

FILE

JOB COMPLETION REPORT

As required by

FEDERAL AID IN FISHERIES RESTORATION ACT

TEXAS

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

Fisheries Investigations and Surveys of the Waters of Region 2-A

Job No. B-29: Fisheries Reconnaissance

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July 6, 1965

ABSTRACT

Lakes Brownwood, Diversion, Graham, Kemp, Kickapoo, Possum Kingdom, Scarborough, Tucker and Coleman were surveyed. The results were compared to previous data, when available, to provide a basis for determining any change that may have occurred.

Lakes on the Wichita watershed continue to yield large populations of rough fish. Lake Kemp has a high rough fish population and stunted game fish even though the lake does not show an overall high fish population.

Lakes on the Brazos watershed show only slight changes.

Collection of fish made on these lakes show no major changes in fish populations or habitat and recommendation for fish harvest regulations remain unchanged.

The tidewater silversides, Menidia beryllina, was collected for the first time from Possum Kingdom Lake.

JOB COMPLETION REPORT

State of Texas

Project No. F-4-R-11

Name: Fisheries Investigations and Surveys of the Waters of Region 2-A

Job No. B-29

Title: Fisheries Reconnaissance.

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

Objectives:

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

Procedure:

Certain major lakes in Region 2-A, that had been surveyed or had other work done, were revisited and net collections made. These data collected were recorded for comparison with the results of previous work, when available, to provide a basis for determining any change that may have occurred. Lakes Brownwood, Diversion, Graham, Kemp, Kickapoo, Possum Kingdom, Scarborough, Tucker and Coleman were surveyed.

Findings:

Lake Graham

Results of netting in Lake Graham indicate that there has been some changes in the fish population since the 1962-1963 survey was made. Spotted gar did not appear in the samples as frequently as in past samples. Shad, buffalo and carp-sucker comprised 48.61 per cent of the rough fish total of 54.59 per cent of numbers taken. Carpsucker comprised 20.19 per cent by weight which is a gain from 4.30 per cent from 1962-1963. Channel catfish, bass and crappie remained relatively unchanged except for the per cent by weight of crappie which dropped from 21.99 per cent to 4.57 per cent (Table No. 1 and 2).

Fishing interest remains strong on Lake Graham with good catches of all game fish and these fish as well as the fish taken in the net survey indicate that fish are in good condition.

Lake Possum Kingdom

Fewer fish were taken from Possum Kingdom during the 1963-1964 reconnaissance than during the 1962-1963 resurvey. A total of 5,325 feet of net was used to take 362 fish. The rough fish made up 63.82 per cent by number and 36.18 per cent game fish. The game fish ratio is 72.74 per cent by weight of rough fish and only 27.26 per cent game fish. Gizzard shad provide 34.80 per cent of the rough fish followed by longnose gar with 18.79 per cent. Channel catfish provide 12.15 per cent of the total number followed by white bass and 11.95 per cent and white crappie with 6.62 per cent (Table No. 3 and 4).

Since the release of walleye fry, (*Stizostedion vitreum*) May 7, 1964, Possum Kingdom Lake possibly has another species which is not listed on the checklist. Walleye have not been taken by fishermen or nets therefore was not posted on the check list (Table No. 15).

Tidewater silversides were collected for the first time from Possum Kingdom.

Lake Kickapoo

Lake Kickapoo, a turbid lake, is located on the Wichita River System.

Net checks gave a better picture of the species present than was shown in the 1962-1963 net check. White crappie still provide the greatest number present but are of a stunted size. Gar, buffalo and carpsucker make up the bulk of the rough fish which comprise 66.05 per cent of the total weight. (Tables 5 and 6).

Lake Kemp

A total of 1,600 feet of net were set taking 171 fish. Shad were found to be the most numerous species with 26.90 per cent by numbers followed by carpsucker with 25.56 per cent. All fish taken show very small "K" averages (Table No. 7). Netting from Lake Kemp indicates only 12.22 per cent game fish by weight.

Further reconnaissance is planned for Lake Kemp in order to determine ways and means of improving fishing. Kemp is a large lake near Wichita Falls, Texas, therefore the lake could provide fishing for that area of the State where large lakes are not common.

Lake Scarborough

Lake Scarborough was netted only one time during this segment of work. Previous work on the lake indicate white crappie to be the most abundant species but the 1963-1964 results show shad to be the most abundant species with 60.26 per cent by number. Bluegill provide 17.51 per cent of the catch and crappie provided 9.76 per cent (Table No. 8 and 9). Crappie taken in nets appear to be overpopulated and stunted and so do those taken by fishermen.

Lake Tucker

Lake Tucker is a small, 50 acre lake located in Comanche County. The lake has been repeatedly stocked with largemouth bass from the State Fish Hatchery but bass fishing continues to be very poor. The net survey did not produce any bass. Shad was the most numerous species with 59.42 per cent. Crappie show 24.63 per cent by number and only 4.66 per cent by weight (Table No. 10).

The lake is heavily infected with aquatic vegetation which is a probable cause of the poor fishing.

Lake Coleman

Lake Coleman was netted in order to check survival of blue catfish which were stocked in the lake. One blue catfish was captured which measured 290 millimeters standard length and weighed 387 grams. There were no evidence of reproduction of

of the blue catfish. Fishermen took some blue catfish while fishing from the bank. (Table No. 11)

Lake Diversion

Diversion Lake, located on the Wichita River System, is a shallow turbid lake. The majority of the fish taken from Diversion are rough fish and "K" factors for game fish are very low. (Table No. 12).

Lake Brownwood

Two netting trips were made to Lake Brownwood. The overall fish population is relatively unchanged even though the largest change occurred in the number of shad. The 1962-1963 netting results show shad to be 50.12 per cent by number while the 1963-1964 results indicate 17.45 per cent by number. The per cent by numbers of buffalo and carpsucker indicate a slight increase. The changes in per cent is reflected by the use of the new type experimental gill net. Table No. 13 and 14.

Prepared by Dwane Q. Smith
Project Leader

Approved by Marion Toole
(Coordinator)

Date: July 6, 1965

JOHN E. TILTON
Regional Supervisor

Table 1. Results of netting Lake Graham November 1, 1963 - October 30, 1964

Species	Number	Per Cent by Number	Total Weight Pounds	Per Cent by Weight	Average Length mm	Average Weight Gms	Average "K"
Spotted gar	4	0.79	8.11	1.20	505	921	0.65
Gizzard shad	152	30.28	37.43	5.56	179	111	1.72
Smallmouth buffalo	33	6.57	231.23	34.34	461	3181	3.17
River carpsucker	59	11.76	135.96	20.19	359	1046	2.42
European carp	12	2.39	79.56	11.81	487	3010	2.29
Golden shiner	1	0.20	0.17	0.03	155	880	2.15
Channel cat	66	13.14	88.26	13.10	308	607	1.38
Black bullhead	10	2.00	3.39	0.51	199	154	1.89
Flathead cat	2	0.39	12.98	1.92	555	2948	1.72
Largemouth bass	19	3.79	37.83	5.62	314	904	2.28
Bluegill sunfish	41	8.17	4.28	0.64	113	54	3.24
White crappie	100	19.92	30.79	4.57	167	139	2.19
Freshwater drun	3	0.60	3.41	0.51	298	518	1.86
Total	502	100.00	673.40	100.00			

Table 2. Lake Graham netting results, 1962-1963.

Species	Number	Per Cent by Number	Total Weight Pounds	Per Cent by Weight	Average Length mm.	Average Weight Gms.	Average "K"
Spotted gar	7	9.58	16.55	26.54	514	1074	0.60
Gizzard shad	12	16.44	1.92	3.08	161	72	1.67
Smallmouth buffalo	3	4.11	20.48	32.85	460	3099	3.22
River carpsucker	1	1.37	2.68	4.30	380	1219	2.22
Channel catfish	11	15.07	4.29	6.88	229	177	1.31
Black bullhead	3	4.11	0.83	1.34	190	126	1.83
Largemouth bass	1	1.37	0.17	0.27	160	80	1.95
Green sunfish	1	1.37	0.07	0.12	100	35	3.55
Bluegill sunfish	9	12.33	0.90	1.44	114	45	3.04
White crappie	24	32.88	13.71	21.99	209	259	2.25
Drum	1	1.37	0.74	1.19	260	340	1.95
Totals	73	100.00	62.34	100.00			

Table 3. Results of netting Lake Possum Kingdom November 1, 1963 - October 30, 1964

Species	Number	Per Cent by Number	Total Weight Pounds	Per Cent by Weight	Average Length mm	Average Weight Gms	Average "K"
Spotted gar	1	0.28	0.50	0.11	355	230	
Longnose gar	68	18.79	137.35	32.38	630	930	
Gizzard shad	126	34.80	72.10	16.99	235	259	1.63
Smallmouth buffalo	13	3.59	64.50	15.21	407	2252	2.93
River carpsucker	6	1.66	15.36	3.62	355	1162	2.45
European carp	4	1.11	14.05	3.31	402	1594	2.25
Channel cat	44	12.15	59.74	14.08	364	616	1.36
White bass	40	11.05	27.23	6.42	247	309	1.93
Ky. spotted bass	1	0.28	2.12	0.50	360	964	2.15
Largemouth bass	5	1.38	11.25	2.65	356	1022	1.74
Bluegill sunfish	17	4.69	3.06	0.72	130	81	3.35
White crappie	24	6.63	12.26	2.89	180	232	2.10
Freshwater drum	13	3.59	4.73	1.12	198	165	1.93
Total	362	100.00	424.25	100.00			

Table 4. Lake Possum Kingdom netting results 1962 - 1963.

Species	Number	Per Cent by Number	Total Weight Pounds	Per Cent by Weight	Average Length mm	Average Weight Gms	Average "K"
Spotted gar	30	1.96	42.61	3.95	477	645	
Longnose gar	58	3.81	207.42	19.23	712	1623	
Gizzard shad	698	45.82	354.43	32.86	231	234	1.84
Smallmouth buffalo	8	0.53	51.16	4.74	366	2611	2.91
River carpsucker	21	1.38	47.45	4.40	321	970	2.84
European carp	4	0.26	17.37	1.62	275	1335	2.03
Channel catfish	90	5.91	108.51	10.06	325	542	1.48
Flathead catfish	1	0.07	1.00	0.09	310	454	1.52
White bass	77	5.05	54.59	5.06	236	321	2.21
Largemouth bass	75	4.93	71.59	6.64	258	433	2.19
Warmouth sunfish	1	0.07	0.37	0.03	170	170	3.50
Green sunfish	1	0.07	0.27	0.03	160	125	3.00
Redear sunfish	98	6.43	26.25	2.43	157	121	3.07
Bluegill sunfish	322	21.14	79.34	7.36	141	111	3.83
Longear sunfish	2	0.14	0.41	0.04	140	95	3.55
White crappie	24	1.57	10.31	0.95	198	195	2.45
Black crappie	3	0.20	1.57	0.15	206	240	2.66
Freshwater drum	10	0.66	3.85	0.36	196	175	2.24
Totals	1523	100.00	1078.50	100.00			

Table 5. Results of netting Lake Kickapoo November 1, 1963 - October 30, 1964.

Species	Number	Per Cent by Number	Total Weight Pounds	Per Cent by Weight	Average Length mm	Average Weight Gms	Average "K"
Spotted gar	9	3.53	27.72	17.10	600	1398	0.64
Longnose gar	1	0.39	3.80	2.34	790	1729	
Gizzard shad	20	7.84	6.36	3.92	184	144	1.62
Buffalo	10	3.92	29.35	18.11	363	1332	2.69
River carpsucker	49	19.22	33.16	20.46	261	307	2.10
European carp	3	1.17	4.37	2.70	293	1415	2.28
Channel cat	16	6.28	9.35	5.76	248	265	1.33
White bass	5	1.96	10.37	6.40	285	941	2.83
Largemouth bass	4	1.57	5.61	3.46	250	637	2.13
Longear sunfish	1	0.39	0.06	0.04	90	30	4.30
Bluegill sunfish	2	0.78	0.18	0.11	105	42	3.82
White crappie	122	47.85	29.47	18.18	201	109	2.22
Freshwater drum	13	5.10	2.29	1.42	134	80	2.00
Total	255	100.00	162.09	100.00			

Table 6. Lake Kickapoo netting results 1962-1963

Species	Number	Per Cent by Number	Total Weight Pounds	Per Cent by Weight	Average Length mm	Average Weight Gms	Average "K"
Shortnose gar	3	3.00	4.49	15.23	566	680	
River carpsucker	17	17.00	9.86	33.44	257	263	1.69
Channel catfish	13	13.00	5.28	17.91	222	184	1.38
White bass	2	2.00	4.62	15.67	425	1049	1.37
White crappie	60	60.00	4.79	16.25	235	36	1.85
Freshwater drum	5	5.00	0.44	1.50	130	40	2.00
Total	110	100.00	29.48	100.00			

Table 7. Results of netting Lake Kemp November 1, 1963 - October 30, 1964

Species	Number	Per Cent by Number	Total Weight Pounds	Per Cent by Weight	Average Length mm	Average Weight Gms	Average "K"
Spotted gar	15	8.77	58.81	38.37	666	1780	0.60
Gizzard shad	46	26.90	14.29	9.32	208	141	1.41
River carpsucker	42	24.56	44.36	28.95	298	479	1.92
European carp	14	8.19	15.35	10.01	288	498	1.87
Channel cat	14	8.19	6.53	4.26	242	211	1.23
Flathead catfish	1	0.59	1.74	1.14	370	794	1.12
White bass	11	6.43	5.29	3.45	230	218	1.72
Bluegill sunfish	9	5.26	1.00	0.65	115	50	3.00
White crappie	11	6.43	4.16	2.72	197	171	1.75
Freshwater drum	8	4.68	1.73	1.13	155	98	0.45
Total	170	100.00	153.26	100.00			

Table 8. Results of netting Lake Scarborough November 1, 1963 - October 30, 1964.

Species	Number	Per Cent by Number	Total Weight Pounds	Per Cent by Weight	Average Length mm	Average Weight Gms	Average "K"
Gizzard shad	179	60.26	59.17	46.78	239	150	1.26
European carp	1	0.34	5.37	4.24	490	2438	2.10
Golden shiner	2	0.67	0.33	0.26	165	75	1.65
Channel catfish	2	0.67	2.68	2.12	350	609	1.38
Flathead catfish	2	0.67	12.98	10.27	530	2948	1.72
Largemouth bass	4	1.35	3.63	2.87	315	412	1.85
Warmouth	6	2.02	11.35	1.06	150	102	2.83
Green sunfish	1	0.34	0.11	0.09	115	50	3.28
Redear sunfish	16	5.39	4.84	3.83	170	137	2.78
Bluegill sunfish	52	17.51	21.79	17.22	132	190	3.31
White crappie	29	9.76	4.31	3.41	154	67	2.08
Freshwater drum	3	1.02	9.92	7.85	410	1502	2.19
Total	297	100.00	126.48	100.00			

Table 9. Lake Scarbrough Netting Results, 1962-1963

Species	Number	Per Cent of Number	Weight	Per Cent of Weight
Gizzard shad	16	7.27	14.09	30.56
Largemouth bass	4	1.82	2.63	5.71
Redear sunfish	3	1.37	0.93	2.02
Bluegill sunfish	15	6.82	2.44	5.29
Longear sunfish	1	0.45	0.29	0.63
White crappie	180	81.81	22.72	49.28
Freshwater drum	1	0.46	3.00	6.51
Totals	220	100.00	46.10	100.00

Table 10. Results of netting Lake Tucker, November 1, 1963-October 30, 1964

Species	Number	Per Cent by Number	Total Weight Pounds	Per Cent by Weight	Average Length mm	Average Weight Gms	Average "K"
Longnose gar	1	1.45	11.11	24.29	1030	5046	
Gizzard shad	41	59.42	18.50	40.45	225	204	1.50
Rivwr carpsucker	4	5.80	10.17	22.24	363	1155	2.37
Channel catfish	2	2.90	3.18	6.96	350	723	1.61
Warmouth	1	1.45	0.37	0.81	180	170	2.95
Bluegill sunfish	3	4.34	0.27	0.59	111	41	2.98
White crappie	17	24.63	2.13	4.66	141	57	2.01
Totals	69	100.00	45.73	100.00			

Table 11. Results of netting Lake Coleman November 1, 1963 - October 30, 1964

Species	Number	Per Cent by Number	Total Weight Pounds	Per Cent by Weight	Average Length mm	Average Weight Gms	Average "K"
Black bullhead	1	9.09	2.31	40.31	345	1049	2.58
Blue catfish	1	9.09	0.85	14.83	290	387	1.60
Largemouth bass	1	9.09	0.23	4.02	175	105	1.95
Green sunfish	6	54.55	2.23	38.92	177	169	3.00
Bluegill sunfish	2	18.18	0.21	1.92	102	25	2.25
Totals	11	100.00	5.83	100.00			

Table 12. Results of netting Lake Diversion, November 1, 1963-October 30, 1964.

Species	Number	Per Cent by Number	Total Weight Pounds	Per Cent by Weight	Average Length mm	Average Weight Gms	Average "K"
Longnose gar	3	1.39	29.66	10.02	956	4488	
Gizzard shad	106	49.30	82.03	27.73	306	351	1.78
Smallmouth buffalo	36	16.75	120.42	40.71	272	1518	2.57
River carpsucker	42	19.53	45.65	15.44	310	493	2.34
European carp	1	0.47	2.87	0.97	390	1304	2.20
Channel cat	5	2.32	6.87	2.32	348	623	1.30
White bass	7	3.26	3.16	1.07	208	205	2.06
Largemouth bass	1	0.47	0.28	0.09	190	130	1.90
Bluegill sunfish	5	2.32	0.59	0.20	116	54	3.41
White crappie	5	2.32	2.89	0.98	237	263	1.86
Freshwater drum	4	1.87	1.38	0.47	190	157	2.13
Totals	215	100.00	295.80	100.00			

Table 13. Results of netting Lake Brownwood November 1, 1963-October 30, 1964

Species	Number	Per Cent by Number	Total Weight Pounds	Per Cent by Weight	Average Length mm	Average Weight Gms	Average "K"
Longnose gar	8	3.40	7.38	2.47	493	418	
Gizzard shad	41	17.45	11.65	3.90	232	129	1.61
Smallmouth buffalo	40	17.02	136.12	45.56	392	1544	2.64
River carpsucker	40	17.02	78.03	26.12	336	885	2.23
European carp	2	0.85	5.55	1.86	400	1261	1.96
Channel cat	11	4.68	8.12	2.72	279	335	1.28
White bass	46	19.58	31.78	10.64	239	213	2.05
Largemouth bass	16	6.80	10.71	3.58	237	304	1.81
Green sunfish	3	1.28	0.52	0.18	131	60	2.60
Bluegill sunfish	14	5.96	1.50	0.50	116	48	3.13
White crappie	13	5.53	3.38	1.13	166	118	2.21
Freshwater drum	1	0.43	3.99	1.34	460	181	1.85
Totals	235	100.00	298.73	100.00			

Table 14. Lake Brownwood Netting Results, 1962-1963

Species	Number	Per Cent of Number	Weight	Per Cent of Weight
Longnose gar	59	4.59	163.91	14.13
Gizzard shad	643	50.12	327.11	28.12
Smallmouth buffalo	65	5.06	198.02	17.07
River carpsucker	70	5.46	131.50	11.34
Carp	7	0.55	27.45	2.37
Channel catfish	76	5.92	69.14	5.96
White bass	152	11.85	144.70	12.47
Largemouth bass	37	2.88	15.07	1.21
Warmouth	2	0.16	0.49	0.04
Green sunfish	0	0.00	0.00	0.00
Redear sunfish	1	0.08	0.35	0.03
Bluegill	17	1.33	1.85	0.16
Longear sunfish	5	0.39	0.60	0.05
White crappie	144	11.22	76.99	6.64
Freshwater drum	5	0.39	2.92	0.25
Totals	1,283	100.00	1,160.10	100.00

Table 15. Fisheries Reconnaissance November 1, 1963 - October 30, 1964

- I. LEPISOSTEIDA -- (Gars)
 1. Lepisosteus oculatus - (Spotted Gar)
 2. L. osseus - (Longnose Gar)
- II. CLUPEIDAI -- (Herrings)
 3. Dorosoma cepedianum - (Gizzard shad)
- III. CATOSTOMIDAE -- (Suckers and Buffalofishes)
 4. Ictiobus bubalus - (Smallmouth buffalo)
 5. Carpionodes carpio - (River carpsucker)
- IV. CYPRINIDAE - (Shiners and minnows)
 6. Cyprinus carpio - (European carp)
 7. Notemigonus crysoleucas - (Golden shiner)
 8. Notropis lutrensis - (Red shiner)
- V. AMEIURIDAE -- (Freshwater catfishes)
 9. Ictalurus punctatus - (Channel catfish)
 10. Ictalurus furcatus - (Blue catfish)
 11. Ictalurus melas - (Black bullhead)
 12. Ictalurus natalis (Yellow bullhead)
 13. Pylodictis olivaris - (Blathead catfish)
- VI. CYPRINODONTIDAE -- (Topminnows)
 14. Fundulus notatus - (Blackstripe topminnow)
- VII. POECILIIDAE -- (Mosquitofish)
 15. Gambusia affinis - (Mosquitofish)
- VIII. SERRANIDAE -- (Sea basses)
 16. Roccus chrysops - (White bass)
- IX. CENTRARCHIDAE -- (Black basses and sunfishes)
 17. Micropterus punctulatus - (Spotted bass)
 18. Micropterus salmoides - (Largemouth bass)
 19. Chaenobryttus gulosus - (Warmouth)
 20. Lepomis cyanellus - (Green sunfish)
 21. Lepomis microlophus - (Redear sunfish)
 22. Lepomis macrochirus - (Bluegill sunfish)
 23. Lepomis megalotis - (Longear sunfish)
 24. Pomoxis annularis - (White crappie)
- X. SCIAENIDAE -- (Freshwater drum)
 25. Aplodinotus grunniens - (Freshwater drum)

