

FEDERAL AID IN FISHERIES RESTORATION ACT  
FISHERIES RESTORATION  
required by  
**JOB COMPLETION REPORT**

As required by

**FEDERAL AID IN FISHERIES RESTORATION ACT**

**TEXAS**

**Federal Aid Project No. F-6-R-10**

**FISHERIES INVESTIGATIONS AND SURVEYS OF THE WATERS OF REGION 5-B**

**Job No. B-20 Fisheries Reconnaissance**

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## ABSTRACT

Four public lakes and a portion of a resaca were visited during this segment to see if any appreciable changes in the fish populations had occurred since previous surveys. Fort Brown Lake, included in the 1961 reconnaissance survey, was not worked during the current segment due to recent draining and deepening of the lake.

In Delta Orchards Lake, near Monte Alto in Hidalgo County, game species including channel and blue catfish, white crappie and freshwater drum showed a relative increase in numbers and a relative decrease in weight.

In Bentsen State Park Lake, rough fish species including alligator gar, gizzard shad, bluegill and Rio Grande perch were dominant both in numbers and in weight with 86.45 per cent and 78.49 per cent respectively.

Game fish species including blue catfish, white bass, largemouth bass and warmouth comprised 23.47 per cent of the total number and 5.96 per cent of the total weight of fish taken in nets in Harlingen City Lake.

Resaca de la Guerra, near Brownsville, has an abundance of spotted gar, smallmouth buffalo, carp, striped mullet, bluegills and freshwater drum, but has a surprisingly lack of gizzard shad and river carpsucker. Thus an intensive resurvey was initiated (see completion report for Project F-6-R-10, Job B-22).

Gizzard shad showed a relative increase of nearly 100 per cent in Lake Corpus Christi; however, this figure is based on very limited data and is not taken to be conclusive.

Other than continued water hyacinth control work on Lake Corpus Christi, no recommendations for Federal Aid developmental work are made in this report.

## JOB COMPLETION REPORT

State of Texas

Project No. F-6-R-10

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

Job No. B-20

Title: Fisheries Reconnaissance

Period Covered: January 1, 1962 through December 31, 1962

### Objectives:

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

### Techniques Used:

Standard, 125-foot long, gill nets and common sense minnow seines were used to sample fish populations. The gill nets consisted of nylon webbing, 8-foot deep, with five 25-foot long sections of 1-, 1½-, 2-, 2½- and 3-inch square mesh. Nets were set overnight at previously established netting stations and fish specimens were taken from them the following morning. The netted specimens were weighed in grams and measured in millimeters in the field. Sex and sexual development and the occurrence of parasites in the individual specimens were recorded. Seined specimens were preserved and taken to project headquarters at Mathis for identification. A list of the common and scientific names of fish species taken during this study is included as Table 1.

Water analyses were made only on Delta Orchards Lake. In order to determine land usage and possible sources of pollution, a limited check was made of the surrounding area of each lake.

In comparing water levels, reference points were established on all lakes encountered with the exception of Lake Corpus Christi. The data for this lake were obtained from officials at Wesley Seale Dam.

Fishermen usage of the various lakes was determined by talking to camp owners, game wardens and sometimes to fishermen. Public access is available to all of the lakes studied in this segment.

### Findings:

#### Delta Orchards Lake

Delta Orchards Lake, a 2,200 surface acre irrigation reservoir near Monte Alto in Hidalgo County, is a part of the Hidalgo and Willacy Counties

Table 1. Checklist of species referred to in text and tables.

Common name	Scientific name
Alligator gar	<u>Lepisosteus spatula</u> Lacépède
Spotted gar	<u>L. oculatus</u> (Winchell)
Longnose gar	<u>L. osseus</u> (Linnaeus)
Threadfin shad	<u>Dorosoma petenense</u> (Günther)
Gizzard shad	<u>D. cepedianum</u> (LeSueur)
Smallmouth buffalo	<u>Ictiobus bubalus</u> (Rafinesque)
Carp	<u>Cyprinus carpio</u> Linnaeus
Pugnose minnow	<u>Opsopoeodus emiliae</u> Hay
Red shiner	<u>Notropis lutrensis</u> (Baird & Girard)
Shiner	<u>Notropis</u> sp.
Channel catfish	<u>Ictalurus punctatus</u> (Rafinesque)
Blue catfish	<u>I. furcatus</u> (LeSueur)
Flathead catfish	<u>Pylodictis olivaris</u> (Rafinesque)
Sheepshead minnow	<u>Cyprinodon variegatus</u> Lacépède
Mosquitofish	<u>Gambusia affinis</u> (Baird & Girard)
Sailfin molly	<u>Mollienesia latipinna</u> LeSueur
Amazon molly	<u>M. formosa</u> (Girard)
Striped mullet	<u>Mugil cephalus</u> Linnaeus
Tidewater silversides	<u>Menidia beryllina</u> (Cope)
White bass	<u>Roccus chrysops</u> (Rafinesque)
Largemouth bass	<u>Micropterus salmoides</u> (Lacépède)
Warmouth	<u>Chaenobryttus gulosus</u> (Cuvier)
Redear sunfish	<u>Lepomis microlophus</u> (Günther)
Bluegill	<u>L. macrochirus</u> Rafinesque
White crappie	<u>Pomoxis annularis</u> Rafinesque
Black crappie	<u>P. nigromaculatus</u> (LeSueur)
Freshwater drum	<u>Aplodinotus grunniens</u> Rafinesque
Rio Grande perch	<u>Cichlasoma cyanoguttatum</u> (Baird & Girard)

Water Control and Improvement District No. 1. The reservoir contains approximately 20,000 acre-feet of water which is used to irrigate nearly 70,000 acres of farm land. Water in the lake comes from the Rio Grande River and reaches the lake through a system of gravity flow irrigation canals.

Public angling in this lake is permitted for a fee of 25 cents per person per day. Trotline fishing is prohibited except to persons who are issued special permission. Fishing pressure decreased during the year due to the recent closing of a nearby U. S. Air Force base.

Netting - In March 1962, five netting collections took a total of 231 fish of nine species (Table 2). The game fish species taken in nets included channel and blue catfish, white crappie and freshwater drum. Normally the drum is considered a rough fish species, but is classed as a game fish in this case because anglers at Delta Orchards Lake harvest them in large numbers the year around.

Of the total fish taken in nets, game fish species comprised 71.43 per cent of the number and 32.14 per cent of the weight. A year previously, game fish comprised 68.17 per cent and 38.67 per cent by number and weight respectively. On the basis of these limited data, it appears that game fish species are increasing in numbers but decreasing in weight.

Compared with netting data for the same period in 1961, both blue catfish and white crappie showed relative increases in numbers. Blue catfish comprised 15.58 per cent of the 1962 net collection as compared to 10.63 per cent in March 1961. White crappie increased from 10.33 per cent in March 1961 to 21.21 per cent in March 1962.

Another game fish species, freshwater drum, however, showed a relative decrease during the 12-month period from 46.92 per cent in March 1961 to 33.77 per cent in March 1962.

Longnose gar showed an increase in numbers while gizzard shad showed a decrease in numbers during the period from March 1961 to March 1962. This may be explained in part by the gar feeding on the shad.

The average "K" factors, or indices of physical condition, for all four game fish species showed definite increases over the specimens taken in March 1961. Among the rough fish species, the average "K" factor of the small-mouth buffalo increased from 2.95 in the March 1961 collections to 3.28 in the March 1962 collections. Table 3 shows the length-weight statistics of the nine species of fish taken in nets.

Seining - Two seining collections took a total of 245 specimens of nine species (Table 4). Tidewater silversides comprised more than 75 per cent of the collections and threadfin shad comprised nearly 10 per cent.

Stomach analyses - Algae or fish remains were found in most of the channel and blue catfish stomachs. Visceral round worms were found in many of the white crappie and freshwater drum stomachs.

Table 2. Results of gill netting, Delta Orchards Lake, March 1962

Species	Numbers Taken	Per Cent of Total Number	Weights (pounds)	Per Cent of Total Weight
Alligator gar	2	0.87	8.1	3.67
Spotted gar	4	1.73	5.4	2.45
Longnose gar	30	12.99	70.8	32.05
Gizzard shad	8	3.46	1.8	0.81
Smallmouth buffalo	22	9.52	63.8	28.88
Channel catfish *	2	0.87	0.6	0.27
Blue catfish *	36	15.58	35.9	16.25
White crappie *	49	21.21	10.8	4.89
Freshwater drum *	78	33.77	23.7	10.73
Totals	231	100.00	220.9	100.00
Per Cent Game Fish		71.43		32.14
Per Cent Rough Fish		28.57		67.86

\* Indicates game fish

Table 3. Length-weight statistics of fish taken with experimental gill nets, Delta Orchards Lake, March 1962

Species	Standard Length (millimeters)		Weight (grams)		"K" factors	
	Range	Average	Range	Average	Range	Average
Alligator gar	612-662	637	1616-2041	1828	0.70-0.71	0.70
Spotted gar	393-550	450	394-1134	616	0.56-0.68	0.63
Longnose gar	443-955	647	310-5075	1402	0.31-0.58	0.42
Gizzard shad	132-224	175	42-191	104	1.34-1.87	1.70
Smallmouth buffalo	298-410	341	822-2381	1314	2.63-4.08	3.28
Channel catfish	170-250	210	74-218	146	1.40-1.51	1.46
Blue catfish	169-511	297	55-2495	453	1.14-1.87	1.39
White crappie	75-220	145	12-335	100	2.25-3.35	2.72
Freshwater drum	138-276	175	55-624	138	1.88-2.97	2.38

Table 4. Seining results, Delta Orchards Lake,  
March 1962

Species	Stations		Total	Per Cent of Total
	1	2		
Threadfin shad	24	0	24	9.79
Gizzard shad	7	1	8	3.26
Pugnose minnow	0	2	2	0.82
Red shiner	1	0	1	0.41
Sheepshead minnow	0	2	2	0.82
Mosquitofish	0	21	21	8.57
Sailfin molly	0	1	1	0.41
Amazon molly	0	1	1	0.41
Tidewater silversides	175	10	185	75.51
Totals	207	38	245	100.00

Lake Conditions - Although algae was found in several catfish stomachs, aquatic vegetation is scarce in the lake. This may be attributed in part to the fact that the prevailing, strong, southeasterly winds keep silt in suspension in this shallow lake.

Recommendations - Since wild fish from the Rio Grande River have constant access to Delta Orchards Lake, population control work would be ineffective and therefore is not recommended. It is recommended, however, that commercial fishing with nets be permitted in order to harvest as many of the undesirable fish as possible. Commercial netters should be prohibited from taking catfish so that this population be kept as abundant as possible.

In addition to the commercial netting of rough fish, it is recommended that white crappie and freshwater drum be harvested as heavily as possible by anglers in order to make full use of these species.

#### Bentsen State Park Lake

Netting - Three gill netting collections were made on this lake in April 1962. A total of 177 fish of seven species was taken and rough fish species, including the alligator gar, gizzard shad, bluegill and Rio Grande perch were dominant both in numbers and in weight (Table 5). Of the three game fish species taken, blue catfish and largemouth bass are the most important sport fishes. Their numbers, however, are limited.

This lake was chemically treated for a complete kill of fish in January 1960 (see Job Completion Report for Project F-14-D-4, Job 16a25) and restocked with largemouth bass in March 1960. Attempts in June 1960 to screen native fish from the incoming water of the Rio Grande River were unsuccessful (see Supplementary Report for Project F-14-D-4, Job 16a25).

The length-weight statistics of the netted specimens are presented in Table 6. No appreciable change was noted for any species.

Seining - The single seining collection was comprised of 21 fish of five species and included threadfin shad, gizzard shad, mosquitofish, tidewater silversides and redear sunfish (Table 7). Of these, the threadfin shad, which comprised 24 per cent of the netting collection, is the best forage fish. Mosquitofish dominated the collection, as they did a year earlier. No young largemouth bass were taken in the collection, indicating poor spawning success.

Lake Conditions - The water level has been abnormally low all year. The upper portion, or bend, of this oxbow lake is dry, but a total of approximately 10 acres of water still remains in both "arms" of the lake.

A new irrigation canal, completed in July 1961, was built immediately north of the state park to provide more water for farmers in Hidalgo County Water Control and Improvement Districts Numbers 7 and 14. Water is pumped directly from the Rio Grande River to supply the canal. At one time it seemed as though an agreement would be reached whereby the park lake would get its water from the irrigation canal. However, no such agreement has as yet been reached.

Table 5. Results of gill netting, Bentsen State Park Lake, April 1962

Species	Numbers Taken	Per Cent of Total Number	Weights (pounds)	Per Cent of Total Weight
Alligator gar	7	3.96	23.0	29.79
Gizzard shad	128	72.32	31.4	40.67
Blue catfish *	3	1.69	1.0	1.30
Largemouth bass *	7	3.96	13.1	16.97
Warmouth *	21	11.86	2.5	3.24
Bluegill	6	3.39	4.9	6.35
Rio Grande perch	5	2.82	1.3	1.68
Totals	177	100.00	77.2	100.00
Per Cent game fish		13.55		21.51
Per Cent rough fish		86.45		78.49

\*Indicates game fish

Table 6. Length-weight statistics of fish taken with experimental gill nets, Bentsen State Park Lake, April 1962

Species	Standard Length (millimeters)		Weight (grams)		"K" factors	
	Range	Average	Range	Average	Range	Average
Alligator gar	710-710	710	250-3600	1492	1.01-1.01	1.01
Gizzard shad	134-270	215	49-393	92	1.69-2.52	2.00
Blue catfish	350-370	358	822-936	850	1.77-1.92	1.84
Largemouth bass	168-305	225	118-794	369	2.20-2.88	2.50
Warmouth	120-200	148	66-324	153	3.58-4.05	3.81
Bluegill	97-120	107	38-74	54	4.13-4.79	4.37
Rio Grande perch	145-145	145	134-134	134	4.40-4.40	4.40

Table 7. Seining results, Bentsen State Park Lake,  
April 1962

Species	Station 1	Total	Per Cent of Total
Threadfin shad	5	5	23.81
Gizzard shad	3	3	14.29
Mosquitofish	9	9	42.85
Tidewater silversides	3	3	14.29
Redear sunfish	1	1	4.76
Totals	21	21	100.00

Recommendations - Periodic netting and seining checks should be continued to check changes and developments in the fish population. An annual reconnaissance survey should be adequate. No further developmental work is planned because of the unfavorable water supply.

#### Harlingen City Lake

This 20-acre lake is located in downtown Harlingen and is the city's water supply reservoir. Water in the lake originates from the Rio Grande River and reaches the lake through a system of gravity flow irrigation canals.

Public angling is permitted on this lake without restrictions or limitations, but little fishing is done due to the preponderance of rough fish species.

Netting - Six gill netting collections were made on this lake: three in April and three in September. In these collections, a total of 98 fish of ten species was taken (Table 8). The game fish species taken in nets included blue catfish, white bass, largemouth bass and warmouth.

Of the total fish netted, game fish comprised 23.47 per cent of the number and 5.96 per cent of the weight. No comparison was made since this was the first such reconnaissance survey made of this lake.

Longnose gar, gizzard shad and smallmouth buffalo, in that order, are the ranking rough fish species. Collectively, they comprised 63.27 per cent of the total number and 84.80 per cent of the total weight of the fish netted.

The length-weight statistics of the fish taken in nets are presented in Table 9. The average "K" factors appear to be normal for all species of fish in this area.

Seining - Four seining collections were made at two stations. The combined results included 197 fish of seven species (Table 10). Tidewater silversides, threadfin shad, mosquitofish and pugnose minnow, in that order, comprised 91.88 per cent of the total number.

Stomach Analyses - Shad, tidewater silversides and unidentifiable fish remains were found in most of the spotted and longnose gar stomachs, while insect remains were found in most of the blue catfish stomachs. Algae was also present in several of the catfish stomachs.

Stomachs of the gizzard shad, smallmouth buffalo, striped mullet and freshwater drum were not examined.

Lake Conditions - Although algae was found in several catfish stomachs, aquatic vegetation is scarce in the lake. Shoreline vegetation consists mainly of bulrushes, mixed with a few cattails.

Secchi disc readings of light penetration ranged from 10- to 11½-inches. It is believed that the turbidity is caused largely by bottom-feeding fishes

Table 8. Results of gill netting, Harlingen City Lake, April and September 1962

Species	Numbers Taken	Per Cent of Total Number	Weight (pounds)	Per Cent of Total Weight
Spotted gar	5	5.10	13.8	6.97
Longnose gar	22	22.45	100.4	50.71
Gizzard shad	22	22.45	4.9	2.47
Smallmouth buffalo	18	18.37	62.6	31.62
Blue catfish *	20	20.41	9.9	5.00
Striped mullet	1	1.02	2.5	1.26
White bass *	1	1.02	1.0	0.51
Largemouth bass *	1	1.02	0.8	0.40
Warmouth*	1	1.02	0.1	0.05
Freshwater drum	7	7.14	2.0	1.01
Totals	98	100.00	198.0	100.00
Per Cent game fish		23.47		5.96
Per Cent rough fish		76.53		94.04

\* Indicates game fish

Table 9. Length-weight statistics of fish taken with experimental gill nets, Harlingen City Lake, April and September 1962

Species	Standard Length (Millimeters)		Weight (grams)		"K" factors	
	Range	Average	Range	Average	Range	Average
Spotted gar	510-625	570	822-1673	1253	0.60-0.75	0.65
Longnose gar	482-985	758	539-4649	2069	0.39-0.58	0.45
Gizzard shad	126-212	177	43-164	101	1.35-2.15	1.72
Smallmouth buffalo	246-496	348	111-5046	1576	3.18-5.37	3.93
Blue catfish	179-392	237	80-1304	224	1.19-2.16	1.36
Striped mullet	375-375	375	1134-1134	1134	2.15-2.15	2.15
White bass	260-260	260	458-458	458	2.61-2.61	2.61
Largemouth bass	244-244	244	350-350	350	2.41-2.41	2.41
Warmouth	112-112	112	60-60	60	4.27-4.27	4.27
Freshwater drum	122-246	155	50-391	126	2.60-3.15	2.82

Table 10. Seining results, Harlingen City Lake,  
September 13, 1962

Species	Stations		Total	Per Cent of Total
	1	2		
Threadfin shad	6	46	52	26.40
Pugnose minnow	19	1	20	10.15
Red shiner	1	5	6	3.04
Shiner	0	1	1	0.51
Mosquitofish	32	10	42	21.32
Amazon molly	2	7	9	4.57
Tidewater silversides	47	20	67	34.01
Totals	107	90	197	100.00

which keep silt in suspension, rather than the prevailing southeasterly wind.

Recommendations - Under present conditions, catfish and crappie are the species most likely to afford good sports fishing. Anglers should be encouraged to fish for both gars and smallmouth buffalos and controlled commercial netting should be permitted but the taking of catfish should be prohibited.

#### Resaca de la Guerra

Resaca de la Guerra is an old stream bed of the Rio Grande River which skirts a portion of the northern edge of the City of Brownsville. The water in the resaca is pumped from the Rio Grande River approximately four miles away.

Netting - Five gill netting collections were made during the reconnaissance period, however, data were obtained from only four nets because one was stolen. The gill nets took a total of 76 fish of 12 species (Table 11).

Rough fish species including spotted gar, smallmouth buffalo, carp, striped mullet, bluegill and freshwater drum comprised 64.48 per cent of the total number and 80.55 per cent of the total weight. Smallmouth buffalo ranked first by number and first by weight, and spotted gar ranked second by number and weight.

Game fish species including channel, blue and flathead catfish, largemouth bass and white and black crappie comprised 35.52 per cent of the total number and 19.45 per cent of the total weight.

The length-weight statistics of the fish taken in the nets are presented in Table 12. Since no comparable data are available, no comparison was made, but all average "K" factors appear to be normal for this area.

Seining - A total of 26 fish of five species was taken in one seining collection (Table 13). Tidewater silversides comprised 50 per cent of the total number taken.

Stomach Analyses - Insect remains were found in the stomach of one bass and also in the stomach of one bluegill. Unidentifiable fish remains were found in the stomach of one white crappie. All other stomachs of carnivorous species were empty.

Recommendations - It was recommended that a more intensive study be made of Resaca de la Guerra in order to formulate plans for improving sports fishing. This work was done under Job B-22, D-J Project F-6-R-10.

#### Lake Corpus Christi

Netting - A total of eight gill net collections was made on Lake Corpus Christi during September 1962. All were surface sets in water ranging from 5- to 55-feet in depth. All told, these nets took 425 fish of 13 species (Table 14).

Table 11. Results of gill netting, Resaca de la Guerra, May 1962

Species	Numbers Taken	Per Cent of Total Number	Weight (pounds)	Per Cent of Total Weight
Spotted gar	18	23.69	22.4	18.53
Smallmouth buffalo	21	27.63	70.6	58.40
Carp	1	1.32	0.9	0.74
Channel catfish *	16	21.05	10.9	9.02
Blue catfish *	2	2.63	3.2	2.65
Flathead catfish *	1	1.32	7.1	5.87
Striped mullet	1	1.32	1.2	0.99
Largemouth bass *	4	5.26	1.0	0.83
Bluegill	4	5.26	0.3	0.24
White crappie *	2	2.63	0.7	0.58
Black crappie *	2	2.63	0.6	0.50
Freshwater drum	4	5.26	2.0	1.65
Totals	76	100.00	120.9	100.00
Per Cent game fish		35.52		19.45
Per Cent rough fish		64.48		80.55

\*Indicates game fish

Table 12. Length-weight statistics of fish taken with experimental gill nets, Resaca de la Guerra, May 1962

Species	Standard Length (Millimeters)		Weight (grams)		"K" factors	
	Range	Average	Range	Average	Range	Average
Spotted gar	348-653	436.2	228-1786	565.4	0.50-0.78	0.59
Smallmouth buffalo	121-551	325.5	65-6662	1524.1	2.90-3.98	3.39
Carp	237-237	237.0	396-396	396.0	2.97-2.97	2.97
Channel catfish	173-377	256.3	77-936	308.3	1.26-1.76	1.58
Blue catfish	315-373	344.0	510-936	723.0	1.63-1.80	1.72
Flathead catfish	513-513	513.0	3204-3204	3204.0	2.37-2.37	2.37
Striped mullet	315-315	315.0	567-567	567.0	1.81-1.81	1.81
Largemouth bass	156-188	174.8	82-132	110.5	1.72-2.28	2.07
Bluegill	94-102	97.5	37-42	39.0	3.92-4.68	4.23
White crappie	143-192	167.5	95-225	160.0	3.12-3.25	3.19
Black crappie	168-173	170.5	130-136	133.0	2.63-2.74	2.69
Freshwater drum	182-274	211.5	151-402	226.0	1.95-2.51	2.30

Table 13. Results of seining collections,  
Resaca de la Guerra, May 15, 1962

Species	Total	Per Cent of Total Number
Gizzard shad	6	23.07
Mosquitofish	3	11.53
Tidewater silversides	13	50.00
Redear sunfish	2	7.70
Rio Grande perch	2	7.70
Totals	26	100.00

Table 14. Results of gill netting, Lake Corpus Christi, September 1962

Species	Numbers Taken	Per Cent of Total Number	Weights (pounds)	Per Cent of Total Weight
Alligator gar	4	0.94	32.6	9.45
Spotted gar	23	5.41	58.7	17.05
Longnose gar	10	2.35	63.6	18.44
Gizzard shad	170	40.00	48.0	13.94
Smallmouth buffalo	2	0.47	14.6	4.23
Channel catfish *	57	13.41	17.4	5.06
Blue catfish *	52	12.24	35.7	10.36
White bass *	13	3.06	21.7	6.29
Bluegill	4	0.94	0.4	0.10
White crappie *	48	11.30	20.7	6.02
Black crappie *	2	0.47	0.7	0.20
Freshwater drum	39	9.18	30.4	8.83
Rio Grande perch	1	0.23	0.1	0.03
Totals	425	100.00	344.6	100.00
Per Cent game fish		40.48		27.93
Per Cent rough fish		59.52		72.07

\*Indicates game fish

Rough fish species including alligator, spotted and longnose gars, gizzard shad, smallmouth buffalo, bluegill, freshwater drum and Rio Grande perch comprised 59.52 per cent of the number of fish netted, and 72.07 per cent of the weight.

Gizzard shad alone comprised 40 per cent of the total fish taken in nets. However, these limited data are not considered conclusive in that the resurvey of 1961 showed the shad population to be 21.53 per cent. It is probable that this high percentage of shad is largely due to the fact that most of the nets were located in open water areas where shad are more likely to be found.

No largemouth bass were taken in nets, but fishermen catch this species in good numbers, especially in the spring and fall.

Collectively, channel and blue catfish, and white and black crappie comprised 37.42 per cent of the number, and 21.64 per cent of the weight.

The white bass were concentrated in the lower portions of the lake in September but most fishermen reported that they were unsuccessful in catching them.

The length-weight statistics presented in Table 15 are normal for this lake. No significant changes were noted.

Seining - Three seining collections took a total of 447 fish of eight species (Table 16). Tidewater silversides, threadfin shad and red shiners, in that order, were the most frequently encountered fishes. Collectively, these three species comprised 85.91 per cent of the fish seined.

Stomach Analyses - Unidentifiable fish remains were found in the stomachs of both alligator and spotted gar. Also, one catfish was found in an alligator gar's stomach. Insect remains were found in three white bass stomachs, fish remains were in two stomachs, and seven were empty.

Lake Conditions - Chemical control of water hyacinths in the upper portions of Lake Corpus Christi was continued under Job 15a4, Project F-15-D-4. Such work is necessary in order to maintain access for fishermen (see completion report for Project F-15-D-4, Job 15a4).

Water stargrass has become a problem around boat docks and boat channels. This problem will be partly solved when the lake refills.

The water level varied from one to five feet below the 88-foot crest of the dam during the year (Table 17). In early June 1962, the lake rose two feet, but soon began to drop again. Undoubtedly the dropping water level will affect the spawning of centrarchids, especially largemouth bass and crappies, if it continues into the next spring.

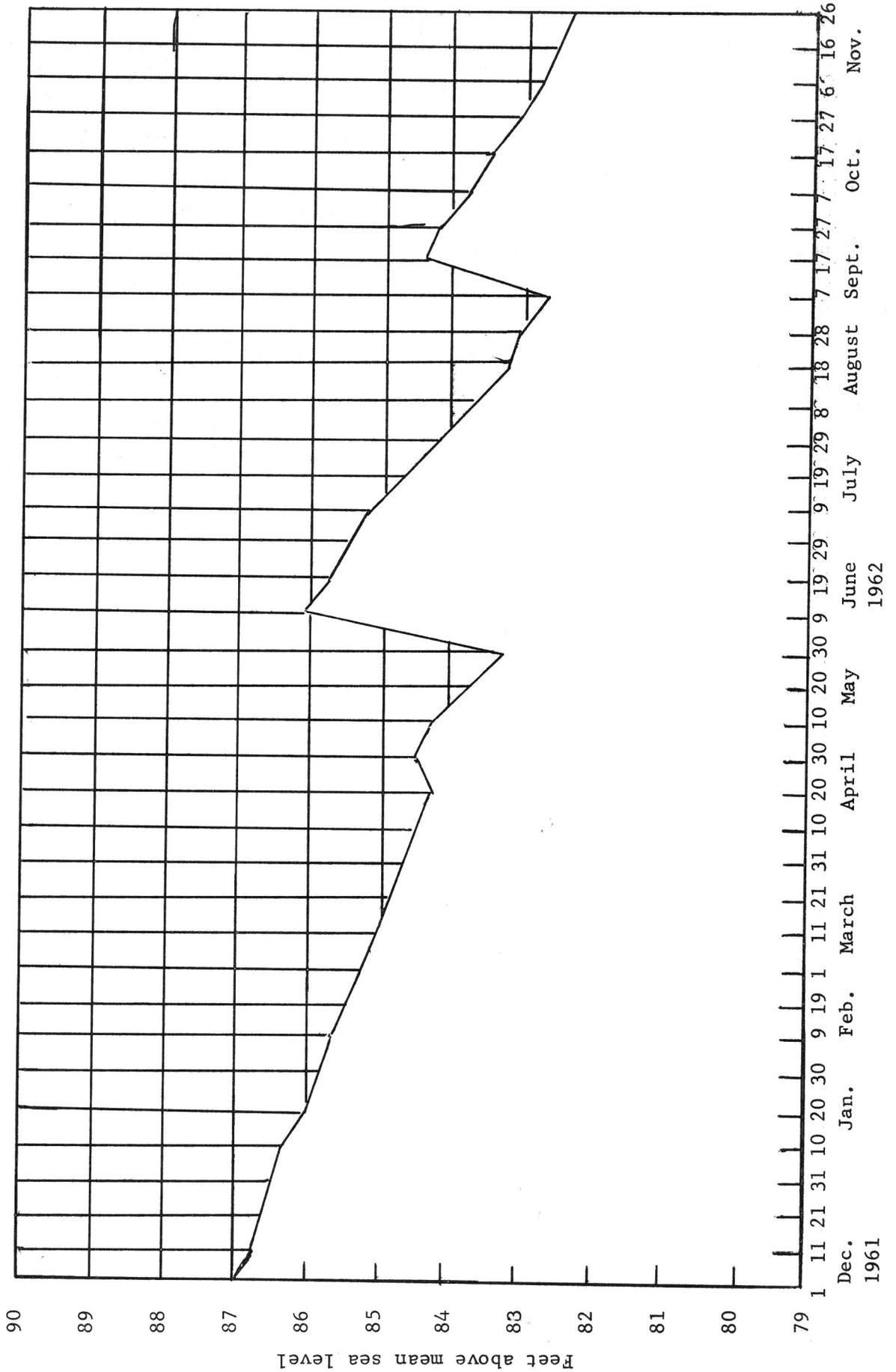
Table 15. Length-weight statistics of fish taken with experimental gill nets, Lake Corpus Christi, September 1962

Species	Standard Length (millimeters)		Weight (grams)		"K" factors	
	Range	Average	Range	Average	Range	Average
Alligator gar	696-875	786	3090-7002	4923	0.70-0.96	0.85
Spotted gar	324-698	470	182-3235	1087	0.32-1.23	0.74
Longnose gar	536-965	785	737-4338	2883	0.31-0.65	0.54
Gizzard shad	117-305	175	25-680	128	1.07-2.74	2.01
Smallmouth buffalo	384-422	403	2381-4224	3302	4.20-5.62	4.91
Channel catfish	103-355	198	14-851	138	1.26-1.91	1.52
Blue catfish	146-464	250	48-1588	311	1.29-3.07	1.64
White bass	246-301	268	482-1049	803	2.97-5.72	4.24
Bluegill	90-110	96	35-53	41	3.98-4.80	4.26
White crappie	120-241	186	49-426	197	2.50-3.67	2.91
Black crappie	164-169	166	146-173	159	3.31-3.58	3.44
Freshwater drum	132-285	211	59-1021	354	2.19-5.84	3.23
Rio Grande perch	94-94	94	41-41	41	4.92-4.92	4.92

Table 16. Seining results, Lake Corpus Christi, September 1962

Species	Stations			Total	Per Cent of Total
	1	2	3		
Threadfin shad	77	2	1	80	17.90
Pugnose minnow	2	15	9	26	5.82
Red shiner	1	33	30	64	14.32
Channel catfish	0	0	1	1	0.22
Mosquitofish	22	10	3	25	5.59
Tidewater silversides	22	14	204	240	53.69
Bluegill	6	3	0	9	2.01
Rio Grande perch	1	1	0	2	0.45
Totals	131	68	248	447	100.00

Table 17. Lake Corpus Christi water levels, December 1961 through November 1962.



Recommendations - Quarterly checks should be made on the lake during the coming segment to gather more information on the status of the fish population.

Water hyacinth eradication will be attempted through the use of aircraft.

For information purposes a comparison of netting success is included as Table 18.

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Date May 27, 1963

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Table 18. Success of gill netting on all lakes in terms of number and pounds of fish caught

Lake and Date	Number of Nets	Number of Feet of Nets	Number of Fish Caught	Average Number of Fish/Net	Average Number of Fish/Foot of Net	Pounds of Fish Caught	Average Pounds of Fish/Net	Average Pounds of Fish/Foot of Net
Resaca de la Guerra May 1962	4*	500	76	19.0	0.152	120.9	30.2	0.241
Lake Corpus Christi September 1962	8	1,000	425	53.1	0.425	344.6	43.1	0.344
Delta Orchards Lake March 1962	5	625	231	46.2	0.369	220.9	44.2	0.353
Bentson State Park Lake April 1962	3	375	177	59.0	0.472	77.2	25.7	0.205
Harlingen City Lake April & September 1962	6	750	98	16.3	0.130	198.0	33.0	0.264

\*Five nets were set, but one set was stolen and is not included.

