

STATE TEXAS

PROJECT NO. F-3-R-2, Job B-1

PERIOD December 1, 1953
to May 31, 1955

JOB COMPLETION REPORT

by

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FILE

TITLE

Inventory of the Species Present in Caddo Lake.

OBJECTIVES

To determine the species present and their relative abundance as well as to determine the ecological factors influencing their distribution.

METHODS

Four netting stations were selected at widely separated sites in order to sample the various environments in the lake. (See attached map for location of stations). These stations were netted once each month using experimental type gill nets composed of 25 foot sections of varying mesh, including 3/4", 1", 1 1/2", 2" and 3" square mesh. Hoop and fyke nets of 1/4" and 1" mesh were also used. Fish were kept alive until examined for length, weight, sex and stage of sexual development. Scale samples were taken and saved for future study and comparison with those from other sections of the State. Some doubt exists at present as to the reliability of annuli in age determination at this latitude. Stomachs of sport species were preserved for food analysis. Results of the analysis of ten species are recorded in Table #15.

Ecological data recorded for each collection include:

- a. Temperature: air and surface water
- b. pH
- c. Turbidity
- d. Depth of water
- e. Depth of net set
- f. Direction and strength of wind
- g. Dissolved oxygen
- h. Main cover types
- i. Bottom type

Because of the heavy vegetation in Caddo Lake seining stations were difficult to find. The five sites were chosen simply because they were about the only ones open enough to allow seining operations and even these become impossible at times because of thick mats of water hyacinths. Seining collections were made once each month after waders became available. All seining specimens were brought to the laboratory for counting and identification. Ecological data recorded for each collection include the same items listed above for netting collections.

For the purpose of comparing populations and conditions in the different areas of the lake, the data for each netting station was treated separately. Five collections were made at each station during the period covered by this report.

NETTING COLLECTIONS

Station No. 1 - This site is located where the dense cypress breaks open into the waters of the Big Lake area. The area contains scattered cypress (Taxodium distichum) of a density of about four or five trees to an acre. Submerged aquatics occur here in dense beds although they do not cover the area completely. The more important ones in estimated order of abundance include: pondweeds (Potamogeton) water milfoil (Myriophyllum), coontail (Ceratophyllum) and muskgrass (Chara). By early summer, dense beds of water lily (Nymphaea) and lotus (Nelumbo) emerge to cover part of the area. Water hyacinths (Eichornia crassipes) almost cover the area at times, depending on the time of year and wind direction and velocity. The bottom of this station is a sandy silt covered with organic litter. The water depth is normally 5 to 8 feet. Twenty-five species of fish, including nine families were collected at this station. Table #1 shows the relative abundance of each species taken at this station. Results of the water analysis for this station are recorded in Table #6.

Station No. 2 - This station is located in the open water of the Big Lake area. There are some widely scattered cypress trees in the area but they are so few that the area may be considered open water. Depth of the water ranges from 4 to 8 feet, and due to wind action it is generally more turbid than the other stations. Submerged aquatics are present but are much less abundant than at other stations. Water milfoil, (Myriophyllum), Pondweeds (Potamogeton), Coontail (Ceratophyllum) and muskgrass (Chara) were found in the more shallow water. Mats of water hyacinths (Eichornia crassipes) drift through the area with water and wind currents. Twenty six species representing nine families of fish were taken at this station. Table #2 shows the relative abundance at this station. Water analysis results for this station are recorded in Table #7.

Station No. 3 - This station lies in the Clinton Lake area as shown on the attached map. Woody vegetation in the area consists of thick cypress breaks and open water dotted with scattered cypress trees. In warm weather, Clinton Lake becomes choked with submerged aquatics to such an extent that boat travel becomes very difficult. The major submerged species found here include: Pondweeds (Potamogeton), water milfoil (Myriophyllum), Coontail (Ceratophyllum) and Muskgrass (Chara). Some scattered beds of water lillies (Nymphaea) and lotus (Nelumbo) emerge in the spring. The water in this area is very clear, becoming turbid only after prolonged rains and very high water. Water depth ranges from three to eight feet. The bottom is a sandy clay covered with organic litter. Twenty-three species representing ten families of fish were collected at this station. Relative abundance for this station is recorded in Table #3. Results of water analysis are recorded in Table #8.

Station No. 4 - This station is located in the Carter's Lake area in the extreme upper end of Caddo Lake. Aquatic vegetation at station four is much the same as at station three. However, station four receives even less water from the bayou than station three. This can easily be seen on the attached map. Very seldom does all of the water in Carters Lake become turbid. The bottom is sandy clay and sandy silt covered with organic litter. Netting collections at station four produced nineteen species of fish which included ten families. Relative abundance for this station is recorded in Table #4. Results of water analysis are shown in Table #9.

SEINING COLLECTIONS

Five seining stations were selected at sites where vegetation was least likely to interfere with seining operations. (See attached map for location of seining stations). There were times when water hyacinths prevented seining at some stations. Fifty species, representing twelve families of fish were collected at these five stations. The silversides family represented by Menidia audens and Labidesthes sicculus were the most abundant, and stomach analysis showed that these two species made up a large portion of the diet of the game species. The relative abundance of each species is shown in Table #5. Water analysis results are shown in Table #10 through #14.

On April 30, 1954, at station #2, 119 largemouth bass fry were taken in a 50 ft. haul with a 30 X 6 ft. bag seine. On the same day under the same conditions, station #5 produced 80 largemouth bass fry, station #4 produced 26 and station #3 yielded 9.

It is interesting to note that although Caddo Lake was once famous for White crappie fishing, not a single white crappie was collected at the seining stations and only 36 were taken in gill nets during the entire period. Three hundred and fifteen black crappie were taken by seining and gill nets during the period. The white crappie were found to be more abundant in the more open and turbid water at netting stations #1 and #2 while the black crappie were more abundant in the wooded portion of the lake at netting stations #3 and #4.

SUMMARY

In order to measure and compare ecological differences in various localities in Caddo Lake, data from each collection station was recorded and studied separately. Four netting stations and five seining stations were selected in widely separated areas for this purpose. Collections were made and ecological data recorded once each month at each station.

A total of 5,241 fish were collected at the four netting stations during the period. A breakdown of the species and their relative abundance for each station may be found in Table #1 through #4. Stomach analysis were run on 1,057 individuals of 15 species. Table #15 shows the results of these analyses. Length-Weight data was kept and the co-efficient of condition computed for 12 species totaling 1,054 individuals. These records are shown in Table #17. Water analysis data for the four netting stations is recorded in Tables #6 through #9.

A total of 8,953 fish including 50 species and 12 families were collected at the five seining stations. On April 30, 1954, one 50 ft. haul with a 30 X 6 ft. bag sein yielded 119 black bass fry at station #2. Other stations produced good catches of bass fry on this same day, thus indicating a good bass spawn.

White crappie, which were once extremely abundant in Caddo Lake, appear to be on the decline while black crappie seem to be increasing in abundance.

A total of 69 species including 16 families were collected by all methods during the period. A checklist of species collected during the period of this report is shown on Table #16.

TABLE #1. Results of 12 Netting Collections, Station #1, Caddo Lake

SPECIES	NUMBER	% OF TOTAL NUMBER	WEIGHT	% OF TOTAL WEIGHT
Short nose gar	1	0.08	5.00	0.34
Spotted gar	44	3.82	53.26	3.66
Long nose gar	39	3.38	358.31	24.62
Gizzard shad	593	51.52	515.64	35.46
Chain pickerel	34	2.95	58.51	4.02
Bigmouth buffalo	1	0.08	4.00	0.27
Small mouth buffalo	10	0.87	38.44	2.64
River Carpsucker	8	0.79	18.38	1.26
Spotted sucker	121	10.51	171.68	11.79
Chubsucker	24	2.08	16.18	1.11
Golden shiner	1	0.08	0.25	0.02
White channel cat	1	0.08	1.88	0.13
Blue cat	1	0.08	1.44	0.09
Black bullhead cat	5	0.43	6.88	0.47
Yellow bullhead	2	0.17	1.50	0.10
Flathead cat	6	0.52	30.48	2.09
White bass	20	1.74	21.45	1.47
Yellow bass	110	9.55	52.45	3.60
Large mouth bass	5	0.43	10.86	0.75
Warmouth	36	3.13	14.33	0.98
Redear	2	0.17	0.62	0.04
Bluegill	19	1.65	4.39	0.30
White crappie	6	0.52	5.81	0.39
Black crappie	55	4.77	49.01	3.37
Drum	7	0.60	14.88	1.02
TOTAL	1151	100%	1455.63	100%

TABLE #2. Results of 12 Netting Collections, Station #2, Caddo Lake

SPECIES	NUMBER	% OF TOTAL NUMBER	WEIGHT	% OF TOTAL WEIGHT
Short nose gar	4	0.43	14.94	1.91
Spotted gar	28	2.98	54.93	7.05
Long nose gar	13	1.38	87.00	11.17
Gizzard shad	304	32.38	217.32	27.96
Chain pickerel	15	1.59	21.96	2.77
Small mouth buffalo	8	0.85	23.31	2.99
River carpsucker	33	3.51	58.58	7.52
Spotted sucker	55	5.86	60.61	7.78
Chubsucker	2	0.21	2.56	0.32
S. Channel cat	9	0.96	9.37	1.20
Blue cat	3	0.32	3.13	0.40
Black bullhead	1	0.11	0.31	0.04
Yellow bullhead	7	0.75	5.25	0.67
Flathead cat	10	1.06	25.95	3.33
White bass	49	5.22	39.05	5.02
Yellow bass	251	26.74	75.17	9.74
Spotted bass	1	0.11	1.25	0.16
Large mouth bass	23	2.45	13.78	1.77
Warmouth	10	1.06	3.38	0.43
Redear	48	5.11	13.45	1.72
Bluegill	10	1.06	3.17	0.40
White crappie	28	2.98	19.86	2.55
Black crappie	11	1.17	5.44	0.69
Drum	14	1.49	17.13	2.20
Longear	1	0.11	0.31	0.03
Skip Jack	1	0.11	0.44	0.18
TOTAL	939	100%	778.61	100%

TABLE #3. Results of 12 Netting Collections, Station #3, Caddo Lake

SPECIES	NUMBER	% OF TOTAL NUMBER	WEIGHT	% OF TOTAL WEIGHT
Short nose gar	4	0.30	19.56	1.35
Spotted gar	85	6.40	144.29	10.04
Long nose gar	8	0.60	105.00	7.28
Gizzard shad	639	48.15	570.16	39.52
Chain pickerel	73	5.50	101.14	7.01
River carpsucker	1	0.07	3.37	0.23
Spotted sucker	83	6.25	143.08	9.92
Chubsucker	66	4.97	45.01	3.12
Golden shiner	1	0.07	0.25	0.01
S. channel cat	1	0.07	0.25	0.01
Black bullhead	72	5.42	91.95	6.37
Yellow bullhead	19	1.43	22.12	1.53
Flathead cat	1	0.07	2.56	0.18
Yellow bass	54	4.06	38.19	2.65
Large mouth bass	18	1.43	23.30	1.61
Warmouth	42	3.16	18.48	1.28
Redear	31	2.33	12.25	0.85
Bluegill	40	3.01	13.20	0.91
White crappie	1	0.07	1.06	0.07
Black crappie	79	5.95	73.92	5.12
Drum	3	0.22	6.57	0.45
Western sp. sunfish	4	0.30	0.64	0.24
Bowfin	2	0.15	6.43	0.45
TOTAL	1327	100%	1442.78	100%

TABLE # 4. Results of 12 Netting Collections, Station #4, Caddo Lake

SPECIES	NUMBER	% OF TOTAL NUMBER	WEIGHT	% OF TOTAL WEIGHT
Short nose gar	5	0.27	10.00	0.50
Spotted gar	60	3.29	179.18	10.07
Alligator gar	1	0.05	2.31	0.12
Gizzard shad	866	47.47	703.69	41.07
Chain pickerel	102	5.69	148.05	8.40
Spotted sucker	172	9.43	272.43	15.35
Chubsucker	149	8.16	91.72	5.24
Flier	6	0.32	2.53	0.14
Black bullhead	66	3.61	86.86	4.90
Yellow bullhead	19	1.04	16.25	0.91
Yellow bass	34	1.86	24.32	1.37
Largemouth bass	27	1.48	32.31	1.81
Warmouth	101	5.53	40.21	2.26
Redear	40	2.19	12.90	0.67
Bluegill	59	3.23	19.79	1.11
White crappie	1	0.05	1.00	0.05
Black crappie	103	5.64	72.45	4.07
Golden shiner	3	0.16	0.87	0.05
Bowfin	9	0.49	34.76	1.90
Western sp. sunfish	1	0.05	0.13	0.01
TOTAL	1847	100%	1751.76	100%

TABLE #5. Results of 12 Seining Collections, Caddo Lake, March 25, 1954 through Feb. 24, 1955

SPECIES	STATION NO. 1	STATION NO. 2	STATION NO. 3	STATION NO. 4	STATION NO. 5	TOTALS
<i>Dorosoma petenensis</i>	53		44		1	98
<i>Dorosoma cepedianum</i>				6		6
<i>Esox vermiculatus</i>	1	2		2		5
<i>Esox niger</i>	10	8			3	21
<i>Minytrema melanops</i>	1					1
<i>Notemigonus crysoleucas</i>		14	2		27	43
<i>Opsopoeodus emiliae</i>	1	1	105	24	1	132
<i>Notropis chalbeus</i>	9	10		2	18	39
<i>Notropis roseus</i>	1		1	4	4	10
<i>Notropis amnis</i>	1			5		6
<i>Notropis venustus</i>			1	12		13
<i>Notropis lutrensis</i>	10			17		27
<i>Notropis deliciosus</i>			1			1
<i>Notropis atrocaudalis</i>	1	2	4			7
<i>Notropis volucellus</i>			1			1
<i>Notropis maculatus</i>			1			1
* <i>Notropis alpha</i>	2		8			10
<i>Hybognathus nuchalis</i>	1		2			3
<i>Pimephales vigilax</i>	1		158	145	1	305
<i>Ameiurus natalis</i>					1	1
<i>Ameiurus melas</i>		1				1
<i>Schilbeodes mollis</i>		1	1	1	7	10
<i>Schilbeodes nocturnus</i>			1			1
<i>Fundulus chrysotus</i>	1	85	45	5	123	259
<i>Fundulus notti</i>	49	46	13	7	40	155
<i>Fundulus notatus</i>	100	2	12	19	30	163

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<i>Gambusia affinis</i>	145	224	107	46	48	570
<i>Menidia audens</i>			420	2457	212	3089
<i>Labidesthes sicculus</i>	313	201	240	945	378	2077
<i>Morone interrupta</i>			3	1		4
<i>Micropterus salmoides</i>	15	135	25	43	107	325
<i>Chaenobryttus coronarius</i>	8	3	2	1	9	23
<i>Lepomis symmetricus</i>	3	24	5	4	6	42
<i>Lepomis punctatus</i>	7		1	5	55	68
<i>Lepomis microlophus</i>	90	73	151	97	184	595
<i>Lepomis macrochirus</i>	153	70	38	200	208	669
<i>Lepomis auritus</i>	31				1	32
<i>Lepomis megalotis</i>	18				1	19
<i>Lepomis marginatus</i>	4					4
<i>Pomoxis nigro-maculatus</i>			30	1	2	33
<i>Parachanna zonatum</i>	3	1	2	1	7	14
<i>Hadropterus shumardi</i>				1		1
<i>Percina caprodes</i>			5	2		7
<i>Ammocrypta vivax</i>				2		2
<i>Etheostoma chlorosomun</i>			1	2		3
<i>Etheostoma gracile</i>		5	1		16	22
<i>Etheostoma barratti</i>		1		2	5	8
<i>Etheostoma proliare</i>	11			3	10	24
<i>Etheostoma fonticola</i>	1	1				2
<i>Aplodinotus grunniens</i>			1			1
TOTALS	1044	910	1432	4062	1505	8953

* Undescribed species collected in Caddo Lake, now listed as *Notropis alpha* in Clark Hubbs, Key to The Freshwater Fishes of Texas, Feb. 22, 1955. This Key is under study for corrections and has not been officially published on the date of this report.

TABLE #6. Water Analysis, Netting Station #1, Caddo Lake

DATE	AIR TEMP. F ^o	WATER TEMP. F ^o	pH	DISSOLVED O ₂ ppm	CARBON DIOXIDE ppm
1-26-54	59.0 ^o	45.0 ^o	6.2	7.3	7.2
2-18-54	63.5	49.5	6.7	8.3	6.7
3-16-54	54.0	56.0	6.6	11.7	4.0
4-16-54	62.0	70.0	6.6	6.9	8.0
5-26-54	72.0	73.0	6.2	7.8	8.0
6-29-54	82.0	90.0	6.6	5.6	5.0
9-22-54	81.0	81.0	7.1	9.4	5.0
11-2-54	47.0	58.0	6.8	-0-	3.0
12-17-54	59.0	49.0	6.8	-0-	4.0
AVERAGES	64.4	63.5	6.6	8.1	5.7

TABLE #7. Water Analysis, Netting Station #2, Caddo Lake

DATE	AIR TEMP. F ^o	WATER TEMP. F ^o	pH	DISSOLVED O ₂ ppm	CARBON DIOXIDE ppm
1-29-54	57.5	45.5	6.4	13.2	5.7
3-10-54	62.0	58.5	7.0	7.7	5.0
4-1-54	57.0	58.0	6.8	10.0	3.0
4-21-54	79.0	72.0	7.0	7.9	5.0
5-25-54	72.5	72.0	6.4	8.0	6.0
7-14-54	82.0	84.0	7.0	-0-	4.5
10-6-54	93.0	88.0	7.1	5.6	3.0
10-28-54	58.0	68.0	7.0	-0-	3.0
1-15-55	69.0	55.0	7.0	-0-	3.5
AVERAGES	70.0 ^o F.	66.7 ^o F.	6.8	8.7 ppm	4.3 ppm

TABLE #8. Water Analysis, Netting Station #3, Caddo Lake

DATE	AIR TEMP. F°	WATER TEMP. F°	pH	DISSOLVED O ₂ ppm	CARBON DIOXIDE ppm
2-3-54	60.0	51.5	6.0	11.1	5.0
2-24-54	62.0	58.0	7.0	10.5	3.0
3-26-54	76.0	67.0	7.2	8.8	1.0
5-11-54	60.0	65.0	6.7	-0-	7.0
6-3-54	70.0	77.0	6.4	7.6	8.0
8-17-54	85.0	88.0	6.8	4.8	8.0
9-16-54	70.0	82.0	7.2	6.6	3.0
10-8-54	69.0	74.0	6.6	7.0	6.0
1-14-55	49.0	45.0	6.4	-0-	6.0
AVERAGES	66.7	67.5	6.7	8.0	5.3

TABLE #9. Water Analysis, Netting Station #4, Caddo Lake

DATE	AIR TEMP. F°	WATER TEMP. F°	pH	DISSOLVED O ₂ ppm	CARBON DIOXIDE ppm
2-9-54	59.0	50.5	6.6	9.8	5.8
3-2-54	60.0	58.5	7.0	8.4	3.0
4-6-54	78.0	71.0	6.8	10.0	3.0
6-15-54	76.0	80.0	6.4	4.0	-0-
7-23-54	82.0	88.0	6.8	6.2	6.0
9-23-54	87.0	80.0	7.6	10.2	3.0
10-22-54	58.0	62.0	6.6	-0-	-0-
11-17-54	64.0	62.0	6.4	-0-	-0-
1-26-55	50.0	53.0	6.2	-0-	3.5
AVERAGES	68.2	67.2	6.7	8.1	4.0

TABLE #10. Water Analysis, Seining Station #1, Caddo Lake

DATE	AIR TEMP.	WATER TEMP.	pH	O ²	Co ₂
4/30/54	78° F.	76° F.	6.3	-0- ppm	8.0 ppm
5/31/54	83	81	6.4	6.2	10.0
6/28/54	97	96	6.6	4.8	6.5
9/28/54	85	84	7.0	10.0	5.5
10/13/54	79	80	6.8	6.8	7.0
11/12/54	60	74	6.6	-0-	5.0
2/24/55	58	48	6.0	-0-	5.0
AVERAGES	77°	77°	6.5	6.9 ppm	6.7 ppm

TABLE #11. Water Analysis, Seining Station #2, Caddo Lake

DATE	AIR TEMP.	WATER TEMP.	pH	O ²	Co ₂
4/30/54	80° F.	78° F.	6.8	-0- ppm	5.0 ppm
5/31/54	83	85	7.6	8.4	3.0
6/28/54	93	91	7.3	6.0	2.0
11/12/54	65	58	7.2	-0-	3.0
2/24/55	56	48	6.2	5.6	5.0
AVERAGES	75°	72°	7.0	6.6 ppm	3.6 ppm

TABLE #12. Water Analysis, Seining Station #3, Caddo Lake

DATE	AIR TEMP.	WATER TEMP.	pH	O ²	Co ₂
4/30/54	76° F.	-0-° F.	6.5	-0- ppm	8.0 ppm
5/31/54	82	79	6.6	7.0	6.0
6/28/54	96	95	7.0	4.6	4.0
8/2/54	98	89	7.6	7.6	5.0
9/28/54	91	80	7.2	8.8	4.0
10/13/54	78	79	7.0	10.4	2.5
11/12/54	65	60	7.0	-0-	3.5
AVERAGES	84°	80°	6.9	7.8 ppm	4.7 ppm

TABLE #13. Water Analysis, Seining Station #4, Caddo Lake

DATE	AIR TEMP.	WATER TEMP.	pH	O ²	CO ₂
4/30/54	68°	71°	6.8	-0- ppm	4.5 ppm
5/31/54	81	82	6.8	6.8	5.0
6/28/54	95	95	7.4	6.8	4.0
8/2/54	95	90	-0-	9.4	5.0
9/28/54	86	80	7.5	11.4	2.0
10/13/54	77	78	7.1	10.4	2.0
11/12/54	60	62	7.0	-0-	3.5
2/24/55	52	48	6.0	6.4	5.0
AVERAGES	77° F.	76° F.	6.9	8.6 ppm	3.9 ppm

TABLE #14. Water Analysis, Seining Station #5, Caddo Lake

DATE	AIR TEMP.	WATER TEMP.	pH	O ²	CO ₂
4/30/54	70°	74°	6.8	-0- ppm	6.0 ppm
5/31/54	85	83	6.9	7.4	4.5
8/2/54	95	90	6.0	7.0	4.0
9/28/54	86	84	7.6	12.6	1.0
10/13/54	78	78	7.0	10.4	3.0
11/12/54	60	62	7.0	-0-	2.5
2/24/55	51	48	6.2	11.0	6.0
AVERAGES	75° F.	74° F.	6.8	9.8 ppm	3.9 ppm

TABLE #15. Results of Stomach Analysis, Fifteen Species, Caddo Lake, Dec. 1953 - Jan. 1955

SPECIES	No. Stomachs Examined	No. Stomachs Empty	Ephemera Mayflies	Odonata Dragonflies	Hemiptera Waterbugs	Coleoptera Beetles	Mollusca	Crustacea	Game Fish	Forage Fish	Detritus	Unidentified Fish	Unidentified Insects	MISCELLANEOUS
<i>Esox niger</i>	138	40			1.02			11.51	1.44	36.63	0.01	19.39		
<i>Ictalurus punctatus</i>	7	1						12.51		33.34	16.66		16.66	Gar egg 16.66 Algae 4.17
<i>S. Channel catfish</i>														
<i>Ictalurus furcatus</i>	4	2						25.00			50.00	25.00		
<i>Blue catfish</i>														
<i>Ameiurus melas</i>														
<i>Black bullhead</i>	8	4					27.50				25.00			Algae 25.00 *Nem. 22.50
<i>Pilodictus olivaris</i>														
<i>Flathead catfish</i>	18	9						11.23	22.22	44.33		22.22		
<i>Morone chrysops</i>														
<i>White bass</i>	54	23	9.68			2.35		32.62		38.71	6.46	3.22		Algae 6.96
<i>Morone interrupta</i>														
<i>Yellow bass</i>	240	59	14.45	8.54	2.13			34.50		19.27	5.13	0.55	1.10	Algae 13.28 *Veg. 1.05
<i>Micropterus punctulatus</i>														
<i>Spotted bass</i>	5	3								50.00	50.00			
<i>Micropterus salmoides</i>														
<i>Largemouth black bass</i>	88	39		4.89	0.52			12.07	6.36	61.15	4.30	8.16		Algae 2.25
<i>Chaenobryttus coronarius</i>														
<i>Warmouth</i>	102	50		8.43	2.79	1.92	0.09	39.72	11.46	10.75	8.23	7.69		Algae 7.00 *Gras. 1.29
<i>Lepomis microlophus</i>														
<i>Redear sunfish</i>	69	38	3.22				12.91	4.51			16.13			Algae 63.23
<i>Lepomis macrochirus</i>														
<i>Bluegill sunfish</i>	56	20	3.48	13.19	2.78	0.69		2.08			13.88	2.78		Algae 61.12
<i>Pomoxis annularis</i>														
<i>White crappie</i>	45	12						25.64		49.79	15.82	8.75		
<i>Pomoxis nigro-maculatus</i>														
<i>Black crappie</i>	214	40	1.39	7.50	1.42			39.15		17.23	18.12	5.44	0.28	Algae 8.90 *Nem. 0.57
<i>Aplodinotus grunniens</i>														
<i>Freshwater drum</i>	4	2						75.00						

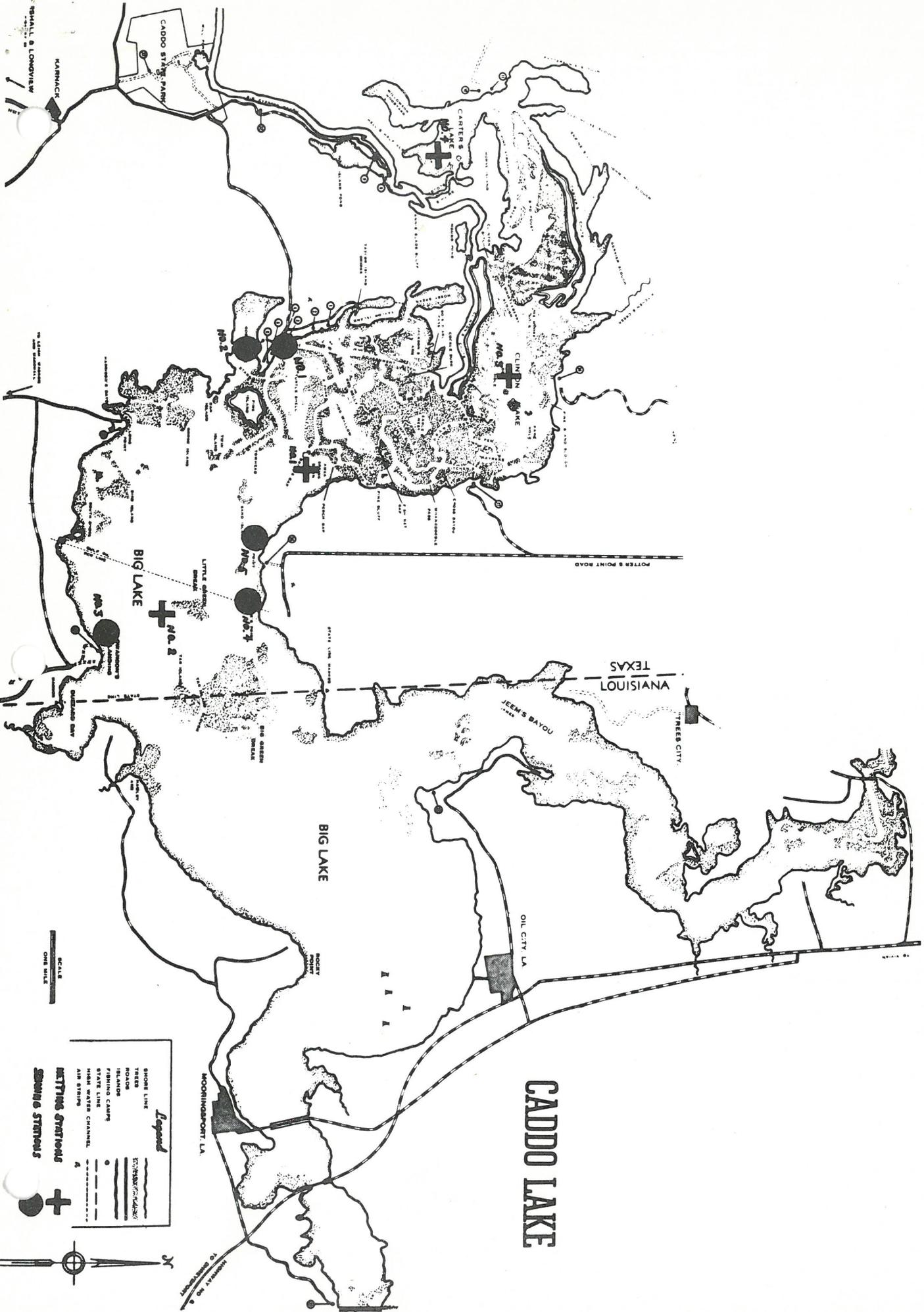
* Nem. - Nematodes * Veg. - Vegetation * Gras. - Grasshopper

TABLE #16. Checklist of Species, Caddo Lake, Dec. 1, 1953 through May 31, 1955

PETROMYZONIDAE <i>Ichthyomyzon castaneus</i>	CYPRINODONTIDAE <i>Fundulus chrysotus</i> <i>Fundulus notti</i> <i>Fundulus notatus</i>
LEPISOSTEIDAE <i>Lepisosteus spatula</i> <i>Lepisosteus platostomus</i> <i>Lepisosteus productus</i> <i>Lepisosteus osseus</i>	POECILIIDAE <i>Gambusia affanis</i>
AMIIDAE <i>Amia calva</i>	ATHERINIDAE <i>Menidia audens</i> <i>Labidesthes sicculus</i>
CLUPEIDAE <i>Alosa chrysochloris</i> <i>Dorosoma petenensis</i> <i>Dorosoma cepedianum</i>	SERRANIDAE <i>Morone chrysops</i> <i>Morone interrupta</i>
EXOCIDAE <i>Esox vermiculatus</i> <i>Esox niger</i>	CENTRARCHIDAE <i>Micropterus punctulatus</i> <i>Micropterus salmoides</i> <i>Chaenobryttus coronarius</i> <i>Lepomis symmetricus</i> <i>Lepomis punctatus</i> <i>Lepomis microlophus</i> <i>Lepomis macrochirus</i> <i>Lepomis auritus</i> <i>Lepomis megalotis</i> <i>Lepomis marginatus</i> <i>Pomoxis annularis</i> <i>Pomoxis nigro-maculatus</i> <i>Centrarchus macropterus</i> <i>Elassoma zonatum</i>
CATOSTOMIDAE <i>Ictiobus cyprinellus</i> <i>Ictiobus bubalus</i> <i>Carpionodes carpio</i> <i>Minytrema melanops</i> <i>Erimyzon sucetta</i>	PERCIDAE <i>Hadropterus shumardi</i> <i>Percina caprodes</i> <i>Amnocypta vivax</i> <i>Etheostoma chlorosomum</i> <i>Etheostoma gracile</i> <i>Etheostoma barratti</i> <i>Etheostoma proliare</i> <i>Etheostoma fonticola</i>
CYPRINIDAE <i>Notemigonus crysoleucas</i> <i>Opsopoeodus emiliae</i> <i>Notropis chalybeus</i> <i>Notropis roseus</i> <i>Notropis amnis</i> <i>Notropis venustus</i> <i>Notropis lutrensis</i> <i>Notropis deliciosus</i> <i>Notropis atrocaudalis</i> <i>Notropis volucellus</i> <i>Notropis maculatus</i> <i>Notropis alpha</i> <i>Hybognathus nuchalis</i> <i>Pimephales vigilax</i>	SCIAENIDAE <i>Aplodinotus grunniens</i>
AMEIURIDAE <i>Ictalurus punctatus</i> <i>Ictalurus furcatus</i> <i>Ameiurus melas</i> <i>Ameiurus natalis</i> <i>Pilodictus olivaris</i> <i>Schilbeodes mollis</i> <i>Schilbeodes nocturnus</i>	
ANGUILLIDAE <i>Anguilla rostrata</i>	

TABLE #17. Length-Weight Data, 12 Species, Caddo Lake, Dec. 1, 1953 through May 31, 1955

SPECIES	SEX	NO. SPECIMENS	STANDARD LENGTH RANGE	STANDARD LENGTH AVERAGE	WEIGHT RANGE	WEIGHT AVERAGE	"K" RANGE	"K" AVERAGE
Chain Pickerel	M	50	256 - 492	339	235 - 1106	546	0.62 - 1.15	0.89
	F	87	298 - 545	428	212 - 1673	779	0.71 - 1.21	0.97
S. Channel catfish	M	3	184 - 335	265	100 - 652	411	1.61 - 1.96	1.76
	F	3	204 - 330	280	152 - 737	464	1.73 - 2.05	1.85
Flathead catfish	M	1	425	425	1191	1191	1.55	1.55
	F	17	250 - 565	427	275 - 4082	1438	1.40 - 2.42	1.64
White Bass	M	27	162 - 270	218	590 - 102	296	3.19 - 1.45	2.61
	F	35	133 - 336	246	1247 - 83	486	4.48 - 1.13	2.75
Yellow bass	M	117	256 - 105	180	488 - 53	175	4.78 - 1.28	2.83
	F	126	265 - 129	188	680 - 54	222	4.57 - 1.19	2.93
Spotted bass	M	2	230 - 220	225	263 - 240	252	2.92 - 2.25	2.59
	F	4	271 - 176	214	539 - 119	259	2.71 - 1.93	2.27
Largemouth bass	M	32	355 - 126	239	1219 - 105	361	3.16 - 1.86	2.35
	F	43	419 - 127	254	2211 - 46	481	3.21 - 1.85	2.36
Warmouth	M	52	184 - 115	157	251 - 55	172	4.94 - 2.14	3.89
	F	72	190 - 110	159	256 - 60	170	4.98 - 2.16	3.96
Redear sunfish	M	26	194 - 112	160	309 - 55	159	4.41 - 0.94	3.44
	F	40	194 - 100	152	296 - 40	136	4.90 - 2.22	3.70
Bluegill sunfish	M	31	172 - 100	143	248 - 40	136	5.31 - 2.70	4.29
	F	31	175 - 106	142	245 - 50	124	4.76 - 1.60	3.98
Black crappie	M	84	272 - 115	209	794 - 46	327	3.85 - 1.37	3.20
	F	129	305 - 106	215	1191 - 33	384	5.27 - 1.40	3.24
White crappie	M	16	260 - 140	209	609 - 70	293	3.55 - 2.42	2.95
	F	26	289 - 135	200	680 - 65	256	3.57 - 1.20	2.86



CADDO LAKE

Legend

SHORE LINE	ISLANDS
TREES	SETTLINGS
ISLANDS	STATE LINE
FISHING CAMPS	WATER CHANNELS
STATE LINE	AIR STRIPS
WATER CHANNELS	
AIR STRIPS	

SETTLING STATIONS

SWIMMING STATIONS

SCALE
ONE MILE

