

Fisheries Invest
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Report of Fisheries Investigations

Resurvey of Lake O' the Pines

by

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Dingell-Johnson Project F-3-R-8, Job B-16
June 1, 1960 - January 31, 1961

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A B S T R A C T

This report covers a six-months resurvey of Lake O' the Pines located on Cypress Creek near Jefferson, Marion County, Texas. Data collected during the year 1960 is compared as near as possible with data collected during the first survey conducted during the years 1958-59. During 1960 there were forty species of fish collected by seining and gill netting. Several species of fish such as gizzard shad, spotted gar, spotted sucker, the bullheads and the crappies have become well established and abundant. The greatest changes in numbers of fish collected were made by the gizzard shad with a large increase and the smallmouth buffalo with a large decrease.

Submerged aquatic vegetation has become a problem in areas where the timber was not cut or was cut but not cleaned up. Public access is excellent and fishing has been termed as good to excellent. Recommendations are made to occasionally revisit the lake to keep information up to date.

Job Completion Report

State of TEXAS

Project No. F-3-R-8

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

Job No. B-16

Title: Resurvey of Lake O' the Pines

Period Covered:

June 1, 1960 - January 31, 1961

OBJECTIVES

To conduct investigations to obtain current information concerning the fish population and factors influencing the fish population.

HISTORY

Ferrell's Bridge Reservoir, named Lake O' the Pines, is a flood control project of the U. S. Army Corps of Engineers, New Orleans District. The earth-fill dam is located on Cypress Creek approximately 9 miles west of Jefferson, Marion County, Texas. Small portions of the lake also lie in Morris and Upshur Counties. At a normal elevation of 228.5 feet mean sea level, the lake covers some 18,700 acres and contains 251,000 acre-feet of water. During June of 1958 the lake first reached normal elevation and the fish apparently had a highly successful spawn. The gates were opened and the lake receded nearly to the original stream bed by October. This was to facilitate additional clearing of some timber, building of boat launching ramps and other structures.

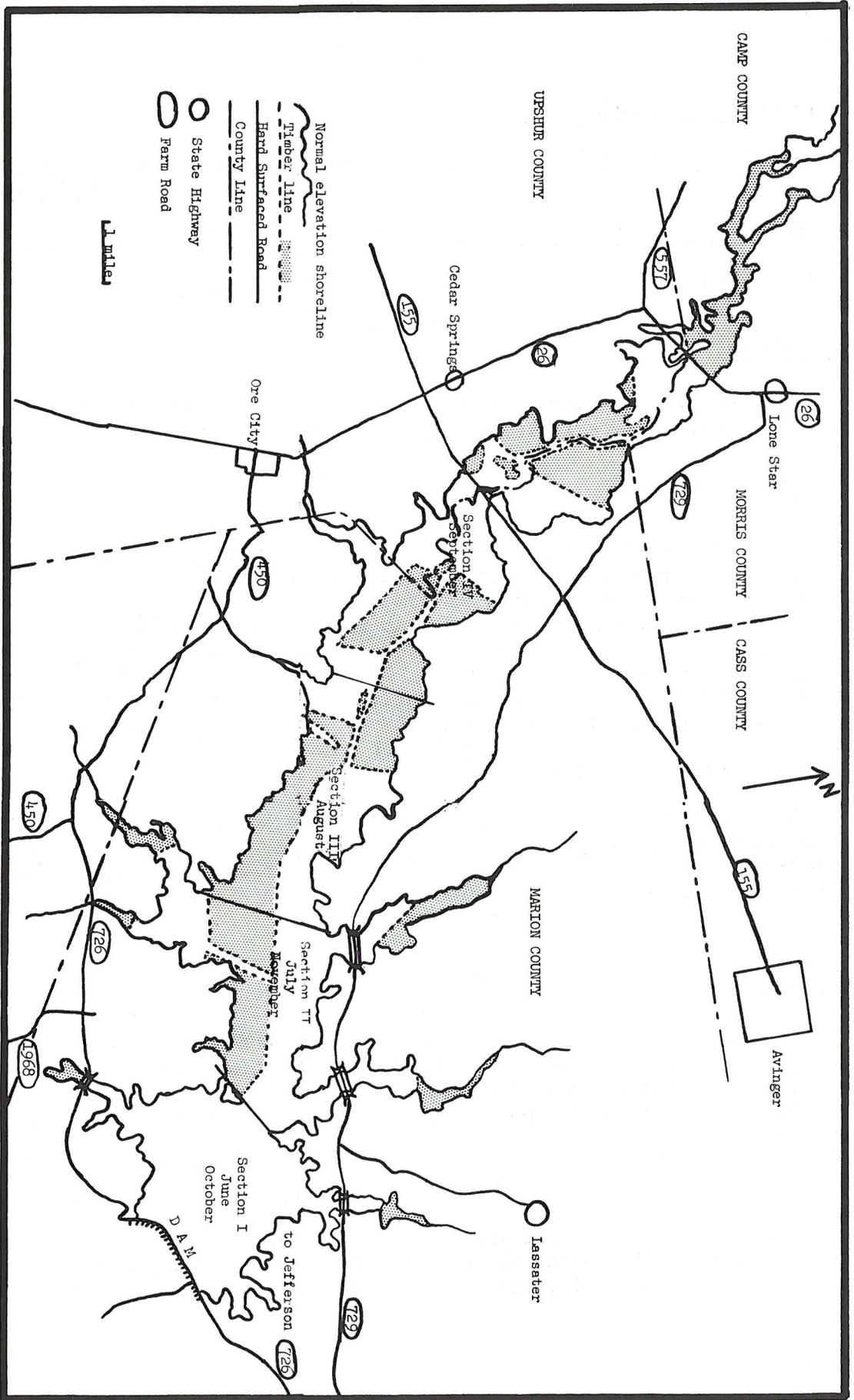
This low lake level also greatly concentrated the fish population and some tremendous catches were made. It was during this period (June 1, 1958 - May 31, 1959) that the original basic survey was made. The gates were finally closed February 15, 1960, for impoundment and the lake has maintained a fairly constant level since that time.

PROCEDURE

Data was collected at monthly intervals for the first six months of this short-term project. The lake was divided into four sections (see map) and two sections were visited twice and the other two once each. Data collected included gill netting results, seining results, water analysis, temperatures, turbidity, weather conditions and time.

Netting

Eight experimental type gill nets (1,000 feet) were set at six random locations each month. The dimensions of the nets were 125 feet long, eight feet deep with mesh sizes of 1-, 1½-, 2-, 2½- and 3-inches changing every 25 feet. The nets were



set late in the afternoon and picked up the following morning. A total of 36 sets made up of 48 nets was made.

All fish caught in nets were saved. These fish were then separated according to species, counted and their total weight taken. The rough fish were then destroyed and returned to the lake. The game fish were individually weighed and measured for both standard and total lengths. Spot checks were made on stomach contents and sexual developments. Coefficients of condition ("K" factors) were determined in the laboratory. The average lengths, weights and condition factors were calculated for each species.

Seining

Seining collections were made with a 26- by 6-foot bag seine with a $\frac{1}{4}$ -inch mesh. Six collections, consisting of 43 hauls, were made. All specimens were preserved in 10 percent formalin solution and brought back to the laboratory for identification.

FINDINGS

During the year 1960, netting and seining collections yielded a total of 40 species of fish representing 13 families. There was a total of 47 species representing 15 families collected during the original survey, 1958-59. Table 1 lists each species phylogenetically including species from both surveys. The names are those used by Hubbs in his "A Checklist of Texas Freshwater Fishes", dated December, 1958.

Netting Results

Table 2 gives a tabulation of monthly results of netting. There were 25 species collected in this manner. As can be seen from this table there were 11 species collected every time, some of which could be considered the major species for the lake. This table also gives the totals of game fish and rough fish collected and percentages of each. Of the 25 species collected by netting, there were 11 rough fish species and 14 game fish species. Rough fish are defined as those considered undesirable or those fish not normally sought by sports fishermen. There were a greater number of rough fish caught each month than game fish. The average percentages of rough fish and game fish were 67 and 33 percent respectively, compared to 64 percent and 36 percent respectively for the first survey. These figures compare favorably with other lakes in the area.

A total of 863 fish were caught by six gill net collections which is considerably less than the 3,543 fish collected by 14 gill net collections the first year, however it must be remembered that the fish were concentrated during the first year due to the low water level.

The total of 863 fish collected by gill nets during 1960 includes 574 rough fish and 289 game fish. The most abundant species collected was gizzard shad, Dorosoma cepedianum, with 226 or 26.19 percent of the total number caught. Next was the spotted gar, Lepisosteus productus, with 116 or 13.44 percent being collected. Other commonly netted species in descending order of abundance are black bullhead, Ictalurus melas, with 92 or 10.66 percent, spotted sucker, Minytrema melanops, with 88 or 10.20 percent, bluegill sunfish, Lepomis macrochirus, with 68 or 7.88 percent and largemouth bass, Micropterus salmoides, with 45 or 5.21 percent.

Table 3 gives a comparison of percentages of numbers of all netted fish for the two surveys. Also the change, either gain or loss, between the two is shown.

A total of 667.83 pounds of fish were taken by netting over the year. Table 4 gives the total weights of each species for each month over the netting period as well as the total percentages and average weights for the year. The percentages of rough fish and game fish for each month are also given. Over the year rough fish made up approximately 82 percent of the total weight of fish collected by gill nets. This compares to only approximately 73 percent the first year. Two species of fish, the spotted gar and gizzard shad, each had a higher total weight than all the game fish combined. The bowfin, Amia calva, had the highest average weight, 5.69 pounds, while the spotted sunfish, Lepomis punctatus, had the least, 0.11 pounds. Of the game fish, flathead catfish, Pylodictus olivaris, averaged the heaviest, 3.00 pounds, based on only two specimens, followed by blue catfish, Ictalurus furcatus, with an average weight of 1.75 pounds which was also based on two fish. Considering the average weight of a larger number of game fish the white bass, Roccus chrysops, could be considered the heaviest, 0.80 pounds.

The percentages of weights of netted fish from the year 1958-59 and the year 1960 are given in Table 5. The greatest change made by an individual species was made by the smallmouth buffalo, Ictiobus bubalus, with a decrease of over 26 percent. This was due to a change in habitat desired by buffalo. Gizzard shad increased over 15 percent while many others, largemouth bass for instance, changed very little.

Through the use of percentages of both total weights and numbers a rough comparison can be made of the relative abundance of the fish in the lake. Of the rough fish, the spotted gar, gizzard shad, spotted sucker and black bullhead present the greatest problem with their comparatively large numbers. The following species could be considered as the major species in the lake as determined by numbers and/or weight:

Common name	Scientific name
Spotted gar	<u>Lepisosteus productus</u>
Bowfin	<u>Amia calva</u>
Gizzard shad	<u>Dorosoma cepedianum</u>
Spotted sucker	<u>Minytrema melanops</u>
Black bullhead	<u>Ictalurus melas</u>
Yellow bullhead	<u>I. natalis</u>
White bass	<u>Roccus chrysops</u>
Largemouth bass	<u>Micropterus salmoides</u>
Bluegill sunfish	<u>Lepomis macrochirus</u>
White crappie	<u>Pomoxis annularis</u>
Black crappie	<u>P. nigromaculatus</u>

Seining Results

Table 6 gives the numbers of fish collected by seining each month. Seining yielded 28 species and 1,660 specimens. The greatest numbers of fish collected was in June and July. These figures compare favorably with the first survey. The most abundant species collected by seining were gizzard shad followed by brook silverside, Labidesthes sicculus.

In some areas much of the shoreline was difficult to seine because of snags and brush. It was found that the best places to seine and also to collect fish were old inundated roads and concrete boat launchings which have a layer of mud and silt over them. Several adult fish of the larger species were found in these areas and were collected by seining.

Growth of Fish

Standard length records were kept on ten game fish species in order to determine their growth as near as possible. However, of the 10 species worked, only six species were present in sufficient numbers for any valid comparison. Of these six species only the warmouth, Chaenobryttus gulosus, changed to any great degree. The others changed only slightly, as indicated by the data shown in Table 7.

Table 8 gives the average weights in grams which shows the same pattern as the lengths.

Overall, the condition of game fish from Lake O' the Pines was lower during 1960 than in 1958-59. Only the catfish showed any increase as determined by coefficients of condition. Table 9 shows the averages of the two periods. Generally speaking all game fish are in good physical condition. Table 10 gives data on condition of ten game fish species with the ranges of standard length, weight and "K" factors given.

Food Habits

Many of the game fish stomachs were empty when checked. As expected small shad was the most common food item found in the stomachs of largemouth bass, white bass, warmouth and some crappie. Crappie fed mostly on invertebrates, while channel catfish preferred crayfish. There was one instance where a white bass stomach contained a five-inch long largemouth bass which in turn had a four-inch long chub sucker in its mouth.

Sexual Development and Spawning Activity

Due to the time of year this survey covered the information obtained concerning sexual development was of little value. Of all game fish species, most females examined were either spent or immature. One redear sunfish, Lepomis microlophus, was gravid in July. Considering the seining collections there was an apparent good spawn of largemouth bass, redear sunfish, bluegill and spotted sunfish.

Annotated Checklist of Fish Species

This list includes all species collected in Lake O' the Pines during both studies:

1. Lepisosteus platostomus (shortnose gar) - none were collected the second year.
2. L. productus (spotted gar) - one of the most common species in the lake.
3. L. osseus (longnose gar) - fairly rare, only two were collected the second year.
4. Amia calva (bowfin) - not too common in the lake.
5. Dorosoma petenense (threadfin shad) - one collection was made in August which contained these desirable forage fish.

6. D. cepedianum (gizzard shad) - the most commonly collected fish in the lake the second year.
7. Esoc americanus (grass pickerel) - only one was collected by netting and three by seining during the second year.
8. E. niger (chain pickerel) - one was collected by seining.
9. Ictiobus bubalus (smallmouth buffalo) - the numbers of buffalo netted dropped from 10.78 percent in 1958-59 to 0.58 percent in 1960. This was due to the entirely different habitat of the lake at these two times.
10. Moxostoma poecilurum (blacktail redhorse) - none were collected the second year.
11. Minytrema melanops (spotted sucker) - one of the major species in the lake. They showed a marked increase from the first survey.
12. Erimyzon sucetta (lake chubsucker) - rare in the lake, only one was collected by netting and one by seining.
13. Cyprinus carpio (carp) - four were collected in September. Considered as rare in the lake.
14. Notemigonus crysoleucas (golden shiner) - none were collected the second year.
15. Notropis fumeus (ribbon shiner) - rare in the lake with only four being taken the second year.
16. N. venustus (spottail shiner) - the most abundant notropid in the lake.
17. N. lutrensis (redhorse shiner) - abundant during the summer on sand bars and boat launching ramps. Rare in the winter.
18. N. stramineus (sand shiner) - more commonly collected during the fall months.
19. N. volucellus (mimic shiner) - none were collected the second year.
20. Hybognathus nuchalis (silvery minnow) - there was one large collection made in June but none since.
21. Pimephales vigilax (parrot minnow) - collected only during the first two months of this survey. Rare in the first survey also.
22. Ictalurus punctatus (channel catfish) - the numbers of channel catfish collected was down nearly four and one-half percent from the first survey.
23. I. furcatus (blue catfish) - only two were collected the second year.
24. I. melas (black bullhead) - the third most commonly collected fish by netting although the numbers are down from the first year. Also commonly seined.
25. I. natalis (yellow bullhead) - fairly commonly netted. There was practically no change from the first year.
26. Pylodictus olivaris (flathead catfish) - only two were collected by netting.
27. Fundulus chrysotus (redspot topminnow) - there were two collections of this species.
28. F. notti (starhead topminnow) - this is a new species not previously collected from Lake O' the Pines. Only a few were collected by seining.
29. F. notatus (blackstripe topminnow) - the only species collected every time by seining.
30. Gambusia affinis (common mosquitofish) - not as common the second year as the first.
31. Aphredoderus sayanus (pirate perch) - none were collected the second year.
32. Labidesthes sicculus (brook silversides) - the second most commonly collected fish by seining.
33. Roccus chrysops (white bass) - this fish is on the increase in the lake.

34. Micropterus punctulatus (spotted bass) - a few were collected by seining and only one by netting.
35. M. salmoides (largemouth bass) - though there was little change in the numbers collected, the bass caught the second year were smaller in size than the first year.
36. Chaenobryttus gulosus (warmouth) - collected regularly in small numbers.
37. Lepomis cyanellus (green sunfish) - none were collected the second year.
38. L. punctatus (spotted sunfish) - not too common in the lake.
39. L. microlophus (reardear sunfish) - the population of this fish is up from the first year. Several large ones were collected by seining.
40. L. macrochirus (bluegill sunfish) - very abundant in the lake.
41. L. auritus (yellowbelly sunfish) - rare in the lake. Collected once by seining and once by netting.
42. L. megalotis (longear sunfish) - collected twice by seining. None by netting.
43. Pomoxis annularis (white crappie) - on the increase. This fish is very popular and many are caught at night by fishermen.
44. P. nigromaculatus (black crappie) - also on the increase and very popular.
45. Centrarchus macropterus (flier) - one was collected by netting and four by seining.
46. Hadropterus maculatus (blackside darter) - none were collected the second year.
47. Percina caprodes (logperch) - the logperch is not too common, only three were collected.
48. Aplodinotus grunniens (freshwater drum) - none were collected the second year.

Limnological Conditions

The water quality of Lake O' the Pines is of good quality for fish life. The pH ranged from 6.8 to 7.2 and averaged about 6.9. The methyl-orange alkalinity ranged from 28 p.p.m. to 75 p.p.m. and averaged 41 p.p.m. The chloride content ranged from 35.46 p.p.m. to 85.10 p.p.m. and average 54.37 p.p.m. During the year the turbidity as determined by a Secchi disk ranged from 24 to 75 inches.

Air temperatures ranged from 34 to 95 degrees F., while the surface water temperatures ranged from 63 to 92 degrees F. The color of the water was green with a dark brown stain at times. Weather conditions varied from clear and calm to violent thunderstorms to "pea soup" fog.

Vegetation

The standing timber and the cut and fallen timber in the upper half and in some coves of the lake have provided ideal places for submerged vegetation to gain a strong foothold. In many of these areas the brush and tree tops are so thick that boat travel is impossible. The principal aquatic plants encountered were muskgrass, Chara sp., bladderwort, Utricularia sp., and duck weed, Lemna sp.

Greater forethought should have been exercised to prevent this problem. Instead of cutting timber and allowing it to lay where it fell, it should have been piled and burned. Also, more timber around the edge of the lake could have been cut to an advantage.

Public Access and Usage

Public access and boat launching facilities, as constructed by the Corps of Engineers, are excellent. Large concrete ramps, of which there are ten around the lake, provide easy boat launching.

Also available are fine picnic facilities. Although first class privately operated facilities, such as boat storage, overnight accommodations and cafes, have been somewhat slow in appearing, it is expected that several will be available within a year.

Besides fishing, one of the primary attractions to Lake O' the Pines is the open waters of the lower end of the lake which is greatly utilized by water sports enthusiasts.

Fishing has been termed as good to excellent, especially at night for crappie. Commercial fishing has been sparse due to the lack of a good commercial species of any size at this time.

CONCLUSIONS AND RECOMMENDATIONS

Considering the above findings it can be concluded that Lake O' the Pines has good water quality for fish life, has a good fish population, though heavy on some undesirable species, and has a potential vegetation problem.

Recommendations are made to occasionally revisit the lake under the reconnaissance job to keep information up to date.

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Approved by Marion Toole
Director Inland Fisheries Division

Date April 13, 1961

Table 1. A checklist of Lake O' the Pines fish species.

Fish	1958-59	1960
Shortnose gar	x	
Spotted gar	x	x
Longnose gar	x	x
Bowfin	x	x
Threadfin shad	x	x
Gizzard shad	x	x
Grass pickerel	x	x
Chain pickerel	x	x
Smallmouth buffalo	x	x
Blacktail redhorse	x	
Spotted sucker	x	x
Lake chubsucker	x	x
Carp	x	x
Golden shiner	x	
Ribbon shiner	x	x
Spottail shiner	x	x
Redhorse shiner	x	x
Sand shiner	x	x
Mimic shiner	x	
Silvery minnow	x	x
Parrot minnow	x	x
Channel catfish	x	x
Blue catfish	x	x
Black bullhead	x	x
Yellow bullhead	x	x
Flathead catfish	x	x
Redspot topminnow	x	x
Starhead topminnow		x
Blackstripe topminnow	x	x
Common mosquitofish	x	x
Pirate perch	x	
Brook silversides	x	x
White bass	x	x
Spotted bass	x	x
Largemouth bass	x	x
Warmouth	x	x
Green sunfish	x	
Spotted sunfish	x	x
Redear sunfish	x	x
Bluegill sunfish	x	x
Yellowbelly sunfish	x	x
Longear sunfish	x	x
White crappie	x	x
Black crappie	x	x
Flier	x	x
Blackside darter	x	
Log perch	x	x
Freshwater drum	x	
Total number of species	47	40

Table 2. Numbers of fish collected by monthly netting on Lake O' the Pines, 1960.

Fish	June	July	August	September	October	November	Total	Percent
Spotted gar*	20	19	25	46	4	2	116	13.44
Longnose gar*			2			2	2	0.23
Bowfin*	1		1	3			7	0.80
Gizzard shad*	18	57	32	69		26	226	26.19
Grass pickerel*						1	1	0.12
Smallmouth buffalo*		1	2	1		1	5	0.58
Spotted sucker*		2	13	11		34	88	10.20
Lake chubsucker*	9					1	1	0.12
Carp*				4			4	0.46
Channel catfish	1		2			1	4	0.46
Blue catfish			1		1		2	0.23
Black bullhead*	7	12	27	21	7	18	92	10.66
Yellow bullhead*	6	12	2	6	1	5	32	3.71
Flathead catfish	1		1				2	0.23
White bass	2	13	3	3		1	39	4.52
Spotted bass					17	1	1	0.12
Largemouth bass	1	8	12	21		1	45	5.21
Warmouth	5	5	6	4		2	23	2.67
Spotted sunfish	2	3	1	1		2	7	0.80
Redear sunfish	1	2	4	4		2	13	1.51
Bluegill sunfish	17	17	19	8		2	68	7.88
Yellowbelly sunfish	4	5	11	9		1	5	0.58
White crappie	6	15	5	4		6	43	4.98
Black crappie		10				1	35	4.06
Flier							1	0.12
Rough fish	61	103	104	161		90	574	
Game fish	40	78	65	54		19	289	
Total numbers	101	181	169	215	88	109	863	100.00
Percent rough fish	60.40	56.91	61.53	74.89	62.50	82.57		66.59
Percent game fish	39.60	43.09	38.47	25.11	37.50	17.43		33.41

* indicates rough fish species

Table 3. Change in percentages of numbers of netted fish from Lake O' the Pines.

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

Table 4. Total weights of monthly netted fish from Lake O' the Pines, 1960.

Fish (total numbers)	June	July	August	September	October	November	Total weight (pounds)	Percent of total	Average weight (pounds)
	Spotted gar* (116)	26.62	21.25	43.38	56.81	5.63	1.75	155.44	23.28
Longnose gar* (2)			7.75			11.75	7.75	1.16	3.88
Bowfin* (7)	5.06		7.06	15.93		12.37	39.80	5.96	5.69
Gizzard shad* (226)	8.31	28.75	19.00	43.25	17.56	0.31	129.24	19.34	0.57
Grass pickerel* (1)		8.88	8.00	3.25		2.03	22.16	3.32	4.43
Smallmouth buffalo* (5)		2.00	14.63	12.30	24.25	47.18	108.11	16.19	1.23
Spotted sucker * (88)	7.75					0.25	0.25	0.03	0.25
Lake chubsucker* (1)						8.94	8.94	1.34	2.24
Carp* (4)						1.56	7.06	1.06	1.41
Channel catfish (5)	1.13		4.12		0.25	2.06	3.50	0.52	1.75
Blue catfish (2)			1.44		2.38	8.69	43.02	6.44	0.47
Black bullhead* (92)	2.25	3.88	12.94	12.88	4.75	4.19	18.69	2.80	0.58
Yellow bullhead* (32)	3.19	4.50	1.25	4.75	0.81		6.00	0.90	3.00
Flathead catfish (2)	4.44		1.56						0.80
White bass (39)	1.31	6.94	4.50			0.44	31.07	4.65	0.25
Spotted bass (1)						0.25	0.25	0.03	0.25
Largemouth bass (45)	1.00	3.25	7.75	17.35	1.56	1.19	32.10	4.81	0.71
Warmouth (23)	0.13	1.25	1.56	0.81	0.13	0.37	4.25	0.64	0.18
Spotted sunfish (7)	0.13	0.31	0.13	0.19		0.63	0.76	0.11	0.11
Redear sunfish (13)	0.06	0.56	1.00	1.19		0.69	3.44	0.52	0.26
Bluegill sunfish (68)	2.31	3.38	4.19	1.56	0.94	0.69	13.07	1.96	0.19
Yellowbelly sunfish (5)		0.81				0.31	0.81	0.12	0.16
White crappie (43)	1.31	6.19	5.50	4.99	1.31	0.31	19.61	2.94	0.46
Black crappie (35)	2.13	3.13	1.94	1.56	1.38	1.75	11.89	1.78	0.34
Flier (1)						0.31	0.31	0.05	0.31
Rough fish * (574)	53.18	81.64	114.01	158.11	50.63	88.52	546.09	81.77	0.95
Game fish (289)	13.95	13.44	33.69	29.09	24.07	7.50	121.74	18.23	0.42
Total (863)	67.13	95.08	147.70	187.20	74.70	96.02	667.83	100.00	0.77
Rough fish percent	79.22	85.86	77.19	84.47	67.78	92.19	81.77		
Game fish percent	20.78	14.14	22.81	15.53	32.22	7.81	18.23		

Table 5. Comparison of percentages of weights of all netted fish from Lake O' the Pines.

Fish	1958-59	1960	Overall change
Shortnose gar*	0.27	0	-
Spotted gar*	14.30	23.28	+
Longnose gar*	0.78	1.16	+
Bowfin*	3.47	5.96	+
Gizzard shad*	3.51	19.34	+
Grass pickerel*	0.22	0.05	-
Chain pickerel*	0.26	0	-
Smallmouth buffalo*	30.12	3.32	-
Blacktail redhorse*	0.23	0	-
Spotted sucker*	1.50	16.19	+
Lake chubsucker*	0.14	0.03	-
Carp*	1.98	1.34	-
Golden shiner*	0.01	0	-
Channel catfish	6.02	1.06	-
Blue catfish	3.22	0.52	-
Black bullhead*	13.44	6.44	-
Yellow bullhead*	2.64	2.80	+
Flathead catfish	3.35	0.90	-
White bass	1.80	4.65	+
Spotted bass	1.62	0.03	-
Largemouth bass	4.79	4.81	+
Warmouth	1.80	0.64	-
Green sunfish	0.01	0	-
Spotted sunfish	0.10	0.11	+
Redear sunfish	0.11	0.52	+
Bluegill sunfish	0.89	1.96	+
Yellowbelly sunfish	0.04	0.12	+
Longear sunfish	0.02	0	-
White crappie	1.70	2.94	+
Black crappie	1.56	1.78	+
Flier	0	0.05	+
Freshwater drum	0.10	0	-
Rough fish*	72.87	81.77	+
Game fish	27.13	18.23	-
Total	100.00	100.00	

Table 6. Results of monthly seining on Lake O' the Pines, 1960.

Fish	June	July	August	September	October	November	Total
Threadfin shad			11				11
Gizzard shad	306	13	3				322
Grass pickerel	1	1		1			3
Chain pickerel						1	1
Lake chubsucker			1				1
Ribbon shiner	3	1					4
Spottail shiner	3	59	8		14	54	138
Redhorse shiner	13	24			1	3	41
Sand shiner	2	4	1		88	19	114
Silvery minnow	134						134
Parrot minnow	15	8					23
Black bullhead	3	209		2			214
Redspot topminnow			2	11			13
Starhead topminnow			1	4			5
Blackstripe topminnow	1	6	20	5	41	25	98
Common mosquitofish		1	2		19	5	27
Brook silversides	26	39	81		9	150	305
White bass	1						1
Spotted bass	1	6			2		9
Largemouth bass	19	8	8		7	3	45
Warmouth				2			2
Spotted sunfish		11			16	15	42
Redear sunfish		1	38	1	7	2	49
Bluegill sunfish		1	10	19	2	2	34
Yellowbelly sunfish		1					1
Longear sunfish	6		10				16
Flier				4			4
Log perch		1			2		3
Total	534	394	196	49	208	279	1,660
Number of hauls	10	10	5	2	8	8	43

Table 7. Comparison of average standard lengths in millimeters of several game fish species from Lake O' the Pines.

Fish	1958-59		1960	
	Number of fish	Length	Number of fish	Length
Channel catfish	136	292.40	5	315.40
Blue catfish	61	281.68	2	363.50
Flathead catfish	29	365.44	2	400.00
White bass	69	210.82	37	217.60
Spotted bass	55	200.87	1	180.00
Largemouth bass	146	219.97	32	221.03
Warmouth	114	147.12	21	127.04
Bluegill sunfish	72	116.15	40	125.60
White crappie	76	185.00	36	189.83
Black crappie	88	161.29	34	160.20

Table 8. Comparison of average weight in grams of several game fish species from Lake O' the Pines.

FISH	1958-59		1960	
	Number of fish	Weight	Number of fish	Weight
Channel catfish	136	481.69	5	651.20
Blue catfish	61	421.21	2	836.50
Flathead catfish	29	1,030.24	2	1,361.00
White bass	69	324.59	37	373.64
Spotted bass	55	291.63	1	119.00
Largemouth bass	146	336.26	32	338.03
Warmouth	114	155.77	31	86.85
Bluegill sunfish	72	80.02	40	95.22
White crappie	76	235.77	36	211.80
Black crappie	88	184.71	34	142.67

Table 9. Comparison of average coefficients of condition ("K") of several game fish species from Lake O' the Pines.

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

Table 10. Data on condition of several game fish species from Lake O' the Pines.

Fish	Number of fish	Standard length range in millimeters	Average standard length in millimeters	Weight range in grams	Average weight in grams	"K" range	Average "K"
Channel catfish	5	197-370	315.40	110-1,134	651.20	1.44-2.24	1.80
Blue catfish	2	332-395	363.50	737- 936	836.50	1.52-2.01	1.77
Flathead catfish	2	330-470	400.00	709-2,013	1,361.00	1.94-1.97	1.96
White bass	37	138-308	217.60	75- 992	373.64	2.49-3.83	3.02
Spotted bass	1		180.00		119.00		2.04
Largemouth bass	32	140-357	221.03	70-1,474	338.03	1.69-4.76	2.59
Moremouth	21	108-168	127.04	40- 228	86.85	3.14-4.81	3.76
Bluegill sunfish	40	88-158	125.60	27- 193	95.22	3.28-5.27	4.36
White crappie	36	125-237	189.83	52- 377	211.80	2.29-4.23	2.91
Black crappie	34	105-207	160.20	28- 330	142.67	1.42-5.17	3.38

Segment Completion Report

State of TEXAS

Project No. F-3-R-8

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

Job No. B-17

Title: Fish Harvest Regulations

Period covered:

June 1, 1960 - January 31, 1961

OBJECTIVES

To recommend fish harvest regulations to the Texas Game and Fish Commission.

PROCEDURE

Proposed fishery regulations for counties in the southeast Texas area under regulatory authority of the Texas Game and Fish Commission were presented at public hearings and to the Commissioners of the Texas Game and Fish Commission. These regulations were based on results and findings of surveys and work done in this Region and established seasons, bag and possession limits, and means and methods of harvest.

DISCUSSION

On April 29, 1960, Game Wardens and Biologists working in the southeast Texas Regulatory Authority Area met in Silsbee, Texas, to discuss proposed hunting and fishing regulation changes for the nine counties in this area. Dates were agreed upon for public hearings for each of the counties as prescribed by law. The public hearings were held in these counties on the dates listed below:

Montgomery County	June 6, 1961	Liberty County	June 7, 1961
Polk County	June 8, 1961	Jefferson County	June 9, 1961
Orange County	June 10, 1961	Tyler County	June 13, 1961
Jasper County	June 14, 1961	Newton County	June 15, 1961
Hardin County	June 16, 1961		

On July 14, 1961, the project leader travelled to Austin to discuss the proposed regulations with the Assistant Executive Secretary, Mr. Toler, of the Attorney General's Department, the Director of Inland Fisheries, Coordinators and other project leaders. On July 15, 1961, the regulation changes were presented to the Texas Game and Fish Commission and were voted into law.

REGULATION CHANGES

1. The channel catfish, blue catfish, flathead catfish and crappie possession limits of 25 were increased to 50 in Hardin, Jefferson and Orange Counties. There is

no shortage of these species in these counties and this regulation change made the above counties conform with the possession limits of the other six counties of the area.

2. Under existing regulations, nets or seines with mesh not less than three (3) inches square were legal in all of the counties except Montgomery County. This was changed to make Montgomery County conform with the other eight counties.

3. Seasons, daily bag limits and size limits remained unchanged.

The project leader spent 13 days on this job during the segment.

RECOMMENDATIONS

It is recommended that this job be continued to facilitate regulation changes that may be needed in the future and to provide time for study of fishing regulations of any additional counties that may come under regulatory authority of the Texas Game and Fish Commission.

Prepared by Charles E. Gray
Project Leader

Approved by Marion Toole
Director Inland Fisheries Division

Date August 29, 1961