catfish	28	2.69	34.76	4.01	1.24	0.64	0.79
Flathead catfish	1	0.10	2.37	0.27	2.37	0.02	0.05
White bass	157	15.12	98.38	11.34	0.63	3.57	2.24
Largemouth bass	14	1.35	26.34	3.04	1.88	0.32	0.59
Bluegill sunfish	1	0.10	0.18	0.02	0.18	0.02	0.01
White crappie	100	9.63	36.20	4.17	0.36	2.27	0.82
Freshwater drum	16	1.55	12.56	1.45	0.78	0.37	0.29
Totals	1,038	100.00	867.73			23.59	19.72

Table 4. Lake Whitney Water Level Elevations, November 1963 - October 1964

Date	Lake Elevations
November 6, 1963	513.82
November 13, 1963	513.68
November 20, 1963	513.43
November 27, 1963	513.30
December 4, 1963	513.25
December 11, 1963	513.16
December 18, 1963	512.92
December 25, 1963	512.83
January 1, 1964	512.68
January 8, 1964	512.50
January 15, 1964	512.22
January 22,1964	512.35
January 29, 1964	512.35
February 5, 1964	513.50
February 12, 1964	513.76
February 20, 1964	513.94
February 27, 1964	513.85
March 5, 1964	513.88
March 12, 1964	514.52
March 19, 1964	515.12
March 26, 1964	515.75
April 2, 1964	515.69
April 9, 1964	515.83
April 16, 1964	515.68
April 23, 1964	517.74
April 30, 1964	517.88
May 7, 1964	517.67
May 14, 1964	517.41
May 21, 1964	516.97
May 28, 1964	516.41
June 4, 1964	515.88
June 11, 1964	515.36
June 18, 1964	515.02
June 25, 1964	514.83
July 2, 1964	514.17
July 9, 1964	513.75
July 16, 1964	513.27
July 23, 1964	512.79
July 30, 1964	512.67
August 6, 1964	512.98
August 13, 1964	512.93
August 20, 1964	512.87
August 27, 1964	512.57
September 3, 1964	511.80
September 10, 1964	511.91
September 17, 1964	511.95
September 24, 1964	514.63
October 1, 1964	515.47
October 8, 1964	515.30
October 15, 1964	515.11
October 22, 1964	514.91
October 29, 1964	515.10