JOB PROGRESS REPORT

As required by

FEDERAL AID IN FISHERIES RESTORATION ACT

TEXAS

Federal Aid Project No. F-6-R-20

FISHERIES INVESTIGATIONS, REGION 5-B

Job No. VIII, Fishery Management

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SUMMARY

Changes in fish harvest regulations were incorporated into the Southeast, Oak Prairie, South Central Texas Hunting, Fishing and Trapping Proclamation No. 0-3, 1972-73, which was approved by the Texas Parks and Wildlife Commission on July 7, 1972. The changes which affected Region 5-B included a reduction of the daily bag limit from fifteen (15) to ten (10) in the aggregate, a minimum size limit of ten (10) inches, and a possession limit of twenty (20) on largemouth, smallmouth or spotted black bass. The possession limit does not include fish processed and stored at the fisherman's permanent residence. The eleven (11) inch minimum size limit on channel catfish was removed and an addition (iii) was made to section 7.02 (d) of the proclamation stating "the daily bag limit on channel, blue, and flathead catfish is twenty-five (25) in the aggregate. The possession limit is fifty (50) in the aggregate." The wording of section 7.02 (d) was changed to clarify the boundaries of an area with special regulations. Changes in "means and methods" of taking fishes require that all trotlines set in public waters shall be redated at the end of each ninety day period. In addition, "any trotline set in the public waters of this state in violation of this proclamation shall be removed from the waters thereof." The proclamation asserts that it is illegal to take catfish in hoop nets, trammel nets, or gill nets of nonmetallic construction having a mesh size not less than three inches square. It is also unlawful to possess catfish on board any boat or vehicle while possessing a hoop net, gill net, or trammel net.

Limited experimentation with granular 2,4-D ("Aqua-Kleen 20" by AMCHEM) was conducted on Lake Corpus Christi to determine the effectiveness of the chemical in controlling water stargrass infestations. The minimum effective dosage rate utilized during the tests was 200 pounds per surface acre. Further investigation in this area should be conducted by the statewide noxious vegetation project.

In 1972 advanced young channel catfish were stocked in Lake Corpus Christi (7,800 fish), Kleberg Park Lake (700 fish), and West Guth Park Lake (100 fish). All fish were finclipped to provide future information on growth and sexual development. Upon availability from State hatcheries, releases of advanced young flathead catfish are recommended for Lake Corpus Christi and Alice City Lake. The stocking of advanced young blue catfish is also recommended for Alice City Lake.

JOB PROGRESS REPORT

State Texas

Project No. F-6-R-20 Project Title: Fisheries Investigations Region 5-B

Job No. VIII Job Title: Fishery Management

Period Covered: January 1, 1972 to December 31, 1972

P. S. OBJECTIVES:

To situate fishery management practices in the waters of Region 5-B.

SEGMENT OBJECTIVES:

1. To recommend fish harvest regulations to the Texas Parks and Wildlife Commission.
2. To recommend stocking ratios for newly constructed or renovated waters, and in waters having established fish populations where insufficient reproduction has been determined.
3. To recommend control of overabundant rough and/or game fish species.
4. To determine need for rough fish removal by contract fishermen.
5. To determine vegetation control needs.
6. To determine public access needs.

PROCEDURES:

Proposed changes in fish harvest regulations, based on data and field observations recorded during previous surveys, were submitted to State headquarters through proper channels. The changes were then presented to the public at hearings in each of the regulatory counties of Region 5-B. The proposed changes, along with records of each hearing, were then submitted to the Texas Parks and Wildlife Commission for final consideration. The following public hearings were attended by F-6-R personnel:

DATE	TIME	TOWN	COUNTY	PUBLIC ATTENDANCE
May 1, 1972	10:00 a.m.	Rockport	Aransas	25
May 1, 1972	2:00 p.m.	Sinton	San Patricio	0
May 1, 1972	8:00 p.m.	Beeville	Bee	0
May 3, 1972	10:00 a.m.	San Diego	Duval	0
May 3, 1972	2:00 p.m.	Alice	Jim Wells	0
May 3, 1972	8:00 p.m.	George West	Live Oak	0

There were no newly constructed or renovated waters in Region 5-B; therefore, no stocking ratio determinations were necessary. Objectives 2 through 6 of this study were fulfilled in conjunction with fisheries surveys conducted on each major body of water having existing fish populations. The surveys were conducted quarterly for the purpose of determining composition and abundance of fish species and to determine supplementary stocking needs. The waters surveyed included Lake Corpus Christi (Jim Wells, San Patricio, and Live Oak Counties), Alice City Lake (Jim Wells County), Kleberg Park Lake (Kleberg County), Lakeview Park Lake (Nueces County), and West Guth Park Lake (Nueces County).

Five permanent sampling sites were established on Lake Corpus Christi (Figure 1). Overnight gill netting, marginal seining, and water analyses were conducted at all stations during each survey. Four gill netting stations were chosen on Alice City Lake; however, due to a substantial decline in water level, only three stations were accessible after the second survey. A map of the lake showing the location of all sampling stations is given in Figure 2. Due to the small size of Kleberg, West Guth, and Lakeview park lakes, no permanent sampling stations were needed.

Experimental gill nets (1-inch to 3½-inch mesh and 150 feet long) were the primary means used for sampling adult game and rough fish populations. Marginal seining was conducted with a 20-foot bag seine (½-inch mesh and 8 feet deep) to determine spawning success and forage fish abundance. A 10-foot otter trawl and an electroshocking device were used to supplement netting and seining data. Water samples were taken with a Kemmerer water sampler and analyzed with a Hach DR-EL Portable Engineer's Laboratory.

Gill net specimens were categorized by species and bulk weights were taken. Individual weights and measurements were recorded on all game fish and on a representative sample of rough fish. Game fish were also checked for sexual development, stomach contents, and parasite infestation. Numbers and weights of each species were totaled and a game fish-rough fish ratio was calculated for each body of water sampled. In addition, average weights were established for each species and average "K" factors were computed on all game fish species.

Seining collections were preserved in 10 per cent formalin in the field and were later keyed and identified in the laboratory. Individuals within each species were measured, separated by size group (juvenile, intermediate, or adult), and counted.

All fish species encountered during Segment 20 are included in a checklist (Table 1). Common and scientific names are in accord with those found in Special Publication No. 6, A List of Common and Scientific Names of Fishes from the United States and Canada (Third Edition), a publication of the American Fisheries Society.

FINDINGS:

Fish Harvest Regulations

The Southeast, Oak Prairie, South Central Texas Hunting, Fishing, and Trapping Proclamation No. 0-3, 1972-73 was approved by the Texas Parks and

Figure 1. Lake Corpus Christi Sampling Stations.

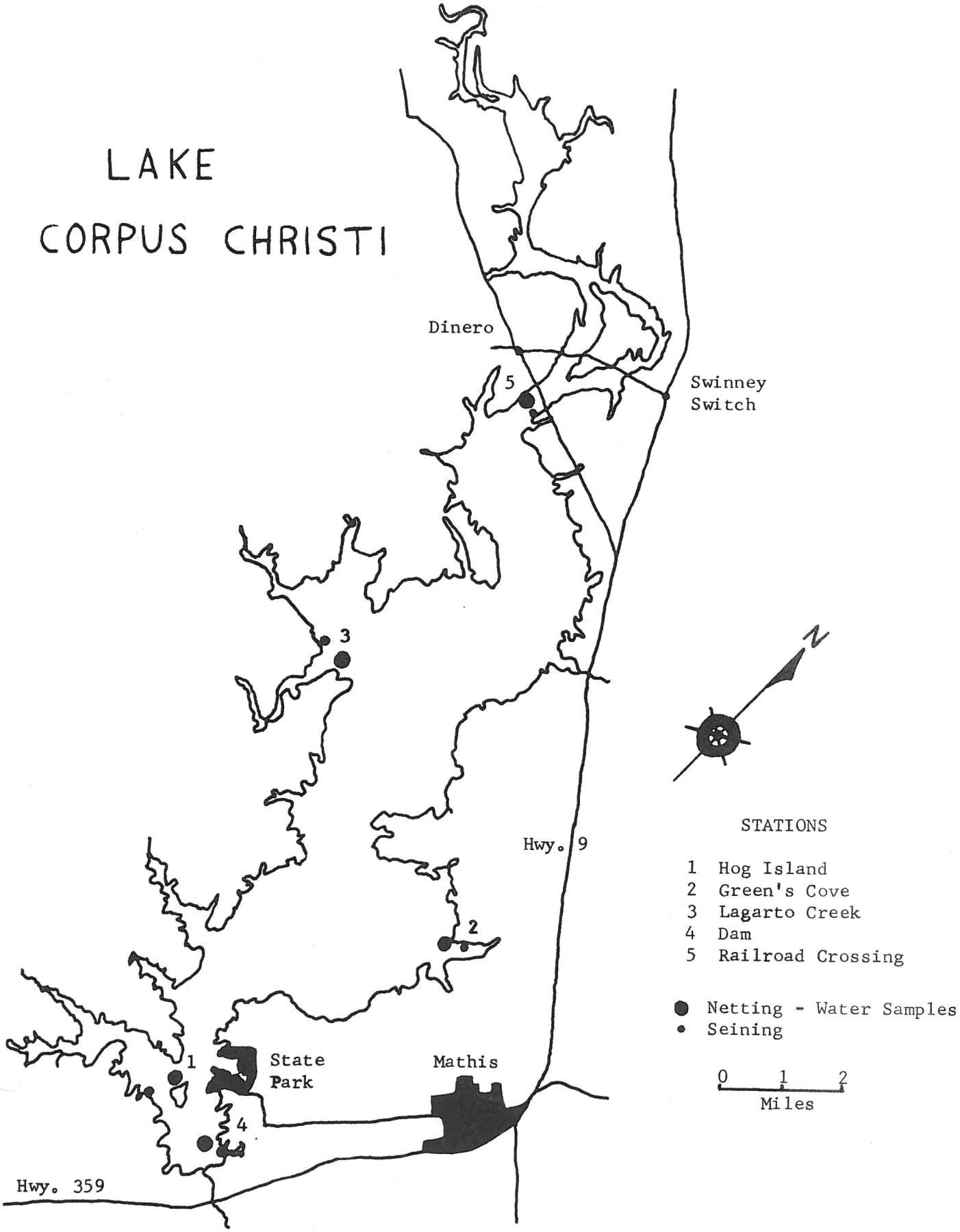


Figure 2. Alice City Lake Sampling Stations

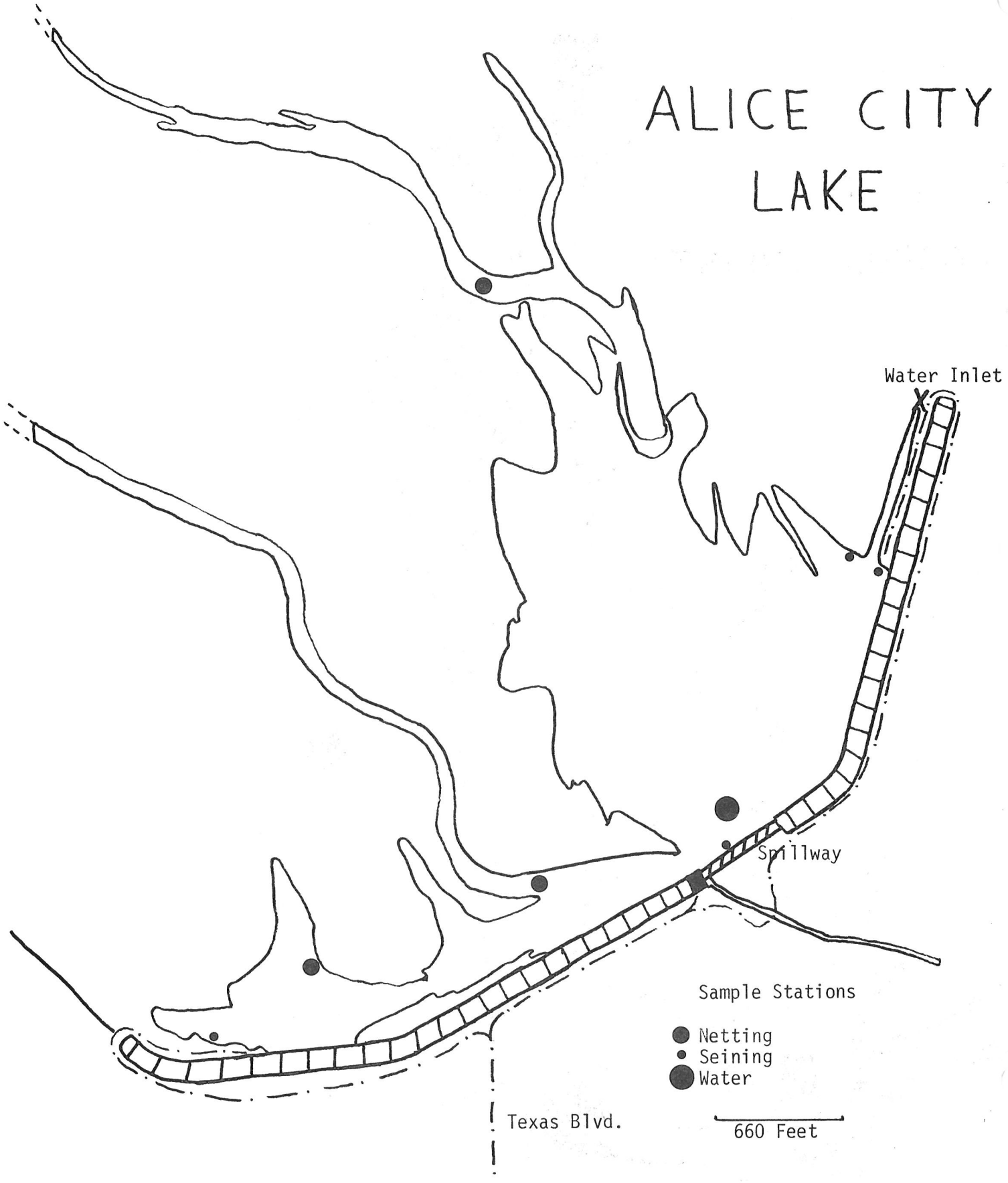


Table 1
Species Checklist

Common Name	Scientific Name
Spotted gar	Lepisosteus oculatus
Longnose gar	L. osseus
Gizzard shad	Dorosoma cepedianum
Threadfin shad	D. petenense
Mexican tetra	Astyanax mexicanus
Carp	Cyprinus carpio
Goldfish	Carassius auratus
Golden shiner	Notemigonus crysoleucas
Pugnose minnow	Opsopoeodua emiliae
Red shiner	Notropis lutrensis
Bullhead minnow	Pimephales vigilax
Smallmouth buffalo	Ictiobus bubalus
Channel catfish	Ictalurus punctatus
Blue catfish	I. furcatus
Black bullhead	I. melas
Yellow bullhead	I. natalis
Flathead catfish	Pylodictis olivarus
Tadpole madtom	Noturus gyrinus
Gulf killifish	Fundulus grandis
Sheepshead minnow	Cyrinodon variegatus
Mosquitofish	Gambusia affinis
Sailfin molly	Poecilia latipinna
Amazon molly	P. formosa
Tidewater silverside	Menidia beryllina
White bass	Morone chrysops
Largemouth bass	Micropterus salmoides
Warmouth	Lepomis gulosus
Green sunfish	L. cyanellus
Redear sunfish	L. microlophus
Bluegill	L. macrochirus
Redbreast sunfish	L. auritus
White crappie	Pomoxis annularis
Black crappie	P. nigromaculatus
Freshwater drum	Aplodinotus grunniens
Rio Grande perch	Cichlasoma cyanoguttatum
Mosambique tilapia	Tilapia mossambica
Striped mullet	Mugil cephalus

Wildlife Commission on July 7, 1972. Changes in the Proclamation which affected Region 5-B fisheries included the following:

1. The daily bag limit on largemouth, smallmouth, or spotted black bass was reduced from fifteen (15) to ten (10) in the aggregate.

2. A minimum size limit of 10-inches in length was imposed on largemouth, smallmouth or spotted black bass.

3. A possession limit of twenty (20), which does not include fish processed and stored at the fisherman's permanent residence, was placed on largemouth, smallmouth and spotted black bass.

4. The eleven (11) inch size limit on channel catfish was removed.

5. The wording of section 7.02 (d) of the proclamation was changed to clarify boundaries of an area affected by special regulations.

6. Exception number (iii) was added to section 7.02 (d) and states that "the daily bag limit on channel, blue, and flathead catfish is twenty-five (25) in the aggregate. The possession limit is fifty (50) in the aggregate."

7. An addition to the Means and Methods (7.04) section of the Proclamation asserts that "all trotlines that remain in public waters shall be redated at the expiration of each ninety-day period. Any trotline set in the public waters of this State in violation of this proclamation shall be removed from the waters thereof."

8. Section 7.04 (g) was changed to make it illegal to take catfish in hoop nets, trammel nets, or gill nets of nonmetallic construction having a mesh size not less than three inches square.

9. Section 7.04 (g) makes it unlawful to possess catfish on board any boat or vehicle while fishing with or possessing a hoop net, gill net, or trammel net.

Lake Corpus Christi
(live Oak, Jim Wells, and San Patricio Counties)

Twenty experimental gill nets were set during the year. Netting results were in keeping with those obtained during recent years. The catch-per-unit effort was calculated for each survey and for the total annual yield (Table 2). Netting results are given in Table 3, and a comparison of the game fish-rough fish ratios obtained during each survey is presented in Figure 3.

Game fish represented 36.4 per cent by number and 26.12 per cent by weight of the total fish netted. Channel and blue catfish accounted for 59.7 per cent by number and 73.8 per cent by weight of the game fish catch. Four flathead catfish were taken during the quarterly surveys as opposed to none during survey of the prior three year period. An additional small number of flathead catfish were taken while assisting the U. S. Fish and Wildlife Service

Table 2

Lake Corpus Christi Catch Per Unit Effort, 1972

	April		July		Sept.		Dec.		Annual Totals	
Station	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.
1	20	14.7	16	18.2	50	51.3	39	53.1	125	137.3
2	35	28.1	41	34.2	31	31.5	70	75.6	177	169.4
3	65	49.8	47	49.2	48	61.0	63	72.1	223	232.1
4	11	6.0	22	30.8	26	22.8	35	22.6	94	82.2
5	39	35.0	25	34.6	23	18.5	30	46.1	117	134.2
Totals	170	133.6	151	167.0	178	185.1	237	269.5	736	755.2
Catch/ net night*	34.0	26.7	30.2	33.4	35.6	37.0	47.4	53.9	36.8	37.8

*net night - one 150-foot experimental type gill net set overnight for approximately 15 hours.

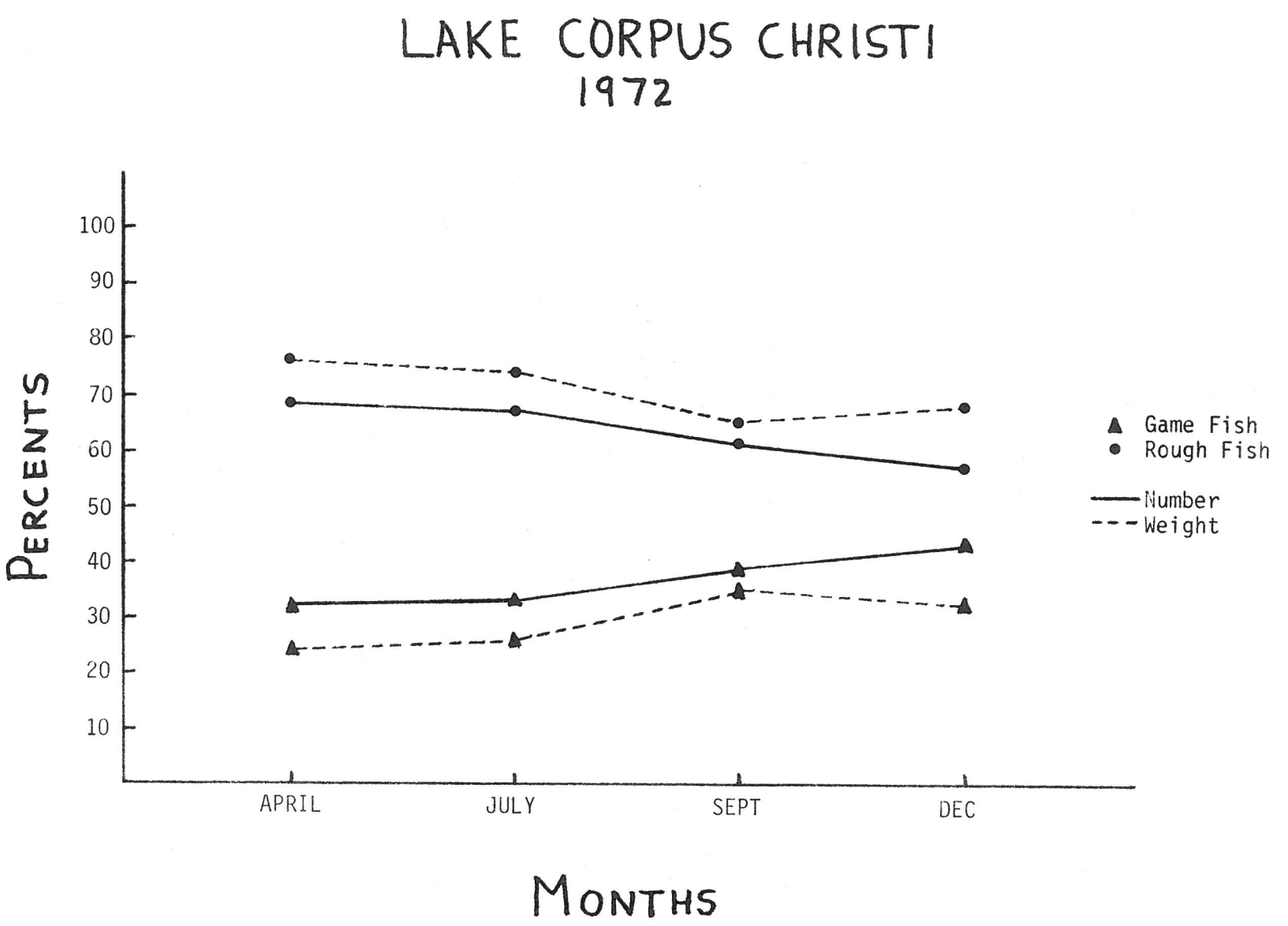
Table 3

Lake Corpus Christi Netting Results, 1972

Species		Station 1 No.	Station 1 Wt.	Station 2 No.	Station 2 Wt.	Station 3 No.	Station 3 Wt.	Station 4 No.	Station 4 Wt.	Station 5 No.	Station 5 Wt.	Total No.	Total %No.	Total Wt.	Total %Wt.	Ave. "K"	Ave. Wt.
Spotted gar		2	4.6	6	18.1	19	33.5	3	6.1			30	4.08	62.3	8.25		2.1
Longnose gar						1	0.7			1	2.3	2	0.27	3.0	0.40		1.5
Gizzard shad		26	12.8	32	12.8	32	9.3	23	7.4	9	5.1	122	16.58	47.4	6.28		0.4
Smallmouth buffalo		15	31.9	32	53.4	38	84.6	5	13.8	4	35.3	94	12.77	219.0	29.00		2.3
Carp		2	13.3	3	15.1	4	20.8			3	13.0	12	1.63	62.2	8.24		5.2
Blue catfish	*	28	38.4	12	14.9	5	6.8	20	28.1	14	12.6	79	10.73	100.8	13.35	1.65	1.3
Channel catfish	*	10	7.9	30	20.9	33	13.6	5	1.5	3	0.9	81	11.00	44.8	5.93	1.65	0.6
Flathead catfish	*	1	5.3	2	4.5			1	1.7			4	0.54	11.5	1.52	1.69	2.9
White bass	*	10	5.6	6	1.9	9	2.0	3	3.2	4	1.3	32	4.35	14.0	1.85	2.71	0.4
Warmouth	*			4	0.5							4	0.54	0.5	0.07	4.44	0.1
Redear sunfish	*			1	0.1	2	0.3					3	0.41	0.4	0.05	3.63	0.1
Redbreast sunfish	*			1	0.1							1	0.14	0.1	0.01	4.26	0.1
Longear sunfish	*			1	0.1							1	0.14	0.1	0.01	4.71	0.1
Bluegill	*	2	0.3	5	0.5	1	0.1	1	0.1	1	0.1	10	1.36	1.1	0.15	4.55	0.1
Largemouth bass	*			2	1.2			1	0.4			3	0.41	1.6	0.21	2.34	0.5
White crappie	*	9	5.9	6	3.3	11	5.9	3	2.1	7	2.4	36	4.89	19.6	2.60	2.97	0.5
Black crappie	*	1	0.1	6	1.0	2	0.3	3	0.6	2	0.8	14	1.90	2.8	0.37	3.43	0.2
Freshwater drum		19	11.2	27	20.9	66	54.2	26	17.2	69	60.4	207	28.12	163.9	21.70		0.8
Rio Grande perch				1	0.1							1	0.14	0.1	0.01		0.1
Total		125	137.3	177	169.4	223	232.1	94	82.2	117	134.2	736	100.00	755.2	100.00		
Game fish		61	63.5	76	49.0	63	29.0	37	37.7	31	18.1	268	36.41	197.3	26.12		
Rough fish		64	73.8	101	120.4	160	203.1	57	44.5	86	116.1	468	63.59	557.9	73.88		

* Denotes game fish

Figure 3. Lake Corpus Christi Game Fish - Rough Fish Ratios, 1972



with an annual pesticide monitoring survey. White crappie, black crappie, and white bass were present in satisfactory numbers. Smallmouth buffalo, freshwater drum, and gizzard shad constituted 90 per cent by number and 77 per cent by weight of the rough fish taken in nets. Only three largemouth bass were netted during the year; however, large numbers of 0-1 age group specimens were captured during seining activities revealing a highly successful spawn.

An abundance of game and forage fishes were present in the seine catches during each of the fisheries surveys. Game fish included largemouth bass, white bass, white crappie, and sunfish species. The major forage species seined were threadfin shad, gizzard shad, tidewater silversides, and grass shrimp (Palemonetes sp.). A reproducing population of mosambique tilapia were discovered with samples taken at the Hog Island and Lagarto Creek seining stations. No record of this species could be found in previous survey data.

In December, the lake was stocked with 7,800 advanced young channel catfish. All fish were finclipped to provide future information on growth and sexual development.

Heavy infestations of water stargrass (Heterantherus sp.) occurred over most of the lake's shoreline area during the early summer months. Experiments with granular 2,4-D (Aqua-Kleen 20 by AMCHEM) were conducted to determine the effectiveness of the chemical as a control measure. Distribution of the chemical was accomplished with a Cyclone spreader and by hand broadcasting. In July, three test plots were selected and treated at rates of 125, 145, and 187 pounds per acre,respectively. Poor results led to a second treatment in August of all three areas at the same dosage rate. A visible reduction in vegetation was noted, although the results were also unsatisfactory. In September a fourth test plot was selected and treated at a rate of 200 pounds per acre. This application resulted in a complete elimination of the stargrass within the test area.

Water analyses results are given in Table 4. Water quality was acceptable throughout the year. An unusually high turbidity reading (7500 JTU's) was recorded during the December survey at Station One. Due to the wide range in turbidity readings between the surface and bottom samples, it is probable that a small amount of bottom sediment was picked up in the water sampler, resulting in a high JTU reading.

Alice City Lake
(Jim Wells County)

A total of 13 experimental gill nets were utilized on Alice City Lake. Sampling trips were made in March, July, September, and December of the year.

The relative abundance and weights of game fishes collected were greater with rough fishes being considerably lower in 1972 than in previous years. Netting results for the four surveys in 1972 indicated that the numbers and weights of game fishes were rapidly declining (Figure 4). Game fish represented 60.2 per cent of the total number and 64.8 per cent of the total weight of all fishes netted (Table 5).

Table 4

Lake Corpus Christi Water Analyses Results, April, July, September, and December 1972.

Sta.No.	Date	Air Temp(°F)	Depth (ft.)	Water Temp(°F)	O_2 (ppm)	CO_2 (ppm)	ph-th Alk.	M.O. Alk.(ppm)	Jack Turb(JTU)	Cl^- (ppm)	pH	Total Hard.(ppm)
1	4-11-72	81.0°	Surface	74.0°	8.0	2.5	0	160.0	5.0	80.0	7.7	180.0
			Bottom(30')	72.0°	5.0	5.0	0	160.0	55.0	80.0	7.2	200.0
	7-10-72	86.0°	Surface	82.0°	7.0	2.5	0	140.0	18.0	97.5	7.4	235.0
			Bottom(30')	80.5°	5.0	2.5	0	140.0	38.0	110.0	7.2	225.0
	9-18-72	95.0°	Surface	85.0°	7.0	2.5	0	120.0	5.0	115.0	7.5	180.0
			Bottom(30')	84.0°	5.0	2.5	0	160.0	130.0	135.0	7.3	180.0
	12-5-72	68.0°	Surface	60.0°	9.0	2.5	0	140.0	5.0	115.0	7.3	210.0
			Bottom(29')	59.0°	8.0	2.5	0	140.0	> 500.0	115.0	7.1	220.0
2	4-11-72	80.0°	Surface	77.0°	8.0	2.5	0	160.0	20.0	90.0	7.3	200.0
			Bottom(10')	77.0°	6.0	2.5	0	160.0	70.0	90.0	8.3	210.0
	7-10-72	84.0°	Surface	82.5°	7.0	2.5	0	140.0	40.0	100.0	7.4	180.0
			Bottom(8.5')	82.5°	7.0	2.5	0	140.0	125.0	105.0	7.3	190.0
	9-18-72	89.0°	Surface	85.0°	8.0	0	0	140.0	25.0	100.0	8.4	190.0
			Bottom(10')	84.0°	7.0	2.5	0	150.0	60.0	105.0	7.6	180.0
	12-5-72	80.0°	Surface	62.0°	8.0	2.5	0	140.0	18.0	118.0	7.3	200.0
			Bottom(9')	64.0°	8.0	2.5	0	145.0	205.0	118.0	7.2	210.0
3	4-11-72	78.0°	Surface	78.0°	7.0	2.5	0	160.0	5.0	135.0	7.2	240.0
			Bottom(12')	77.0°	5.0	5.0	0	170.0	20.0	135.0	7.1	250.0
	7-10-72	84.0°	Surface	82.5°	7.0	5.0	0	150.0	40.0	100.0	7.6	190.0
			Bottom (17')	82.5°	6.0	7.5	0	150.0	90.0	100.0	7.5	190.0
	9-18-72	90.0°	Surface	85.0°	7.0	2.5	0	140.0	30.0	135.0	8.3	205.0
			Bottom(13')	85.0°	5.0	2.5	0	160.0	100.0	125.0	7.4	200.0
	12-5-72	78.0°	Surface	61.0°	9.0	2.5	0	140.0	18.0	110.0	7.0	200.0
			Bottom(15.5')	60.0°	7.0	2.5	0	140.0	145.0	110.0	7.0	200.0
4	4-11-72	79.0°	Surface	77.0°	8.0	5.0	0	140.0	8.0	85.0	7.5	180.0
			Bottom(60')	76.0°	2.0	7.5	0	170.0	32.0	65.0	6.7	190.0
	7-10-72	86.0°	Surface	82.5°	7.0	2.5	0	135.0	17.0	110.0	7.4	200.0
			Bottom(18')	80.5°	6.0	2.5	0	140.0	21.0	105.0	7.3	200.0
	9-18-72	90.0°	Surface	85.0°	6.0	2.5	0	140.0	20.0	95.0	8.3	200.0
			Bottom(32')	84.0°	5.0	2.5	0	150.0	45.0	105.0	7.4	180.0
	12-5-72	73.0°	Surface	60.0°	8.0	2.5	0	130.0	7.0	120.0	7.3	200.0
			Bottom(37')	59.0°	7.0	2.5	0	140.0	245.0	115.0	7.1	200.0

Table 4. (Continued)

Sta.No.	Date	Air Temp(°F)	Depth (ft.)	Water Temp(°F)	O_2 (ppm)	CO_2 (ppm)	ph-th Alk.	M.O. Alk.(ppm)	Jack Turb(JTU)	Cl^- (ppm)	ph	Total Hard.(ppm)
5	4-11-72	82.0°	Surface	78.0°	8.0	5.0	0	160.0	40.0	215.0	7.3	320.0
			Bottom(18')	77.0°	7.0	5.0	0	160.0	60.0	235.0	7.2	330.0
	7-10-72	84.0°	Surface	84.0°	5.0	2.5	0	160.0	53.0	162.5	7.6	225.0
			Bottom(23')	80.5°	4.0	2.5	0	170.0	250.0	155.0	7.2	250.0
	9-18-72	89.0°	Surface	84.0°	6.0	2.5	0	160.0	50.0	85.0	7.5	190.0
			Bottom(30')	84.0°	5.0	5.0	0	160.0	135.0	80.0	7.5	200.0
	12-5-72	68.0°	Surface	61.0°	9.0	2.5	0	150.0	22.0	115.0	7.1	210.0
			Bottom(28')	57.0°	6.0	2.5	0	170.0	130.0	150.0	7.0	250.0

Figure 4. Alice City Lake Game Fish - Rough Fish Ratios, 1972

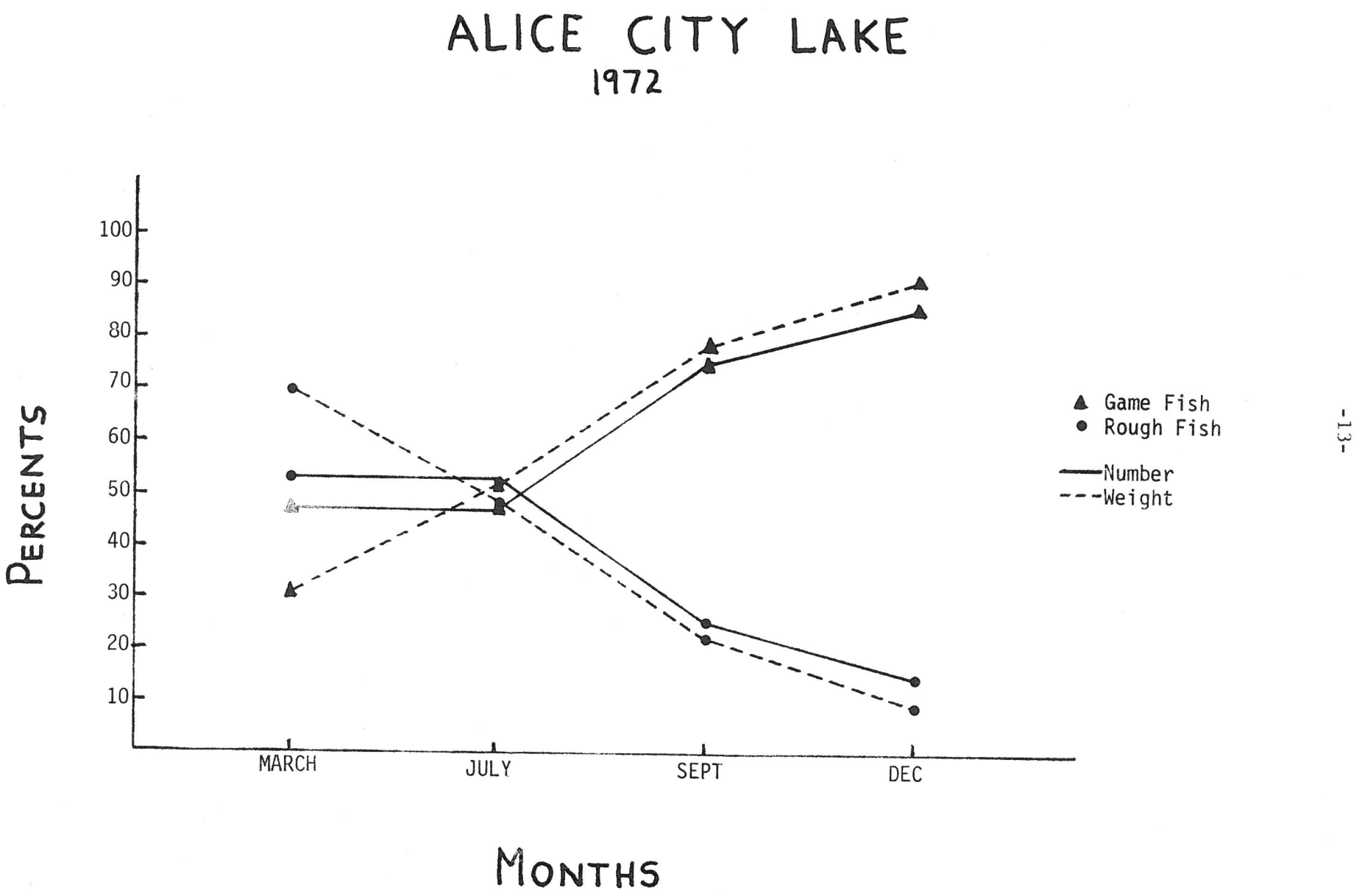


Table 5

Alice City Lake Netting Results, 1972

Species		No.	% No.	Wt.	% Wt.	Ave. K.	Ave. Wt.
Gizzard shad		152	23.64	61.1	14.55		.40
Carp		10	1.56	35.6	8.48		3.56
Goldfish		2	.31	1.7	.40		.85
Golden shiner		14	2.18	2.3	.55		.16
Smallmouth buffalo		2	.31	3.5	.83		1.75
Black bullhead		66	10.26	39.1	9.31		.59
Yellow bullhead		9	1.40	4.2	1.00		.47
Channel catfish	*	38	5.91	54.6	13.01	1.89	1.44
Green sunfish	*	4	.62	.5	.12	3.42	.13
Warmouth	*	34	5.29	8.7	2.07	4.03	.26
Bluegill	*	47	7.31	5.7	1.36	4.12	.12
Redear sunfish	*	114	17.73	31.8	7.58	4.31	.28
Largemouth bass	*	42	6.53	88.8	21.15	3.00	2.11
White crappie	*	33	5.13	39.2	9.34	3.27	1.19
Black crappie	*	75	11.66	42.6	10.15	3.40	.57
Rio Grande perch		1	.16	.4	.10		.4
Total		643	100%	419.8	100%		
Rough fish		256	39.8%	147.9	35.2%		
Game fish		387	60.2%	271.9	64.8%		

* Denotes game fish species

The rapid increase in game fish abundance may be correlated with lake water level. At the time of the first survey in March, the water level was near normal. During the next three surveys the water level dropped about three feet to a minimum level in December. This decreased the surface area of the lake from 100 to approximately 50 surface acres. This drawdown concentrated the fishes and may have allowed the game fishes to crop large numbers of the rough fishes. These larger game fishes may have also fed on their offspring whose numbers dwindled in the seine samples taken in September and December.

Sampling in December yielded an unusually high ratio of game fishes comprising 86 per cent by number and 91 per cent by weight of all fishes netted. Catches of white crappie and largemouth bass were large with 24 largemouth bass weighing 70 pounds being netted.

Seining activities in the first two surveys produced large numbers of age class 0 largemouth bass. This spawning success was much higher than in previous years. Forage fishes were fairly abundant during the first three surveys with fish collections being sparse in December. Large numbers of bluegill, pugnose minnow, gizzard and threadfin shad were collected. Numbers and size of golden shiners declined greatly from 1971 surveys.

Sampling in July was supplemented by nighttime trawling and electrofishing. Trawling efforts produced good numbers of game and rough fishes with bluegill and redear sunfish being predominant. Trawling also produced the first yellow bullhead collected at the lake as well as the only recapture out of 2,000 finclipped advanced young channel catfish which had been stocked in the lake in December, 1971. Electrofishing was also successful in collecting game and rough fishes from shoreline areas with largemouth bass and shad being predominant. Due to the low water levels, trawling and electrofishing were not attempted during later surveys.

Surface and bottom water samples were taken and analyzed during each survey (Table 6). Results of the analyses were considered normal for the lake and no significant changes in water quality were observed during the year.

Kleberg Park Lake
(Kleberg County)

The lake is approximately five acres in size and receives its water supply from nearby fields and range land. It has a maximum depth of about eight feet with gradually sloping banks and a heavily silted bottom. The lake has a high chloride content, total hardness, and turbidity. Widgeon grass, water stargrass, water primrose, and filamentous algae are the major plant species present. Small channel catfish and bluegill populations exist in the lake while other game fish are lacking. The lake also supports several fish species which are characteristically found in highly saline waters. These include striped mullet, gulf killifish, and sheepshead minnows. In December, the lake was stocked with 700 advanced young channel catfish in order to supplement the game fish population.

Table 6

Water Analyses Results of Region 5-B Waters, March, July, September and December 1972

Name of Water	Date	Air Temp(°F)	Depth (ft.)	Water Temp (°F)	O_2 (ppm)	CO_2 (ppm)	ph-th Alk.(ppm)	M.O.Alk. (ppm)	Jack Turb. (JTU)	Cl^- (ppm)	pH	Total Hard.(ppm)
Alice City Lake	3-28-72	90.0°	Surface	79.0°	8.0	2.5	0	160.0	26.0	20.0	7.5	140.0
			Bottom (8')	79.0°	7.0	2.5	0	150.0	30.0	20.0	7.3	140.0
	7-14-72	91.0°	Surface	82.0°	6.0	2.5	0	140.0	50.0	35.0	7.2	190.0
			Bottom (6')	82.0°	6.0	2.5	0	140.0	57.0	35.0	7.0	145.0
	9-14-72	84.0°	Surface	81.0°	7.0	2.5	0	130.0	55.0	90.0	7.2	190.0
			Bottom (3.5')	81.0°	7.0	2.5	0	130.0	95.0	90.0	7.3	190.0
	12-7-72	45.0°	Surface	52.0°	11.0	2.5	0	150.0	77.0	40.0	7.2	160.0
			Bottom (5')	48.0°	11.0	2.5	0	150.0	160.0	40.0	7.1	160.0
Kleberg Park Lake	3-23-72	X*	Surface	X*	7.0	2.5	0	220.0	40.0	615.0	7.5	490.0
			Bottom (8')	X*	5.0	2.5	0	220.0	170.0	170.0	7.5	550.0
	7-19-72	92.0°	Surface	85.0°	X**	0	0	120.0	40.0	1750.0	8.2	1170.0
			Bottom (7')	82.0°	X**	0	0	130.0	51.0	1785.0	8.2	1170.0
	9-12-72	88.0°	Surface	88.0°	6.0	2.5	0	140.0	20.0	2250.0	7.0	1450.0
			Bottom (5')	86.0°	6.0	5.0	0	140.0	20.0	2125.0	6.9	1250.0
	12-11-72	43.0°	Surface	51.0°	9.0	2.5	0	130.0	35.0	2555.0	7.4	>20,000 #
			Bottom (6.5')	51.0°	8.0	2.5	0	150.0	120.0	2710.0	7.6	>20,000 #
West Guth Park Lake	3-24-72	73.0°	Surface	72.5°	7.0	0	10	70.0	42.0	25.0	8.8	90.0
			Bottom (8')	72.5°	3.0	2.5	0	90.0	400.0	25.0	6.5	100.0
	7-17-72	86.0°	Surface	85.0°	9.0	0	10	60.0	34.0	60.0	7.3	80.0
			Bottom (8')	82.0°	4.0	0	0	60.0	67.0	60.0	6.9	100.0
Lakeview Park Lake	3-13-72	73.0°	Surface	66.0°	7.0	<4.0	0	60.0	140.0	55.0	7.0	110.0
			Bottom (4')	64.0°	7.0	<4.0	0	90.0	140.0	55.0	7.0	110.0
	7-17-72	86.0°	Surface	89.0°	9.0	0	0	90.0	10.0	110.0	7.2	135.0
			Bottom (8')	84.0°	4.0	0	0	100.0	75.0	110.0	7.1	150.0

* No reading due to broken thermometer.

** No reading due to depletion of test chemicals.

\# Unknown chemical may have interferred with titration reaction.

Management surveys were conducted in March, July, September, and December. Three experimental gill nets were set overnight during each survey. Only eight game fish were netted during the year (Table 7). Of the total net yield, only 14.3 per cent by number and 6.2 per cent by weight were game fish. Gizzard shad dominated the rough fish catch by number and in weight. Other rough fish netted included striped mullet, Rio Grande perch, black bullheads, and one gulf killifish.

Marginal seining produced an abundance of forage in the first three surveys of the year. However, forage was lacking during the December survey. Bluegills were the only game fish species caught during seining activities.

Water analyses results are presented in Table 6. It was noted that the lake level gradually dropped from a full level in March to about two feet below normal in December. As the water volume decreased, the chloride content and total hardness increased.

West Guth Park Lake
(Nueces County)

West Guth Park Lake is a shallow impoundment approximately one-half acre in size and is utilized primarily by children of the surrounding locality. It was surveyed in March and July of the year. Due to its small size, lack of water supply, and lack of spawning habitat, successful game fish reproduction cannot be expected. With periodic stocking, the lake could provide a satisfactory put, grow, and take fishery; therefore, in December it was stocked with 100 advanced young channel catfish.

Netting efforts yielded a total of 19 fishes. Game fishes represented 58 per cent by number of the catch and 63 per cent by weight. The species collected were channel catfish, black bullhead, and one goldfish (Table 8). Seining activities produced large numbers of mosquitofish; however, no other species were collected. Surface and bottom water samples were taken and analyzed during each survey. Results were considered normal and are listed in Table 6.

Lakeview Park Lake
(Nueces County)

Surveys at Lakeview Park Lake were undertaken in March and July, 1972. A total of four experimental gill nets were utilized.

Netting surveys yielded only 17 fishes. The species collected were largemouth bass, channel catfish, warmouth, and black bullhead. Game fish comprised 65 per cent by number and 70 per cent by weight of all fishes netted (Table 9). Several blue crabs (Callinectes sp.) were also taken from the nets. Seining produced small numbers of largemouth bass, Mexican tetra, and Rio Grande perch. Bluegills were present in fairly large numbers. Surface and bottom water samples were taken during both surveys with results (Table 6) which were considered normal for the lake.

None of the waters surveyed indicated a need for control of overabundant rough and/or game fish species.

Table 7
Kleberg Park Lake Netting Results, 1972

Species	No.	%No.	Wt.	%Wt.	Ave K.	Ave. Wt.
Gizzard shad	39	69.64	5.27	29.96		.14
Gulf killifish	1	1.79	.18	1.02		.18
Black bullhead	2	3.57	1.29	7.33		.65
Channel catfish *	2	3.57	.44	2.50	1.61	.22
Bluegill *	6	10.72	.66	3.75	4.25	.11
Rio Grande perch	4	7.14	.38	2.16		.10
Striped mullet	2	3.57	9.37	53.28		4.69
Total	56	100%	17.59	100%		
Rough fish	48	85.7%	16.49	93.7%		
Game fish	8	14.3%	1.10	6.3%		

* Denotes game fish species

Table 8
West Guth Park Lake Netting Results, 1972

Species	No.	%No.	Wt.	%Wt.	Ave K.	Ave. Wt.
Goldfish	1	5.27	1.87	24.77		1.87
Channel catfish *	11	57.89	4.77	63.18	1.44	.43
Black bullhead	7	36.84	.91	12.05		.13
Total	19	100%	7.55	100%		
Rough fish	8	42.1%	2.78	36.8%		
Game fish	11	57.9%	4.77	63.2%		

* Denotes game fish species

Table 9
Lakeview Park Lake Netting Results, 1972

Species	No.	%No.	Wt.	%Wt.	Ave K.	Ave. Wt.
Channel catfish *	2	11.76	.32	8.89	1.42	.16
Black bullhead	5	29.42	.85	23.61		.17
Warmouth *	4	23.53	.57	15.83	4.21	.14
Bluegill *	1	5.88	.09	2.50	4.63	.09
Largemouth bass *	4	23.53	1.54	42.78	2.59	.39
Rio Grande perch	1	5.88	.23	6.39		.23
Total	17	100%	3.60	100%		
Rough fish	6	35.3%	1.08	30.0%		
Game fish	11	64.7%	2.52	70.0%		

* Denotes game fish species

From data collected it was determined that not enough rough fish, smallmouth buffalo, carp or freshwater drum, of commercial size, were present in the project waters to warrant issuance of rough fish removal contracts to contract fishermen.

No suitable sites for additional public access to project waters were located during this segment.

RECOMMENDATIONS:

Survey data from recent years, as in 1972, indicates a poor flathead population exists in Lake Corpus Christi. Supplementary stocking of 10,000 advanced young flathead catfish (6-8 inches) is recommended upon availability from State hatcheries. It is also recommended that the statewide noxious vegetation project conduct a survey to determine the extent of water stargrass infestations and to determine an effective control measure if needed.

Stocking of advanced young (8-10 inches) flathead and blue catfish is recommended for Alice City Lake. A stocking ratio of 15 blue and 20 flathead catfish per surface acre could provide a control of the lake's rough fish population and provide two additional species for the sports fisherman.

Due to its limited size, high chloride content, and the presence of saltwater tolerant species, Kleberg Park should be considered as a candidate lake for saltwater introduction studies.

West Guth Park Lake is heavily utilized by local fishermen and periodic stocking of game fish species on a put, grow, and take basis is recommended.

Lakeview Park Lake has a limited water supply, shallow depth, and poor game fish reproduction. Lake overflow is extensive during periods of heavy rainfall allowing the migration of species into and out of the lake. Under these conditions, it is probable that established management practices would provide little improvement to the fishery. It is therefore recommended that management surveys be discontinued.

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