

FILE

JOB PROGRESS REPORT

As Required by

FEDERAL AID IN FISHERIES RESTORATION ACT

TEXAS

Federal Aid Project No. F-4-R-18

REGION 2-A FISHERIES STUDIES

Job. No. B-37: Fishery Management Recommendations

Project Leader: Charles T. Menn

Clayton Garrison
Executive Director
Texas Parks and Wildlife Department
Austin, Texas

L. J. Peters
Chief of Inland Fisheries

Robert J. Kemp, Jr.
Director, Fish and Wildlife

December 14, 1972

SUMMARY

During this segment, 14 major public lakes in North Central Texas were checked. From 5 to 15 netting collections were made on each lake on a quarterly basis, except Lake Granbury where monthly collections were made.

Rough fish species comprised 50% or more of the total number of fish taken in 10 lakes; they comprised more than 50% of the total weight of the fish in all 14 lakes.

Since the information obtained from this job is meager, it is recommended that this fisheries region be divided into five sub-regions and either one or two lakes in each sub-region be checked on a quarterly basis. Each lake could be checked every three to five years, depending upon the lake and the nature of the problem.

In addition to netting and seining data, information is needed with respect to the quality of fishing as well as water quality data.

Job Progress Report

State of Texas

Project No. F-4-R-18

Name: Region 2-A Fisheries Studies

Job No. B-37

Title: Fishery Management Recommendations

Period Covered: January 1, 1971 to December 31, 1971

Objectives:

To determine the need for changes in fish harvest regulations, stocking, population control, vegetation control, and contract fishing in Region 2-A waters.

Procedures:

Proposed fishing regulations for the Possum Kingdom and Trinity Brazos Regulatory Areas were discussed at a Game Management Officer-Biologist meeting prior to being presented at public hearings in each county under regulatory authority. The proposed fishing laws were then presented to the Commissioners of the Texas Parks and Wildlife Commission. The regulations which set seasons, bag and possession limits, and means and methods of harvest, were based upon results and findings of surveys and work done in this region.

Fourteen public lakes were surveyed during this segment. Quarterly surveys were made on Lakes Garza Little Elm, Eagle Mountain, Arrowhead, Palo Pinto, Kickapoo, Hubbard Creek, Moss, Amon Carter, Diversion, Weatherford, Whitney, Coleman and Hords Creek. Lake Granbury, a relatively new reservoir, was surveyed on a monthly basis to collect background data to be used for future management recommendations. Each survey consisted of overnight gill net sets and seining collections. Gill nets used were 150 feet long and 5 feet deep with mesh sizes varying from 1 inch to 3½ inches. The number of sets was determined by the size of the reservoir with five sets in reservoirs less than 5,000 surface acres, 10 sets in 5,000 to 10,000 surface acre reservoirs and 15 sets in reservoirs over 10,000 surface acres. Seining collections were made with a ½ inch mesh 20-foot sein. Usually 10 seining collections were made in conjunction with the quarterly netting trips. Each collection consisted of from three to ten hauls, 20 to 40 feet in length. Game fish collected were weighed and measured individually. A representative sample of rough fish species were weighed and measured, and the remainder were counted and bulk weighed.

Table 1. is a checklist of all fish taken in the netting and seining collections during this segment. Common and scientific names used in A List of Common and Scientific Names of Fishes from the United States and Canada (Third Edition), American Fisheries Society, Special Publication No. 6 are used in this checklist. Only common names are used in this report.

Tables 2, 3, 4 and 5 give average weight, "K" factor range and average "K" factor for the major game species collected during this segment.

Findings:

Garza-Little Elm Reservoir
(Denton County)

Gill Netting: Game fish species (channel catfish, flathead catfish, white bass, largemouth bass, bluegill, longear sunfish and white crappie) increased both in per cent of total number and total weight since the previous survey in 1969. Increased numbers of channel catfish, white bass, bluegill, and white crappie were noted. White bass alone comprised 25.05% of all fish taken in 1971 (Table 6.). Their average weight was less than one pound, but the largest one weighed more than two pounds. White crappie increased numerically since 1969, but the per cent of total number declined slightly. The per cent of total weight also increased slightly, from 4.24% to 4.90%. The "K" factors of all game fish species revealed that they were in good condition.

Rough fish species comprised 55.89% of the total number and 79.96% of the total weight of all fish taken in the netting collections. River carpsucker and smallmouth buffalo comprised 42.84% of the total number and 67.09% of the total weight of all fish taken in the netting collections. Two years ago smallmouth buffalo ranked first and river carpsucker ranked second. This apparent decline in the number of buffalo could be attributed to the contract fisherman who fished the lake. Otherwise there were no significant changes noted among the rough fish.

Seining Collections: Mississippi silversides, threadfin shad, red shiners, and bullhead minnows, in that order, were the most frequently taken species during the year. In all, 1,514 silversides, 1,199 threadfin shad, 549 red shiners, and 369 bullhead minnows were taken. Both silversides and shad are considered excellent forage for some species of game fish. Additionally, the following fish were taken during the year: longear sunfish, 10; blacktail shiner, 10; bluegill, 23; largemouth bass, one; gizzard shad, 17; river carpsucker, 12; channel catfish, one; freshwater drum, five; logperch, 10; golden shiner, two; white bass, nine; and orangespotted sunfish, one.

Vegetation: Aquatic vegetation was not a problem in this lake.

Discussion and Recommendations: River carpsucker and smallmouth buffalo were the principal rough fish species taken in Garza-Little Elm. This was essentially the case in 1969.

White bass accounted for one-fourth of all fish taken in the netting collections. This is an increase of approximately 8% since 1969. The large quantity of suitable forage, mainly Mississippi silversides and threadfin shad undoubtedly contributed to the increase in white bass. Either walleye or striped bass (Morone saxatilis) should be stocked in this lake to provide an additional predator and sport fish. If either of these fish could be established, they could serve as a source of fish for stocking in suitable lakes in this area.

Eagle Mountain Lake
(Tarrant-Wise Counties)

Gill Netting: Forty netting collections were made on this lake in 1971. In all, 943 fish of 22 species were taken (Table 7.). Rough fish species comprised 67.34% of the total number and 88.88% of the total weight of all fish taken in Eagle Mountain. Smallmouth buffalo and river carpsucker ranked first and second by number and by weight respectively. Together, they comprised 53.02% of the total number and 8.02% of the total weight. White bass, bluegill, white crappie, and

Table 1.

Checklist of Fish Species

<u>Common Name</u>	<u>Scientific Name</u>
Spotted gar	<u>Lepisosteus oculatus</u>
Longnose gar	<u>L. osseus</u>
Shortnose gar	<u>L. platostomus</u>
Alligator gar	<u>L. spatula</u>
Gizzard shad	<u>Dorosoma cepedianum</u>
Threadfin shad	<u>D. petenense</u>
Goldeye	<u>Hiodon alosoides</u>
Carp	<u>Cyprinus carpio</u>
Golden shiner	<u>Notemigonus crysoleucas</u>
Silver chub	<u>Hybopsis storeriana</u>
Suckermouth minnow	<u>Phenacobius mirabilis</u>
Red shiner	<u>Notropis lutrensis</u>
Redfin shiner	<u>N. umbratilis</u>
Blacktail shiner	<u>N. venustus</u>
Plains minnow	<u>Hybognathus placita</u>
Bullhead minnow	<u>Pimephales vigilax</u>
Fathead minnow	<u>P. promelas</u>
River carpsucker	<u>Carpionodes carpio</u>
Bigmouth buffalo	<u>Ictiobus cyprinellus</u>
Smallmouth buffalo	<u>I. bubalus</u>
Spotted sucker	<u>Minytrema melanops</u>
Gray redhorse	<u>Moxostoma congestum</u>
Blue catfish	<u>Ictalurus furcatus</u>
Black bullhead	<u>I. melas</u>
Yellow bullhead	<u>I. natalis</u>
Channel catfish	<u>I. punctatus</u>
Flathead catfish	<u>Pylodictis olivaris</u>
Blackstripe topminnow	<u>Fundulus notatus</u>
Starhead topminnow	<u>F. notti</u>
Blackspotted topminnow	<u>F. olivaceus</u>
Mosquitofish	<u>Gambusia affinis</u>
Brook silverside	<u>Labidesthes sicculus</u>
Mississippi silverside	<u>Menidia audens</u>
White bass	<u>Morone chrysops</u>
Redbreast sunfish	<u>Lepomis auritus</u>
Green sunfish	<u>L. cyanellus</u>
Warmouth	<u>L. gulosus</u>
Orangespotted sunfish	<u>L. humilis</u>
Bluegill	<u>L. macrochirus</u>
Longear sunfish	<u>L. megalotis</u>
Redear sunfish	<u>L. microlophus</u>
Green - Redear hybrid sunfish	<u>L. cyanellus</u> X <u>L. microlophus</u>
Spotted bass	<u>Micropterus punctulatus</u>
Largemouth bass	<u>M. salmoides</u>
White crappie	<u>Pomoxis annularis</u>
Black crappie	<u>P. nigromaculatus</u>
Logperch	<u>Percina caprodes</u>
Walleye	<u>Stizostedion vitreum vitreum</u>
Freshwater drum	<u>Aplodinotus grunniens</u>

Table 2. Average weight, "K" factor, and "K" factor range of the Largemouth Bass (Micropterus salmoides) from Region II-A Lakes, 1971.

Lake	Ave. Wt. (grams)	Ave. Wt.*(pounds-oz.)	"K" Range	"K" Average
Amon Carter	771.64	1 lb. 11 oz.	1.93 - 3.38	2.52
Arrowhead	1382.00	3 lb. 1 oz.	3.03 - 3.59	3.22
Coleman	968.90	2 lb. 2 oz.	1.87 - 3.21	2.46
Diversion	592.00	1 lb. 5 oz.	2.02 - 3.08	2.51
Eagle Mountain	438.53	1 lb. 1 oz.	1.87 - 2.77	2.34
Garza-Little Elm	279.78	10 oz.	1.72 - 3.24	2.28
Granbury	435.87	15 oz.	1.77 - 3.47	2.48
Hords Creek	1159.85	2 lb. 9 oz.	1.85 - 3.14	2.51
Hubbard Creek	814.02	1 lb. 13 oz.	1.54 - 5.40	2.62
Kickapoo	555.60	1 lb. 4 oz.	1.01 - 3.15	2.42
ss	573.18	1 lb. 5 oz.	2.13 - 2.92	2.41
Palo Pinto	298.78	10 oz.	1.62 - 2.68	2.24
Weatherford	930.39	2 lb. 1 oz.	1.88 - 3.05	2.51
Whitney	534.96	1 lb. 3 oz.	1.73 - 2.72	2.34

* Approximate

Table 3. Average weight, "K" factor, and "K" range of White Bass (Morone chrysops) from Region II-A Lakes, 1971.

Lake	Ave. Wt. (grams)	Ave. Wt. * (pounds-oz.)	"K" Range	"K" Average
Amon Carter	**	**	**	**
Arrowhead	**	**	**	**
Coleman	**	**	**	**
Diversion	320.59	11 oz	1.93 - 3.53	2.62
Eagle Mountain	322.75	11 oz.	1.68 - 3.44	2.32
Garza Little Elm	372.29	13 oz.	1.08 - 4.26	2.70
Granbury	370.87	13 oz.	1.14 - 4.48	2.64
Hords Creek	**	**	**	**
Hubbard Creek	**	**	**	**
Kickapoo	528.30	1 lb. 3 oz.	1.48 - 3.47	2.45
Moss	770.25	1 lb. 11 oz.	2.97 - 3.26	3.08
Palo Pinto	317.33	11 oz.	2.30 - 2.72	2.48
Weatherford	**	**	**	**
Whitney	376.51	13 oz.	1.35 - 5.62	2.37

* Approximate
 ** Not Recorded

Table 4. Average weight, "K" factor, and "K" factor range of Channel Catfish (Ictalurus punctatus) from Region II-A Lakes, 1971.

Lake	Ave. Wt. (grams)	Ave. Wt.* (pounds-oz)	"K" Range	"K" Average
Amon Carter	449.63	1 lb.	1.19 - 2.29	1.52
Arrowhead	661.76	1 lb. 7 oz.	1.28 - 2.27	1.64
Coleman	810.07	1 lb. 13 oz.	1.16 - 2.13	1.52
Diversion	649.64	1 lb. 7 oz.	1.11 - 2.32	1.74
Eagle Mountain	841.07	1 lb. 14 oz.	1.38 - 2.35	1.73
Garza Little Elm	571.85	1 lb. 4 oz.	1.28 - 3.65	1.58
Granbury	514.47	1 lb. 2 oz.	0.94 - 2.74	1.64
Hords Creek	1264.25	2 lb. 12 oz.	0.84 - 2.02	1.69
Hubbard Creek	596.22	1 lb. 5 oz.	1.10 - 2.11	1.58
Kickapoo	518.13	1 lb. 2 oz.	1.18 - 2.10	1.50
Moss	2330.33	5 lb. 2 oz.	1.29 - 2.27	1.79
Palo Pinto	480.87	1 lb. 1 oz.	1.21 - 2.08	1.54
Weatherford	1002.27	2 lb. 3 oz.	1.32 - 2.48	1.70
Whitney	672.21	1 lb. 7 oz.	1.07 - 1.97	1.50

* Approximate

Table 5. Average weight, "K: factors, and "K" factor range of White Crappie (Pomoxis annularis) from Region II-A Lakes, 1971.

Lake	Ave. Wt. (grams)	Ave. Wt.* (pounds-oz)	"K" Range	"K" Average
Amon Carter	77.07	3 oz.	1.37 - 3.86	2.39
Arrowhead	195.04	7 oz.	1.49 - 3.99	2.55
Coleman	242.80	9 oz.	1.75 - 3.43	2.72
Diversion	176.96	6 oz.	1.23 - 3.19	2.68
Eagle Mountain	440.60	1 lb.	2.81 - 3.35	2.77
Garza Little Elm	359.86	13. oz	1.10 - 4.32	3.12
Granbury	106.40	4 oz.	1.76 - 3.72	2.32
Hords Creek	196.54	7 oz.	1.51 - 4.82	2.40
Hubbard Creek	172.27	6 oz.	1.46 - 4.10	2.51
Kickapoo	220.42	8 oz.	1.60 - 3.37	2.60
is	350.32	13 oz.	2.31 - 3.68	3.17
Palo Pinto	215.28	8 oz.	1.97 - 3.91	2.90
Weatherford	117.95	4 oz.	1.63 - 3.40	2.38
Whitney	226.05	8 oz.	1.10 - 4.49	2.60

* Approximate

Table 6. Garza Little Elm Netting Results - 1971

<u>Species</u>	<u>Total Number</u>	<u>Per Cent of Total Number</u>	<u>Total Weight (Pounds)</u>	<u>Per Cent of Weight</u>
Spotted gar *	11	0.71	29.03	1.11
Longnose gar *	23	1.48	167.54	6.39
Shortnose gar *	2	0.13	2.94	0.11
Alligator gar *	2	0.13	11.88	0.45
Gizzard shad *	108	6.94	62.94	2.40
Threadfin shad *	11	0.71	1.00	0.04
Smallmouth buffalo *	306	19.65	913.98	34.88
River carpsucker *	361	23.19	843.92	32.21
Spotted sucker *	3	0.19	1.03	0.04
Carp *	30	1.93	52.58	2.01
Channel catfish	26	1.67	32.77	1.25
Flathead catfish	5	0.32	20.80	0.79
White bass	390	25.05	319.85	12.20
Largemouth bass	23	1.48	14.18	0.54
Bluegill	67	4.30	8.44	0.32
Longear Sunfish	14	0.89	1.17	0.04
White Crappie	162	10.40	128.43	4.90
Freshwater drum *	13	0.83	8.39	0.32
Total	1557	100.00	2620.87	100.00
Rough fish	870	55.89	2095.23	79.96
Game fish	687	44.11	525.64	20.04

* Indicates rough fish species

Table 7. Eagle Mountain Lake Netting Results - 1971

<u>Species</u>	<u>Total Number</u>	<u>Per Cent of Total Number</u>	<u>Total Weight (Pounds)</u>	<u>Per Cent of Weight</u>
Shortnose gar *	5	0.53	17.49	0.81
Spotted gar *	8	0.85	9.41	0.44
Longnose gar *	10	1.06	37.48	1.74
Gizzard shad *	83	8.80	37.97	1.76
Smallmouth buffalo *	272	28.84	1218.06	56.55
River carpsucker *	228	24.18	527.16	24.47
Carp *	14	1.49	55.85	2.59
Golden shiner *	4	0.42	0.93	0.04
Channel catfish	27	2.86	50.03	2.32
Yellow bullhead	1	0.11	0.62	0.03
head catfish	4	0.42	17.49	0.81
White bass	134	14.21	95.31	4.43
Largemouth bass	36	3.82	39.15	1.82
Warmouth	1	0.11	0.62	0.03
Green sunfish	3	0.32	0.82	0.04
Redear sunfish	6	0.64	1.76	0.08
Bluegill	47	4.98	9.15	0.43
Orangespotted sunfish	3	0.32	0.67	0.03
Longear sunfish	2	0.21	0.30	0.01
Green-Redear hybrid sunfish	3	0.32	0.68	0.03
White crappie	42	4.45	23.74	1.10
Freshwater drum *	10	1.06	9.70	0.45
Total	943	100.00	2154.16	100.00
Rough fish	635	67.34	1914.67	88.88
Game fish	308	32.66	239.45	11.12

* Indicates rough fish species

largemouth bass, in that order, were the most frequently taken game fish species. Collectively, they comprised 27.46% of the total number and 7.79% of the total weight of all fish taken.

All game fish species were in good condition, as shown by their "K" factors.

Seining Collections: Mississippi silversides and gizzard shad comprised more than half of the total number of fish taken in the seining collections. In all, 4,277 fish of 12 species were taken during the year. Of that number, 1,381 were Mississippi silversides and 1,337 were gizzard shad.

In addition, the following fish were taken during the year, the total number is shown in parentheses: threadfin shad (21); bluegill (52); bullhead minnow (670); mosquitofish (2); logperch (2); longear sunfish (5); redear sunfish (1); red shiner (434); blacktail shiner (371); and white bass (1).

Vegetation: Cattails and bulrushes are increasing in the lower part of the lake. These plants should be controlled before they become problematic.

Discussion and Recommendations: Smallmouth buffalo and river carpsucker comprised 53.02% of the total number and 81.02% of the total weight of all fish taken in the netting collections. This was essentially the case in 1969. A relative increase in white bass and a decrease in white crappie was noted since 1969. No other apparent changes were noted. The smallmouth buffalo and the river carpsucker should be harvested either by a contract netter or by stocking a predator fish.

Lake Arrowhead
(Clay and Archer Counties)

Gill Netting: Game fish species, primarily white crappie, channel catfish, and flathead catfish, increased both in per cent of total number and total weight since the previous survey in 1969. Game fish species comprised 52.87% of the total number and 31.12% of the total weight of all fish taken in the 1971 netting collections. The principal game fish species appear to be white crappie and channel catfish.

Carp and smallmouth buffalo, in that order, were the most frequently taken rough fish species. Together, they comprised 23.56% of the total number and 33.75% of the total weight of all fish taken in the netting collections in 1971 (Table 8.).

Seining Collections: During the year, 2,312 fish of 15 species were taken in the seining collections. Red shiners accounted for more than 60% of all fish taken in the seining collections. In all, 1,573 red shiners, 254 Mississippi silversides, 190 bullhead minnows, and 186 gizzard shad were taken during this year. Also, four largemouth bass and three freshwater shrimp (Palaemonetes) were taken in the seining collections.

Vegetation: Aquatic vegetation was not a problem in this relatively turbid lake. Several patches of pondweeds (Potamogeton sp.) were observed in the lower reaches of the lake.

Discussion and Recommendations: This is one lake with more game fish than rough fish. The lake appears to have good populations of white crappie and channel catfish. Only four largemouth bass were taken in the netting collections, but the average weight was more than three pounds.

Channel catfish should be stocked in this lake at the rate of 10 per acre in order to supplement the existing population.

Table 8. Lake Arrowhead Netting Results - 1971

<u>Species</u>	<u>Total Number</u>	<u>Per Cent of Total Number</u>	<u>Total weight (Pounds)</u>	<u>Per Cent of Weight</u>
Shortnose gar *	21	3.56	95.48	10.47
Spotted gar *	5	0.85	11.99	1.32
Longnose gar *	22	3.73	140.91	15.45
Gizzard shad *	24	4.07	5.57	0.61
Bigmouth buffalo *	56	9.49	242.38	26.57
Smallmouth buffalo *	6	1.02	18.55	2.04
River carpsucker *	9	1.53	32.22	3.53
Carp *	83	14.07	65.47	7.18
Channel catfish	59	10.00	86.02	9.43
Black bullhead *	3	0.51	0.95	0.10
Yellow bullhead *	1	0.17	0.94	0.10
Flathead catfish	18	3.05	86.02	9.43
Largemouth bass	4	0.67	12.19	1.34
Bluegill	8	1.35	0.57	0.06
Longear sunfish	1	0.17	0.13	0.01
White crappie	222	37.63	95.40	10.46
Freshwater drum *	48	8.13	13.77	1.51
Total	590	100.00	912.14	100.00
Rough fish	278	47.13	628.23	68.88
Game fish	312	52.87	283.91	31.12

* Indicates Rough Fish species

Lake Palo Pinto
(Palo Pinto County)

Gill Netting: White crappie were the most frequently taken fish in this lake, but rough fish species comprised 61.48% of the total number and 84.15% of the total weight of all fish taken in the netting collections (Table 9.). Substantial increases in gizzard shad, smallmouth buffalo and river carpsucker were noted since 1969.

Seining Collections: Gizzard shad, threadfin shad, bullhead minnows, and red shiners were the most frequently taken fish in the seining collections. Three largemouth bass, 10 bluegill, two longear sunfish, and one orangespotted sunfish were also taken during the year. No channel catfish or white crappie were taken in the collections.

Vegetation: Aquatic vegetation was not a problem in this lake. Several patches of pondweeds and a few cattails were noted, but they were not a problem.

Discussion and Recommendations: It appears that white crappie are the chief game fish in Lake Palo Pinto. Also, there are good populations of channel catfish and largemouth bass present.

The shad, buffalo, and carpsucker should be controlled by stocking a predator fish, such as walleyes.

Channel catfish should be stocked to supplement the existing population.

Lake Kickapoo
(Archer County)

Gill Netting: River carpsucker ranked first in per cent of total number (27.32%) and smallmouth buffalo ranked first in per cent of total weight (25.11%) of all fish taken in the netting collections. This was essentially the case two years ago. Overall, rough fish species comprised 55.52% of the total number and 66.16% of the total weight of fish taken during the year (Table 10.).

White crappie, largemouth bass, channel catfish, and white bass, in that order, were the most frequently taken game fish species.

Seining Collections: Mississippi silversides, red shiners, bullhead minnows, and gizzard shad, in that order, were the most frequently taken fish in the seining collections. In all, they comprised more than 80% of all fish taken. Two largemouth bass and one white crappie were also taken.

Vegetation: Pondweeds and cattails are common along much of the shoreline; however, they are not posing a problem at this time.

Discussion and Recommendations: White crappie, largemouth bass, channel catfish, and white bass, in that order, comprised more than 40% of all fish taken at Lake Kickapoo.

The rough fish should be controlled with a predator-sport fish, such as walleyes.

Table 9. Palo Pinto Neeting Results - 1971

<u>Species</u>	<u>Total Number</u>	<u>Per Cent of Total Number</u>	<u>Total Weight (Pounds)</u>	<u>Per Cent of Weight</u>
Longnose gar *	25	3.42	124.00	12.98
Gizzard shad *	202	27.60	54.63	5.72
Smallmouth buffalo *	123	16.80	454.64	47.58
River carpsucker *	51	6.97	82.80	8.67
Carp *	29	3.96	67.68	7.08
Channel catfish	30	4.10	31.34	3.28
Flathead catfish	1	0.13	5.06	0.53
White bass	3	0.41	2.10	0.22
Largemouth bass	18	2.46	11.84	1.24
Bluegill	19	2.60	1.50	0.15
Yellowbreast sunfish	1	0.13	0.11	0.01
White crappie	210	28.69	99.57	10.42
Freshwater drum *	20	2.73	20.31	2.12
Total	732	100.00	955.58	100.00
Rough fish	450	61.48	804.06	84.15
Game fish	282	38.52	151.52	15.85

* Indicates Rough fish species

Table 10. Lake Kickapoo Netting Results - 1971

<u>Species</u>	<u>Total Number</u>	<u>Per Cent of Total Number</u>	<u>Total Weight (Pounds)</u>	<u>Per Cent of Weight</u>
Spotted gar *	10	1.75	28.25	4.02
Longnose gar *	1	0.17	0.52	0.07
Gizzard shad *	66	11.56	24.73	3.52
Bigmouth buffalo *	10	1.75	56.18	8.00
Smallmouth buffalo *	54	9.46	176.21	25.11
River carpsucker *	156	27.32	136.13	19.40
Carp *	15	2.63	40.82	5.82
Golden shiner *	2	0.35	0.45	0.06
Channel catfish	46	8.06	51.36	7.32
Flathead catfish	6	1.05	24.45	3.48
White bass	43	7.53	50.05	7.13
Largemouth bass	53	9.28	64.88	9.24
Green sunfish	1	0.17	0.11	0.02
Bluegill	8	1.40	1.19	0.17
Longear sunfish	4	0.70	0.36	0.05
White crappie	93	16.29	45.16	6.43
Freshwater drum *	3	0.53	1.15	0.16
Total	571	100.00	702.00	100.00
Rough fish	317	55.52	464.44	66.16
Game fish	254	44.48	237.56	33.84

* Indicates Rough fish species

Hubbard Creek Lake
(Stephens County)

Gill Netting: Game fish species (channel, blue and flathead catfish, largemouth bass, warmouth, bluegill, longear sunfish, and white crappie) comprised more than 54% of the total number of fish taken in the netting collections and more than 32% of the total weight (Table 11.).

White crappie, bluegill, channel catfish, and largemouth bass, in that order, were the most frequently taken game fish species. In fact, 338 crappie were taken during the year.

Smallmouth buffalo, carp, and river carpsucker were the most frequently taken rough fish species. Collectively, they comprised 35.38% of the total number and 60.17% of the total weight of all fish taken in the netting collections.

Seining Collections: Gizzard shad, red shiners, and bluegill were the most frequently taken species in the seining collections. Threadfin shad, blacktail shiner, mosquitofish, blackstripe topminnow, bullhead minnow, plains shiner, logperch, and longear sunfish were taken in lesser numbers. Only eight largemouth bass and one white crappie were taken during the year.

Vegetation: No problem with aquatic vegetation was noted in Hubbard Creek Lake.

Discussion and Recommendations: White crappie, channel catfish, and largemouth bass appear to be well established in Hubbard Creek Lake. In June, numerous carp were observed spawning in shallow water, less than 12 inches deep. In many cases their backs were protruding from the water. Under this condition many carp could be harvested by using spears or bows and arrows.

The introduction of a suitable predator fish is recommended.

Moss Lake
(Cooke County)

Gill Netting: Game fish species (channel catfish, white bass, largemouth bass, warmouth, green sunfish, bluegill, and white crappie) accounted for 49.10% of the total number and 39.95% of the total weight of all fish taken in the netting collections (Table 12.). In 1969, game fish species comprised 86.45% of the total number and 68.69% of the total weight of all fish taken in the nets. However, bullheads were classified as game fish; they were classified as rough fish in 1971. Bluegill, white crappie, and largemouth bass were the most frequently taken game fish species.

Black bullheads and gizzard shad were the most frequently taken rough fish species. Together, they comprised 26.58% of the total number of all fish taken in the nets. River carpsucker and carp comprised 39.41% of the total weight, however.

Seining Collections: Mississippi silversides, brook silversides, bluegills, golden shiners, largemouth bass, blackstripe topminnows, and threadfin shad were the most frequently taken fish in the seining collections. Logperch, starhead topminnow, red shiner, gizzard shad, orangespotted and longear sunfish were taken in lesser numbers. The largemouth bass ranged in length from 1½ to 8 inches (T.L.).

Vegetation: Aquatic vegetation was not a problem in Moss Lake.

Table 11. Hubbard Creek Lake Netting Results - 1971

<u>Species</u>	<u>Total Number</u>	<u>Per Cent of Total Number</u>	<u>Total Weight (Pounds)</u>	<u>Per Cent of Weight</u>
Shortnose gar *	4	0.27	8.18	0.34
Spotted gar *	3	0.20	14.02	0.59
Longnose gar *	14	0.94	57.64	2.41
Gizzard shad *	81	5.46	18.54	0.78
Smallmouth buffalo *	222	14.96	892.27	37.32
River carpsucker *	150	10.11	231.40	9.68
Carp *	153	10.31	314.80	13.17
Golden shiner *	2	0.13	0.29	0.01
Channel catfish	149	10.05	195.72	8.19
White catfish	7	0.47	65.44	2.74
Black bullhead *	6	0.40	1.05	0.04
Yellow bullhead *	1	0.07	0.29	0.01
Flathead catfish	23	1.55	135.24	5.65
Largemouth bass	123	8.29	242.68	10.15
Warmouth	2	1.13	0.21	0.01
Bluegill	159	10.72	13.23	0.55
Longear sunfish	14	0.94	1.07	0.04
White crappie	338	22.78	128.29	5.36
Freshwater drum *	33	2.22	70.82	2.96
Total	1484	100.00	2391.18	100.00
Rough fish	669	45.07	1609.30	67.31
Game fish	815	54.93	781.88	32.69

* Indicates Rough fish species

Table 12. Moss Lake Netting Results - 1971

<u>Species</u>	<u>Total Number</u>	<u>Per Cent of Total Number</u>	<u>Total Weight (Pounds)</u>	<u>Per Cent of Weight</u>
Spotted gar *	2	0.91	6.00	2.33
Gizzard shad *	24	10.81	7.81	3.03
River carpsucker *	13	5.85	54.14	21.03
Gray redhorse *	6	2.70	7.80	3.03
Carp *	9	4.05	47.33	18.38
Golden shiner *	11	4.96	2.16	0.84
Channel catfish	9	4.05	46.21	17.94
Black bullhead *	35	15.77	12.95	5.03
Yellow bullhead *	8	3.60	3.90	1.51
White bass	4	1.80	6.80	2.64
Largemouth bass	11	4.96	13.89	5.39
Warmouth	3	1.35	0.51	0.20
Green sunfish	4	1.80	0.77	0.30
Bluegill	44	19.82	8.48	3.29
White crappie	34	15.32	26.24	10.19
Freshwater drum *	5	2.25	12.53	4.87
Total	222	100.00	257.52	100.00
Rough fish	113	50.90	154.62	60.05
Game fish	109	49.10	102.90	39.95

* Indicates Rough fish species

Discussion and Recommendations: In 1969, 575 fish of 16 species were taken in the netting collections. However, in 1971, only 222 fish of 16 species were taken. The reason for this decline is not fully understood.

The white crappie and largemouth bass were in good condition as shown by their "K" factors.

The bullheads should be controlled with some predator fish, such as the flathead catfish.

Amon Carter Lake
(Montague County)

Gill Netting: Game fish species (channel catfish, flathead catfish, largemouth bass, green sunfish, bluegill, longear sunfish, and white crappie) comprised 74.79% of the total number and 46.49% of the total weight of all fish taken in the netting collections. (Table 13.) Nearly half the fish taken were white crappie; in all, they comprised 42.56% of the total number of fish taken, but their average weight was less than three ounces.

No flathead catfish were taken in the 1969 survey, but five were taken during 1971. More largemouth bass were taken during 1971 than were taken two years earlier. The average weight of the bass was approximately 1.5 pounds.

Rough fish species increased during the 1969-70 period, especially the golden shiner and carp. Together, they comprised 24% of the total number and 49% of the total weight of all fish taken in the netting collections.

Seining Collections: Red shiners were the most frequently taken fish in the seining collections. A total of 1,255 red shiners were taken during the year. The majority of them were taken in October 1971. At that time, 1,113 specimens were taken.

Largemouth bass were taken in each of the quarterly seining collections. In all, 44 bass, from 2 to 6 inches (T L.) were taken. Also, white crappie were taken in the collections. Blacktail shiners, golden shiners, logperch, bluegill, redear and longear sunfish were taken in lesser numbers.

Vegetation: No serious aquatic vegetation problem was noted. Cattails, bulrushes, and broadleaf and curly pondweeds were noted.

Discussion and Recommendations: In 1969, only 156 fish weighing 35.59 pounds were taken in the quarterly checks. Two years later, 242 fish weighing 159.25 pounds were taken. This apparent increase in productivity was badly needed in this lake.

Catchable or subcatchable size channel catfish should be stocked to supplement the existing population.

Table 13. Lake Amon Carter Netting Results - 1971

<u>Species</u>	<u>Total Number</u>	<u>Per Cent of Total Number</u>	<u>Total Weight (Pounds)</u>	<u>Per Cent of Weight</u>
Gizzard shad *	1	0.41	1.87	1.17
River carpsucker *	1	0.41	4.06	2.55
Carp *	14	5.79	71.88	45.14
Golden shiner *	45	18.60	7.40	4.65
Channel catfish	24	9.92	23.77	14.93
Flathead catfish	5	2.07	11.02	6.92
Largemouth bass	11	4.55	18.07	11.75
Green sunfish	1	0.41	0.15	0.09
Bluegill	35	14.46	2.76	1.73
Longear sunfish	2	0.82	0.15	0.09
White crappie	103	42.56	17.49	10.98
Total	242	100.00	159.25	100.00
Rough fish	61	25.21	85.21	53.51
Game fish	181	74.79	74.04	46.49

Lake Diversion
(Archer and Baylor Counties)

Gill Netting: White crappie, white bass, bluegill, channel catfish, and largemouth bass were the most frequently taken game fish species. A total of nine species of game fish were taken during the year. They comprised 45.51% of the total number and 23.67% of the total weight of all fish taken in the netting collections (Table 14.). Smallmouth buffalo, gizzard shad, river carpsucker, and longnose gar were the most frequently taken rough fish species. Collectively, those species comprised 52% of the total number and nearly 72% of the total weight of all fish taken in the netting collections.

Seining Collections: Red shiners were the most frequently taken fish in the seining collections. In all, 257 specimens were collected during the year. Redear sunfish, bluegill, logperch, largemouth bass, and bullhead minnows, in that order, were taken in lesser numbers. In addition to the bass, one channel catfish was taken in the seining collections.

Vegetation: In general, aquatic vegetation was not a problem in Lake Diversion. Several patches of cattails were noted along with some pondweed and muskgrass. The submerged vegetation was located in the still backwater areas.

Discussion and Recommendations: Game fish species, mainly channel catfish and white crappie, increased both in per cent of total number and weight since the previous survey in 1968. In addition, smallmouth buffalo apparently declined since 1968. At that time they comprised 35.70% of the total number and 62.85% of the total weight, whereas, in 1971 the buffalo comprised 22.30% of the number and 44.83% of the weight of all fish taken in the nets.

Walleyes should be stocked annually in order to establish a nursery stock. The adults could be stripped and the eggs could be hatched at the Dundee State Fish Hatchery. The fry could be reared on the hatchery before being stocked in suitable lakes in the region.

Lake Weatherford
(Parker County)

Gill Netting: White crappie, bluegill, channel catfish, and largemouth bass, in that order, comprised 65.02% of all fish taken in the netting collections. White crappie alone accounted for nearly 40% of all fish taken during the year (Table 15.).

Rough fish species (gizzard shad, river carpsucker, carp, and yellow bullhead) comprised 32.93% of the total number and 66.89% of the total weight of all fish taken during the year. River carpsucker and carp were the most frequently taken rough fish species.

Seining Collections: Blacktail shiner, red shiner, and bluegill, in that order, were the most frequently taken fish in the seining collections. These three species comprised 86.96% of the total number of all fish taken in the seining collections. In addition, gizzard shad, bullhead minnow, redbreast sunfish, longear sunfish, green sunfish, mosquitofish, golden shiner, redear sunfish, fathead minnow and largemouth bass were taken in lesser numbers. The bass ranged from 1 to 8 inches (T.L.).

Table 14. Lake Diversion Netting Results - 1971

<u>Species</u>	<u>Total Number</u>	<u>Per Cent of Total Number</u>	<u>Total Weight (Pounds)</u>	<u>Per Cent of weight</u>
Shortnose gar *	1	0.23	1.31	0.21
Spotted gar *	1	0.23	3.00	0.48
Longnose gar *	24	5.52	76.50	12.32
Gizzard shad *	71	16.32	39.04	6.29
Goldeye *	1	0.23	1.00	0.16
Smallmouth buffalo *	97	22.30	278.49	44.83
River carpsucker *	35	8.05	52.48	8.45
Carp *	6	1.38	22.20	3.57
Golden shiner *	1	0.23	0.11	0.02
Channel catfish	28	6.44	40.09	6.46
Flathead catfish	6	1.38	15.51	2.50
White bass	63	14.48	44.49	7.16
Largemouth bass	16	3.68	20.88	3.36
Green sunfish	1	0.23	0.15	0.02
Redear sunfish	1	0.23	0.26	0.04
Bluegill	34	7.81	7.01	1.13
Green-Redear hybrid sunfish	2	0.46	0.32	0.05
White crappie	47	10.80	18.32	2.95
Total	435	100.00	621.16	100.00
Rough fish	237	54.49	474.13	76.33
Game fish	198	45.51	147.03	23.67

* Indicates Rough fish species

Table 15. Lake Weatherford Netting Results - 1971

<u>Species</u>	<u>Total Number</u>	<u>Per Cent of Total Number</u>	<u>Total Weight (Pounds)</u>	<u>Per Cent of Weight</u>
Gizzard shad *	40	8.23	6.27	1.15
River carpsucker *	65	13.38	188.35	34.43
Carp *	53	10.91	170.60	31.19
Channel catfish	38	7.82	81.70	14.94
Yellow bullhead *	2	0.41	0.66	0.12
Largemouth bass	23	4.73	42.82	7.83
Warmouth	2	0.41	0.30	0.06
Green sunfish	2	0.41	0.73	0.13
Redear sunfish	3	0.62	0.50	0.09
Bluegill	63	12.96	4.85	0.88
Longear sunfish	2	0.41	0.12	0.02
White crappie	193	39.71	50.15	9.16
Total	486	100.00	547.05	100.00
Rough fish	160	32.93	365.88	66.89
Game fish	326	67.07	181.17	33.11

* Indicates Rough fish species

Vegetation: Aquatic vegetation, both emerged and submerged, was a problem. Pondweeds (Potamogeton sp. and Najas sp.), muskgrass, cattails, and bulrushes were the most abundant plants. An area in the west end of the lake was covered with American lotus.

Discussion and Recommendations: White crappie, channel catfish, and largemouth bass appear to be the principal game fish species in Lake Weatherford. Of the three species, white crappie increased in total numbers since the 1969 survey.

The vegetation should be controlled before it blankets prime fishing areas.

Lake Whitney
(Hill County)

Gill Netting: Rough fish species, primarily gizzard shad, smallmouth buffalo, river carpsucker, longnose gar, freshwater drum, and carp increased both in per cent of total number and total weight since the previous survey in 1969. In 1971, the rough fish species comprised 69.34% of the total number and 85.85% of the total weight of all fish taken in the nets (Table 16.).

White crappie, bluegill, white bass, channel catfish, and largemouth bass, in that order, were the most frequently taken game fish species. The largest crappie weighed one and one-half pounds; the average weight was nearly one-half pound. Average weight of largemouth bass was one and one-half pounds.

Seining Collections: Mississippi silversides and blacktail shiners were the most frequently taken fish in the seining collections. Several mosquitofish, red shiners, and Texas shiners were also taken in the collections.

Vegetation: Aquatic vegetation was not a problem in Lake Whitney.

Discussion and Recommendations: The rough fish should be controlled by extensive netting and by stocking a suitable predator fish, such as striped bass.

Coleman City Lake
(Coleman County)

Gill Netting: Rough fish species comprised 66.34% of the total number and 56.75% of the total weight of all fish taken in the netting collections (Table 17.). Smallmouth buffalo, gizzard shad, and river carpsucker, in that order, were the principal rough fish species.

Seining Collections: Red shiners and blacktail shiners, in that order, were the most frequently taken fish in the seining collections. Few collections were made due to the difficulty in seining this lake.

Vegetation: No problem with aquatic vegetation were noted.

Discussion and Recommendations: Channel catfish, white crappie, and largemouth bass are the principal game fish species in this lake. The smallmouth buffalo, gizzard shad, and river carpsucker should be controlled with the introduction of another predator fish.

Table 16. Lake Whitney Netting Results. - 1971

<u>Species</u>	<u>Total Number</u>	<u>Per Cent of Total Number</u>	<u>Total Weight (Pounds)</u>	<u>Per Cent of Weight</u>
Spotted gar *	9	0.69	19.37	0.79
Longnose gar *	97	7.42	278.39	11.40
Gizzard shad *	304	23.24	196.43	8.05
Smallmouth buffalo *	185	14.14	958.85	39.28
River carpsucker *	119	9.10	311.46	12.76
Gray redhorse *	24	1.83	43.83	1.80
Carp *	74	5.66	246.09	10.08
Channel catfish	62	4.74	91.78	3.76
Flathead catfish	14	1.07	77.98	3.19
White bass	82	6.27	67.77	2.78
Spotted bass	1	0.08	1.68	0.07
Largemouth bass	27	2.06	31.79	1.30
Warmouth	1	0.08	0.24	0.01
Green sunfish	3	0.23	0.54	0.02
Redear sunfish	3	0.23	0.43	0.02
Bluegill	91	6.96	17.23	0.70
Orangespotted sunfish	6	0.46	1.39	0.05
Redbreast sunfish	1	0.08	0.10	0.01
White crappie	110	8.40	54.73	2.24
Freshwater drum *	95	7.26	41.23	1.69
Total	1308	100.00	2441.31	100.00
Rough fish	907	69.34	2095.65	85.85
Smooth fish	401	30.66	345.66	14.15

* Indicates Rough fish species

Table 17. Coleman Lake Netting Results - 1971

<u>Species</u>	<u>Total Number</u>	<u>Per Cent of Total Number</u>	<u>Total Weight (Pounds)</u>	<u>Per Cent of Weight</u>
Spotted gar *	1	0.24	1.34	0.27
Longnose gar *	2	0.49	4.99	1.02
Gizzard shad *	84	20.49	15.30	3.12
Smallmouth buffalo *	94	22.93	97.00	19.76
River carpsucker *	57	13.90	122.03	24.86
Carp *	22	5.37	26.29	5.36
Channel catfish	36	8.78	64.23	13.08
Black bullhead *	1	0.24	0.70	0.14
Flathead catfish	13	3.17	87.92	17.91
Largemouth bass	20	4.88	42.66	8.69
Green sunfish	3	0.73	0.42	0.08
Bluegill	40	9.76	3.75	0.76
Longear sunfish	1	0.24	0.08	0.01
White crappie	25	6.10	13.36	2.72
Freshwater drum *	11	2.68	10.90	2.22
Total	410	100.00	490.97	100.00
Rough fish	272	66.34	278.55	56.75
Game fish	138	33.66	212.42	43.25

* Indicates Rough fish species

Hords Creek Reservoir
(Coleman County)

Gill Netting: Gizzard shad, bluegill, white crappie, and carp were the most frequently taken fish in the netting collections. Four species of fish were classified as "rough" fish: gizzard shad, river carpsucker, carp and golden shiner. Collectively, they comprised 52.78% of the total number and 55.70% of the total weight of all fish taken. River carpsucker and carp alone accounted for 49.74% of the total weight of all fish taken during the year (Table 18.).

Bluegill, white crappie, largemouth bass, and flathead catfish, in that order, were the most abundant game fish species in the collections. The average weight of the crappie was seven ounces. In 1969, their average weight was only three ounces.

Seining Collections: Logperch, largemouth bass, and bluegill, in that order, were the most frequently taken fish in the seining collections. Longear and redear sunfish were taken in lesser numbers.

Vegetation: Aquatic vegetation was not a problem in this lake.

Discussion and Recommendations: Hords Creek has good populations of white crappie, largemouth bass, and flathead catfish. The crappie no longer appear to be stunted, as was the case two years ago.

Gizzard shad and carp appear to be the principal rough fish species.

A suitable predator fish should be stocked to control the shad and anglers should be encouraged to fish for carp.

Granbury Lake
(Hood and Parker Counties)

Gill Netting: Monthly netting collections were made on this 8,500 surface acre lake. In all, 119 netting collections were made.

Rough fish species comprised 70.02% of the total number and 81.76% of the total weight of all fish taken in the netting collections (Table 19.). Together, gizzard shad, smallmouth buffalo, and carp comprised 48.06% of the total number and 48.38% of the total weight. In addition, longnose gar, river carpsucker, and gray redhorse were frequently taken in the netting collections.

White crappie, bluegill, channel catfish, and white bass, in that order, were the most frequently taken game fish species. They comprised 24.76% of the total number and 13.56% of the total weight of all fish taken in the netting collections. In 1970, only 40 white bass and 34 white crappie were taken in the nets, but during 1971, 127 white bass and 292 white crappie were taken in the nets. Thus, the white bass increased 200% by number, and the white crappie increased more than 750% by number since the 1970 survey.

Seining Collections: Usually 10 seining collections were made in conjunction with the monthly netting trips. In all, 10,427 fish of 21 species were taken. Of all the fish taken in the seining collections, more than half (6,547) were Mississippi silversides. Gizzard shad, blacktail shiner, bullhead minnow, red shiner, and brook silverside, in that order, were the next most frequently taken fish in the seining collections. The following kinds and numbers of game fish were taken during

Table 18. Hords Creek Lake Netting Results - 1971

<u>Species</u>	<u>Total Number</u>	<u>Per Cent of Total Number</u>	<u>Total Weight (Pounds)</u>	<u>Per Cent of Weight</u>
Gizzard shad *	164	30.37	44.16	5.75
Carp *	73	13.52	245.03	31.90
River carpsucker *	39	7.22	137.00	17.84
Golden shiner *	9	1.67	1.59	0.21
Channel catfish	12	2.22	33.41	4.35
Flathead catfish	27	5.00	174.54	22.73
Largemouth bass	34	6.30	86.85	11.31
Warmouth	1	0.18	0.11	0.01
Redear sunfish	5	0.92	0.51	0.07
Bluegill	92	17.04	8.52	1.10
White crappie	84	15.56	36.35	4.73
Total	540	100.00	768.07	100.00
Rough fish	285	52.78	427.78	55.70
Game fish	255	47.22	340.29	44.30

* Indicates Rough fish species

Table 19. Lake Granbury Netting Results - 1971

<u>Species</u>	<u>Total Number</u>	<u>Per Cent of Total Number</u>	<u>Total Weight (Pounds)</u>	<u>Per Cent of Weight</u>
Shortnose gar *	6	0.17	8.99	0.31
Spotted gar *	16	0.46	19.03	0.66
Longnose gar *	127	3.63	223.56	7.81
Gizzard shad *	833	23.83	176.41	6.16
Smallmouth buffalo *	483	13.82	961.91	33.61
River carpsucker	205	5.86	348.70	12.18
Gray redhorse *	251	7.18	282.51	9.87
Carp *	364	10.41	246.43	8.61
Golden shiner *	19	0.54	3.38	0.12
Channel catfish	155	4.43	175.67	6.14
Black bullhead *	44	1.26	7.84	0.27
Yellow bullhead *	2	0.06	0.35	0.01
Flathead catfish	13	0.37	60.65	2.12
White bass	127	3.63	103.75	3.62
Spotted bass	24	0.69	14.93	0.52
Largemouth bass	45	1.29	43.23	1.51
Warmouth	8	0.23	1.46	0.05
Green sunfish	23	0.66	3.48	0.12
Redear sunfish	9	0.26	2.71	0.09
Bluegill	292	8.35	40.46	1.41
Orangespotted sunfish	17	0.49	3.01	0.11
Redbreast sunfish	1	0.03	0.18	0.01
Loggear sunfish	40	1.14	3.43	0.12

Table 19 (continued)

<u>Species</u>	<u>Total Number</u>	<u>Per Cent of Total Number</u>	<u>Total Weight (Pounds)</u>	<u>Per Cent of Weight</u>
White crappie	292	8.35	68.44	2.39
Black crappie	2	0.06	0.77	0.03
Freshwater drum *	98	2.80	61.42	2.15
Total	3496	100.00	2862.70	100.00
Game fish	1048	29.98	522.17	18.24
Rough fish	2448	70.02	2340.53	81.76

* Indicates Rough fish species

Table 20. Station 1 - Lake Granbury Water Analysis - 1971

January

Depth-Temp.	(°C)	DO*	ph-th*	M.O.*	Alkalinity		pH
					Total*		
Surface	10	9.5	7	118	125		8.2
10 ft.	10	9.8	9	115	124		8.2
20 ft.	10	9.0	9	122	131		8.2
30 ft.	10	10.1	8	112	120		8.2

May

Surface	28	8.5	0	146	146		+
10 ft.	26	8.6	0	150	150		+
20 ft.	24	6.5	0	144	144		+
30 ft.	23	4.7	0	150	150		+
40 ft.	21	1.7	0	146	146		+

July

Surface	32	8.6	0	114	114		8.2
10 ft.	30	7.4	0	118	118		8.2
20 ft.	29	1.4	0	120	120		7.8
30 ft.	25	1.1	0	130	130		7.8
40 ft.	20	0	0	164	164		7.8

November

Surface	18	8.6	0	100	100		8.4
10 ft.	18	8.9	0	100	100		8.4
20 ft.	18	8.9	0	100	100		8.5
30 ft.	18	8.7	0	100	100		8.4
40 ft.	18	7.9	0	100	100		8.1

Secchi disc: 27 to 50 inches

* ppm

+ insufficient chemicals

Table 21. Station 2 - Lake Granbury Water Analysis - 1971

January

Depth-Temp.	(°C)	DO *	ph-th*	Alkalinity		pH
				M. O.*	Total*	
Surface	10	6.5	0	128	128	8.4
10 ft.	10	10.3	8	120	128	8.4
20 ft.	10	8.2	8	121	129	8.4
30 ft.	9	7.8	9	120	129	8.4

May

Surface	25	8.8	0	150	150	+
10 ft.	24	6.3	0	150	150	+
20 ft.	24	5.0	0	154	154	+
25 ft.	24	4.2	0	154	154	+

July

Surface	32	10.2	0	86	86	8.0
10 ft.	30	7.0	0	114	114	8.0
20 ft.	29	4.7	0	114	114	7.8

November

Surface	18	10.5	0	188	188	8.3
10 ft.	17	10.0	0	197	197	8.3
20 ft.	17	9.4	0	165	165	8.4
30 ft.	16	9.0	0	100	100	8.3

Secchi disc: 24 to 31 inches

* ppm

+ insufficient chemicals

the year: largemouth bass, 50; bluegill, 181; redear sunfish, 38; longear sunfish, 69; green sunfish, seven; spotted bass, two; orangespotted sunfish, one; and white crappie, two.

Vegetation: Aquatic vegetation was not found to be a problem in Lake Granbury.

Discussion and Recommendations: Rough fish species, primarily gizzard shad, smallmouth buffalo, carp, grey redhorse, and river carpsucker were dominant in Lake Granbury. Nearly one-fourth of all fish taken were gizzard shad.

Significant increases in the number of white crappie and white bass were noted. The number of spotted bass taken in the nets also increased.

Water quality studies were made at two stations. Station 1 was approximately 11 miles from the dam and Station 2 was approximately 21 miles from the dam. At both stations water samples were taken at the surface and at 10-foot intervals to the bottom.

At Station 1 dissolved oxygen values ranged from 9.49 ppm at the surface in January to 10.08 ppm at 30 feet in the same month. Total alkalinity ranged from 100 to 197 ppm and pH ranged from 7.8 to 8.5. Tables 20 and 21 show the results of the water analyses made in January, May, July and November.

Monthly fisheries surveys have been made on Lake Granbury for the second consecutive year. The monthly surveys should be continued for one more year in order to gather as much data as possible on this newly constructed Brazos River lake.

Striped bass, if available, should be stocked in order to control the gizzard shad and to provide an additional sport fish.

Stocking Records

The following lakes were stocked with largemouth bass during 1971:

<u>Lake</u>	<u>Number of Largemouth Bass</u>
Amon Carter	98,000
Arlington	75,400
Brownwood	5,000
Cleburne	50,000
Coleman	5,000
Eagle Mountain	110,964
Garza-Little Elm	21,000
Grapevine	400,000
Hords Creek	5,000
Kemp	35,000
Kickapoo	88,370
Moss	225,000
Waco	400,000
Weatherford	20,000
Whitney	220,000

To a large extent, data gathered under this job were used in making the stocking recommendations.

In May 1971, approximately 1,400,000 walleyes (i inch T.L.) were stocked in Lake Diversion. In September 1971, 2,800 channel catfish were stocked in Cleburne State Park Lake and 3,000 channel catfish were stocked in Meridian State Park Lake. Channel catfish stocking records were not available for inclusion in this report.

Fish Harvest Regulations

A meeting of all concerned Game Management Officers and Biologists in the Possum Kingdom and Trinity-Brazos Regulatory Authority Areas was held in Mineral Wells to discuss the proposed fishing regulations. Two changes in the fishing regulations were proposed and adopted by the Texas Parks and Wildlife Department. One change established a minimum size limit of eleven (11) inches for catfish and the other change required all trotlines to be identified by a legible tag, bearing the name and address of the fisherman and the date it was set out.

Public hearings were attended in all counties in the Possum Kingdom area in May 1971.

Prepared by Charles T. Menn
Project Leader

Approved by *L. L. Peters*

Date June 21, 1972

Robert L. Bounds
Regional Director for Inland Fisheries