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SEGMENT COMPLETION REPORT

As required by

FEDERAL AID IN FISHERIES RESTORATION ACT

TEXAS

Federal Aid Project No. F-3-R-11

Fisheries Investigations and Surveys of the Waters of Region 3-B

Job No. B-18 (Seg. 4) Title: Fisheries Reconnaissance

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#### ABSTRACT

During this segment reconnaissance surveys were conducted on seven reservoirs in Region 3-B. Data for these lakes are reported separately in the following order: Tyler State Park Lake, Dam "B" Reservoir, Lake O' the Pines, Lake Murvaul, Lake Striker, Caddo Lake and Lake Tyler. In addition, 13 small lakes in the Sam Rayburn Basin (formerly McGee Bend) were check netted in order to determine if it would be feasible to set up a management program on these lakes prior to impoundment by Sam Rayburn Reservoir. It was not.

Netting and seining collections were made on each lake with the exception of Tyler State Park Lake and Lake Striker. The current data were compared to past collections. Water analysis included pH, methyl-orange alkalinity, chlorides, turbidity and surface temperature.

Two lakes, Dam "B" Reservoir and Caddo Lake, suffered decreases in per cent of game fish numbers while Lake Murvaul showed a good increase. The other lakes remained fairly stable.

All lakes were below normal water level with Lake Striker being down some 9 feet below normal.

Submerged aquatic vegetation is a standard problem in all of the lakes with Lake Tyler also having a lotus problem.

Recommendations are made to continue this job.

SEGMENT COMPLETION REPORT

State of Texas

Project No. F-3-R-11

Name: Fisheries Evaluation and Surveys  
of the Waters of Region 3-B.

Job No. B-18 (Seg. 4)

Title: Fisheries Reconnaissance

Period Covered: February 1, 1963 - January 31, 1964

OBJECTIVES:

To determine gross changes in (a) fish populations, (b) fishing quality and (c) factors influencing fish populations.

TECHNIQUES USED:

Netting trips were made to five bodies of water that had previously been surveyed. The lakes are as follows: Dam "B" Reservoir, Lake O' the Pines, Lake Murvaul, Caddo Lake and Lake Tyler. In addition several small lakes in the Sam Rayburn Lake Basin (formerly McGee Bend) were seined and netted. Visits were also made to Lake Striker and Tyler State Park Lake.

Fish were collected with experimental type gill nets, the dimensions of which were 125 feet long, 6 and 8 feet deep with mesh size ranging from 1 to 3 inches. On the major lakes surveyed there were 14 nets set overnight. Also bag seines were used to make seining collections on some of the lakes surveyed. These seines were of two sizes, one was 26 feet long, 6 feet deep with 1/4 inch mesh. The other was 15 feet long, 4 feet deep with 1/8 inch mesh.

Observations were made on several items such as water level, status of aquatic vegetation, fishing pressure and public access.

Water analysis included pH, methyl-orange alkalinity, chlorides, turbidity (secchi) and water temperature.

The findings for each lake are reported separately and as follows:

TYLER STATE PARK LAKE

Tyler State Park Lake, located in Smith County 10 miles north of Tyler, was surveyed in 1959, 1960, 1961 and 1962. The lake was completely renovated in 1961.

No netting or seining collections were made this segment because only 3 days before the scheduled reconnaissance survey was to be made the dam broke and the lake was completely drained.

Following this disaster several recommendations were made to improve the lake in the event the dam was repaired. At the time of this writing a contract has been let for the repair of the dam, plus repairing other structures such as the boat dock, swimming area, lights, etc. Meanwhile, a portion of the lake bed has been disked and planted with rye grass. Other plans call for the spreading of limestone and the construction of a concrete boat launching ramp, the latter by the Texas Highway Department.

Even though this lake was reaching its peak on fishing, the improvements being made while it is dry and the restocking that is planned, should put the lake in better condition than it has been for a number of years.

DAM "B" RESERVOIR

Dam "B" Reservoir is located in Jasper and Tyler Counties on the Angelina and Neches Rivers. Surveys have been conducted in 1958-59, 1961-62, and 1963. Table 1 is a checklist of all species of fish collected from Dam "B" in all the surveys. Two additional species were added to the list in 1963. They were the golden shiner (Notemigonus crysoleucas) and emerald shiner (Notropis atherinoides).

Table 2 is a comparison of the percentage of numbers of netted fish for all surveys. The number of game fish reached an all-time low with only 27.41 per cent being taken during 1963. However, according to Table 3 which is the percentages of weights of fishes, the per cent of game fish taken is up slightly over the past 3 years. The change in these figures can be partly attributed to the increase in the numbers and size of blue catfish and flat-head catfish collected. Also, the great increase of small gizzard shad and the decrease in numbers but the increase in weight of smallmouth buffalo. Most of the other species of fish have remained fairly stable with both white and black crappie dropping off in numbers and weight. Table 4 is a comparison of average "K" factors to the regional average.

Vegetation, which is a serious problem in the form of water hyacinths as well as buttonbush and black willow, has maintained its status. The submerged vegetation problem has been helped somewhat by the fact that the lake level dropped in mid-summer and the water stayed muddy. The lake was approximately 4 to 5 feet below normal.

In spite of the low water level this lake has been a favorite spot for family camping. The U. S. Corps of Engineers has opened up many new areas around the lake for access and camping areas. Also the 58th Texas Legislature appropriated funds for the construction of a state park at this lake.

Table 1. A check list of Dam "B" Reservoir Fish Species.

<u>Species</u>	<u>1958-59</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
Alligator gar ( <u>Lepisosteus spatula</u> )	x			
Shortnose gar ( <u>L. platostomus</u> )	x			
Spotted gar ( <u>L. oculatus</u> )	x	x	x	x
Longnose gar ( <u>L. osseus</u> )	x	x	x	x
Bowfin ( <u>Amia calva</u> )	x			
Threadfin shad ( <u>Dorosoma petenense</u> )			x	
Gizzard shad ( <u>D. cepedianum</u> )	x	x	x	x
Blue sucker ( <u>Cycleptus elongatus</u> )	x			
Smallmouth buffalo ( <u>Ictiobus bubalus</u> )	x	x	x	x
River carpsucker ( <u>Carpiodes carpio</u> )	x	x	x	x
Gray redhorse ( <u>Moxostoma congestum</u> )	x			
Blacktail redhorse ( <u>M. poecilurum</u> )	x			
Spotted sucker ( <u>Minytrema melanops</u> )	x		x	x
Lake chubsucker ( <u>Erimyzon sucetta</u> )	x			
Carp ( <u>Cyprinus carpio</u> )	x			x

Table 1. A check list of Dam "B" Reservoir Fish Species (Continued)

<u>Species</u>	<u>1958-59</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
Golden shiner ( <u>Notemigonus crysoleucas</u> )				x
Emerald shiner ( <u>Notropis athernoides</u> )				x
Ribbon shiner ( <u>N. fumeus</u> )	x			
Weed shiner ( <u>N. texanus</u> )			x	x
Chub shiner ( <u>N. potteri</u> )			x	x
Pallid shiner ( <u>N. amnis</u> )	x		x	
Blacktail shiner ( <u>N. venustus</u> )	x	x		x
Red shiner ( <u>N. lutrensis</u> )	x	x		x
Sand shiner ( <u>N. stramineus</u> )	x			x
Mimic shiner ( <u>N. volucellus</u> )	x			
Silvery minnow ( <u>Hybognathus nuchalis</u> )	x		x	
Bullhead minnow ( <u>Pimephales vigilax</u> )	x		x	x
Channel catfish ( <u>Ictalurus punctatus</u> )	x	x	x	x
Blue catfish ( <u>I. furcatus</u> )	x	x	x	x
Black bullhead ( <u>I. melas</u> )	x			
Yellow bullhead ( <u>I. natalis</u> )	x			
Flathead catfish ( <u>Pylodictis olivaris</u> )	x	x	x	x
Golden topminnow ( <u>Fundulus chrysotus</u> )	x		x	x
Blackstripe topminnow ( <u>F. notatus</u> )	x		x	x
Mosquitofish ( <u>Gambusia affinis</u> )	x	x	x	x
Brook silversides ( <u>Labidesthes sicculus</u> )	x		x	x
White bass ( <u>Roccus chrysops</u> ) *	x			
Spotted bass ( <u>Micropterus punctulatus</u> )	x		x	x
Largemouth bass ( <u>M. salmoides</u> )	x	x	x	x
Warmouth ( <u>Chaenobryttus gulosus</u> )	x		x	
Spotted sunfish ( <u>Lepomis punctatus</u> )	x		x	x
Redear sunfish ( <u>L. microlophus</u> )	x	x	x	x
Bluegill sunfish ( <u>L. macrochirus</u> )	x	x	x	x
Longear sunfish ( <u>L. megalotis</u> )			x	
White crappie ( <u>Pomoxis annularis</u> )	x	x	x	x
Black crappie ( <u>P. nigromaculatus</u> )	x	x	x	x
River darter ( <u>Hadropterus shumardi</u> )			x	
Logperch ( <u>Percina caprodes</u> )			x	
Scaly sand darter ( <u>Ammocrypta vivax</u> )			x	
Bluntnose darter ( <u>Etheostoma chlorosomum</u> )	x			
Slough darter ( <u>E. gracile</u> )			x	
Freshwater drum ( <u>Aplodinotus grunniens</u> )			x	x
Number of Species	41	16	33	30

\* Introduced

Table 2. Comparison of percentages of Numbers of Netted fish from Dam "B" Reservoir.

<u>Species</u>	<u>1958-59</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
Alligator gar*	0.34	0	0	0
Longnose gar*	3.12	14.74	5.66	2.88
Shortnose gar*	0.08	6.31	0	0
Spotted gar*	4.68	0	5.00	6.73
Bowfin*	0.68	0	0	0
Gizzard shad*	16.27	10.53	27.00	40.38
Blue sucker*	0.08	0	0	0
Smallmouth buffalo*	22.11	18.95	14.33	15.38
River carpsucker*	4.96	4.21	6.34	0.96
Gray redhorse*	0.24	0	0	0
Blacktail redhorse*	0.36	0	0	0
Spotted sucker*	5.38	0	0.66	2.40
Lake chubsucker*	0.08	0	0	0
Carp*	0.80	0	0	0.48
Channel catfish	6.20	4.21	11.33	2.40
Blue catfish	2.72	12.63	3.00	7.22
Black bullhead*	0.16	0	0	0
Yellow bullhead*	0.47	0	0	0
Flathead catfish	0.60	2.11	0.34	0.96
Spotted bass	0.24	0	0	0.48
Largemouth bass	3.36	4.21	1.34	2.88
Warmouth	0.47	0	0	0
Redear sunfish	3.80	4.21	3.00	1.45
Bluegill sunfish	4.24	1.05	1.67	1.45
Longear sunfish	0	0	0.33	0
White crappie	10.60	2.11	10.00	7.69
Black crappie	5.40	5.26	4.00	2.88
Freshwater drum*	2.56	9.47	6.00	3.38
Rough fish*	62.37	64.21	64.99	72.59
Game fish	37.63	35.79	35.01	27.41
Total	100.00	100.00	100.00	100.00

Table 3. Comparison of Percentages of Weights of Netted Fish from Dam "B" Reservoir.

<u>Species</u>	<u>1958-59</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
Alligator gar*	1.08	0	0	0
Longnose gar*	6.47	29.34	15.73	3.35
Shortnose gar*	0.16	7.61	0	0
Spotted gar*	9.70	0	6.57	11.16
Bowfin*	2.86	0	0	0
Gizzard shad*	6.17	3.39	13.79	12.03
Blue sucker*	0.20	0	0	0
Smallmouth buffalo*	29.23	28.31	27.23	41.71
River carpsucker*	7.38	4.79	10.77	0.87
Gray redhorse*	0.36	0	0	0
Blacktail redhorse*	0.14	0	0	0
Spotted sucker*	4.75	0	0.29	0.76
Lake chubsucker*	0.02	0	0	0
Carp*	2.42	0	0	6.75
Channel catfish	4.29	1.84	7.27	1.58
Blue catfish	3.08	7.48	3.39	8.26
Black bullhead*	0.21	0	0	0
Yellow bullhead*	0.24	0	0	0
Flathead catfish	1.91	3.57	1.86	4.11
Spotted bass	0.14	0	0	0.27
Largemouth bass	3.83	2.26	1.54	1.79
Warmouth	0.17	0	0	0
Redear sunfish	1.02	0.66	0.42	0.41
Bluegill sunfish	0.71	0.09	0.24	0.11
Longear sunfish	0	0	0.03	0
White crappie	6.59	1.38	4.09	3.46
Black crappie	3.66	2.13	3.00	1.74
Freshwater drum*	3.21	7.15	3.78	1.64
Rough fish*	74.60	80.59	78.16	76.63
Game fish	25.40	19.41	21.84	23.37
Total	100.00	100.00	100.00	100.00

Water Quality

pH	M.O. Alkalinity	Chlorides	Turbidity (secchi)
7.0	33 p.p.m.	70.92 p.p.m.	12-18 inches

Table 4 is a comparison of the 1963 average "K" factors and the regional averages. All of the Dam "B" game fish are below the regional average with the exception of redear sunfish which is equal to the regional average.

Table 4. Comparison of Dam "B" Average "K" Factor to Average "K" for Region.

<u>Species</u>	<u>Number</u>	<u>Dam "B" Average "K"</u>	<u>Number</u>	<u>Regional Average "K"</u>
Channel catfish	5	1.56	378	1.70
Blue catfish	15	1.57	118	1.82
Flathead catfish	2	1.98	85	2.03
Largemouth bass	6	2.25	1,166	2.72
Spotted bass	1	2.09	156	2.55
Redear sunfish	3	3.82	270	3.82
Bluegill sunfish	3	4.18	1,189	4.38
White crappie	16	2.90	957	3.03
Black crappie	6	3.13	923	3.34

LAKE O' THE PINES

Lake O' the Pines is located in Marion County west of Jefferson. This lake was surveyed in 1958-59, 1960, 1961, 1962 and 1963.

Table 5 is a checklist of fish species from all collections. One species, bluntnose darter (Etheostoma chlorosomum), was added during the 1963 survey. Table 6 is a comparison of the per cent of numbers of fish collected by nets. The greatest change was the increase in gizzard shad and the decrease in black crappie. All other changes are slight, however, there has been an over-all increase in sunfish.

Table 5. A Checklist of Lake O' the Pines Fish Species.

<u>Species</u>	<u>1958-59</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
Shortnose gar ( <u>Lepisosteus platostomus</u> )	x				
Spotted gar ( <u>L. oculatus</u> )	x	x	x	x	x
Longnose gar ( <u>L. osseus</u> )	x	x			
Bowfin ( <u>Amia calva</u> )	x	x		x	x
Threadfin shad ( <u>Dorosoma petenense</u> )	x	x	x		x
Gizzard shad ( <u>D. cepedianum</u> )	x	x	x	x	x
Grass pickerel ( <u>Esox americanus</u> )	x	x	x	x	
Chain pickerel ( <u>E. niger</u> )	x	x			x
Smallmouth buffalo ( <u>Ictiobus bubalus</u> )	x	x			
Blacktail redhorse ( <u>Moxostoma poecilurum</u> )	x				
Spotted sucker ( <u>Minytrema melanops</u> )	x	x	x	x	x
Lake chubsucker ( <u>Erimyzon sucetta</u> )	x	x	x	x	
Carp ( <u>Cyprinus carpio</u> )	x	x			
Golden shiner ( <u>Notemigonus crysoleucas</u> )	x			x	x
Ribbon shiner ( <u>Notropis fumeus</u> )	x	x			
Spottail shiner ( <u>N. venustus</u> )	x	x	x	x	x
Redhorse shiner ( <u>N. lutrensis</u> )	x	x	x	x	x

Table 5. A Checklist of Lake O' the Pines Fish Species (Continued)

<u>Species</u>	<u>1958-59</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
Sand shiner ( <u>N. stramineus</u> )	x				x
Mimic shiner ( <u>N. volucellus</u> )	x				
Silvery minnow ( <u>Hybognathus nuchalis</u> )	x	x			
Bullhead minnow ( <u>Pimephales vigilax</u> )	x	x		x	x
Channel catfish ( <u>Ictalurus punctatus</u> )	x	x	x		
Blue catfish ( <u>I. furcatus</u> )	x	x			x
Black bullhead ( <u>I. melas</u> )	x	x	x	x	x
Yellow bullhead ( <u>I. natalis</u> )	x	x	x	x	x
Flathead catfish ( <u>Pylodictis olivaris</u> )	x	x			
Golden topminnow ( <u>Fundulus chrysotus</u> )	x	x		x	x
Starhead topminnow ( <u>F. notti</u> )		x			
Blackstripe topminnow ( <u>F. notatus</u> )	x	x	x	x	x
Common mosquitofish ( <u>Gambusia affinis</u> )	x	x	x	x	x
Pirate perch ( <u>Aphredoderus sayanus</u> )	x				
Brook silversides ( <u>Labidesthes sicculus</u> )	x	x	x	x	x
White bass ( <u>Roccus chrysops</u> )	x	x	x	x	x
Spotted bass ( <u>Micropterus punctulatus</u> )	x	x			x
Largemouth bass ( <u>M. salmoides</u> )	x	x	x	x	x
Warmouth ( <u>Chaenobryttus gulosus</u> )	x	x	x	x	x
Green sunfish ( <u>Lepomis cyanellus</u> )	x				
Spotted sunfish ( <u>L. punctatus</u> )	x	x	x	x	x
Redear sunfish ( <u>L. microlophus</u> )	x	x	x	x	x
Bluegill sunfish ( <u>L. macrochirus</u> )	x	x	x	x	x
Redbreast sunfish ( <u>L. auritus</u> )	x	x			
Longear sunfish ( <u>L. megalotis</u> )	x	x			
White crappie ( <u>Pomoxis annularis</u> )	x	x	x	x	x
Black crappie ( <u>P. nigromaculatus</u> )	x	x	x	x	x
Flier ( <u>Centrarchus macropterus</u> )	x	x			
Blackside darter ( <u>Hadropterus maculatus</u> )	x				
Log perch ( <u>Percina caprodes</u> )	x	x			x
Bluntnose darter ( <u>Etheostoma chlorosomum</u> )					x
Freshwater drum ( <u>Aplodinotus grunniens</u> )	x				
Number of species	47	39	22	24	29

Table 6. Comparison of Percentages of Number of Netted Fish from Lake O' the Pines.

<u>Species</u>	<u>1958-59</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
Shortnose gar*	0.08	0	0	0	0
Spotted gar*	18.23	13.44	2.79	6.51	9.13
Longnose gar*	0.42	0.23	0	0	0
Bowfin*	1.04	0.80	0	0.59	0.48
Threadfin shad*	0	0	0.56	0	0
Gizzard shad*	7.00	26.19	44.14	30.78	48.08
Grass pickerel*	0.45	0.12	0	0.59	0
Chain pickerel*	0.40	0	0	0	0
Smallmouth buffalo*	10.78	0.58	0	0	0
Blacktail redhorse*	0.56	0	0	0	0
Spotted sucker*	2.03	10.20	8.94	5.33	1.44
Lake chubsucker*	0.56	0.12	0.56	6.51	0
Carp*	1.04	0.46	0	0	0

Table 6. Comparison of Percentages of Number of Netted Fish from Lake O' the Pines. (Continued).

<u>Species</u>	<u>1958-59</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
Golden shiner*	0.06	0	0	2.96	0
Channel catfish	4.98	0.58	2.23	0	0
Blue catfish	2.78	0.23	0	0	0.48
Black bullhead*	17.41	10.66	8.94	6.51	3.85
Yellow bullhead*	3.67	3.71	1.12	3.55	1.44
Flathead catfish	1.24	0.23	0	0	0
White bass	2.15	4.52	4.47	0.59	1.44
Spotted bass	2.82	0.12	0	0	0.96
Largemouth bass	6.46	5.21	7.26	3.55	4.33
Warmouth	4.49	2.67	1.12	1.77	0.48
Green sunfish	0.03	0	0	0	0
Spotted sunfish	0.59	0.80	0	0.59	1.44
Redear sunfish	0.54	1.51	2.79	2.96	4.81
Bluegill sunfish	3.73	7.88	4.47	5.91	9.13
Redbreast sunfish	0.11	0.58	0	0	0
Longear sunfish	0.25	0	0	0	0
White crappie	2.82	4.98	3.35	1.18	1.93
Black crappie	3.22	4.06	7.26	20.12	10.58
Flier	0	0.12	0	0	0
Freshwater drum*	0.06	0	0	0	0
Rough fish *	63.79	66.51	67.05	63.33	64.42
Game fish	36.21	33.49	32.95	36.67	35.58
Total	100.00	100.00	100.00	100.00	100.00

Table 7 compares the percentages of weights of fishes. Again the greatest increase is in gizzard shad and largemouth bass with a decrease in black crappie. Total percentages of numbers and weights of game fish and rough fish changed only slightly.

Table 7. Comparison of percentages of weights of all netted fish from Lake O' the Pines.

<u>Species</u>	<u>1958-59</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
Shortnose gar*	0.27	0	0	0	0
Spotted gar*	14.30	23.28	4.17	11.22	14.95
Longnose gar*	0.77	1.16	0	0	0
Bowfin*	3.47	5.98	0	1.41	1.55
Threadfin shad*	0	0	0.03	0	0
Gizzard shad*	3.50	19.34	33.03	24.03	40.37
Grass pickerel*	0.22	0.05	0	0.42	0
Chain pickerel*	0.17	0	0	0	0
Smallmouth buffalo*	30.12	3.31	0	0	0
Blacktail redhorse*	0.23	0	0	0	0
Spotted sucker*	1.50	16.18	20.91	18.48	4.33
Lake chubsucker*	0.14	0.03	0.30	2.68	0
Carp*	1.98	1.34	0	0	0

Table 7. Comparison of percentages of weights of all netted fish from Lake O' the Pines. (Continued)

<u>Species</u>	<u>1958-59</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
Golden shiner*	0.01	0	0	0.60	0
Channel catfish	6.02	1.06	5.38	0	0
Blue catfish	3.32	0.52	0	0	0.67
Black bullhead*	13.43	6.44	13.03	6.11	6.51
Yellow bullhead*	2.64	2.80	0.98	3.65	2.00
Flathead catfish	3.35	0.90	0	0	0
White bass	1.80	4.65	6.25	1.55	3.66
Spotted bass	1.63	0.03	0	0	1.71
Largemouth bass	4.79	4.81	6.06	5.25	9.58
Warmouth	1.80	0.64	0.38	0.42	0.07
Green sunfish	0.01	0	0	0	0
Spotted sunfish	0.10	0.11	0	0.09	0.18
Redear sunfish	0.11	0.52	0.76	0.99	1.78
Bluegill sunfish	0.89	1.96	1.21	1.55	2.47
Redbreast sunfish	0.04	0.12	0	0	0
Longear sunfish	0.03	0	0	0	0
White crappie	1.70	2.94	3.03	2.11	1.85
Black crappie	1.56	1.78	4.48	19.44	8.32
Flier	0	0.05	0	0	0
Freshwater drum*	0.10	0	0	0	0
Rough fish*	72.85	79.91	72.45	68.60	69.71
Game fish	27.15	20.09	27.55	31.40	30.29
Total	100.00	100.00	100.00	100.00	100.00

Table 8 is the comparison of 1963 Lake O' the Pines average "K" factors and the regional average for each species. All species are below the average regional "K" factor except redear sunfish and black crappie.

Table 8. Comparison of Lake O' the Pines average "K" and Regional average "K" factor.

<u>Species</u>	<u>Lake O' the Pines</u>		<u>Regional</u>	
	<u>Number</u>	<u>Average "K"</u>	<u>Number</u>	<u>Average "K"</u>
Blue catfish	1	1.30	118	1.82
Largemouth bass	6	2.54	1,166	2.72
Spotted bass	2	2.50	156	2.55
Warmouth	1	3.33	907	4.10
Redear sunfish	9	3.93	270	3.82
Bluegill sunfish	15	4.07	1,189	4.38
White crappie	5	2.99	957	3.03
Black crappie	20	3.50	923	3.34
White bass	2	2.97	252	3.16

Seining collections indicate a good bass spawn during the spring of 1963. Also there is a very good population of forage fish present in the form of various shiners.

Aquatic vegetation is becoming an increasing problem. The lake level, though down about 1 1/2 feet, has been constant with practically no fluctuation.

The U. S. Corps of Engineers counted over 3 million visitors to Lake O' the Pines in 1963. Many new public accommodations have been installed this year. The public facilities such as picnic areas, paved boat launching ramps and camping areas are the best in Region 3-B. These facilities are being expanded every year.

Water samples were taken at about 3-mile intervals through the middle of the lake to determine if runoff from the slag piles of Lone Star Steel Company had any effect on the water quality. Table 9 is a result of these analyses from the steel plant down to the dam. There have been minor fish kills at the head of the lake, though none have occurred during the past ten months.

Table 9. Results of Water Analyses, Lake O' the Pines.

<u>Location</u>	<u>pH</u>	<u>M.O. Alkalinity</u>	<u>Chlorides</u>
State Highway 26	8.0	47 p.p.m.	42.55 p.p.m.
State Highway 155	7.6	59	56.74
Pine Hill	7.0	34	42.55
Alley Creek	7.0	32	42.55
Johnson Creek	7.0	34	42.55
Dam	7.0	32	42.55

Lake O' the Pines is reputed to be one of the best fishing lakes in Texas. This lake has been selected as the site for the 1964 Texas Bass Tournament.

#### LAKE MURVAUL

Lake Murvaul, located in Panola County near Carthage, was surveyed in 1958, 1959, 1960, 1961, 1962 and 1963. Table 10 is the checklist for Lake Murvaul. No additional species were added in 1963.

Table 11 is a comparison of the percentages of numbers and Table 12 is a comparison of weights of netted fish for the past 4 years. Lake Murvaul contains the highest percentage of game fish of all lakes surveyed in Region 3-B. This can be attributed to the high population of large bluegill sunfish. The population of gizzard shad remains high but that of bowfin, though few in numbers, are all of a large size, average weight being 9.50 pounds.

Table 13 is the Lake Murvaul average "K" factors compared to the regional average. All game species listed are below the regional average with the exception of channel catfish.

The lake level has been about 4 feet below normal for the entire year which has been an inconvenience for most people who have boat houses on the lake. Aquatic vegetation has been a problem though not as bad as it has been in previous years. The water quality has remained good with a good plankton bloom being maintained throughout most of the year.

Fishing has continued to be good with bluegill one of the favorites of fishermen. Many strings of large bass are taken as well as crappie. Though most crappie have been small they are becoming larger over-all. Work is progressing rapidly on the George Pirtle Boy Scout Camp on the lake. It is expected to be ready for use by the summer of 1964.

Table 10. A Checklist of Lake Murvaul Fish Species

<u>Species</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961*</u>	<u>1962</u>	<u>1963</u>
Spotted gar ( <u>Lepisosteus oculatus</u> )	x				x	x
Bowfin ( <u>Amia calva</u> )	x	x	x	x	x	x
Gizzard shad ( <u>Dorosoma cepedianum</u> )	x	x	x	x	x	x
Grass pickerel ( <u>Esox americanus</u> )	x	x	x	x		
Smallmouth buffalo ( <u>Ictiobus bubalus</u> )	x	x	x			
River carpsucker ( <u>Carpionodes carpio</u> )	x					
Blacktail redhorse ( <u>Moxostoma poecilurum</u> )	x	x				
Spotted sucker ( <u>Minytrema melanops</u> )	x	x	x	x		
Lake chubsucker ( <u>Erimyzon sucetta</u> )	x	x	x	x	x	x
Golden shiner ( <u>Notemigonus crysoleucas</u> )	x	x	x	x	x	x
Pugnose minnow ( <u>Opsopoeodus emiliae</u> )		x				
Ribbon shiner ( <u>Notropis fumeus</u> )	x	x				
Pallid shiner ( <u>N. amnis</u> )					x	
Blacktail shiner ( <u>N. venustus</u> )	x	x	x		x	x
Redhorse shiner ( <u>N. lutrensis</u> )	x	x	x		x	
Sand shiner ( <u>N. stramineus</u> )	x	x	x			x
Blackspot shiner ( <u>N. atrocaudalis</u> )	x	x	x			
Mimic shiner ( <u>N. volucellus</u> )	x					
Taillight shiner ( <u>N. maculatus</u> )	x					
Silvery minnow ( <u>Hybognathus nuchalis</u> )	x					
Bullhead minnow ( <u>Pimephales vigilax</u> )	x	x	x			
Channel catfish ( <u>Ictalurus punctatus</u> )	x	x	x	x	x	x
Blue catfish ( <u>I. furcatus</u> )	x	x	x	x		
Black bullhead ( <u>I. melas</u> )	x	x	x	x	x	x
Yellow bullhead ( <u>I. natalis</u> )	x	x	x	x	x	x
Flathead catfish ( <u>Pylodictis olivaris</u> )	x	x				
Tadpole madtom ( <u>Schilbeodes gyrinus</u> )	x				x	
Blackstripe topminnow ( <u>Fundulus notatus</u> )	x	x				x
Common mosquitofish ( <u>Gambusia affinis</u> )	x	x	x		x	x
Pirate perch ( <u>Aphredoderus sayanus</u> )	x					
Spotted bass ( <u>Micropterus punctulatus</u> )	x	x	x	x	x	
Largemouth bass ( <u>M. salmoides</u> )	x	x	x	x	x	x
Warmouth ( <u>Chaenobryttus gulosus</u> )	x	x	x	x	x	x
Green sunfish ( <u>Lepomis cyanellus</u> )	x	x	x			
Spotted sunfish ( <u>L. punctatus</u> )	x	x	x	x	x	x
Redear sunfish ( <u>L. microlophus</u> )	x	x	x	x	x	x
Bluegill sunfish ( <u>L. macrochirus</u> )	x	x	x	x	x	x
Redbreast sunfish ( <u>L. auritus</u> )	x	x			x	
Longear sunfish ( <u>L. megalotis</u> )	x	x	x			x
White crappie ( <u>Pomoxis annularis</u> )	x	x	x	x	x	x
Black crappie ( <u>P. nigromaculatus</u> )	x	x	x	x	x	x
Flier ( <u>Centrarchus macropterus</u> )	x	x				
Scaly sand darter ( <u>Ammocrypta vivax</u> )	x					
Slough darter ( <u>Etheostoma gracile</u> )	x		x			
Number of Species	42	34	28	18	22	20

\* Netting only

Table 11. Comparison of percentages of number of netted fish from Lake Murvaul.

<u>Species</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
Spotted gar*	0	0	0.51	0.27
Bowfin*	4.11	3.58	0.51	0.55
Gizzard shad*	31.71	12.90	44.44	40.44
Grass pickerel*	0.29	0.38	0	0
Smallmouth buffalo*	0.09	0	0	0
Spotted sucker*	1.91	0.69	0	0
Lake chubsucker*	6.78	15.23	7.07	1.09
Golden shiner*	0.48	2.94	4.55	0
Channel catfish	2.29	0.80	0.51	0.55
Blue catfish	0.19	0.16	0	0
Black bullhead*	16.24	13.05	5.81	3.55
Yellow bullhead*	6.40	8.72	6.05	8.47
Largemouth bass	1.43	2.30	2.53	1.91
Warmouth	0.48	3.26	1.25	0.55
Spotted sunfish	0.29	0.92	0	0
Redear sunfish	0.48	2.51	2.53	5.19
Bluegill sunfish	6.69	14.06	14.65	24.86
Redbreast sunfish	0	0	0.51	0
Longear sunfish	0.09	0	0	0.82
White crappie	13.56	16.63	6.30	8.20
Black crappie	6.49	1.87	2.78	3.55
Rough fish*	68.00	57.49	68.94	54.37
Game fish	32.00	42.51	31.06	45.63
Total	100.00	100.00	100.00	100.00

Table 12. Comparison of percentages of weights of all netted fish from Lake Murvaul.

<u>Species</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
Spotted gar*	0	0	2.98	2.51
Bowfin*	34.84	34.35	6.49	16.21
Gizzard shad*	8.84	5.64	33.05	9.33
Grass pickerel*	0.23	0.31	0	0
Smallmouth buffalo*	1.38	0	0	0
Spotted sucker*	5.23	2.58	0	0
Lake chubsucker*	6.08	9.91	4.02	0.85
Golden shiner*	0.15	1.10	1.82	0
Channel catfish	6.84	2.70	4.39	9.39
Blue catfish	1.84	0.52	0	0
Black bullhead*	11.30	12.29	7.30	9.39
Yellow bullhead*	7.54	10.22	9.84	13.76
Largemouth bass	6.79	6.63	13.98	10.40
Warmouth	0.21	1.23	0.48	0.21
Spotted sunfish	0.06	0.19	0	0
Redear sunfish	0.45	1.45	1.53	4.05
Bluegill sunfish	2.41	5.47	6.41	16.59
Redbreast sunfish	0	0	0.18	0
Longear sunfish	0.02	0	0	0.32
White crappie	3.22	4.85	5.81	4.00
Black crappie	2.57	0.56	1.72	2.99
Rough fish*	75.59	76.40	65.50	52.05
Game fish	24.41	23.60	34.50	47.95
Total	100.00	100.00	100.00	100.00

Water Quality

	<u>1958</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
pH	6.6	7.3	7.1	7.4	7.2
M.O. Alkalinity (p.p.m.)	44	50	32	45	45
Chlorides (p.p.m.)	27.56	63.83	35.46	56.74	70.92

Table 13. Comparison of Lake Murvaul "K" Factors and Regional "K" Factors.

<u>Species</u>	<u>Lake Murvaul</u>		<u>Regional</u>	
	<u>Number</u>	<u>Average "K"</u>	<u>Number</u>	<u>Average "K"</u>
Channel catfish	2	1.83	378	1.70
Largemouth bass	6	2.51	1,166	2.72
Redear sunfish	10	3.57	270	3.82
Bluegill sunfish	10	3.98	1,189	4.38
White crappie	8	2.08	957	3.03
Black crappie	9	2.96	9.23	3.34

LAKE STRIKER

Though no netting collections were made on Lake Striker this segment, one trip was made to the lake to inspect conditions and make recommendations. The lake level dropped about 9 feet during 1963 as a result of the drought and a leak in the gates. At the time of this writing, the lake is still about 5 feet below normal. While the lake was down there were several potholes in the upper end of the lake that were isolated. Lake personnel inquired as to the advisability of cleaning the fish out of these holes with toxicants. They were advised that the cost of such a project would not justify it and also the few fish that were removed would not have a significant effect on the total population of the lake. Recommendations were made to remove dead trees instead. This was not done because of the lack of funds by the Water District.

Nevertheless, the fact that the lake has been down and the bottom has dried out for a number of months will greatly fertilize the lake when it does reach normal elevation. It is reported that fishing has continued to be good.

CADDO LAKE

Caddo Lake, located on the Texas-Louisiana line and lying in Marion and Harrison Counties, was surveyed in 1953-55, 1961-62, 1962-63 and 1963. Table 14 is a checklist of all species of fish collected from Caddo Lake.

Because of low water and the extremely heavy infestation of submerged aquatic plants during the time of the 1963 survey (October), collection stations for both netting and seining were extremely difficult to find. The only open water was in the main channel and the old original channels of the lake. For this reason it is felt that the information presented in Tables 15 and 16 is not a true indication of the actual population of the lake. The game fish population is probably higher than is shown in the tables.

Table 17 compares the "K" factor average of Caddo Lake with the regional "K" factor average.

All species of fish from Caddo Lake are below the regional average with the exception of black crappie.

Because of the "moss" situation, fishing activity is confined to the few open areas in the summer months until the "moss" sinks in the fall. Some good catches of bass have been made in the fall months. Waterfowl were present in large numbers on the lake, taking advantage of the aquatic plants available.

Public use of the lake has deteriorated in the past few years with many of the commercial camps operating on a marginal basis. There have been several groups seeking improvements on the lake, however, no plans have been accepted as yet.

Table 14. A Checklist of Caddo Lake Fish Species

<u>Species</u>	<u>1953-55</u>	<u>1961-62</u>	<u>1962-63</u>	<u>1963</u>
Chestnut lamprey ( <u>Ichthyomyzon castaneus</u> )	x			
Alligator gar ( <u>Lepisosteus spatula</u> )	x			
Shortnose gar ( <u>L. platostomus</u> )	x			x
Spotted gar ( <u>L. oculatus</u> )	x	x	x	x
Longnose gar ( <u>L. osseus</u> )	x	x	x	x
Bowfin ( <u>Amia calva</u> )	x	x	x	x
Skipjack ( <u>Alosa chrysochloris</u> )	x			
Threadfin shad ( <u>Dorosoma petenense</u> )	x	x		
Gizzard shad ( <u>D. cepedianum</u> )	x	x	x	x
Grass pickerel ( <u>Esox americanus</u> )	x			x
Chain pickerel ( <u>Esox niger</u> )	x	x	x	x
Bigmouth buffalo ( <u>Ictiobus cyprinellus</u> )	x			
Smallmouth buffalo ( <u>I. bubalus</u> )	x	x		
River carpsucker ( <u>Carpiodes carpio</u> )	x	x		
Spotted sucker ( <u>Minytrema melanops</u> )	x	x	x	x
Lake chubsucker ( <u>Erimyzon sucetta</u> )	x	x	x	x
Carp ( <u>Cyprinus carpio</u> )			x	
Golden shiner ( <u>Notemigonus crysoleucas</u> )	x			x
Pugnose minnow ( <u>Opsopoeodus emiliae</u> )	x			
Ironcolor shiner ( <u>Notropis chalybaeus</u> )	x	x		
Weed shiner ( <u>N. texanus</u> )	x	x		
Pallid shiner ( <u>N. amnis</u> )	x			x
Blacktail shiner ( <u>N. venustus</u> )	x	x		
Redhorse shiner ( <u>N. lutrensis</u> )	x			
Sand shiner ( <u>N. stramineus</u> )	x	x		
Blackspot shiner ( <u>N. atrocaudalis</u> )	x			
Mimic shiner ( <u>N. volucellus</u> )	x			
Taillight shiner ( <u>N. maculatus</u> )	x			
Silvery minnow ( <u>Hybognathus nuchalis</u> )	x			
Bullhead minnow ( <u>Pimephales vigilax</u> )	x	x		
Channel catfish ( <u>Ictalurus punctatus</u> )	x		x	
Blue catfish ( <u>I. furcatus</u> )	x	x		
Black bullhead ( <u>I. melas</u> )	x	x	x	x
Yellow bullhead ( <u>I. natalis</u> )	x	x	x	x
Flathead catfish ( <u>Pylodictis olivaris</u> )	x	x	x	
Tadpole madtom ( <u>Schilbeodes gyrinus</u> )	x			
American eel ( <u>Anguilla rostrata</u> )	x			
Golden topminnow ( <u>Fundulus chrysotus</u> )	x	x		x
Starhead topminnow ( <u>F. notti</u> )	x			
Blackstripe topminnow ( <u>F. notatus</u> )	x	x		x
Pirate perch ( <u>Aphredoderus sayanus</u> )		x		
Mosquitofish ( <u>Gambusia affinis</u> )	x	x		
Mississippi silversides ( <u>Menidia audens</u> )	x			

Table 14. A Checklist of Caddo Lake Fish Species (Continued)

<u>Species</u>	<u>1953-55</u>	<u>1961-62</u>	<u>1962-63</u>	<u>1963</u>
Redbreast sunfish ( <u>Lepomis auritus</u> )	x			
Brook silverside ( <u>Labidesthes sicculus</u> )	x	x		
White bass ( <u>Roccus chrysops</u> )	x	x		
Yellow bass ( <u>R. interruptus</u> )	x	x	x	x
Spotted bass ( <u>Micropterus punctulatus</u> )	x			
Largemouth bass ( <u>M. salmoides</u> )	x	x	x	x
Warmouth ( <u>Chaenobryttus gulosus</u> )	x	x	x	x
Bantam sunfish ( <u>Lepomis symmetricus</u> )	x			
Spotted sunfish ( <u>L. punctatus</u> )	x	x	x	x
Redear sunfish ( <u>L. microlophus</u> )	x	x	x	x
Bluegill sunfish ( <u>L. macrochirus</u> )	x			
Longear sunfish ( <u>L. megalotis</u> )	x	x		
Dollar sunfish ( <u>L. marginatus</u> )	x			
White crappie ( <u>Pomoxis annularis</u> )	x	x	x	x
Black crappie ( <u>P. nigromaculatus</u> )	x	x	x	x
Flier ( <u>Centrarchus macropterus</u> )	x			
Banded pygmy sunfish ( <u>Elassoma zonatum</u> )	x			
River darter ( <u>Hadropterus shumardi</u> )	x			
Logperch ( <u>Percina caprodes</u> )	x			
Scaly sand darter ( <u>Ammocrypta vivax</u> )	x			
Bluntnose darter ( <u>Etheostoma chlorosomum</u> )	x			
Slough darter ( <u>E. gracile</u> )	x			x
Scalyhead darter ( <u>E. barratti</u> )	x	x		
Cypress darter ( <u>E. proeliare</u> )	x			
Fountain darter ( <u>E. fonticola</u> )	x			
Freshwater drum ( <u>Aplodinotus grunniens</u> )	x	x	x	x
Number of species	67	36	21	25

Table 15. Comparison of per cent of numbers of netted fish from Caddo Lake.

<u>Species</u>	<u>1953-55</u>	<u>1961-62</u>	<u>1962-63</u>	<u>1963</u>
Alligator gar*	0.02	0	0	0
Shortnose gar*	0.26	0	0	0.58
Spotted gar*	4.14	1.51	1.19	1.16
Longnose gar*	1.15	0.90	0.08	1.16
Bowfin*	0.21	0.60	1.36	0.58
Skipjack*	0.02	0	0	0
Gizzard shad*	45.83	24.09	26.78	51.45
Chain pickerel*	4.27	13.25	11.05	6.93
Bigmouth buffalo*	0.02	0	0	0
Smallmouth buffalo*	0.34	1.81	0	0
River carpsucker*	0.81	0.60	0	0
Spotted sucker*	8.22	19.58	21.00	4.61
Lake chubsucker*	4.59	3.93	3.82	5.78
Carp*	0	0	0.08	0
Golden shiner*	0.10	0	0	1.16
Channel catfish	0.21	0	1.10	0
Blue catfish	0.08	0.90	0	0
Black bullhead*	2.75	1.20	1.61	1.16
Yellow bullhead*	0.89	0.90	1.44	5.78
Flathead catfish	0.33	0.30	0.08	0
White bass	1.32	0.30	0	0
Yellow bass	8.56	18.98	7.99	4.62

Table 15 (Continued)

<u>Species</u>	<u>1953-55</u>	<u>1961-62</u>	<u>1962-63</u>	<u>1963</u>
Spotted bass	0.02	0	0	0
Largemouth bass	1.39	1.20	2.21	1.16
Warmouth	3.61	0.30	4.16	2.89
Spotted sunfish	0.10	0	0.08	0
Redear sunfish	2.31	0.90	2.38	4.04
Bluegill sunfish	2.44	1.81	3.06	4.04
Longear sunfish	0.02	0	0	0
White crappie	0.69	1.81	0.17	0.58
Black crappie	4.73	3.93	10.28	1.16
Flier	0.11	0	0	0
Freshwater drum*	0.46	1.20	0.08	1.16
Rough fish*	74.08	69.57	68.49	82.51
Game fish	25.92	30.43	31.51	18.49
Total	100.00	100.00	100.00	100.00

Table 16. Comparison of per cent of weight of netted fish from Caddo Lake.

<u>Species</u>	<u>1953-55</u>	<u>1961-62</u>	<u>1962-63</u>	<u>1963</u>
Alligator gar*	0.04	0	0	0
Shortnose gar*	0.91	0	0	0.81
Spotted gar*	7.95	1.66	1.21	1.67
Longnose gar*	10.14	11.91	0.45	7.64
Bowfin*	0.76	1.47	3.23	3.58
Skipjack*	0.01	0	0	0
Gizzard shad*	36.97	15.98	68.47	47.32
Chain pickerel*	6.08	15.30	6.13	6.54
Bigmouth buffalo*	0.07	0	0	0
Smallmouth buffalo*	1.14	4.71	0	0
River carpsucker*	1.48	1.57	0	0
Spotted sucker*	11.94	23.83	8.91	8.54
Lake chubsucker*	2.86	2.39	1.14	4.99
Carp*	0	0	0.08	0
Golden shiner*	0.02	0	0	0.33
Channel catfish	0.22	0	0.95	0
Blue catfish	0.08	2.50	0	0
Black bullhead*	3.43	1.25	1.15	1.22
Yellow bullhead*	0.83	0.76	0.89	7.56
Flathead catfish	1.09	0.43	0.21	0
White bass	1.11	0.27	0	0
Yellow bass	3.50	8.00	1.84	2.03
Spotted bass	0.02	0	0	0
Largemouth bass	1.48	1.27	0.92	0.65
Warmouth	1.41	0.12	0.63	1.14
Spotted sunfish	0.01	0	0.01	0
Redear sunfish	0.72	0.25	0.27	0.98
Bluegill sunfish	0.75	0.29	0.29	1.14
Longear sunfish	0.01	0	0	0
White crappie	0.51	1.94	0.05	0.65
Black crappie	3.70	3.32	3.07	1.14
Freshwater drum*	0.76	0.78	0.10	2.07
Rough fish*	85.39	81.61	91.76	92.27
Game fish	14.61	18.39	8.24	7.73
Total	100.00	100.00	100.00	100.00

Water Quality

	<u>1953-55</u>	<u>1961-62</u>	<u>1962-63</u>	<u>1963</u>
pH	6.7	6.5	6.7	6.7
M.O. Alkalinity (p.p.m.)	--	9	18	16
Chlorides (p.p.m.)	--	26.09	39.30	40.70

Table 17. Comparison of Caddo Lake Average "K" factors and regional average "K" factors.

<u>Species</u>	<u>Caddo Lake</u>		<u>Regional</u>	
	<u>Number</u>	<u>Average "K"</u>	<u>Number</u>	<u>Average "K"</u>
Largemouth bass	2	2.33	1,166	2.72
Warmouth	6	3.92	907	4.10
Redear sunfish	8	3.52	270	3.82
Bluegill sunfish	7	4.17	1,189	4.38
White crappie	1	2.69	957	3.03
Black crappie	2	3.58	923	3.34

LAKE TYLER

Lake Tyler is located in Smith County and is the water supply reservoir for the City of Tyler. Surveys were conducted in 1953-54, 1962 and 1963.

Table 18 is a checklist of all fish collected from this lake. Two additional species were added to the checklist in 1963. Table 19 compares the per cents of numbers and weights. The population of game fish has shown a substantial increase each year. White crappie, largemouth bass and channel catfish have all increased, while gizzard shad and carp have decreased. It should be noted though that the majority of the bluegill sunfish are small and could present a problem.

Table 20 compares the average "K" factors with the regional averages. All species are below the regional average except channel catfish.

The lake level was down only about 1 foot during 1963. Lake usage is continually on the increase. Aquatic vegetation is not too much of a problem except for approximately 200 acres of American lotus (Nelumbo lutea) which are located in the shallow flats of the upper end of the lake. Plans have been made to begin a control program in 1964.

Fishing has been considered to be good on the lake. Carp and other rough fish were being taken on a commercial basis for a number of months, which is believed to have improved the fish population.

Table 18. A checklist of Lake Tyler fish species.

<u>Species</u>	<u>1953-54</u>	<u>1962</u>	<u>1963</u>
Bowfin ( <u>Amia calva</u> )	x		
Gizzard shad ( <u>Dorosoma cepedianum</u> )	x	x	x
Blacktail redhorse ( <u>Moxostoma poecilurum</u> )	x		
Spotted sucker ( <u>Minytrema melanops</u> )	x	x	x
Lake chubsucker ( <u>Erimyzon sucetta</u> )	x	x	x

Table 21. A checklist of Sam Rayburn Basin small lakes fish species with numbers and weights and methods of collection.

<u>Species</u>	<u>Netting</u>		<u>Seining Number</u>
	<u>Number</u>	<u>Weight in Pounds</u>	
Spotted gar ( <u>Lepisosteus oculatus</u> )*	1	0.75	0
Bowfin ( <u>Amia calva</u> )*	3	7.27	0
Gizzard shad ( <u>Dorosoma cepedianum</u> )*	17	17.50	0
Grass pickerel ( <u>Esox americanus</u> )*	0	0	1
Bigmouth buffalo ( <u>Ictiobus cyprinellus</u> )*	8	25.38	0
Spotted sucker ( <u>Minytrema melanops</u> )*	18	18.37	0
Chubsucker ( <u>Erimyzon sucetta</u> )*	42	11.31	1
Golden shiner ( <u>Notemigonus crysoleucas</u> )*	7	1.06	0
Ribbon shiner ( <u>Notropis fumeus</u> )*	0	0	9
Roundnose minnow ( <u>Dionda episcopa</u> )*	0	0	3
Channel catfish ( <u>Ictalurus punctatus</u> )	1	0.69	1
Black bullhead ( <u>I. melas</u> )*	6	2.75	3
Yellow bullhead ( <u>I. natalis</u> )*	3	2.81	2
Mosquitofish ( <u>Gambusia affinis</u> )*	0	0	569
Largemouth bass ( <u>Micropterus salmoides</u> )	6	8.30	6
Warmouth ( <u>Chaenobryttus gulosus</u> )	4	2.00	1
Green sunfish ( <u>Lepomis cyanellus</u> )	1	0.50	932
Redear sunfish ( <u>L. microlophus</u> )	6	0.44	9
Bluegill sunfish ( <u>L. macrochirus</u> )	28	2.18	42
White crappie ( <u>Pomoxis annularis</u> )	2	0.75	0
Black crappie ( <u>P. nigromaculatus</u> )	13	6.75	0
Scaly sand darter ( <u>Ammocrypta vivax</u> )*	0	0	3
Slough darter ( <u>Etheostoma gracile</u> )*	0	0	80
Freshwater drum ( <u>Aplodinotus grunniens</u> )*	2	5.93	0
Rough and/or forage fish*	107	63.69%	99.88 87.05%
Game fish	61	36.31	14.86 12.95%
Total	168	100.00	114.74 100.00 1,662

There are eight lakes involved and the average number of fish caught by nets is only 21 per lake and the total weight is slightly over 14 pounds per lake.

It has been decided that there is not enough acreage of water present to merit an eradication and restocking program which would have a beneficial effect on a lake the size of Sam Rayburn Reservoir (141,300 acres).

The average pH of these lakes is 6.3, the average methyl-orange alkalinity is 20 parts per million and the average chlorides are 33.09 parts per million. Only one or two of the larger lakes were used for fishing as most of the lakes were used primarily for stock ponds. Turbidity ranged from 1 1/2 inches to over 8 feet secchi disk.

#### CONCLUSIONS:

Considering that the samples taken from these lakes in a reconnaissance survey represent only one night of netting, but also considering that this particular method had been used for 3 years on some lakes, it is felt that perhaps the major over-all changes in fish populations can be detected. These gross changes can often be easily attributed to a specific cause, such as the big increase in game fish at Lake Murvaul can be attributed to the large numbers of bluegill present. The big decrease in game fish at Caddo Lake is attributed

to infestation of submerged aquatic plants which inhibit movement of fish. The decrease of game fish at Dam "B" Reservoir is caused by the increase of the number of small forage fish. All of the above statements concern the per cent of numbers of game fish and rough fish.

Nearly all average "K" factors of game fish were below the regional average. This comparison has not been used long enough to establish a trend but a possible reason for these below average figures may lie in the fact that the fish are in a more crowded condition due to low water levels which were found in all lakes this year. More information is needed in this aspect of the work.

RECOMMENDATIONS:

It is recommended that this job be continued as it serves as a means of determining gross changes that might occur in a lake's fish population. Also infestation of vegetation can be observed and corrective means can be taken in some instances.

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