

FILE

SEGMENT COMPLETION REPORT

As required by

FEDERAL AID IN FISHERIES RESTORATION ACT

TEXAS

Federal Aid Project No. F-3-R-9

Fisheries Investigations and Surveys of the Waters of Region 5-B

Job No. B-18 Title: Fisheries Reconnaissance

Project Leader John N. Dorchester

H. D. Dodgen  
Executive Secretary  
Texas Game and Fish Commission  
Austin, Texas

Marion Toole  
D-J Coordinator

Eugene A. Walker  
Director, Program Planning

April 25, 1962

#### ABSTRACT

A reconnaissance survey was made on each of the following lakes during this period: Tyler State Park Lake, Dam "B" Reservoir, Lake O' the Pines, Lake Murvaul, Lake Striker and Caddo Lake. Data collected is compared as near as possible with data collected in the basic surveys conducted on these lakes. Over-all, there were very few gross changes in any of the lakes with an indication that game fish are on an increase in all. Aquatic vegetation is the universal problem in all of the lakes.

SEGMENT COMPLETION REPORT

State of Texas

Project No. F-3-R-9

Name: Fisheries Investigations and Surveys  
of the Waters of Region 5-B.

Job No. B-18

Title: Fisheries Reconnaissance

Period covered: February 1, 1961 - January 31, 1962

OBJECTIVES:

To conduct limited investigations to obtain current information concerning gross changes in fishing conditions and factors influencing fish populations.

TECHNIQUES USED:

Netting trips were made to six reservoirs that had previously been surveyed. These lakes are as follows: Tyler State Park, Dam "B" Reservoir, Lake O' the Pines, Lake Murvaul, Lake Striker and Caddo Lake.

Fish were collected with gill nets the dimensions of which are 125 feet long, 8 feet deep with mesh size ranging from 1 to 3 inches. 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 includes pH, methyl orange alkalinity, chlorides, turbidity (secchi) and water temperatures.

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

TYLER STATE PARK LAKE

Tyler State Park Lake, located in Smith County 10 miles north of Tyler, was first surveyed in 1959. The lake was found to be in need of a complete renovation, which was begun in 1960 and completed in 1961. Data presented is for the initial survey, a netting check just prior to the beginning of a complete fish kill in 1960 and a reconnaissance survey in 1961.

Table 1 is a checklist of all species taken from the lake over the three year period. The shift from undesirable fish in 1959 and 1960 to desirable species in 1961 is obvious. To further show this Table 2 compares the percentages of numbers of netted fish. The per cent of game fish jumps from 37.50 per cent in 1959 to 100.00 per cent in 1961. Table 3 compares the per cent of weight of netted fish. In this comparison the weight of game fish rises from 20.60 per cent to 100.00 per cent.

Table 4 compares the average weight in grams, average standard length in millimeters and average coefficients of condition for five principal game species for the three periods. All indications are that the fish stocked in the lake following the renovation are doing quite well.

The water quality of the lake is nearly the same as before. The pH was 7.6 for both times, alkalinity was 27 p.p.m. in 1959 but only 0.5 p.p.m. in 1961. The chlorides were 28.37 p.p.m. and 21.28 p.p.m. respectively. The water level has remained fairly constant with the fluctuation being less than one foot. The water has remained clear with some turbidity following fertilizer applications.

Fishing on the lake was closed for a period of approximately 1 year during renovation. During the first few weeks following the re-opening of the lake there was a good number of fishermen present but their success was only mediocre and the numbers declined. An attempt to obtain 100 per cent creel census of the lake failed because of the lack of cooperation on the part of the several people involved.

The amount of noxious vegetation in the lake has been reduced by at least 95 per cent. Vegetation is only a minor problem at this time. Public access is excellent with the exception of the boat launching area which is unpaved and washed out.

Table 1. A Checklist of Tyler State Park Lake fish species.

<u>Species</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>
Spotted gar ( <u>Lepisosteus oculatus</u> )		x	
Blacktail redhorse ( <u>Moxostoma poecilurum</u> )	x		
Lake chubsucker ( <u>Erimyzon sucetta</u> )	x	x	
Carp ( <u>Cyprinus carpio</u> )	x		
Golden shiner ( <u>Notemigonus crysoleucas</u> )		x	
Red shiner ( <u>Notropis lutrensis</u> )	x		x
Channel catfish ( <u>Ictalurus punctatus</u> )			x
Yellow bullhead ( <u>Ictalurus natalis</u> )	x	x	
Blackstripe topminnow ( <u>Fundulus notatus</u> )	x		
Mosquitofish ( <u>Gambusia affinis</u> )	x		
Largemouth bass ( <u>Micropterus salmoides</u> )	x	x	x
Warmouth ( <u>Chaenobryttus gulosus</u> )	x	x	x
Spotted sunfish ( <u>Lepomis punctatus</u> )	x		
Redear sunfish ( <u>Lepomis microlophus</u> )	x	x	
Bluegill sunfish ( <u>Lepomis macrochirus</u> )	x	x	x
Longear sunfish ( <u>Lepomis megalotis</u> )		x	
Black crappie ( <u>Pomoxis nigromaculatus</u> )		x	
Number of Species	12	10	5

Table 2. Comparison of per cent of numbers of netted fish from Tyler State Park Lake.

<u>Species</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>
Spotted gar*	0	0.89	0
Lake chubsucker*	16.67	55.36	0
Carp*	4.17	0	0
Golden shiner*	0	0.89	0
Channel catfish	0	0	6.67
Yellow bullhead*	41.66	0.89	0
Largemouth bass	12.50	7.14	40.00
Warmouth	4.17	5.36	40.00
Redear sunfish	4.17	10.71	0
Bluegill sunfish	16.67	15.18	13.33
Longear sunfish	0	0.89	0
Black crappie	0	2.67	0
Rough Fish *	62.00	58.03	0
Game Fish	38.00	41.97	100.00
Total	100.00	100.00	100.00

Table 3. Comparison of per cent of weight of netted fish from Tyler State Park Lake.

<u>Species</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>
Spotted gar*	0	1.64	0
Lake chubsucker *	16.62	58.14	0
Carp*	23.56	0	0
Golden shiner*	0	0.39	0
Channel catfish	0	0	11.96
Yellow bullhead*	39.22	1.55	0
Largemouth bass	10.56	20.12	66.86
Warmouth	0.96	2.41	18.89
Redear sunfish	2.29	7.80	0
Bluegill sunfish	6.79	5.72	2.29
Longear sunfish	0	0.68	0
Black crappie	0	1.55	0
Rough Fish *	79.40	61.72	0
Game Fish	20.60	38.28	100.00
Total	100.00	100.00	100.00

Table 4. Comparison of average standard lengths in millimeters of several game fish species from Tyler State Park Lake.

Species	1959		1960 Not Taken	1961	
	Number of Fish	Length		Number of Fish	Length
Channel catfish	0	0		1	340.00
Largemouth bass	3	209.00		6	268.83
Warmouth	1	117.00		6	163.50
Redear sunfish	1	165.00		0	0
Bluegill sunfish	4	137.50		2	110.50

Comparison of average weight in grams of several game fish species from Tyler State Park Lake.

Species	1959		1960 Not taken	1961	
	Number of Fish	Weight		Number of Fish	Weight
Channel catfish	0	0		1	737.00
Largemouth bass	3	216.60		6	680.50
Warmouth	1	58.00		6	191.66
Redear sunfish	1	140.00		0	0
Bluegill sunfish	4	104.00		2	55.00

Comparison of average coefficients of condition ("K") of several game fish species from Tyler State Park Lake.

Species	1959		1960 Not taken	1961	
	Number of Fish	"K"		Number of Fish	"K"
Channel catfish	0	0		1	1.87
Largemouth bass	3	2.15		6	2.97
Warmouth	1	3.62		6	4.31
Redear sunfish	1	3.12		0	0
Bluegill sunfish	4	3.66		2	4.08

Water Quality

	1959	1960	1961
Ph	7.6	Not taken	7.6
Alkalinity	27.00p.p.m.		0.5 p.p.m.
Chlorides	28.37p.p.m.		21.28p.p.m.

### DAM "B" RESERVOIR

Though Dam "B" Reservoir, located in Jasper and Tyler Counties, has never had a basic survey conducted on it there has been a considerable amount of netting done on the lake in obtaining information for two other jobs. One job was a study of netting methods used in taking fish and the other was to determine the need for an additional game fish species in the lake (in this case white bass - Roccus chrysops.)

Table 5 is a checklist of fish collected from Dam "B" in the earlier surveys and in the reconnaissance survey. It should be pointed out that the total feet of nets used on reconnaissance surveys are usually only about one-tenth of that used on regular surveys. Table 6 is a comparison of per cent of numbers of fish collected by nets for both periods. According to this table, gar (Lepisosteus spp.) and catfish (Ictalurus spp.) made the greatest increases while shad (Dorosoma cepedianum) and white crappie (Pomoxis annularis) made the greatest decreases. This same trend is indicated by Table 7 which is a comparison of the percentage of weights of netted fish. There is no data available on condition of game fish.

Vegetation has always been a problem on the lake and the situation remains unchanged. The greatest problem is the infestation of water hyacinths. The shallow water, which is prevalent in the lake, is ideal for vegetation.

The water level has remained fairly constant over the years. The lake is still heavily fished and fishing has remained fairly good. Public access has been greatly improved in the last year or two.

One of the objectives of netting Dam "B" was to attempt to catch white bass which had been introduced into the lake. None were recovered during this period.

Table 5. A checklist of Dam "B" Reservoir fish species.

<u>Species</u>	<u>1958-59</u>	<u>1961</u>
Alligator gar ( <u>Lepisosteus spatula</u> )	x	
Shortnose gar ( <u>Lepisosteus platostomus</u> )	x	
Spotted gar ( <u>Lepisosteus oculatus</u> )	x	x
Longnose gar ( <u>Lepisosteus osseus</u> )	x	x
Bowfin ( <u>Amia calva</u> )	x	
Gizzard shad ( <u>Dorosoma cepedianum</u> )	x	x
Blue sucker ( <u>Cycleptus elongatus</u> )	x	
Smallmouth buffalo ( <u>Ictiobus bubalus</u> )	x	x
River carpsucker ( <u>Carpionodes carpio</u> )	x	x
Gray rehorse ( <u>Moxostoma congestum</u> )	x	
Blacktail rehorse ( <u>Moxostoma poecilurum</u> )	x	
Spotted sucker ( <u>Minytrema melanops</u> )	x	
Lake chubsucker ( <u>Erimyzon sucetta</u> )	x	
Carp ( <u>Cyprinus carpio</u> )	x	
Ribbon Shiner ( <u>Notropis fumeus</u> )	x	
Pallid shiner ( <u>Notropis amnis</u> )	x	
Blacktail shiner ( <u>Notropis venustus</u> )	x	x
Red shiner ( <u>Notropis lutrensis</u> )	x	x
Sand shiner ( <u>Notropis stramineus</u> )	x	
Mimic shiner ( <u>Notropis volucellus</u> )	x	
Silvery minnow ( <u>Hybognathus nuchalis</u> )	x	
Bullhead minnow ( <u>Pimephales vigilax</u> )	x	
Channel catfish ( <u>Ictalurus punctatus</u> )	x	x
Blue catfish ( <u>Ictalurus furcatus</u> )	x	x
Black bullhead ( <u>Ictalurus melas</u> )	x	
Yellow bullhead ( <u>Ictalurus natalis</u> )	x	
Flathead catfish ( <u>Pylodictis olivaris</u> )	x	x
Golden topminnow ( <u>Fundulus chrysotus</u> )	x	
Blackstripe topminnow ( <u>Fundulus notatus</u> )	x	
Mosquitofish ( <u>Gambusia affinis</u> )	x	x
Brook silversides ( <u>Labidesthes sicculus</u> )	x	
White bass ( <u>Roccus chrysops</u> ) *	x	
Spotted bass ( <u>Micropterus punctulatus</u> )	x	
Largemouth bass ( <u>Micropterus salmoides</u> )	x	x
Warmouth ( <u>Chaenobryttus gulosus</u> )	x	
Spotted sunfish ( <u>Lepomis punctatus</u> )	x	
Redear sunfish ( <u>Lepomis microlophus</u> )	x	x
Bluegill sunfish ( <u>Lepomis macrochirus</u> )	x	x
White crappie ( <u>Pomoxis annularis</u> )	x	x
Black crappie ( <u>Pomoxis nigromaculatus</u> )	x	x
Bluntnose darter ( <u>Etheostoma chlorosomum</u> )	x	
Freshwater drum ( <u>Aplodinotus grunniens</u> )		
Number of Species	42	17

\* Introduced

Table 6. Comparison of percentages of number of netted fish from Dam "B" Reservoir.

Species	1958-59	1961
Alligator gar*	0.34	0
Longnose gar*	3.12	14.74
Shortnose gar*	0.08	6.31
Spotted gar*	4.68	0
Bowfin*	0.68	0
Gizzard shad*	16.27	10.53
Blue sucker*	0.08	0
Smallmouth buffalo*	22.11	18.95
River carpsucker*	4.96	4.21
Gray redhorse*	0.24	0
Blacktail redhorse*	0.36	0
Spotted sucker*	5.36	0
Lake chubsucker*	0.08	0
Carp*	0.80	0
Channel catfish	6.20	4.21
Blue catfish	2.72	12.63
Black bullhead*	0.16	0
Yellow bullhead	0.47	0
Flathead catfish	0.60	2.11
Spotted bass	0.24	0
Largemouth bass	3.36	4.21
Warmouth	0.47	0
Redear sunfish	3.80	4.21
Bluegill sunfish	4.24	1.05
White crappie	10.60	2.11
Black crappie	5.40	5.26
Freshwater drum*	2.56	9.47
Rough fish*	62.34	64.21
Game fish	37.66	35.79
Total	100.00	100.00

Table 7. Comparison of percentages of weights of netted fish from Dam "B" Reservoir.

Species	1958-59	1961
Alligator gar*	1.08	0
Longnose gar*	6.47	29.34
Shortnose gar*	0.16	7.61
Spotted gar*	9.70	0
Bowfin*	2.86	0
Gizzard shad*	6.17	3.39
Blue sucker*	0.20	0
Smallmouth buffalo*	29.23	28.31
River carpsucker*	7.38	4.79
Gray redhorse*	0.36	0
Blacktail redhorse*	0.14	0
Spotted sucker*	4.75	0
Lake chubsucker*	0.02	0
Carp*	2.42	0
Channel catfish	4.29	1.84
Blue catfish	3.08	7.48
Black bullhead	0.21	0
Yellow bullhead*	0.24	0
Flathead	1.91	3.57
Spotted bass	0.14	0
Largemouth bass	3.83	2.26
Warmouth	0.17	0
Redear sunfish	1.03	0.66
Bluegill sunfish	0.71	0.09
White crappie	6.59	1.38
Black crappie	3.66	2.13
Freshwater drum*	3.21	7.15
Rough fish*	74.60	80.59
Game fish	25.40	19.41
Total	100.00	100.00

## LAKE O' THE PINES

Lake O' the Pines, located west of Jefferson in Marion County, was originally surveyed in 1958-59 but the lake level was lowered to facilitate further construction. The lake was resurveyed in 1960 and the reconnaissance survey made in October 1961.

Table 8 is a checklist of all species collected from Lake O' the Pines during the three periods. Table 9 shows the percentages of numbers of netted fish. Gizzard shad definitely dominated the catch on the reconnaissance survey. Other species did not change too much except a decided decrease in spotted gar. The same gross changes are also indicated in the comparison of percentage of weights of netted fish, Table 10. Black crappie have increased nicely as well as largemouth bass, white bass, and channel catfish. Table 11 shows the data on condition of some game fish. All species have shown a marked increase in average size which is a good indication of a lake's progress. Most "K" factors were approximately the same.

The water quality of the lake has improved somewhat. The pH in 1958-59 was 6.5, in 1960 it was 6.9 and in 1961 it was 7.0. The methyl orange alkalinity was 18.41 p.p.m. and 15 p.p.m. respectively. Chlorides averaged 24.11 p.p.m., 54.37 p.p.m. and 21.28 p.p.m. respectively.

Submerged vegetation in the lake has become quite a problem, especially in those areas where the timber and brush was left standing and was inundated by the water. The lake level has remained the same with only a few 4-foot rises during the spring and fall rainy seasons.

Table 8. A checklist of Lake O' the Pines fish species.

<u>Species</u>	<u>1958-59</u>	<u>1960</u>	<u>1961</u>
Shortnose gar ( <u>Lepisosteus platostomus</u> )	x		
Spotted gar ( <u>Lepisosteus oculatus</u> )	x	x	x
Longnose gar ( <u>Lepisosteus osseus</u> )	x	x	
Bowfin ( <u>Amia calva</u> )	x	x	
Threadfin shad ( <u>Dorosoma petenense</u> )	x	x	x
Gizzard shad ( <u>Dorosoma cepedianum</u> )	x	x	x
Grass pickerel ( <u>Esox americanus</u> )	x	x	x
Chain pickerel ( <u>Esox niger</u> )	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
Lake chubsucker ( <u>Erimyzon sucetta</u> )	x	x	x
Carp ( <u>Cyprinus carpio</u> )	x	x	
Golden shiner ( <u>Notemigonus crysoleucas</u> )	x		
Ribbon shiner ( <u>Notropis fumeus</u> )	x	x	
Spottail shiner ( <u>Notropis venustus</u> )	x	x	x
Redhorse shiner ( <u>Notropis lutrensis</u> )	x	x	x
Sand shiner ( <u>Notropis stramineus</u> )			
Mimic shiner ( <u>Notropis voluceilus</u> )	x		
Silvery minnow ( <u>Hybognathus nuchalis</u> )	x	x	
Bullhead minnow ( <u>Pimephales vigilax</u> )	x	x	
Channel catfish ( <u>Ictalurus punctatus</u> )	x	x	x
Blue catfish ( <u>Ictalurus furcatus</u> )	x	x	
Black bullhead ( <u>Ictalurus melas</u> )	x	x	x
Yellow bullhead ( <u>Ictalurus natalis</u> )	x	x	x
Flathead catfish ( <u>Pylodictis olivaris</u> )	x	x	
Golden topminnow ( <u>Fundulus chrysotus</u> )	x	x	
Starhead topminnow ( <u>Fundulus notti</u> )		x	
Blackstripe topminnow ( <u>Fundulus notatus</u> )	x	x	x
Common mosquitofish ( <u>Gambusia affinis</u> )	x	x	x
Pirate perch ( <u>Aphredoderus sayanus</u> )	x		
Brook silversides ( <u>Labidesthes sicculus</u> )	x	x	x
White bass ( <u>Roccus chrysops</u> )	x	x	x
Spotted bass ( <u>Micropterus punctulatus</u> )	x	x	
Largemouth bass ( <u>Micropterus salmoides</u> )	x	x	x
Warmouth ( <u>Chaenobryttus gulosus</u> )	x	x	x
Green sunfish ( <u>Lepomis cyanellus</u> )	x		
Spotted sunfish ( <u>Lepomis punctatus</u> )	x	x	x
Redear sunfish ( <u>Lepomis microlophus</u> )	x	x	x
Bluegill sunfish ( <u>Lepomis macrochirus</u> )	x	x	x
Redbreast sunfish ( <u>Lepomis auritus</u> )	x	x	
Longear sunfish ( <u>Lepomis megalotis</u> )	x	x	
White crappie ( <u>Pomoxis annularis</u> )	x	x	x
Black crappie ( <u>Pomoxis nigromaculatus</u> )	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	
Freshwater drum ( <u>Aplodinotus grunniens</u> )	x		

Number of Species

47

40

22

Table 9. Comparison of percentages of numbers of netted fish from Lake O' the Pines.

Species	1958-59	1960	1961
Shortnose gar*	0.08	0	0
Spotted gar*	18.23	13.44	2.79
Longnose gar*	0.42	0.23	0
Bowfin*	1.04	0.23	0
Threadfin shad*	0	0	0.56
Gizzard shad*	7.00	26.19	44.14
Grass pickerel*	0.45	0	0
Chain pickerel*	0.40	0	0
Smallmouth buffalo*	10.78	0.58	0
Blacktail redhorse*	0.56	0	0
Spotted sucker*	2.03	10.20	8.94
Lake chubsucker*	0.56	0	0
Carp*	1.04	0.46	0
Golden shiner*	0.06	0	0
Channel catfish	4.98	0.58	2.23
Blue catfish	2.78	0.23	0
Black bullhead	17.41	10.66	8.94
Yellow bullhead	3.67	3.71	1.12
Flathead catfish	1.24	0.23	0
White bass	2.15	4.52	4.47
Spotted bass	2.82	0.12	0
Largemouth bass	6.46	5.21	7.26
Warmouth	4.49	2.67	1.12
Green sunfish	0.03	0	0
Spotted sunfish	0.59	0.80	0
Readear sunfish	0.54	1.51	2.79
Bluegill sunfish	3.73	7.88	4.47
Yellowbelly sunfish	0.11	0.58	0
Longear sunfish	0.25	0	0
White crappie	2.82	4.98	3.35
Black crappie	3.22	4.06	7.26
Flier	0	0.12	0
Freshwater drum*	0.06	0	0
Rough fish*	63.82	66.59	67.05
Game fish	36.18	33.41	32.95
Total	100.00	100.00	100.00

Table 10. Comparison of percentages of weights of all netted fish from Lake O' the Pines.

Species	1958-59	1960	1961
Shortnose gar*	0.27	0	0
Spotted gar*	14.30	23.28	4.17
Longnose gar*	0.78	1.16	0
Bowfin*	3.47	5.96	0
Threadfin shad*	0	0	0.03
Gizzard shad*	3.51	19.34	33.03
Grass pickerel*	0.22	0.05	0
Chain pickerel*	0.26	0	0
Smallmouth buffalo*	30.12	3.32	0
Blacktail redhorse*	0.23	0	0
Spotted sucker*	1.50	16.19	20.91
Lake chubsucker*	0.14	0.03	0.30
Carp*	1.98	1.34	0
Golden shiner*	0.01	0	0
Channel catfish	6.02	1.06	5.38
Blue catfish	3.22	0.52	0
Black bullhead*	13.44	6.44	13.03
Yellow bullhead*	2.64	2.80	0.98
Flathead catfish	3.35	0.90	0
White bass	1.80	4.65	6.25
Spotted bass	1.62	0.03	0
Largemouth bass	4.79	4.81	6.06
Warmouth	1.80	0.64	0.38
Green sunfish	0.01	0	0
Spotted sunfish	0.10	0.11	0
Redear sunfish	0.11	0.52	0.76
Bluegill sunfish	0.89	1.96	1.21
Yellowbelly sunfish	0.40	0.12	0
Longear sunfish	0.02	0	0
White crappie	1.70	2.94	3.03
Black crappie	1.56	1.78	4.48
Flier	0	0.05	0
Freshwater drum	0.10	0	0
Rough fish*	72.87	81.77	72.45
Game fish	27.13	18.23	27.55
Total	100.00	100.00	100.00

Table 11. Comparison of average standard lengths in millimeters of several game fish species from Lake O' the Pines.

Species	1958-59		1960		1961	
	Number of Fish	Length	Number of Fish	Length	Number of Fish	Length
Channel catfish	136	292.40	5	315.40	4	381.00
Blue catfish	61	281.68	2	363.50	0	0
Flathead catfish	29	365.44	2	400.00	0	0
White bass	69	210.82	37	217.60	8	265.25
Spotted bass	55	200.87	1	180.00	0	0
Largemouth bass	146	219.97	32	221.03	12	236.33
Warmouth	114	147.12	21	127.04	2	155.00
Bluegill sunfish	72	116.15	40	125.60	8	134.62
White crappie	76	185.00	36	189.83	6	222.16
Black crappie	88	161.29	34	160.20	13	190.15

Comparison of average weight in grams of several game fish species from Lake O' the Pines.

Species	1958-59		1960		1961	
	Number of Fish	Weight	Number of Fish	Weight	Number of Fish	Weight
Channel catfish	136	481.69	5	651.20	4	1,007.00
Blue catfish	61	421.21	2	836.50	0	0
Flathead catfish	29	1,030.24	2	1,361.00	0	0
White bass	69	324.59	37	373.64	8	601.00
Spotted bass	55	291.63	1	119.00	0	0
Largemouth bass	146	336.26	32	338.03	12	353.33
Warmouth	114	155.77	31	86.85	2	134.50
Bluegill sunfish	72	80.02	40	95.22	8	108.50
White crappie	76	235.77	36	211.80	6	369.50
Black crappie	88	184.71	34	142.67	13	254.84

Comparison of average coefficients of condition ("K") of several game fish species from Lake O' the Pines.

Species	1958-59		1960		1961	
	Number of Fish	"K"	Number of Fish	"K"	Number of Fish	"K"
Channel catfish	136	1.72	5	1.80	4	1.72
Blue catfish	61	1.73	2	1.77	0	0
Flathead catfish	29	1.95	2	1.96	0	0
White bass	69	3.28	37	3.02	8	3.19
Spotted bass	55	2.73	1	2.04	0	0
Largemouth bass	146	2.74	32	2.59	12	2.48
Warmouth	114	4.58	21	3.76	2	3.52
Bluegill sunfish	72	4.53	40	4.36	8	4.40
White crappie	76	3.39	36	2.91	6	3.25
Black crappie	88	3.59	34	3.38	13	3.57

Lake O' the Pines Water Quality

	1958-59	1960	1961
pH	6.5	6.9	7.0
Alkalinity	18.00 p.p.m.	41.00 p.p.m.	15.00 p.p.m.
Chlorides	24.11 p.p.m.	54.37 p.p.m.	21.28 p.p.m.

### LAKE MURVAUL

The work at Lake Murvaul was in conjunction with the renovation of Jones Branch arm of the lake. Four nets were set each in Jones Branch and Williams Branch every month for eight months. Condition data was taken only on crappie. Seining collections were not made. Table 12 is a checklist of all fish species taken from Lake Murvaul since the first survey began in 1958. Table 13 is the comparison of percentages of numbers of netted fish. Of the rough fish gizzard shad are apparently on a decrease after reaching a peak in 1960. Also, Bowfin have decreased each year. The catch of chubsuckers was up while the bullheads remained about the same. Concerning the game fish, warmouth, redear, bluegill and white crappie increased while black crappie decreased. Over-all the per cent of game fish was 42.51 per cent which is an all time high for the lake. In regards to percentage of weights of netted fish, as shown by Table 14, the over-all per cent of weight of game fish is down compared to the other years. This can probably be attributed to the failure to catch as many channel and blue catfish as before. Table 15 shows the comparison of condition data for white and black crappie. The average length and weight on white crappie were up, but down for black crappie while the "K" factor was down for both species.

Vegetation is an increasing problem on the lake though cattails are under control and Jones Branch arm was greatly improved. The water level fluctuated less than 2 feet. There was not much change in water quality.

Fishing has been more stable during this past year with "bream" being the fish most taken. The bass that are caught are usually of a very good size. Public access has been improved through a new Farm Road being built to the lake and the addition of another concession area in the upper end of the lake.

Table 12. A checklist of Lake Murvaul fish species.

<u>Species</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961*</u>
Spotted gar ( <u>Lepisosteus oculatus</u> )	x			
Bowfin ( <u>Amia calva</u> )	x	x	x	x
Gizzard shad ( <u>Dorosoma cepedianum</u> )	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
Golden shiner ( <u>Notemigonus crysoleucas</u> )	x	x	x	x
Pugnose minnow ( <u>Opsopoedus emiliae</u> )		x		
Ribbon shiner ( <u>Notropis fumeus</u> )	x	x		
Blacktail shiner ( <u>Notropis venustus</u> )	x	x	x	
Redhorse shiner ( <u>Notropis lutrensis</u> )	x	x	x	
Sand shiner ( <u>Notropis stramineus</u> )	x	x	x	
Blackspot shiner ( <u>Notropis atrocaudalis</u> )	x	x	x	
Mimic shiner ( <u>Notropis volucellus</u> )	x			
Taillight shiner ( <u>Notropis 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
Blue catfish ( <u>Ictalurus furcatus</u> )	x	x	x	x
Black bullhead ( <u>Ictalurus melas</u> )	x	x	x	x
Yellow bullhead ( <u>Ictalurus natalis</u> )	x	x	x	x
Flathead catfish ( <u>Pylodictis olivaris</u> )	x	x		
Tadpole madtom ( <u>Schilbeodes gyrinus</u> )	x			
Blackstripe topminnow ( <u>Fundulus notatus</u> )	x	x		
Common mosquitofish ( <u>Gambusia affinis</u> )	x	x	x	
Pirate perch ( <u>Aphredoderus sayanus</u> )	x			
Spotted bass ( <u>Micropterus punctulatus</u> )	x	x		
Largemouth bass ( <u>Micropterus salmoides</u> )	x	x	x	x
Warmouth ( <u>Chaenobryttus gulosus</u> )	x	x	x	x
Green sunfish ( <u>Lepomis cyanellus</u> )	x	x	x	
Spotted sunfish ( <u>Lepomis punctatus</u> )	x	x	x	x
Redear sunfish ( <u>Lepomis microlophus</u> )	x	x	x	x
Bluegill sunfish ( <u>Lepomis macrochirus</u> )	x	x	x	x
Redbreast sunfish ( <u>Lepomis auritus</u> )	x	x		
Longear sunfish ( <u>Lepomis megalotis</u> )	x	x	x	
White crappie ( <u>Pomoxis annularis</u> )	x	x	x	x
Black crappie ( <u>Pomoxis nigromaculatus</u> )	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	33	26	17

\* Netting only

Table 13. Comparison of percentages of numbers of netted fish from Lake Murvaul.

Species	1958	1959	1960	1961
Spotted gar*	0.08	0	0	0
Bowfin*	13.74	10.16	4.11	3.58
Gizzard shad*	4.30	19.39	31.71	12.78
Grass pickerel*	0.98	1.85	0.29	0.38
Smallmouth buffalo*	0.98	0.09	0.09	0
River carpsucker*	2.04	0	0	0
Blacktail redhorse*	0.45	0.09	0	0
Spotted sucker*	1.50	5.82	1.91	0.69
Lake chubsucker*	3.00	9.60	6.78	15.23
Golden shiner*	2.19	1.75	0.48	2.94
Channel catfish	0.16	0.65	2.29	0.80
Blue catfish	0.08	0.37	0.19	0.16
Black bullhead*	27.85	13.48	16.24	13.05
Yellow bullhead*	8.30	8.13	6.40	8.72
Spotted bass	0.32	0.09	0	0
Largemouth bass	9.82	12.19	1.43	2.30
Warmouth	6.87	1.39	0.48	3.26
Green sunfish	0.98	0.37	0	0
Spotted sunfish	0.39	0.09	0.29	0.92
Redear sunfish	0.60	0.55	0.48	2.51
Bluegill sunfish	11.18	7.29	6.69	14.06
Yellowbelly sunfish	0.83	0.28	0	0
Longear sunfish	0.08	0.09	0.09	0
White crappie	2.19	1.57	13.56	16.63
Black crappie	0.70	4.62	6.49	1.87
Flier	0.39	0.09	0	0
Rough fish*	65.41	70.36	68.00	57.49
Game fish	34.59	29.64	32.00	42.51
Total	100.00	100.00	100.00	100.00

Table 14. Comparison of percentages of weights of all netted fish from Lake Murvaul.

Species	1958	1959	1960	1961
Spotted gar*	**	0	0	0
Bowfin*		39.58	34.84	34.35
Gizzard shad*		3.84	8.84	5.64
Grass pickerel*		1.03	0.23	0.31
Smallmouth buffalo*		0.91	1.38	0
River carpsucker*		0	0	0
Blacktail redhorse*		0.03	0	0
Spotted sucker*		5.90	5.23	2.58
Lake chubsucker*		3.72	6.08	9.91
Golden shiner*		0.41	0.15	1.10
Channel catfish		0.66	6.84	2.70
Blue catfish		0.91	1.84	0.52
Black bullhead*		7.16	11.30	12.29
Yellow bullhead*		4.89	7.54	10.22
Spotted bass		0.05	0	0
Largemouth bass		26.45	6.79	6.63
Warmouth		0.56	0.21	1.23
Green sunfish		0.09	0	0
Spotted sunfish		0.02	0.06	0.19
Redear sunfish		0.18	0.45	1.45
Bluegill sunfish		1.89	2.41	5.47
Yellowbelly sunfish		0.10	0	0
Longear sunfish		0.02	0.02	0
White crappie		0.82	3.22	4.85
Black crappie		0.75	2.57	0.56
Flier		0.03	0	0
Rough fish*		67.46	75.59	76.40
Game fish		32.54	24.41	23.60
Total		100.00	100.00	100.00

\*\* No weights were recorded the first year.

Table 15, Comparison of average standard lengths in millimeters of crappie from Lake Murvaul.

Species	1958		1959		1960		1961	
	No.	Length	No.	Length	No.	Length	No.	Length
White crappie	30	207.26	15	146.53	60	129.48	425	133.15
Black crappie	9	190.55	30	116.86	39	135.20	48	129.53

Comparison of average weight in grams of crappie from Lake Murvaul.

Species	1958		1959		1960		1961	
	No.	Weight	No.	Weight	No.	Weight	No.	Weight
White crappie	30	380.30	15	183.46	60	60.93	425	66.65
Black crappie	9	299.55	30	55.40	39	79.56	48	59.35

Comparison of average coefficients of condition ("K") of crappie from Lake Murvaul.

Species	1958		1959		1960		1961	
	No.	"K"	No.	"K"	No.	"K"	No.	"K"
White crappie	30	3.52	15	2.98	60	2.66	425	2.51
Black Crappie	9	3.62	30	3.01	39	2.99	48	2.62

Water quality

	1958	1959	1960	1961
pH	6.6	Unknown	7.3	7.1
Alkalinity	44.00 p.p.m.		50.00 p.p.m.	32.00 p.p.m.
Chlorides	27.56 p.p.m.		63.83 p.p.m.	35.46 p.p.m.

## LAKE STRIKER

The initial basic survey was begun on Lake Striker in 1957 and completed in 1960. The reconnaissance survey was conducted in September 1961.

Table 16 is the checklist of fish species collected from the lake which includes one species not previously collected. Table 17 is the comparison of percentage of numbers of netted fish. The over-all per cent of game fish is about the same although it is an all time high at 29.81 per cent. Spotted gar, bowfin, bullheads and channel catfish are on an increase. Spotted sucker and chubsuckers show a decrease but it is due to the time of year that the reconnaissance survey was made. Table 18, which is the per cent of weights, also shows an increase in the per cent of weight of game fish. There was a big increase in the weight of gar taken along with channel catfish. Of course the weight of the suckers is down due to the previously mentioned reason. Table 19 is the data on condition of several game fish. Channel catfish have shown the best progress while black crappie are making a comeback after being on a decline. Bass are making a slow decline although it is slight.

Vegetation continues to be a big problem in the lake in areas where the timber was left standing. Lake personnel have made efforts to rid the lake of some vegetation and have succeeded in some areas.

The water quality has continued to improve as the average pH has reached 7.0 which is an all time high. The chlorides are 156.02 p.p.m. which is an all time low.

Fishing has continued to be good and public access is somewhat improved with the opening of another concession on the west side of the lake.

Table 16. A checklist of Lake Striker fish species.

<u>Species</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>
Spotted gar ( <u>Lepisosteus oculatus</u> )	x	x	x	x
Bowfin ( <u>Amia calva</u> )	x	x		x
Gizzard shad ( <u>Dorosoma cepedianum</u> )	x	x	x	x
Grass pickerel ( <u>Esox americanus</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
Carp ( <u>Cyprinus carpio</u> )	x	x	x	x
Golden shiner ( <u>Notemigonus crysoleucas</u> )	x	x	x	
Pugnose minnow ( <u>Opsopoeodus emiliae</u> )	x	x	x	
Texas shiner ( <u>Notropis amabilis</u> )				x
Ribbon shiner ( <u>Notropis fumeus</u> )	x	x	x	x
Redfin shiner ( <u>Notropis umbratilis</u> )	x	x		
Brazos River shiner ( <u>Notropis brazosensis</u> )	x			
Weed shiner ( <u>Notropis texanus</u> )	x			
River shiner ( <u>Notropis blennioides</u> )	x			
Blacktail shiner ( <u>Notropis venustus</u> )	x	x	x	x
Redhorse shiner ( <u>Notropis lutrensis</u> )	x	x	x	x
Sand shiner ( <u>Notropis stramineus</u> )	x	x	x	
Blackspot shiner ( <u>Notropis atrocaudalis</u> )	x			
Mimic shiner ( <u>Notropis volucellus</u> )	x		x	
Bullhead minnow ( <u>Pimephales vigilax</u> )	x	x	x	x
Silvery minnow ( <u>Hybognathus nuchalis</u> )		x	x	
Channel catfish ( <u>Ictalurus punctatus</u> )	x	x	x	x
Black bullhead ( <u>Ictalurus melas</u> )	x	x	x	x
Yellow bullhead ( <u>Ictalurus natalis</u> )	x	x	x	x
Golden topminnow ( <u>Fundulus chrysotus</u> )	x		x	x
Blackstripe topminnow ( <u>Fundulus notatus</u> )	x	x	x	x
Common mosquitofish ( <u>Gambusia affinis</u> )	x	x	x	x
Brook silversides ( <u>Labidesthes sicculus</u> )	x	x	x	x
Largemouth bass ( <u>Micropterus salmoides</u> )	x	x	x	x
Spotted bass ( <u>Micropterus punctulatus</u> )		x	x	
Warmouth ( <u>Chaenobryttus gulosus</u> )	x	x	x	
Green sunfish ( <u>Lepomis cyanellus</u> )	x	x	x	
Spotted sunfish ( <u>Lepomis punctatus</u> )	x	x	x	
Redear sunfish ( <u>Lepomis microlophus</u> )	x	x	x	x
Bluegill sunfish ( <u>Lepomis macrochirus</u> )	x	x	x	x
Redbreast sunfish ( <u>Lepomis auritus</u> )	x	x		
Longear sunfish ( <u>Lepomis megalotis</u> )	x	x		
White crappie ( <u>Pomoxis annularis</u> )	x	x	x	x
Black crappie ( <u>Pomoxis nigromaculatus</u> )	x	x	x	x
Scaly sand darter ( <u>Ammocrypta vivax</u> )		x	x	x
Slough darter ( <u>Etheostoma gracile</u> )	x	x		x
Number of species	39	37	32	25

Table 17. Comparison of percentages of numbers of netted fish from Lake Striker.

Species	1957-58	1958-59	1959-60	1961
Spotted gar*	2.87	2.87	0.71	5.76
Bowfin*	0.15	0.39	0	1.69
Gizzard shad*	29.93	34.68	38.86	37.63
Grass pickerel*	0.15	0.07	0	0
River carpsucker*	0	0.07	0	0
Blacktail redhorse*	0.31	0.59	0	0
Spotted sucker*	4.75	14.79	17.29	2.72
Lake chubsucker*	7.82	5.67	7.86	1.36
Carp*	2.87	0.26	0.14	2.38
Golden shiner*	0	0.07	0	0
Channel catfish	0.26	2.15	2.86	6.10
Blue catfish	0	0	0	0.33
Black bullhead*	16.89	6.65	2.57	7.12
Yellow bullhead*	9.12	7.56	4.29	11.53
Largemouth bass	7.77	6.06	5.00	3.39
Spotted bass	0	0.52	0.29	0
Warmouth	3.02	1.50	0.43	0
Green sunfish	0	0	0.28	0
Spotted sunfish	2.70	0.59	0	0
Redear sunfish	0	0.20	0	1.01
Bluegill sunfish	6.83	10.03	13.57	11.53
Yellowbelly sunfish	1.82	0.39	0	0.33
Longear sunfish	0.20	0.78	0	0
White crappie	0.16	0.85	2.43	3.06
Black crappie	2.35	3.26	1.71	4.06
Rough fish*	74.35	73.66	71.71	70.19
Game fish	25.65	26.34	28.29	29.81
Total	100.00	100.00	100.00	100.00

Table 18. Comparison of percentages of weights of all netted fish from Lake Striker.

Species	1957-58	1958-59	1959-60	1961
Spotted gar*	**	**	3.24	23.12
Bowfin*			0	7.44
Gizzard shad*			17.78	11.85
River carpsucker*			0	0
Blacktail redhorse			0	0
Spotted sucker*			40.38	5.53
Lake chubsucker*			7.23	0.45
Carp*			1.19	3.32
Golden shiner*			0	0
Channel catfish			5.72	15.94
Blue catfish			0	3.08
Black bullhead*			2.52	7.04
Yellow bullhead*			2.56	10.52
Largemouth bass			12.86	3.78
Spotted bass			0.09	0
Warmouth			0.13	0
Green sunfish			0.07	0
Spotted sunfish			0	0
Redear sunfish			0	0.40
Bluegill sunfish			2.07	2.18
Yellowbelly sunfish			0	0.08
Longear sunfish			0	0
White crappie			2.61	2.66
Black crappie			1.32	2.61
Rough fish*			74.89	69.27
Game fish			25.11	30.73
Total			100.00	100.00

\*\* Weights not taken

Table 19. Comparison of standard length in millimeters of several game fish species from Lake Striker.

Species	1957-58		1958-59		1959-60		1961	
	No.	Length	No.	Length	No.	Length	No.	Length
Channel catfish	0	0	32	265.62	20	319.25	18	342.50
Largemouth bass	142	225.60	88	266.31	35	278.14	10	247.20
Warmouth	58	127.50	21	143.00	3	135.66	0	0
Bluegill sunfish	65	119.20	72	106.12	45	103.73	22	124.40
Spotted sunfish	41	69.80	5	106.40	12	98.00	0	0
White crappie	3	187.00	12	163.00	17	198.29	9	181.66
Black crappie	41	159.40	39	186.41	18	145.94	12	192.58

Comparison of weights in grams of several game fish species from Lake Striker.

Species	1957-58		1958-59		1959-60		1961	
	No.	Weight	No.	Weight	No.	Weight	No.	Weight
Channel catfish	0	0	32	335.40	20	599.00	18	932.94
Largemouth bass	142	332.80	88	606.23	35	705.20	10	399.50
Warmouth	58	99.80	21	124.47	3	82.33	0	0
Bluegill sunfish	65	92.30	72	47.18	45	39.40	22	80.77
Spotted sunfish	41	46.70	5	56.40	12	34.66	0	0
White crappie	3	235.70	12	210.16	17	286.94	9	156.66
Black crappie	41	155.40	39	300.94	18	138.22	12	242.75

Comparison of average coefficients of condition ("K") of several game fish species from Lake Striker.

Species	1957-58		1958-59		1959-60		1961	
	No.	"K"	No.	"K"	No.	"K"	No.	"K"
Channel catfish	0	0	32	1.51	20	1.65	18	1.74
Largemouth bass	142	2.69	88	2.78	35	2.88	10	2.27
Warmouth	58	4.73	21	3.90	3	3.26	0	0
Bluegill sunfish	65	4.81	72	4.11	45	3.46	22	3.92
Spotted sunfish	41	4.69	5	4.42	12	3.68	0	0
White crappie	3	3.29	12	2.76	17	2.88	9	2.47
Black crappie	41	3.49	39	3.76	18	3.00	12	3.29

### CADDO LAKE

Caddo Lake, on the Texas - Louisiana line, was first surveyed in 1953-55 and no fisheries work was conducted on the lake again until November 1961 and January 1962 when the reconnaissance surveys were made. This lake probably contains more different species of fish than most other lakes in the State. Seining locations are difficult to find because of the nature of the shoreline. Table 20 lists each species for each survey. One additional fish was added to the list on the reconnaissance survey.

Table 21 compares the percentage of numbers of fish collected by netting. Over-all there was little change in the make up of the catch that could not be attributed to the time of year that the reconnaissance survey was made. Gizzard shad were down considerably and spotted suckers and chain pickerel were up. The principal game fish species did not change much. The total per cent of game fish increased 7.51 per cent to 30.43 per cent. Table 22 is the comparison of per cent of weight of netted fish. The same trend is found with the weights as with the numbers. The time of year has to be considered for both. However, the condition of some game fish appear to be better than before, especially flathead catfish. This is shown in Table 23.

The water quality has apparently changed very little over the years. Submerged aquatic vegetation has been a perennial problem and no change is indicated in the near future. The water level is probably about the same as before although there have been some 10-foot rises during wet seasons. Generally, over a year's time the fluctuation of one foot is normal. Public access is good, although many of the commercial camps are in a run down condition.

Table 20. A checklist of Caddo Lake fish species.

<u>Species</u>	<u>1953-55</u>	<u>1961-62</u>
Chestnut lamprey ( <u>Ichthyomyzon castaneus</u> )	x	
Alligator gar ( <u>Lepisosteus spatula</u> )	x	
Shortnose gar ( <u>Lepisosteus platostomus</u> )	x	
Spotted gar ( <u>Lepisosteus oculatus</u> )	x	x
Longnose gar ( <u>Lepisosteus osseus</u> )	x	x
Bowfin ( <u>Amia calva</u> )	x	x
Skipjack ( <u>Alosa chrysochloris</u> )	x	
Threadfin shad ( <u>Dorosoma petenense</u> )	x	x
Gizzard shad ( <u>Dorosoma cepedianum</u> )	x	x
Grass pickerel ( <u>Esox americanus</u> )	x	
Chain pickerel ( <u>Esox niger</u> )	x	x
Bigmouth buffalo ( <u>Ictiobus cyprinellus</u> )	x	
Smallmouth buffalo ( <u>Ictiobus bubalus</u> )	x	x
River carpsucker ( <u>Carpionodes carpio</u> )	x	x
Spotted sucker ( <u>Minytrema melanops</u> )	x	x
Lake chubsucker ( <u>Erimyzon sucetta</u> )	x	x
Golden shiner ( <u>Notemigonus crysoleucas</u> )	x	
Pugnose minnow ( <u>Opsopoeodus emiliae</u> )	x	
Ironcolor shiner ( <u>Notropis chalybaeus</u> )	x	x
Weed shiner ( <u>Notropis texanus</u> )	x	x
Pallid shiner ( <u>Notropis amnis</u> )	x	
Blacktail shiner ( <u>Notropis venustus</u> )	x	x
Redhorse shiner ( <u>Notropis lutrensis</u> )	x	
Sand shiner ( <u>Notropis stramineus</u> )	x	x
Blackspot shiner ( <u>Notropis atrocaudalis</u> )	x	
Mimic shiner ( <u>Notropis volucellus</u> )	x	
Taillight shiner ( <u>Notropis 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	
Blue catfish ( <u>Ictalurus furcatus</u> )	x	x
Black bullhead ( <u>Ictalurus melas</u> )	x	x
Yellow bullhead ( <u>Ictalurus natalis</u> )	x	x
Flathead catfish ( <u>Pylodictis olivaris</u> )	x	x
Tadpole madtom ( <u>Schilbeodes gyrinus</u> )	x	
Freckled madtom ( <u>Schilbeodes nocturnus</u> )	x	
American eel ( <u>Anguilla rostrata</u> )	x	
Golden topminnow ( <u>Fundulus chrysotus</u> )	x	x
Starhead topminnow ( <u>Fundulus notti</u> )	x	
Blackstripe topminnow ( <u>Fundulus notatus</u> )	x	x

Table 20. A checklist of Caddo Lake fish species. (Continued)

<u>Species</u>	<u>1953-55</u>	<u>1961-62</u>
Pirate perch ( <u>Aphredoderus sayanus</u> )		x
Mosquitofish ( <u>Gambusia affinis</u> )	x	x
Mississippi silversides ( <u>Menidia audens</u> )	x	
Brook silverside ( <u>Labidesthes sicculus</u> )	x	x
White bass ( <u>Roccus chrysops</u> )	x	x
Yellow bass ( <u>Roccus interruptus</u> )	x	x
Spotted bass ( <u>Micropterus punctulatus</u> )	x	
Largemouth bass ( <u>Micropterus salmoides</u> )	x	x
Warmouth ( <u>Chaenobryttus gulosus</u> )	x	x
Bantam sunfish ( <u>Lepomis symmetricus</u> )	x	
Spotted sunfish ( <u>Lepomis punctatus</u> )	x	x
Redear sunfish ( <u>Lepomis microlophus</u> )	x	x
Bluegill sunfish ( <u>Lepomis macrochirus</u> )	x	x
Redbreast sunfish ( <u>Lepomis auritus</u> )	x	
Longear sunfish ( <u>Lepomis megalotis</u> )	x	x
Dollar sunfish ( <u>Lepomis marginatus</u> )	x	
White crappie ( <u>Pomoxis annularis</u> )	x	x
Black crappie ( <u>Pomoxis nigromaculatus</u> )	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>Etheostoma gracile</u> )	x	
Scalyhead darter ( <u>Etheostoma barratti</u> )	x	x
Cypress darter ( <u>Etheostoma proeliare</u> )	x	
Fountain darter ( <u>Etheostoma fonticola</u> )	x	
Freshwater drum ( <u>Aplodinotus grunniens</u> )	x	x
Number of species	68	36

Table 21. Comparison of per cent of numbers of netted fish from Caddo Lake.

<u>Species</u>	<u>1953-55</u>	<u>1961-62</u>
Alligator gar*	0.02	0
Shortnose gar*	0.26	0
Spotted gar*	4.14	1.51
Longnose gar*	1.15	0.90
Bowfin*	0.21	0.60
Skipjack*	0.02	0
Gizzard shad*	45.83	24.09
Chain pickerel*	4.27	13.25
Bigmouth buffalo*	0.02	0
Smallmouth buffalo*	0.34	1.81
River carpsucker*	0.81	0.60
Spotted sucker*	8.22	19.58
Lake chubsucker*	4.59	3.93
Golden shiner*	0.10	0
Channel catfish	0.21	0
Blue catfish	0.08	0.90
Flathead catfish	0.33	0.30
Black bullhead*	2.75	1.20
Yellow bullhead*	0.89	0.90
White bass	1.32	0.30
Yellow bass	8.56	18.98
Spotted bass	9.02	0
Largemouth bass	1.39	1.20
Warmouth	3.61	0.30
Longear sunfish	0.02	0
Redear sunfish	2.31	0.90
Bluegill sunfish	2.44	1.81
Spotted sunfish	0.10	0
Flier	0.11	0
White crappie	0.69	1.81
Black crappie	4.73	3.93
Freshwater drum*	0.46	1.20
Rough fish*	74.08	69.57
Game fish	25.92	30.43
Total	100.00	100.00

Table 22. Comparison of per cent of weights of netted fish from Caddo Lake.

<u>Species</u>	<u>1953-55</u>	<u>1961-62</u>
Alligator gar*	0.04	0
Shortnose gar*	0.91	0
Spotted gar*	7.95	1.66
Longnose gar*	10.14	11.91
Bowfin*	0.76	1.47
Skipjack*	0.01	0
Gizzard shad*	36.97	15.98
Chain pickerel*	6.08	15.30
Bigmouth buffalo*	0.07	0
Smallmouth buffalo*	1.14	4.71
River carpsucker*	1.48	1.57
Spotted sucker*	11.94	23.83
Lake chubsucker*	2.86	2.39
Golden shiner*	0.02	0
Channel catfish	0.22	0
Blue catfish	0.08	2.50
Flathead catfish	1.09	0.43
Black bullhead*	3.43	1.25
Yellow bullhead*	0.83	0.76
White bass	1.11	0.27
Yellow bass	3.50	8.00
Spotted bass	0.02	0
Largemouth bass	1.48	1.27
Warmouth	1.41	0.12
Longear sunfish	0.01	0
Redear sunfish	0.72	0.25
Bluegill sunfish	0.75	0.29
Spotted sunfish	0.01	0
Flier	0.05	0
White crappie	0.51	1.94
Black crappie	3.70	3.32
Freshwater drum*	0.71	0.78
Rough fish*	85.34	81.61
Game fish	14.66	18.39
Total	100.00	100.00

Table 23. Comparison of average standard lengths in millimeters of several game fish species from Caddo Lake.

Species	1953-55		1961-62	
	Number of Fish	Length	Number of Fish	Length
Channel catfish	6	273	0	0
Flathead catfish	18	426	1	325
White bass	62	232	1	250
Largemouth bass	75	247	4	275
Warmouth	124	158	1	155
Redear sunfish	66	156	2	148
Bluegill sunfish	62	143	7	118
Black crappie	213	212	13	210
White crappie	42	205	6	251

Comparison of average weights in grams of several game fish species from Caddo Lake.

Species	1953-55		1961-62	
	Number of Fish	Weight	Number of Fish	Weight
Channel catfish	6	438	0	0
Flathead catfish	18	1,315	1	1,135
White bass	62	391	1	442
Largemouth bass	75	421	4	?
Warmouth	124	171	1	160
Redear sunfish	66	148	2	130
Bluegill sunfish	62	130	7	76
Black crappie	213	356	13	330
White crappie	42	275	6	527

Comparison of average coefficients of condition ("K") of several game fish species from Caddo Lake.

Species	1953-55		1961-62	
	Number of Fish	"K"	Number of Fish	"K"
Channel catfish	6	1.80	0	0
Flathead catfish	18	1.60	1	3.30
White bass	62	2.66	1	2.83
Largemouth bass	75	2.36	4	0
Warmouth	124	3.93	1	4.30
Redear sunfish	66	3.57	2	4.02
Bluegill sunfish	62	4.14	7	4.27
Black crappie	213	3.22	13	3.45
White crappie	42	2.91	6	3.13

Water Quality

	1953-55	1961-62
pH	6.7	6.5
Alkalinity	Unknown	9.00 p.p.m.
Chlorides	Unknown	26.09 p.p.m.

It is recommended that this job be continued and that a reconnaissance survey be made on the above lakes at least once each year in order to keep information current.

Prepared by John N. Dorchester  
Project Leader

Approved by Marion Toole  
Coordinator

Date April 25, 1962

Charles E. Gray  
Regional Supervisor