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JOB COMPLETION REPORT

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FEDERAL AID IN FISHERIES RESTORATION ACT

TEXAS

Federal Aid Project No. F-5-R-13

REGION I-B FISHERIES STUDIES

Job No. 8 Evaluation of Impoundment Renovation

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ABSTRACT

Lakes Trammell and Moss Creek were selected for use in production and utilization studies aimed at determining cost-benefits ratios for evaluating impoundment rotenone renovation. This first segment was a calibrating period to establish comparative data.

Monthly netting and seining data were collected and creel census were taken on one weekday and one weekend day per week at each lake.

Lake Trammell had a very desirable fish population and the harvest averaged over one fish per man-hour. Moss Creek Lake had many desirable fish but a large population of gizzard shad apparently contributed to a stunted Centrarchid problem and poor fishing success.

It was recommended that the data collected at Lake Trammell be saved until the fishery deteriorated. The lake could then be renovated and a post-treatment creel could be implemented.

It was recommended that Moss Creek Lake receive a selective kill of gizzard shad when project personnel are permanently established. A post-treatment creel could then be used to evaluate results.

JOB COMPLETION REPORT

State of Texas

Project No. F-5-R-13

Name: Region I-B Fisheries Studies

Job No. 8

Title: Evaluation of Impoundment Renovation

Period Covered: March 1, 1965 to February 28, 1966

Objectives:

General:

To determine cost-benefits ratios for evaluating impoundment rotenone renovation.

Specific:

1. To determine production and relative abundance of fish species prior to renovation procedures.

2. To determine utilization and harvest of the fishery resources prior to renovation procedures.

Procedures:

General:

Two similar bodies of water, Lakes Trammell and Moss Creek, were selected for evaluating the effects of rotenone renovation on fisheries production and harvest. During this first segment extensive creel census were run and monthly netting and seining samples were collected. This was a calibration period to establish comparative data. No renovation activities were scheduled.

Specific:

1. Desirable-undesirable fish ratios and relative abundances for individual species were estimated by the monthly use of standard unit, 150-foot gill nets and various type seines. Standard nets have six 25- by 8-foot sections. The first section has 1-inch mesh. In each succeeding section the mesh is 1/2-inch larger. The seines used are described in the tables denoting their catches. The term "seining collection" is used to designate one or two drags of a 20-, 30-, or 40-foot seine in an area no larger than 2 acres, or one drag of a 100-, 200⁵ or 300-foot seine.

2. All available records of recreational permits sold for Lakes Trammell and Moss Creek were procured from the cities of Sweetwater and Big Spring. Automatic car counters were placed at the entrances to both lakes. The lake superintendents recorded the meter readings on Friday evenings and Monday mornings.

Creel census were taken on alternating weekend days and rotating weekdays as stipulated in the job description schedule, except for minor deviations. Angler's catches were counted by species and recorded according to total length. The same creel cards used in Job 7 were utilized for this purpose (Appendix A).

In order to convert total length to weight, samples of 10 specimens of each size range (using one-inch intervals) were actually weighed at each lake. The average weights were then calculated (Appendixes B and C).

Results of actual creel interviews were tabulated on a daily basis. These data were then compiled into monthly findings. The independent weekday and weekend totals were reduced to daily averages in order to project the data into estimates of monthly fishing utilization and success. These estimates were derived by multiplying daily averages by the actual number of weekdays and weekend days occurring in the particular month under consideration.

A list of common and scientific names is presented in Appendix D so that common names may be used in the context of this report.

Findings:

General:

Lake Abilene, in Taylor County, and Moss Creek Lake, in Howard County, were originally selected as the investigation areas. Written approval for the use of these lakes was promised by the cities of Abilene and Big Spring before the job was incorporated into the F-5-R-13 project. This documentary sanction was soon forthcoming from Big Spring, but negotiations with Abilene over a three month period failed to produce written results. Lake Trammell, in Nolan County, was substituted for the Lake Abilene site. The city of Sweetwater quickly produced written clearance. However, delay resulting from the lengthy negotiations with Abilene prevented initiation of field activities until June 1, 1965.

Fishing usage at the two lakes dwindled as the weather became cold. Because of this sparse utilization, and because of a shortage of project personnel, harvest data collection was terminated at the end of November 1965. Corresponding production investigations were completed December 15, 1965.

Specific:

1. Production and Abundance

Car counter readings were severely influenced by intermittent sight-seeing traffic. Sporadic traffic by oilfield workers also contributed to inaccuracy. The fishing utilization factor, as reflected by car counters, was so encumbered with variables that it was unreliable. For that reason, utilization projections were derived by multiplying daily averages by monthly weekday and weekend day totals.

Lake Trammell

This is an auxiliary water supply for the city of Sweetwater. When full, as it became during June 1965, it contains 3,183 acre feet of water and covers 230 surface acres. Prior to June the lake had contained less than half of its capacity. The report for Job B-24, Project F-5-R-6 contains background information, fisheries statistics and other pertinent information.

Table 1 is a compilation of monthly seining results. Shallow shoreline areas were heavily infested by water star grass, Heteranthera dubia, smartweed, Polygonum sp. and muskgrass, Chara sp. during the summer months so that uniform seining collections were impossible to obtain.

Soon after the lake caught a significant runoff from spring rains, 40,000 largemouth bass fry were stocked from the state hatchery's surplus production. Later, 8,350 channel catfish fingerlings were stocked because of an apparent biological need.

Soon after the hatchery bass were released, several late but successful natural spawns occurred. As indicated by the seining results, some of the bass progeny grew very well. Other progeny, possibly the late spawns, remained about three inches long throughout the year.

Netting results are presented in Tables 2, 3 and 4. Since the June sample was composed mainly of game fish species, it was decided that a monthly collection of two netting units would yield sufficient netting statistics.

Centrarchids were extremely abundant in these samples. White crappie, redear sunfish and largemouth bass were of adequate average size to be desirable.

Golden shiners appear to be the most numerous undesirable species present. Only one gizzard shad and three river carpsuckers were captured. Fortunately and unexplainably these species have not reproduced.

When the original survey of this lake was made, bullhead catfish were very abundant. The introduction of 300 small flathead catfish during 1960 has evidently affected a control.

Table 1. Results of 31 Seining Collections Obtained from Lake Trammell During 1965.
 (4 collections with a 10-foot straight seine, 6 feet deep with 1/8-inch mesh)
 (26 collections with a 20-foot straight seine, 6 feet deep with 1/4-inch mesh)
 (1 collection with a 100-foot straight seine, 8 feet deep with 1-inch mesh)

Species	June 17	July 30	Aug. 30	Sept. 27	Oct. 20	Nov. 30	Dec. 15	Totals
<u>Numbers</u>								
Golden shiner	8	184	2	82	0	2	0	278
Mosquitofish	1	2	13	0	2	4	0	22
Warmouth	0	0	7	0	0	0	0	7
Green sunfish	3	0	0	0	0	0	0	3
Bluegill	18	4	20	50	13	12	11	128
Redear sunfish	0	16	25	0	1	4	2	48
Largemouth bass	550	62	62	48	29	21	14	786
White crappie	0	12	0	0	0	0	0	12
Logperch	0	3	0	12	0	0	0	15
Totals	580	283	129	192	45	43	27	1299

<u>Size Range in Inches</u>								
Golden shiner	2	1-2.50	6-7	1.50-3.50	--	2-3	--	1-7
Mosquitofish	2.25	2	.50-1	--	1.50-2	2-2.50	--	.50-2.50
Warmouth	--	--	2-6	--	--	--	--	2-6
Green sunfish	4	--	--	--	--	--	--	4
Bluegill	2-3.50	1-3.50	.50-4	2-6	2-4	2-5	3-4	.50-6
Redear sunfish	--	1.50-2	2-7	--	3.50	3-4	3	1.50-7
Largemouth bass	1-3.25	2-6	3-7.50	3-8.75	2.50-4.50	3-5	3-4	1-8.75
White crappie	--	1.50-2.50	--	--	--	--	--	1.50-2.50
Logperch	--	2-3	--	2-3.50	--	--	--	2-3.50

Table 2. Percentage Composition by Number of Netting Samples Obtained from Lake Trammell During 1965.

Species	June 17 (4 units)		July 30 (2 units)		Aug. 31 (2 units)		Sept. 27 (2 units)		Oct. 20 (2 units)		Nov. 30 (2 units)		Dec. 15 (2 units)		Totals (16 units)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Gizzard shad	1	.77	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	1	.21
Golden shiner	2	1.55	0	.00	0	.00	7	10.29	8	25.00	25	37.31	18	40.90	60	12.76
River carpsucker	2	1.55	0	.00	0	.00	0	.00	0	.00	0	.00	1	2.28	3	.64
Black bullhead	0	.00	0	.00	0	.00	2	2.94	0	.00	2	2.98	7	15.91	11	2.34
Channel catfish	7	5.43	3	4.10	0	.00	4	5.88	0	.00	0	.00	0	.00	14	2.98
Flathead catfish	1	.77	2	2.74	0	.00	0	.00	0	.00	0	.00	0	.00	3	.64
Warmouth	0	.00	0	.00	2	3.50	0	.00	1	3.12	1	1.50	0	.00	4	.85
Green sunfish	2	1.55	0	.00	1	1.76	5	7.36	0	.00	0	.00	0	.00	8	1.70
Bluegill	62	48.06	34	46.58	26	45.61	11	16.17	6	18.75	17	25.37	8	18.18	164	34.90
Redear sunfish	6	4.66	7	9.59	13	22.81	3	4.41	8	25.00	18	26.86	6	13.63	61	12.98
Largemouth bass	3	2.32	3	4.11	2	3.51	20	29.42	4	12.50	2	2.99	0	.00	34	7.23
White crappie	43	33.34	24	32.88	13	22.81	16	23.53	5	15.63	2	2.99	4	9.10	107	22.77
Totals	129	100.00	73	100.00	57	100.00	68	100.00	32	100.00	67	100.00	44	100.00	470	100.00

Table 3. Percentage Composition by Weight of Netting Samples Obtained from Lake Irammell During 1965.

Species	June 17 (4 units)		July 30 (2 units)		Aug. 31 (2 units)		Sept. 27 (2 units)		Oct. 20 (2 units)		Nov. 30 (2 units)		Dec. 15 (2 units)		Totals (16 units)	
	Lbs.	%	Lbs.	%	Lbs.	%	Lbs.	%	Lbs.	%	Lbs.	%	Lbs.	%	Lbs.	%
Gizzard shad	.97	2.99	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	.97	.61
Golden shiner	.32	.99	0	.00	0	.00	1.28	5.50	1.40	12.90	4.86	26.12	3.34	22.03	11.20	7.15
River carpsucker	2.86	8.82	0	.00	0	.00	0	.00	0	.00	0	.00	1.56	10.29	4.42	2.81
Black bullhead	0	.00	0	.00	0	.00	1.63	7.01	0	.00	2.50	13.44	6.17	40.70	10.30	6.57
Channel catfish	6.50	20.06	4.62	11.52	0	.00	4.94	21.25	0	.00	0	.00	0	.00	16.06	10.24
Flathead catfish	2.00	6.17	11.50	28.70	0	.00	0	.00	0	.00	0	.00	0	.00	13.50	8.61
Warmouth	0	.00	0	.00	.20	1.21	0	.00	.23	2.12	.08	.44	0	.00	.51	.33
Green sunfish	.34	1.05	0	.00	.10	.61	.59	2.54	0	.00	0	.00	0	.00	1.03	.65
Bluegill	9.06	27.95	7.43	18.55	5.46	33.13	1.45	6.23	.73	6.73	3.08	16.55	1.05	6.92	28.26	18.02
Redear sunfish	1.56	4.81	1.95	4.86	3.85	23.36	.90	3.87	2.71	24.97	5.81	31.24	1.88	12.40	18.66	11.90
Largemouth bass	2.47	7.63	7.31	18.24	2.31	14.02	8.69	37.38	3.86	35.58	1.74	9.36	0	.00	26.38	16.83
White crappie	6.33	19.53	7.26	18.12	4.56	27.67	3.77	16.22	1.92	17.70	.53	2.85	1.16	7.66	25.53	16.28
Totals	32.41	100.00	40.07	100.00	16.48	100.00	23.25	100.00	10.85	100.00	18.60	100.00	15.16	100.00	156.82	100.00

Table 4. Average Weights and K Factors of Fish Netted from Lake Trammell During 1965.

Species	June 17 (4 units)	July 30 (2 units)	Aug. 31 (2 units)	Sept. 27 (2 units)	Oct. 20 (2 units)	Nov. 30 (2 units)	Dec. 15 (2 units)	Averages (16 units)
	A.Wt. K	A.Wt. K	A.Wt. K	A.Wt. K	A.Wt. K	A.Wt. K	A.Wt. K	A.Wt. K
Gizzard shad	.97 1.90	- -	- -	- -	- -	- -	- -	.97 1.90
Golden shiner	.16 2.34	- -	- -	.18 2.21	.18 2.25	.19 2.08	.19 2.16	.19 2.15
River carpsucker	1.43 2.79	- -	- -	- -	- -	- -	1.56 2.84	1.47 2.81
Black bullhead	- -	- -	- -	.82 2.23	- -	1.25 2.79	.88 2.66	.94 2.61
Channel catfish	.93 1.81	1.54 1.77	- -	1.24 1.95	- -	- -	- -	1.15 1.84
Flathead catfish	2.00 1.59	5.75 1.98	- -	- -	- -	- -	- -	4.50 1.85
Warmouth	- -	- -	.10 3.94	- -	.23 4.20	.08 3.17	- -	.13 3.81
Green sunfish	.17 3.64	- -	.10 3.95	.12 4.65	- -	- -	- -	.13 4.31
Bluegill	.15 4.83	.21 4.80	.21 4.29	.13 4.65	.12 4.40	.18 4.56	.13 4.32	.17 4.65
Redear sunfish	.26 4.37	.28 4.40	.30 3.88	.30 3.62	.34 4.19	.32 4.43	.31 3.75	.31 4.16
Largemouth bass	.82 2.63	2.44 2.37	1.15 2.21	.43 2.52	.97 2.58	.87 2.58	- -	.78 2.50
White crappie	.15 2.81	.25 2.97	.35 2.76	.24 3.07	.38 2.93	.27 2.66	.29 2.64	.24 2.87

Moss Creek Lake

This is an auxiliary water supply for the city of Big Spring. When full, as it was during June 1965, it contains 2,325 acre feet of water and covers 145 acres. A fisheries survey and a selective shad eradication were completed during 1958 and 1959. The reports for Job B-25, Project F-5-R-6 and Job 16a-14, Project F-14-D-3 contain background information, fish population data and other pertinent findings.

Table 5 is a compilation of monthly seining samples. Wide discrepancies and variations in the monthly seining catches resulted partially from a lack of uniformity in the numbers and types of seining collections. Fluctuating water levels and obstructive aquatic vegetation made it impossible to standardize seining techniques. Other factors creating discrepancies were the variations in water temperatures and turbidities occurring between June and December.

Despite sampling errors it is significant that fingerling largemouth bass and other Centrarchids were common throughout the sampling period. Food competition among small fishes appears critical. The carrying capacity of this lake is undoubtedly over-utilized.

Project personnel authorized the stocking of 18,000 surplus bass fry prior to the initiation of production studies. The influence of stocked fish on established populations is still somewhat conjectural. However, it appears that the supplementation of bass fry in this case was probably not needed and may have been detrimental.

Netting results are presented in Tables 6, 7 and 8. Six standard netting units captured 40 channel catfish during June. After June only two netting units were utilized monthly. It was decided that a smaller sample would provide sufficient population data without depleting the catchable population of catfish. The sample was increased to four netting units in November. This larger sample was obtained to balance the data accumulated during the warmer months.

Channel catfish accounted for 12.34 per cent of the netting sample and constituted 35.31 per cent of the total weight. While the effects of trotlines on catfish populations is undocumented, it is interesting to note that the catfish population is much higher in this lake where no trotlines are allowed than in nonrestricting Region I-B lakes.

Gizzard shad were very numerous in the netting sample. A percentage of 53.52 is large enough to warrant remedial action.

Table 5. Results of 37 Seining Collections Obtained from Moss Creek Lake During 1965.

(33 collections with a 20-foot straight seine, 6 feet deep with 1/4-inch mesh)
 (3 collections with a 100-foot straight seine, 8 feet deep with 1/2-inch mesh)

Species	June 8	July 13	Aug. 27	Sept. 17	Oct. 15	Nov. 12	Dec. 14	Totals
<u>Numbers</u>								
Gizzard shad	413	9	0	0	8	0	3	433
Golden shiner	19	14	0	0	2	0	3	38
Red shiner	14	0	0	0	0	0	0	14
Mosquitofish	4	4	0	0	0	0	0	8
Warmouth	1	4	0	1	0	0	0	6
Green sunfish	1	0	11	0	0	0	0	12
Orangespotted sunfish	0	14	0	7	0	0	0	21
Bluegill	47	64	40	78	48	32	20	329
Longear sunfish	3	1	10	8	5	7	3	37
Redear sunfish	5	4	0	3	16	0	0	28
Largemouth bass	13	73	6	22	57	10	9	190
White crappie	66	0	0	0	1	0	0	67
Logperch	7	61	6	38	64	22	19	217
Totals	593	248	73	157	201	71	57	1,400
<u>Size Range in Inches</u>								
Gizzard shad	3-7	4	- -	- -	4-5	- -	3-4	3-7
Golden shiner	3-6	2-3	- -	- -	4-6	- -	3-4	2-6
Red shiner	2	- -	- -	- -	- -	- -	- -	2
Mosquitofish	2.5	2	- -	- -	- -	- -	- -	2-2.5
Warmouth	4	4-6	- -	5	- -	- -	- -	4-6
Green sunfish	3	- -	2.5-3	- -	- -	- -	- -	2.5-3
Orangespotted sunfish	- -	2-3	- -	1-2.5	- -	- -	- -	1-3
Bluegill	1-4	.5-4	.5-4	.5-4.5	.5-3	1.5-3	2-4	.5-4.5
Longear sunfish	3	3	2-5	2-3	2-3.5	2-4	3-3.5	2-5
Redear sunfish	4-7	2-3	- -	2-5	2.5-4	- -	- -	2-7
Largemouth bass	1.5-10	1-5	2-3	2-5.5	2-4	2-4	2-5	1-10
White crappie	2-5	- -	- -	- -	2	- -	- -	2-5
Logperch	1-4	2-4	3-6	2-4.5	1.5-3	1-3.5	2.5-3.5	1-6

Table 6. Percentage Composition by Number of Netting Samples Obtained from Moss Creek Lake During 1965.

Species	June 9 (6 units)		July 14 (2 units)		Aug. 27 (2 units)		Sept. 18 (2 units)		Oct. 16 (2 units)		Nov. 12 (4 units)		Dec. 14 (2 units)		Totals (20 units)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Gizzard shad	58	29.59	86	69.35	55	73.33	22	68.75	50	73.52	39	50.64	24	45.28	334	53.52
Carp	2	1.02	2	1.61	1	1.33	1	3.12	1	1.48	6	7.80	0	.00	13	2.08
Golden shiner	4	2.04	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	4	.65
River carpsucker	1	.51	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	1	.16
Black bullhead	47	23.98	3	2.42	1	1.34	0	.00	0	.00	2	2.59	0	.00	53	8.49
Channel catfish	40	20.41	10	8.07	4	5.33	5	15.63	6	8.82	6	7.80	6	11.32	77	12.34
Flathead catfish	2	1.02	0	.00	0	.00	0	.00	0	.00	0	.00	1	1.89	3	.48
White bass	4	2.04	2	1.61	0	.00	0	.00	0	.00	5	6.49	1	1.88	12	1.92
Warmouth	0	.00	1	.81	0	.00	0	.00	0	.00	0	.00	0	.00	1	.16
Bluegill	7	3.57	0	.00	2	2.67	1	3.12	2	2.94	1	1.30	15	28.30	27	4.33
Redear sunfish	6	3.06	0	.00	7	9.33	0	.00	2	2.94	6	7.79	0	.00	21	3.37
Largemouth bass	3	1.53	2	1.61	0	.00	0	.00	0	.00	0	.00	2	3.78	7	1.12
White crappie	22	11.23	18	14.52	5	6.67	3	9.38	7	10.30	12	15.59	4	7.55	71	11.38
Totals	196	100.00	124	100.00	75	100.00	32	100.00	68	100.00	77	100.00	53	100.00	624	100.00

Table 7. Percentage Composition by Weight of Netting Samples Obtained from Moss Creek Lake During 1965.

Species	June 9 (6 units)		July 14 (2 units)		Aug. 27 (2 units)		Sept. 18 (2 units)	
	Lbs.	%	Lbs.	%	Lbs.	%	Lbs.	%
Gizzard shad	7.57	5.42	9.73	23.50	5.87	28.39	2.84	17.61
Carp	8.50	6.10	15.56	37.58	10.68	51.67	3.87	24.01
Golden shiner	.64	.46	.00	.00	.00	.00	.00	.00
River carpsucker	3.43	2.46	.00	.00	.00	.00	.00	.00
Black bullhead	13.00	9.32	.60	1.45	.12	.58	.00	.00
Channel catfish	68.57	49.17	9.13	22.05	2.75	13.31	9.04	56.08
Flathead catfish	17.12	12.27	.00	.00	.00	.00	.00	.00
White bass	7.62	5.47	2.81	6.79	.00	.00	.00	.00
Warmouth	.00	.00	.11	.27	.00	.00	.00	.00
Bluegill	.64	.46	.00	.00	.15	.72	.07	.43
Redear sunfish	1.16	.83	.00	.00	.66	3.20	.00	.00
Largemouth bass	10.24	7.34	1.43	3.45	.00	.00	.00	.00
White crappie	.97	.70	2.03	4.91	.44	2.13	.30	1.87
Totals	139.46	100.00	41.40	100.00	20.67	100.00	16.12	100.00

Species	Oct. 16 (2 units)		Nov. 12 (4 units)		Dec. 14 (2 units)		Totals (20 units)	
	Lbs.	%	Lbs.	%	Lbs.	%	Lbs.	%
Gizzard shad	5.11	36.89	4.03	6.68	3.19	11.34	38.34	11.67
Carp	4.06	29.31	31.29	51.90	.00	.00	73.96	22.51
Golden shiner	.00	.00	.00	.00	.00	.00	.64	.19
River carpsucker	.00	.00	.00	.00	.00	.00	3.43	1.05
Black bullhead	.00	.00	.33	.55	.00	.00	14.05	4.28
Channel catfish	3.87	27.95	10.77	17.86	11.88	42.27	116.01	35.31
Flathead catfish	.00	.00	.00	.00	3.93	13.98	21.05	6.41
White bass	.00	.00	10.61	17.60	3.12	11.10	24.16	7.35
Warmouth	.00	.00	.00	.00	.00	.00	.11	.04
Bluegill	.14	1.01	.07	.11	1.28	4.55	2.28	.69
Redear sunfish	.17	1.22	.47	.78	.00	.00	11.14	3.39
Largemouth bass	.00	.00	.00	.00	4.30	15.30	15.96	4.86
White crappie	.50	3.62	2.72	4.52	.41	1.46	7.37	2.24
Totals	13.85	100.00	60.29	100.00	28.11	100.00	328.51	100.00

Table 8. Average Weights and K Factors of Fish Netted from Moss Creek Lake During 1965.

Species	June 9 (6 units)		July 14 (2 units)		Aug. 27 (2 units)		Sept. 18 (2 units)	
	A.Wt.	K	A.Wt.	K	A.Wt.	K	A.Wt.	K
Gizzard shad	.13	1.70	.11	2.04	.15	1.92	.13	1.70
Carp	4.25	2.72	7.78	2.82	10.68	2.76	3.87	2.85
Golden shiner	.16	2.53	- -	- -	- -	- -	- -	- -
River carpsucker	3.43	3.22	- -	- -	- -	- -	- -	- -
Black bullhead	.28	2.71	.20	2.87	.12	2.52	- -	- -
Channel catfish	1.71	2.04	.91	1.83	1.69	1.65	1.81	1.64
Flathead catfish	8.56	2.27	- -	- -	- -	- -	- -	- -
White bass	1.91	2.82	1.41	2.71	- -	- -	- -	- -
Warmouth	- -	- -	.11	3.64	- -	- -	- -	- -
Bluegill	.09	4.26	- -	- -	.08	4.04	.07	4.35
Redear sunfish	.19	3.99	- -	- -	.09	3.67	- -	- -
Largemouth bass	3.41	2.78	.72	2.59	- -	- -	- -	- -
White crappie	.04	2.55	.11	2.70	.09	2.28	.10	2.53

Species	Oct. 16 (2 units)		Nov. 12 (4 units)		Dec. 14 (2 units)		Averages (20 units)	
	A.Wt.	K	A.Wt.	K	A.Wt.	K	A.Wt.	K
Gizzard shad	.10	1.45	.10	1.75	.13	1.83	.11	1.80
Carp	4.06	2.92	5.21	2.83	- -	- -	5.69	2.82
Golden shiner	- -	- -	- -	- -	- -	- -	.16	2.53
River carpsucker	- -	- -	- -	- -	- -	- -	3.43	3.22
Black bullhead	- -	- -	.17	2.18	- -	- -	.27	2.70
Channel catfish	.65	1.39	1.80	1.63	1.98	1.72	1.51	1.86
Flathead catfish	- -	- -	- -	- -	3.93	1.66	7.02	2.07
White bass	- -	- -	2.12	2.90	3.12	2.87	2.01	2.84
Warmouth	- -	- -	- -	- -	- -	- -	.11	3.64
Bluegill	.07	3.15	.07	3.20	.09	3.92	.08	4.09
Redear sunfish	.09	3.02	.08	3.20	- -	- -	.05	3.56
Largemouth bass	- -	- -	- -	- -	2.15	3.04	2.28	2.80
White crappie	.07	1.97	.22	2.42	.10	2.49	.10	2.48

2. Utilization and Harvest

Lake Trammell

Daily recreational permit records are presented in Table 9. These have little significance, however, since family and annual permits are also issued. These allow fishing at any of three city owned reservoirs.

Table 9. Individual Permits Sold at Lake Trammell from 1962 through 1965.

<u>Year</u>	<u>Permits</u>
1962	5,783
1963	4,738
1964	2,484
1965	3,456

Each months fishing utilization and success is presented in dual tables. Tables 10, 12, 14, 16, 18 and 20 are summaries of the actual monthly creel data. The catch per man-hour figures are tabulated directly from the interviews.

Tables 11, 13, 15, 17, 19 and 21 are estimates of monthly utilization and quantity of fish caught. These are projections of the actual samples, as previously discussed.

Catch per man-hour at Lake Trammell was consistently high throughout the sampling months, averaging over one fish per man-hour. An abundance of large sunfish and small largemouth bass were primarily responsible for this success.

Table 10. Results of Creel Interviews at Lake Trammell During June 1965.

	Weekdays (1,7,18,24, 30)		Weekend days (6,12,20,26)		June Creel (9 days)	
Number of parties checked:	59		91		150	
Number of parties catching fish:	38		64		102	
Number of fishermen:	117		189		306	
Man hours of fishing:	445.00		811.50		1,256.50	
Actual catch:	<u>No. Pounds</u>		<u>No. Pounds</u>		<u>No. Pounds</u>	
<u>Game Species</u>						
sunfish	385	110.07	980	299.33	1,365	409.40
white crappie	17	5.05	1	.31	18	5.36
largemouth bass	14	25.86	15	26.21	29	52.07
channel catfish	7	12.22	2	5.85	9	18.07
flathead catfish	1	2.00	0	0	1	2.00
totals	424	155.20	998	331.70	1,422	486.90
<u>Rough Species</u>						
bullhead catfish	2	4.14	8	7.64	10	11.78
Totals for all species:	426	159.34	1,006	339.34	1,432	498.68
Game fish caught per man hour:	.952	.348	1.229	.408	1.131	.387
Rough fish caught per man hour:	.004	.009	.009	.009	.007	.009
Catch of all species per man hour:	.957	.358	1.239	.418	1.139	.396

Table 11. Estimated Fishing Utilization and Success at Lake Trammell During June 1965.

	<u>Weekdays</u>		<u>Weekend days</u>		<u>June</u>	
	<u>(22)</u>		<u>(8)</u>		<u>(30)</u>	
Number of fishermen:	515		378		893	
Man hours of fishing:	1,958.00		1,623.00		3,581.00	
Projected Catch:	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>
<u>Game Species</u>						
sunfish	1,694	484.31	1,960	598.66	3,654	1,082.97
white crappie	75	22.22	2	.62	77	22.84
largemouth bass	62	113.78	30	52.42	92	166.20
channel catfish	31	53.77	4	11.70	35	65.47
flathead catfish	4	8.80	0	0	4	8.80
Totals	1,866	682.88	1,996	663.40	3,862	1,346.28
<u>Rough Species</u>						
bullhead catfish	9	18.22	16	15.28	25	33.50
Totals for all species:	1,875	701.10	2,012	678.68	3,887	1,379.78

Table 12. Results of Creel Interviews at Lake Trammell During July 1965.

	<u>Weekdays</u> <u>(6,12,23,29)</u>		<u>Weekend days</u> <u>(4,10,18,24)</u>		<u>July Creel</u> <u>(8 days)</u>	
Number of parties checked:	40		74		114	
Number of parties catching fish:	31		49		80	
Number of fishermen:	83		159		242	
Man hours of fishing:	341.50		479.50		821.00	
Actual catch:	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>
<u>Game Species</u>						
sunfish	567	184.51	786	274.55	1,353	459.06
white crappie	33	3.12	57	20.15	90	23.27
largemouth bass	8	1.53	25	7.25	33	8.78
channel catfish	2	1.13	8	15.63	10	16.76
Totals	610	190.29	876	317.58	1,486	507.87
<u>Rough Species</u>						
bullhead catfish	3	1.07	2	.86	5	1.93
Totals for all species:	613	191.36	878	318.44	1,491	509.80
Game fish caught per man hour:	1.786	.557	1.826	.662	1.809	.618
Rough fish caught per man hour:	.008	.003	.004	.001	.006	.002
Catch of all species per man hours:	1,795	.560	1.831	.664	1.816	.620

Table 13. Estimated Fishing Utilization and Success at Lake Trammell During July 1965.

	<u>Weekdays</u> (22)		<u>Weekend days</u> (9)		<u>July</u> (31 days)	
Number of fishermen:	457		358		815	
Man hours of fishing:	1,878.25		1,078.88		2,957.13	
Projected Catch:	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>
<u>Game Species</u>						
sunfish	3,119	1,014.81	1,769	617.74	4,888	1,632.55
white crappie	182	17.16	128	45.34	310	62.50
largemouth bass	44	8.41	56	16.31	100	24.72
channel catfish	11	6.22	18	35.17	29	41.39
Totals	3,356	1,046.60	1,971	714.56	5,327	1,761.16
<u>Rough Species</u>						
bullhead catfish	17	5.89	5	1.94	22	7.83
Totals for all species:	3,373	1,052.49	1,976	716.50	5,349	1,768.99

Table 14. Results of Creel Interviews at Lake Trammell During August 1965.

	<u>Weekdays</u> (4, 16, 27)		<u>Weekend days</u> (1, 7, 15, 21, 29)		<u>Aug. Creel</u> (8 days)	
Number of parties checked:	44		84		128	
Number of parties catching fish:	36		67		103	
Number of fishermen:	87		172		259	
Man hours of fishing:	320.00		704.00		1,024.00	
Actual catch:	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>
<u>Game Species</u>						
sunfish	226	70.69	821	254.01	1,047	324.70
white crappie	93	31.93	371	108.94	464	140.87
largemouth bass	34	9.97	318	34.77	352	44.74
channel catfish	2	1.34	3	15.92	5	17.26
Totals	355	113.93	1,513	413.64	1,868	527.57
<u>Rough Species</u>						
bullhead catfish	0	0	2	1.79	2	1.79
Totals for all species:	355	113.93	1,515	415.43	1,870	529.36
Game fish caught per man hour:	1.109	.356	2.149	.587	1.824	.515
Rough fish caught per man hour:	0	0	.002	.002	.001	.001
Catch of all species per man hour:	1,109	.356	2.151	.590	1.826	.516

Table 15. Estimated Fishing Utilization and Success at Lake Trammell During August 1965.

	<u>Weekdays</u> (22)		<u>Weekend days</u> (9)		<u>August</u> (31 days)	
Number of fishermen:	638		310		948	
Man hours of fishing:	2,345.60		1,267.20		3,612.80	
Projected Catch:	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>
<u>Game Species</u>						
sunfish	1,657	518.16	1,478	533.42	3,135	1,051.58
white crappie	682	234.05	668	206.99	1,350	441.04
largemouth bass	249	73.08	572	62.59	821	135.67
channel catfish	15	9.82	5	28.66	20	38.48
Totals	2,603	835.11	2,723	831.66	5,326	1,666.77
<u>Rough Species</u>						
bullhead catfish	0	0	4	3.22	4	3.22
Totals for all species:	2,603	835.11	2,727	834.88	5,330	1,669.99

Table 16. Results of Creel Interviews at Lake Trammell During September 1965.

	<u>Weekdays</u> (2,13,20)		<u>Weekend days</u> (4,12,18,26)		<u>September</u> (7 days)	
Number of parties checked:	20		51		71	
Number of parties catching fish:	17		42		59	
Number of fishermen:	37		110		147	
Man hours of fishing:	364.00		429.50		793.50	
Actual Catch:	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>
<u>Game Species</u>						
sunfish	130	40.13	542	162.24	672	202.37
white crappie	17	3.62	78	19.79	95	23.41
largemouth bass	28	4.23	97	34.32	125	38.55
channel catfish	0	0	3	3.85	3	3.85
Totals	175	47.98	720	220.20	895	268.10
<u>Rough Species</u>						
bullhead catfish	0	0	1	1.11	1	1.11
Totals for all species:	175	47.98	721	221.31	896	269.29
Game fish caught per man hour:	.480	.131	1.676	.512	1.127	.337
Rough fish caught per man hour:	0	0	.002	.002	.001	.001
Catch of all species per man hour:	480	.131	1.678	.515	1.129	.339

Table 17. Estimated Fishing Utilization and Success at Lake Trammell During September 1965.

	<u>Weekdays</u> (22)		<u>Weekend days</u> (8)		<u>September</u> (30 days)	
Number of fishermen:	271		220		491	
Man hours of fishing:	2,668.12		859.00		3,527.12	
Projected Catch:	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>
<u>Game Species</u>						
sunfish	953	294.15	1,084	324.48	2,037	618.63
white crappie	125	26.53	1,240	39.58	1,365	66.11
largemouth bass	205	31.01	194	68.64	399	99.65
channel catfish	0	0	6	7.70	6	7.70
Totals	1,283	351.69	2,524	440.40	3,807	792.09
<u>Rough Species</u>						
bullhead catfish	0	0	2	2.20	2	2.20
Totals for all species:	1,283	351.69	2,526	442.60	3,809	794.29

Table 18. Results of Creel Interviews at Lake Trammell During October 1965.

	Weekdays (1, 7, 13, 19, 25)		Weekend days (2, 10, 16, 24, 30)		October (9 days)	
Number of parties checked:	54		51		105	
Number of parties catching fish:	37		33		70	
Number of fishermen:	102		107		209	
Man hours of fishing:	331.00		367.50		698.50	
Actual Catch:	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>
<u>Game Species</u>						
sunfish	246	77.59	163	47.49	409	125.08
white crappie	93	39.17	162	76.98	255	116.15
largemouth bass	97	34.18	113	35.96	210	70.14
channel catfish	3	3.63	1	.67	4	4.3
Totals	439	154.57	439	161.10	878	315.67
<u>Rough Species</u>						
bullhead catfish	5	1.00	5	.40	10	1.40
Totals for all species:	444	155.57	444	161.50	888	317.07
Game fish caught per man hour:	1.326	.466	1.194	.438	.1256	.451
Rough fish caught per man hour:	.015	.003	.013	.001	.014	.002
Catch of all species per man hour:	1.341	.470	1.208	.439	1.271	.453

Table 19, Estimated Fishing Utilization and Success at Lake Trammell During October 1965.

	<u>Weekdays</u> <u>(21)</u>		<u>Weekend days</u> <u>(10)</u>		<u>October</u> <u>(31) days</u>	
Number of fishermen:	428		214		642	
Man hours of fishing:	1,390.20		735.00		2,125.20	
Projected Catch:	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>
<u>Game Species</u>						
sunfish	1,033	325.88	326	94.98	1,359	420.86
white crappie	391	164.51	324	153.96	715	318.47
largemouth bass	407	143.56	226	71.92	633	215.48
channel catfish	13	15.25	2	1.34	15	16.59
Totals	1,844	649.20	878	322.20	2,722	971.40
<u>Rough Species</u>						
bullhead catfish	21	4.20	10	.80	31	5.00
Totals for all species:	1,865	653.40	888	323.00	2,753	976.40

Table 20. Results of Creel Interviews at Lake Trammell During November 1965.

	<u>Weekdays</u> (5, 11, 17, 23, 29)		<u>Weekend days</u> (7, 13, 21, 27)		<u>November</u> (9 days)	
Number of parties checked:	17		25		42	
Number of parties catching fish:	15		18		33	
Number of fishermen:	29		57		86	
Man hours for fishing:	55.50		193.00		248.50	
Actual catch:	<u>No. Pounds</u>		<u>No. Pounds</u>		<u>No. Pounds</u>	
<u>Game Species</u>						
sunfish	45	10.33	16	3.76	61	14.59
white crappie	44	10.78	118	36.16	162	46.94
largemouth bass	66	13.44	69	11.99	135	25.43
Totals	155	34.55	203	51.91	358	86.96
<u>Rough Species</u>						
bullhead catfish	0	0	13	4.32	13	4.32
Totals for all species:	155	34.55	216	56.23	371	91.28
Game fish caught per man hour:	2.792	.631	1.051	.268	1.440	.349
Rough fish caught per man hour:	0	0	.067	.022	.052	.017
Catch of all species per man hour:	2.792	.631	1.119	.291	1.492	.367

Table 21. Estimated Fishing Utilization and Success at Lake Trammell During November 1965.

	Weekdays (22)		Weekend days (8)		November (30 days)	
Number of fishermen:	128		114		242	
Man hours of fishing:	244.20		386.00		630.20	
Projected Catch:	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>
<u>Game Species</u>						
sunfish	198	47.65	32	7.52	230	55.17
white crappie	194	47.43	236	72.32	430	119.75
largemouth bass	290	59.14	138	23.98	428	83.12
Totals	682	154.22	406	103.82	1,088	258.04
<u>Rough Species</u>						
bullhead catfish	0	0	26	8.64	26	8.64
Totals for all species:	682	154.22	432	112.46	1,114	266.68

Moss Creek Lake

Daily recreational permit records are presented in Table 22. These records are a better indication of utilization than those from Lake Trammell. However, some annual permits are sold.

Discrepancies in these data and utilization estimates presented in the following tables are discussed later in this report. Fishing utilization and success are presented in Tables 23 through 34. These are comparable to Tables 10-22 in the Lake Trammell section.

Fishing success at Moss Creek Lake was much lower than at Lake Trammell. Catch per man-hour averages less than one-half fish per person per hour. An abundance of gizzard shad is probably responsible for these poor results.

Table 22. Individual Permits Sold at Moss Creek Lake from 1962 through 1965.

<u>1965</u>	
<u>Month</u>	<u>Permits</u>
January	281
February	413
March	958
April	2,412
May	1,889
June	1,461
July	1,404
August	1,026
September	602
October	505
November	366
December	206

<u>Year</u>	<u>Permits</u>
1962	12,721
1963	14,757
1964	13,427
1965	11,523

Table 23. Results of Creel Interviews at Moss Creek Lake During June 1965.

	Weekdays (1,7,18,24,30)		Weekend days (6,12,20,26)		June Creel (9 days)	
Number of parties checked:	40		105		145	
Number of parties catching fish:	24		72		96	
Number of fishermen:	110		285		395	
Man hours of fishing:	642.00		1,621.00		2,263.00	
Actual catch:	<u>No. Pounds</u>		<u>No. Pounds</u>		<u>No. Pounds</u>	
<u>Game Species</u>						
sunfish	182	58.09	119	25.39	301	83.48
white crappie	184	25.83	419	68.95	603	94.78
largemouth bass	7	6.35	13	9.30	20	15.65
white bass	1	.33	1	.51	2	.84
channel catfish	6	1.88	50	41.87	56	43.75
Totals	380	92.48	602	146.02	982	238.50
<u>Rough Species</u>						
bullhead catfish	28	8.80	144	25.75	172	34.55
Totals for all species:	408	101.28	746	171.77	1,154	273.05
Game fish caught per man hour:	.591	.144	.371	.090	.433	.105
Rough fish caught per man hour:	.043	.013	.088	.015	.076	.015
Catch of all species per man hour:	.635	.157	.460	.105	.509	.120

Table 24. Estimated Fishing Utilization and Success at Moss Creek Lake During June 1965.

	Weekdays <u>(22)</u>		Weekend days <u>(8)</u>		June <u>(30 days)</u>	
Number of fishermen:	484		570		1,054	
Man hours of fishing:	2,824.80		3,242.00		6,066.80	
Projected Catch:	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>
<u>Game Species</u>						
sunfish	801	255.42	238	50.80	1,039	306.22
white crappie	810	113.74	838	137.92	1,648	251.66
largemouth bass	31	27.94	26	18.64	57	46.58
white bass	4	1.54	2	1.04	6	2.58
channel catfish	26	8.36	100	83.76	126	92.12
Totals	1,672	407.00	1,204	292.16	2,876	699.16
<u>Rough Species</u>						
bullhead catfish	123	38.72	288	51.52	411	90.24
Totals for all species:	1,795	445.72	1,492	343.68	3,287	789.40

Table 25. Results of Creel Interviews at Moss Creek Lake During July 1965.

	<u>Weekdays</u> <u>(6,12,23,29)</u>		<u>Weekend days</u> <u>(4,10,18,24)</u>		<u>July Creel</u> <u>(8 days)</u>	
Number of parties checked:	53		63		116	
Number of parties catching fish:	35		39		74	
Number of fishermen:	135		148		283	
Man hours for fishing:	515.00		811.50		1,326.50	
Actual Catch:	<u>No. Pounds</u>		<u>No. Pounds</u>		<u>No. Pounds</u>	
<u>Game Species</u>						
sunfish	35	7.53	122	30.08	157	37.61
white crappie	68	9.96	87	22.04	155	32.00
largemouth bass	4	.08	6	2.26	10	2.34
white bass	0	0	2	.11	2	.11
channel catfish	23	8.10	41	18.77	64	26.87
Totals	130	25.67	258	73.26	388	98.93
<u>Rough Species</u>						
bullhead catfish	44	13.63	63	21.19	107	34.82
Totals for all species:	174	39.30	321	94.45	495	133.75
Game fish caught per man hour:	.252	.049	.317	.090	.292	.074
Rough fish caught per man hour:	.085	.026	.077	.026	.080	.026
Catch of all species per man hour:	.337	.076	.395	.116	.373	.100

Table 26. Estimated Fishing Utilization and Success at Moss Creek Lake During July 1965.

	Weekdays (22)		Weekend days (9)		July (31 days)	
	<u>743</u>		<u>333</u>		<u>1,076</u>	
Number of fishermen:						
Man hours of fishing:	2,832.50		1,825.88		4,658.38	
Projected Catch:	<u>No. Pounds</u>		<u>No. Pounds</u>		<u>No. Pounds</u>	
<u>Game Species</u>						
sunfish	193	41.42	275	67.68	468	109.10
white crappie	374	54.78	196	49.59	570	104.37
largemouth bass	22	.44	14	5.09	36	5.53
white bass	0	0	5	.25	5	.25
channel catfish	127	44.55	92	42.23	219	86.78
Totals	716	141.19	582	164.84	1,298	306.03
<u>Rough Species</u>						
bullhead catfish	242	74.97	142	47.68	384	122.65
Totals for all species:	958	216.16	724	212.52	1,682	428.68

Table 27. Results of Creel Interviews at Moss Creek Lake During August 1965.

	<u>Weekdays</u> <u>(4,16,27)</u>		<u>Weekend days August Creel</u> <u>(1,7,15,21,29) (8 days)</u>			
	No.	Pounds	No.	Pounds	No.	Pounds
Number of parties checked:	18		89		107	
Number of parties catching fish:	13		46		59	
Number of fishermen:	32		217		249	
Man hours of fishing:	124.00		2,829.00		2,953.00	
Actual catch:						
	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>
<u>Game Species</u>						
sunfish	100	30.84	71	17.23	171	48.07
white crappie	5	1.17	93	24.20	98	25.37
largemouth bass	3	.48	9	6.56	12	7.04
channel catfish	0	0	32	32.97	32	32.97
Totals	108	32.49	205	80.96	313	113.45
<u>Rough Species</u>						
bullhead catfish	13	3.63	132	27.33	145	30.96
Totals for all species:	121	36.12	337	108.29	458	144.41
Game fish caught per man hour:	.870	.262	.072	.028	.105	.038
Rough fish caught per man hour:	.104	.029	.046	.009	.049	.010
Catch of all species per man hour:	.975	.291	.119	.038	.155	.048

Table 28. Estimated Fishing Utilization and Success at Moss Creek Lake During August 1965.

	<u>Weekdays</u> (22)		<u>Weekend days</u> (9)		<u>August</u> (31 days)	
Number of fishermen:	235		391		626	
Man hours of fishing:	909.29		5,092.20		6,001.49	
Projected Catch:	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>
<u>Game Species</u>						
sunfish	733	226.15	135	31.01	868	257.16
white crappie	37	8.58	167	43.56	204	52.14
largemouth bass	22	3.52	16	11.81	38	15.33
channel catfish	0	0	61	65.94	61	65.94
Totals	792	238.25	379	152.32	1,171	390.57
<u>Rough Species</u>						
bullhead catfish	95	26.62	238	49.19	333	75.81
Totals for all species:	887	264.87	617	201.51	1,504	466.38

Table 29. Results of Creel Interviews at Moss Creek Lake During September 1965.

	<u>Weekdays</u> (2,13,20)		<u>Weekend days</u> (4,12,18,26)		<u>September Creel</u> (7 days)	
Number of parties checked:	24		44		68	
Number of parties catching fish:	11		18		29	
Number of fishermen:	44		79		123	
Man hours of fishing:	214.50		324.00		538.50	
Actual Catch:	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>
<u>Game Species</u>						
sunfish	60	7.55	37	6.67	97	14.22
white crappie	21	2.09	11	.99	32	3.08
largemouth bass	20	5.93	12	.49	32	6.42
channel catfish	3	2.42	4	4.50	7	6.92
Totals	104	17.99	64	12.65	168	30.64
<u>Rough Species</u>						
bullhead catfish	1	.31	24	9.19	25	9.50
Totals for all species:	105	18.30	88	21.84	193	40.14
Game fish caught per man hour:	.484	.083	.197	.039	.311	.056
Rough fish caught per man hour:	.004	.001	.074	.028	.046	.017
Catch of all species per man hour:	.489	.085	.271	.067	.358	.074

Table 30. Estimated Fishing Utilization and Success at Moss Creek Lake During September 1965.

	<u>Weekdays</u> <u>(22)</u>	<u>Weekend days</u> <u>(8)</u>	<u>September</u> <u>(30 days)</u>			
Number of fishermen:	323	158	481			
Man hours of fishing:	1,572.29	648.00	2,220.29			
Projected Catch:	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>
<u>Game Species</u>						
sunfish	440	55.34	74	13.34	514	68.68
white crappie	154	15.32	22	1.98	176	17.30
largemouth bass	147	43.47	24	.98	171	44.45
channel catfish	22	17.74	8	9.00	30	26.74
Totals	763	131.87	128	25.30	891	157.17
<u>Rough Species</u>						
bullhead catfish	7	2.27	48	18.38	55	20.65
Totals for all species:	770	134.14	176	43.68	946	177.82

Table 31. Results of Creel Interviews at Moss Creek Lake During October 1965.

	Weekdays (1, 7, 13, 19, 25)		Weekend days (2, 10, 16, 24, 30)		October Creel (9 days)	
Number of parties checked:	33		47		80	
Number of parties catching fish:	15		19		34	
Number of fishermen:	55		98		153	
Man hours of fishing:	197.00		460.00		657.00	
Actual Catch:	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>
<u>Game Species</u>						
sunfish	69	17.86	56	15.19	125	33.05
white crappie	0	0	7	2.45	7	2.45
largemouth bass	5	1.79	15	8.77	20	10.56
channel catfish	10	9.17	15	23.66	25	32.83
Totals	84	28.82	93	50.07	177	78.89
<u>Rough Species</u>						
bullhead catfish	13	3.76	15	4.36	28	8.12
Totals for all species:	97	32.58	108	54.43	205	87.01
Game fish caught per man hour:	.426	.146	.202	.108	.269	.120
Rough fish caught per man hour:	.065	.019	.032	.009	.042	.012
Catch of all species per man hour:	.492	.165	.234	.118	.312	.132

Table 32. Estimated Fishing Utilization and Success at Moss Creek Lake During October 1965.

	<u>Weekdays</u> <u>(21)</u>		<u>Weekend days</u> <u>(10)</u>		<u>October</u> <u>(31 days)</u>	
Number of fishermen:	289		196		485	
Man hours of fishing:	1,034.25		920.00		1,954.25	
Projected Catch:	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>
<u>Game Species</u>						
sunfish	362	93.77	112	31.50	474	125.27
white crappie	0	0	14	4.90	14	4.90
largemouth bass	26	9.40	30	17.54	56	26.94
channel catfish	53	48.14	30	47.32	83	95.46
Totals	441	151.31	186	101.26	627	252.57
<u>Rough Species</u>						
bullhead catfish	68	19.74	30	8.72	98	28.46
Totals for all species:	509	171.05	216	109.98	725	281.03

Table 33. Results of Creel Interviews at Moss Creek Lake During November 1965.

	Weekdays (5, 11, 17, 23, 25, 29)		Weekend days (7, 13, 21, 27)		November (11 days)	
Number of parties checked:	28		32		60	
Number of parties catching fish:	15		10		25	
Number of fishermen:	42		63		105	
Man hours of fishing:	246.00		265.00		511.00	
Actual Catch:	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>
<u>Game Species</u>						
sunfish	35	8.61	83	20.27	118	28.88
white crappie	38	7.03	29	3.10	67	10.13
largemouth bass	11	6.56	4	.12	15	6.68
channel catfish	6	9.23	2	.35	8	9.58
white bass	10	3.63	0	0	10	3.63
Totals	100	35.06	118	23.84	218	58.90
<u>Rough Species</u>						
bullhead catfish	5	.95	1	.20	6	1.15
Totals for all species:	105	36.01	119	24.04	224	60.05
Game fish caught per man hour:	.406	.142	.445	.089	.426	.115
Rough fish caught per man hour:	.020	.003	.003	.000	.011	.002
Catch of all species per man hour:	.426	.146	.449	.090	.437	.117

Table 34. Estimated Fishing Utilization and Success at Moss Creek Lake During November 1965.

	<u>Weekdays</u> <u>(22)</u>		<u>Weekend days</u> <u>(8)</u>		<u>November</u> <u>(30 days)</u>	
Number of fishermen:	154		126		280	
Man hours of fishing:	900.36		530.00		1,430.36	
Projected Catch:	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>	<u>No.</u>	<u>Pounds</u>
<u>Game Species</u>						
sunfish	128	31.51	166	40.54	294	72.05
white crappie	139	25.73	58	6.20	197	31.93
largemouth bass	40	24.01	8	.24	48	24.25
white bass	37	13.29	0	0	37	13.29
channel catfish	22	33.78	4	.70	26	34.48
Totals	366	128.32	236	47.68	602	176.00
<u>Rough Species</u>						
bullhead catfish	18	3.48	2	.40	20	3.88
Totals for all species:	384	131.80	238	48.08	622	179.88

Conclusions and Recommendations:

Lake Trammell currently needs no fisheries renovation. Production sampling indicated a desirable fishery and creel success reinforced this assumption.

The data collected during this segment may be valuable for comparative purposes when rough fish populations reproduce. It is recommended that biannual fisheries inventories be conducted. When rough fish populations become extensive the creel census should be resumed, and the objectives of this project can be implemented.

Moss Creek Lake does not need total renovation. A selective eradication of gizzard shad would be appropriate. The intent of this job would be served to some degree by determination of the cost-benefits ratios of partial rotenone renovation. It is recommended that this program be enacted when a permanent project leader is selected and enough personnel are available to conduct the required post-treatment census.

The estimated number of fishermen at Moss Creek Lake is about 30 per cent less than the record of actual permits sold. This probably is a result of night fishermen and people not willing to stop and answer questions as they left the lake. This apparent error in the method of estimating total usage does not detract from the usefulness or reliability of the data in determining cost-benefit ratios. Identical procedures should be followed subsequent post-treatment creel census, so that findings may be reliably compared. If more exacting utilization estimates are desired, a correction factor may be simply derived and easily applied.

Prepared by James F. Wilcox

Approved by Marion Toole
Coordinator

Date May 6, 1966

Leo D. Lewis
Inland Fisheries Supervisor

APPENDIX A

Lake _____ Date _____ No. in party _____ Names _____

Hours fished (circle) _____ Hometowns _____
 1/2 1 1/2 2 1/2 3 1/2 4 1/2 5 1/2 6 1/2 7 1/2 8 1/2 9 1/2 10 1/2 11 1/2 12 1/2
 13 1/2 14 1/2 15 1/2 16 1/2 17 1/2 18 1/2 19 1/2 20 1/2 21 1/2 22 1/2 23 1/2

Species caught _____ (write number under estimated length)
 3" 4" 5" 6" 7" 8" 9" 10" 12" 14" 16" 18" 20" 22" 24"

sunfish																			
crappie																			
l.m. bass																			
w. bass																			
c. catfish																			
y. catfish																			
bullheads																			
carp																			

Type of fishing: boat _____ shore _____ dock _____ nat. bait _____ artf. bait _____ setline _____

_____ 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6

Appendix B. Length-Weight Relationship of Fish from Lake Trammel.

Inches	Sunfish		White Crappie		Largemouth Bass		Channel Catfish		Bullheads	
	grams	pounds	grams	pounds	grams	pounds	grams	pounds	grams	pounds
3	20	.04								
4	38	.08							35	.08
5	98	.22	22	.05	30	.07			91	.20
6	120	.26	60	.13	70	.15			141	.31
7	129	.29	89	.20	101	.22			196	.43
8	176	.39	143	.31	126	.28			249	.55
9	232	.51	185	.41	151	.33			309	.68
10			240	.53	208	.46			365	.80
11			307	.68	261	.57	211	.46	505	1.11
12			454	1.00	434	.96	303	.67	680	1.50
13			550	1.21	624	1.37	459	1.01	941	2.07
14			722	1.59	838	1.85	615	1.35		
15			891	1.96	1027	2.26	771	1.70		
16			999	2.20	1226	2.70	927	2.04		
17					1418	3.12	1083	2.39		
18					1607	3.54	1239	2.73		
19					1801	3.97	1400	3.08		
20					1995	4.39	1551	3.42		
21					2235	4.92	1781	3.92		
22					2502	5.51	2041	4.50		
23					2737	6.03	2301	5.07		
24					2999	6.61	2600	5.73		

APPENDIX D

Appendix D. Common and Scientific Names of Fishes Used in this Report. ^{1/}

<u>Common</u>	<u>Scientific</u>
Gizzard shad	<u>Dorosoma cepedianum</u>
Carp	<u>Cyprinus carpio</u>
Golden shiner	<u>Notemigonus crysoleucas</u>
Red shiner	<u>Notropis lutrensis</u>
River carpsucker	<u>Carpionodes carpio</u>
Black bullhead	<u>Ictalurus melas</u>
Channel catfish	<u>Ictalurus punctatus</u>
Flathead catfish	<u>Pylodictis olivaris</u>
Mosquitofish	<u>Gambusia affinis</u>
White bass	<u>Roccus chrysops</u>
Warmouth	<u>Chaenobryttus gulosus</u>
Green sunfish	<u>Lepomis cyanellus</u>
Orangespotted sunfish	<u>Lepomis humilis</u>
Bluegill	<u>Lepomis macrochirus</u>
Longear sunfish	<u>Lepomis megalotis</u>
Redear sunfish	<u>Lepomis microlophus</u>
Largemouth bass	<u>Micropterus salmoides</u>
White crappie	<u>Pomoxis annularis</u>
Logperch	<u>Percina caprodes</u>

^{1/} As specified in "A List of Common and Scientific Names of Fishes from the United States and Canada", Second Edition, American Fisheries Society, Special Publication, Number 2, 1960.

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