

Report of Fisheries Investigations  
Resurvey of the Waters of Region 8-B.

by

Charles Menn  
Assistant Project Leader

Dingell-Johnson Project F-6-R-6, Job B-11  
July 1, 1958 - June 30, 1959

H. D. Dodgen - Executive Secretary

Texas Game and Fish Commission  
Austin, Texas

Marion Toole  
Coordinator

Kenneth C. Jurgens & William H. Brown  
Assistant Coordinators



## Job Completion Report

State of TEXAS

Project No. F-6-R-6

Name: Fisheries Investigations and Surveys  
of the Waters of Region 8-B.

Job No. B-11

Title: Resurvey of the Waters of Region 8-B.

Period Covered:

July 1, 1958 - June 30, 1959

### Abstract:

During the period from July 1, 1958 through June 30, 1959, five lakes including Falcon Lake, Lake Corpus Christi, Bentsen State Park Lake, Llano Grande Lake, and Campacuas Lake were resurveyed.

In Falcon Lake, rough fish appeared to be increasing in numbers but decreasing in weights. Water levels varied approximately 20 feet during the first half of this segment. This was generally higher than in the previous segment.

The rough fish in Lake Corpus Christi appeared to be increasing in numbers although sports fishermen continued to have better than average success in catching black bass and white crappie. The lake level remained relatively constant during the year, varying less than 10 feet, as compared to the previous year's fluctuation of about 15 feet. The deeper water of the new lake aided in clearing up the water, to some extent, which will be favorable to the black bass population. A total of 164,000 black bass fingerlings and fry and 6,000 channel catfish fingerlings were planted in the lake during the year to supplement the existing population.

Three netting collections made on Bentsen State Park Lake during this segment indicate that rough fish at present dominate the fish population as a result of introductions from the Rio Grande River during the fall flood of 1958. A complete kill of fish should be made and the lake restocked with game fish.

Netting samples on Llano Grande and Campacuas Lakes, after rotenone treatment, showed that rough fish were greatly reduced in numbers and weights but a complete kill of fish was not obtained. A total of 10,000 channel catfish fingerlings was stocked in Campacuas Lake and a total of 20,000 channel catfish and 10,500 black bass fingerlings was stocked in Llano Grande Lake.

### Objectives:

To determine the present status of waters and fish populations which have been previously surveyed in Project F-6-R.

### Procedure:

Fish samples were collected by means of standard experimental gill nets and small mesh minnow seines in Falcon Lake and Bentsen State Park Lake; only netting collections

were made on Lake Corpus Christi and Llano Grande and Campacuas Lakes.

Netted specimens were weighed and measured in the field. Sex, state of sexual development and the occurrence of parasites of the individual specimens were also noted and recorded in the field. Seined specimens were preserved in 10% formalin and taken to the regional fisheries laboratory for identification.

#### Findings:

##### Falcon Lake

During the segment period 14 gill net and 4 seine collections of fish specimens were made on Falcon Lake. All of the nets were set at the surface in water ranging from 10 to 70 feet in depth. Of the 14 gill net collections, 2 were made in August 1958 and 12 were made in March 1959. The results of the gill net collections are presented in Figures 1 through 4. Those of the seine collections are given in Figure 5 and the variations in lake level are shown on the chart in Figure 6.

On the basis of netting data collected in March 1959, compared with comparable data collected in March of 1958 (see Tables XV and XVI, Job Completion Report for Job B-11, Project F-6-R-5) it appears that the relative abundance of those species considered rough fish continue to increase. They comprised 79.29 percent of the fish netted in March 1958 and increased to 82.88 percent of the fish netted in March 1959. The relative weight of these species, however, has decreased.

Of the fish species netted during March 1959, there were four noticeable changes compared with the data for netting in March of 1958. Gizzard shad, Dorosoma cepedianum, increased in the net catch from 23.37 percent of the total fish netted to 62.06 percent. This was an increase of 38.69 percent of the total fish taken in nets. Similarly this species increased 6.57 percent of the total weight of the netted fish. The long-nose gar, Lepisosteus osseus, increased by 10.81 percent of the total number and 28.91 percent of the weight. The smallmouth buffalo, Ictiobus bubalus, on the other hand, decreased 19.82 percent of the number and 33.04 percent of the weight. The only other significant change was the reduction in the relative abundance of white bass, Roccus chrysops, in the total fish netted. White bass dropped 9.11 percent by number and 12.34 percent by weight compared with data for the same period in 1958.

The apparent increases and reductions in relative abundance and weight of the species mentioned may be explained in part by the fact that all of the nets set in March of 1959 were surface sets. This would account for the larger number of longnose gars taken and would be reflected in number and weight figures.

Since no comparable data exists for August of 1957 the data collected for August 1958 need not be mentioned except to point out that they also indicate a relatively large number of rough fish in Falcon Lake.

In the four seining collections made on Falcon Lake in March 1959, tidewater silversides (Menidia beryllina), the most abundant species collected, comprised 78.59 percent of the total number and threadfin shad (Dorosoma petenense) comprised 18.91 percent. Redhorse shiners (Notropis lutrensis), sea pupfish (Cyprinodon variegatus) and black bass (Micropterus salmoides) combined comprised only 2.5 percent of fish taken in the seine collections (Figure 5). No earlier comparable seine collections were available.

Water levels varied approximately 21 feet during the period from July through December 1958. Water levels, recorded at 10-day intervals, given in Figure 6, indicate the lake was lowest during the latter part of August and highest in mid-October. The water levels for the second half of this segment will be included in the Completion Report for Job B-11, Project F-6-R-7.

#### Lake Corpus Christi

During October and November 1958, a total of 15 experimental gill nets were set in Lake Corpus Christi. The 400 fish, of 15 species, taken in the gill net collections are shown by species in Figure 7. The minimum, maximum and average lengths, as well as the weight ranges (in grams) and "K" factors of these fish are presented in Figure 8.

Of the 400 fish collected, game fish comprised approximately 38 percent of the total number and 25 percent of the weight. In comparing these results with comparable data for 1957, game species showed a slight decrease in numbers and weight (see Job Completion Report, Job B-11, F-6-R-5, Tables III and IV). According to the netting samples, two significant changes regarding the rough species occurred. Spotted gar, Lepisosteus productus, increased by 12.36 percent of the total fish netted and gizzard shad, Dorosoma cepedianum, decreased by 7.72 percent. Similarly, channel catfish, Ictalurus punctatus, showed an increase of 6.38 percent and white crappie, Pomoxis annularis, decreased 7.48 percent. In spite of the apparent decrease in overall game fish numbers, sports fishermen report taking large numbers of largemouth bass (Micropterus salmoides) and white crappie.

Water level data for Lake Corpus Christi, obtained from the Lower Nueces River Water Supply District, were fairly constant as compared with those for the previous year. The lowest level, recorded on July 1, 1958, was 82.61 feet above mean sea level. This was at a time when the new lake was beginning to fill. The highest level, 89.58 feet, was recorded on October 9, 1958. Figure 9 contains water level data for Lake Corpus Christi, recorded at 10-day intervals, for the period from July 1958 through June 1959.

The crest of the new dam, completed in April 1958, is 88 feet as compared to the 74 foot crest of the old dam. The water in the lake, during this segment, was considerably clearer than in the previous segment probably due to enlargement of the lake, the addition of approximately 14 feet of water, and a relatively constant lake level. The clearer water, within limits, should provide better bass fishing due to better conditions for spawning and growing. Turbidity readings, in terms of light penetration in inches measured with a Secchi disk, were made on the lake at special stations set up for that purpose. Figure 11 gives the Secchi disk readings made in July 1958, and March 1959. After filling and flood silts settled, the lake had a brown discoloration probably due to decaying organic substances of the new lake bottom. A total of 29 readings was made at 17 stations during the year (Figure 10). The minimum reading was 19 inches and the maximum was 44 inches, with a mean average reading of 26.19 inches. In previous work, it was found that the minimum reading was 9 inches and the maximum was 28 inches with an average of 11.56 inches.

A total of 16 water analyses were made at five locations on the lake during October and November, 1958 (Figure 10). The water samples, taken from the surface and, where possible, down to 30 feet in depth were analyzed for oxygen, carbon dioxide, methyl orange alkalinity, ph-th alkalinity, and pH. The results of these tests, given

in Figure 12, are normal for this region and apparently are little different from the old lake.

A total of 164,000 largemouth bass and 6,000 channel catfish was stocked in the lake during the year. On July 11, 1958, 14,600 fingerling bass were stocked in the upper part of the lake where sufficient cover and food were available. These fish were obtained from the Medina State Fish Hatchery. On March 10, 1959, 150,000 black bass fry from the Olmito State Fish Hatchery were stocked at four locations on the lake to supplement the existing population. Also, 6,000 channel catfish fingerlings from the Olmito State Hatchery were stocked on October 21, 1958.

#### Bentsen State Park Lake

A total of 70 fish of 8 species was taken in three experimental gill nets during this segment. The netting samples showed that rough fish comprised 80.00 percent of the total number and 86.62 percent of the weight. The three gill nets were set in water ranging from 6 to 24 feet in depth.

During the basic survey, made in 1954 and 1955, largemouth bass were reported present, but in small numbers. None was taken by gill nets or minnow seines during the present resurvey. In October and November 1958, high floodwaters on the Rio Grande River, less than a mile from the lake, overflowed into this ox-bow lake and probably caused considerable changes in the fish population. Blue catfish (Ictalurus furcatus) was the only game species found in this resurvey, and they comprised 20.00 percent of the total fish netted.

Figure 13 presents the results of netting collections including the numbers and weights of the fish taken by species. The minimum, maximum and average lengths as well as the "K" factors of the fish taken in these collections are shown in Figure 14.

A total of 430 fish of 9 species was taken in two seining collections using a 20-foot "common sense" minnow seine, 4-feet deep with  $\frac{1}{4}$ -inch mesh. The most abundant species taken was Gambusia affinis which comprised 77.44 percent of the number. Figure 15 shows the numbers and percent of fish taken in the two seining collections made in April 1959.

In view of the large percentage of rough fish present, this lake should be chemically treated to remove the present fish population and desirable game fish restocked. Since immediate danger of a major flood seems slight, renovation of Bentsen State Park Lake should result in a very good and popular fishing lake.

#### Llano Grande and Campacuas Lakes

Two natural lakes lying in the Llano Grande Floodway, Campacuas and Llano Grande Lakes, were chemically treated with 5% rotenone in May 1959 (Project F-14-D, Job 16a-18) to remove the existing fish population which was found to be approximately 89.00 percent rough fish and 11.00 percent game fish (Project F-6-R-6, Job B-12; Table III, page 13).

Approximately one month after the treatment of these lakes, nine experimental gill nets were set in Campacuas Lake, which took a total of 24 fish of 8 species. The ten nets set in Llano Grande Lake took 69 fish of 6 species. All fish taken, with the exception of the warmouth bass (Chaenobryttus gulosus), are considered undesirable

species. Figure 16 gives the numbers and weights of fish taken in Campacuas Lake in June 1959. European carp (Cyprinus carpio), warmouth bass, and Rio Grande cichlid (Cichlasoma cyanoguttatum) were found to be the most abundant species present in the lake after the chemical treatment. Figure 17 gives the numbers and weight of fish taken in Llano Grande Lake in June 1959. According to this table, alligator gar (Lepisosteus spatula), gizzard shad, and carp were the most numerous fishes taken.

It is apparent that a total kill of fish in both lakes was not obtained, but large numbers of undesirable fish were removed. Figure 18 shows the success of netting in Campacuas and Llano Grande Lakes in June 1959. According to this table, an average of less than 5 fish per net were caught as compared to over 25 fish per net before the chemical treatment (Project F-6-R-6, Job B-12; Table VIII, page 18).

On June 24, 1959, 20,000 channel catfish fingerlings were stocked at six locations on Llano Grande Lake and 10,000 channel catfish fingerlings (about 1 to 1½ inches long) were stocked at 4 locations on Campacuas Lake. On June 25, 1959, 10,500 black bass fingerlings (approximately 2 to 4 inches long) were stocked at six locations in Llano Grande Lake. Black bass for stocking Campacuas Lake were unavailable during this report period.

Four Secchi disk readings, which were taken on Campacuas Lake during this resurvey, showed that the water was a little clearer after the treatment but not as clear as had been expected. Wave action and the few remaining fish probably contributed to the turbidity. The Secchi disk readings ranged from 10½ to 11 inches as compared to 8 inches during the basic survey. No additional water analyses were made on Campacuas Lake.

Six Secchi disk readings were taken on Llano Grande Lake during this resurvey; they ranged from 8 to 26 inches as compared to 5½ to 11 inches before the treatment of the lake. Llano Grande Lake had a green, "bloom" appearance during this resurvey. This was probably due to the influx of waste water from the City of Mission sewage treatment plant upstream.

Figure 19 shows the success of gill netting on the five lakes resurveyed this segment. According to this table, almost twice as many fish were taken in gill nets as the previous resurvey on Lake Corpus Christi using the same number of nets.

Prepared by Charles Menn  
Assistant Project Leader

Approved by Marion Toole  
Director Inland Fisheries Division

Date January 28, 1960

Figure 1. Netting Results, Falcon Lake, March 1959.

Species	Number	Percent of Total Number	Weight (lbs.)	Percent of Total Weight
<u>Lepisosteus spatula</u>	4	0.82	112.96	24.68
<u>Lepisosteus osseus</u>	61	12.58	159.58	34.86
<u>Dorosoma petenense</u>	2	0.41	0.30	0.07
<u>Dorosoma cepedianum</u>	301	62.06	62.59	13.67
<u>Ictiobus bubalus</u>	23	4.74	63.57	13.89
<u>Carploides carpio</u>	3	0.62	4.56	1.00
<u>Cyprinus carpio</u>	8	1.65	6.27	1.37
<u>*Ictalurus punctatus</u>	1	0.21	1.87	0.41
<u>*Ictalurus furcatus</u>	48	9.89	24.62	5.38
<u>*Roccus chrysops</u>	29	5.98	16.36	3.57
<u>*Micropterus salmoides</u>	3	0.62	4.28	0.94
<u>*Chaenobryttus gulosus</u>	1	0.21	0.25	0.05
<u>*Pomoxis annularis</u>	1	0.21	0.49	0.11
Totals	485	100.00	457.70	100.00
Total Rough Fish	402		409.83	
Percent Rough Fish		82.88		78.89
*Total Game Fish	83		47.87	
*Percent Game Fish		17.12		21.11

Figure 2. Lengths, Weights and "K" Factors of Fish Caught in Falcon Lake, March 1959.

Species	Standard Length*			Weight in Grams			"K" Factor		
	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
<u>Lepisosteus spatula</u>	856	1,270	1,077.75	7,711	21,773	12,821.25	0.82	1.06	0.94
<u>Lepisosteus osseus</u>	445	810	676.65	352	2,296	1,166.28	0.29	1.45	0.44
<u>Dorosoma petenense</u>	130	170	150.00	48	90	69.00	1.84	2.18	2.01
<u>Dorosoma cepedianum</u>	115	625	166.68	36	349	98.94	1.41	2.98	2.02
<u>Ictiobus bubalus</u>	210	470	326.45	709	3,685	1,255.45	2.80	4.01	3.36
<u>Carpiodes carpio</u>	249	300	279.33	351	765	524.00	2.95	3.17	3.09
<u>Cyprinus carpio</u>	215	251	233.62	254	459	356.37	1.90	3.26	2.64
<u>Ictalurus punctatus</u>	-	360	360.00	-	851	851.00	-	1.82	1.82
<u>Ictalurus furcatus</u>	185	350	233.47	66	652	201.40	1.17	1.70	1.39
<u>Roccus chrysops</u>	160	275	203.21	72	595	241.65	2.25	2.98	2.63
<u>Micropterus salmoides</u>	220	338	289.33	271	964	648.00	2.38	2.54	2.47
<u>Chaenobryttus gulosus</u>	-	148	148.00	-	112	112.00	3.45	3.45	3.45
<u>Pomoxis annularis</u>	-	200	200.00	-	220	200.00	-	2.75	2.75

\* Lengths in millimeter

- Indicates only one fish

Figure 3. Netting Results, Falcon Lake, August 1958.

Species	Number	Percent of Total Number	Weight (lbs.)	Percent of Total Weight
<u>Lepisosteus spatula</u>	9	16.36	110.83	64.66
<u>Lepisosteus osseus</u>	16	29.09	32.18	18.78
<u>Dorosoma cepedianum</u>	8	14.55	1.64	0.96
<u>Ictiobus bubalus</u>	8	14.55	16.17	9.43
<u>Carpiodes carpio</u>	3	5.45	3.68	2.15
<u>*Ictalurus furcatus</u>	6	10.91	5.13	2.99
<u>*Roccus chrysops</u>	5	9.09	1.77	1.03
Total	55	100.00	171.40	100.00
Total rough fish	44		164.50	
Percent rough fish		80.00		95.98
*Total game fish	11		6.9	
*Percent game fish		20.00		4.02

Figure 4. Lengths, Weights and "K" Factors of Fish Caught in Falcon Lake, August 1958.

Species	Standard Length**			Weight in Grams			"K" Factor		
	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
<u>Lepisosteus spatula</u>	760	935	879	3,742	7,343	5,591	0.76	0.90	0.81
<u>Lepisosteus osseus</u>	515	822	618	482	1,843	913	0.33	0.50	0.37
<u>Dorosoma cepedianum</u>	130	210	166	39	171	93	1.65	1.91	1.81
<u>Ictiobus bubalus</u>	270	356	299	620	1,588	917	2.79	3.65	3.33
<u>Carpionides carpio</u>	210	300	262	281	709	557	2.52	3.41	2.99
<u>Ictalurus furcatus*</u>	199	393	288	96	879	388	1.22	1.69	1.38
<u>Roccus chrysops*</u>	151	250	179	71	423	160	2.04	2.71	2.32

\*Game fish

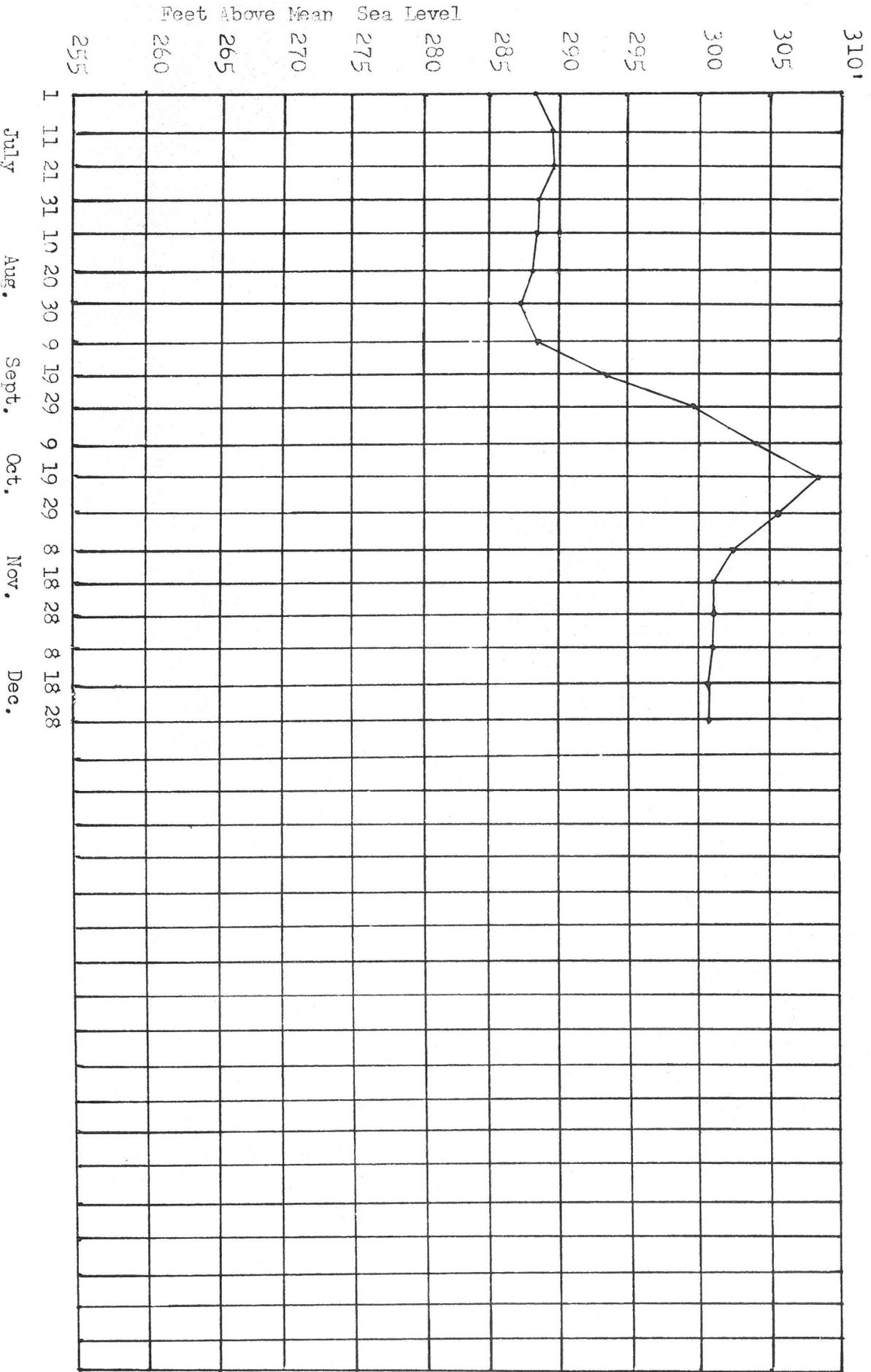
\*\*Length given in millimeters

Figure 5. Seining Results, Falcon Lake, March 13-14, 1959.

Species	Sta. A	Sta. B	Sta. C	Sta. D	Total	Percent by No.
<u>Dorosoma petenense</u>	0	0	15	114	129	18.91
<u>Notropis lutrensis</u>	0	0	0	1	1	0.15
<u>Cyprinodon variegatus</u>	0	0	14	1	15	2.20
<u>Menidia beryllina</u>	14	13	209	300	536	78.59
<u>Micropterus salmoides</u>	0	1	0	0	1	0.15
Totals	14	14	238	416	682	100.00

Figure 6. Falcon Lake Water Levels, July, 1958 through December, 1958

296.4' - Spillway elevation - top of Conservation Pool - 78,000 surface acres - 2,400,000 acre-feet  
314.2' - Maximum elevation - top of Flood Storage - 113,000 surface acres - 4,085,000 acre-feet



1958

Figure 7. Netting Results, Lake Corpus Christi, October &amp; November 1958.

Species	Number	Percent of Total Number	Weight (lbs.)	Percent of Total Weight
<u>Lepisosteus spatula</u>	20	5.00	106.19	21.33
<u>Lepisosteus productus</u>	56	14.00	67.33	13.53
<u>Lepisosteus osseus</u>	14	3.50	18.25	3.67
<u>Dorosoma cepedianum</u>	19	4.75	5.97	1.20
<u>Ictiobus bubalus</u>	45	11.25	84.90	17.05
<u>Cyprinus carpio</u>	16	4.00	35.76	7.19
* <u>Ictalurus punctatus</u>	43	10.75	22.38	4.50
* <u>Ictalurus furcatus</u>	34	8.50	80.06	16.08
<u>Ictalurus melas</u>	1	0.25	0.12	0.03
* <u>Micropterus salmoides</u>	1	0.25	0.62	0.12
* <u>Chaenobryttus gulosus</u>	1	0.25	0.31	0.06
<u>Lepomis macrochirus</u>	1	0.25	0.09	0.02
* <u>Pomoxis annularis</u>	75	18.75	21.83	4.39
<u>Aplodinotus grunniens</u>	70	17.50	53.09	10.67
<u>Cichlasoma cyanoguttatum</u>	4	1.00	0.79	0.16
Totals	400	100.00	497.69	100.00
Total rough fish	237	59.25	372.49	74.85
Percent rough fish				
*Total game fish	163	40.75	125.20	25.15
*Percent game fish				

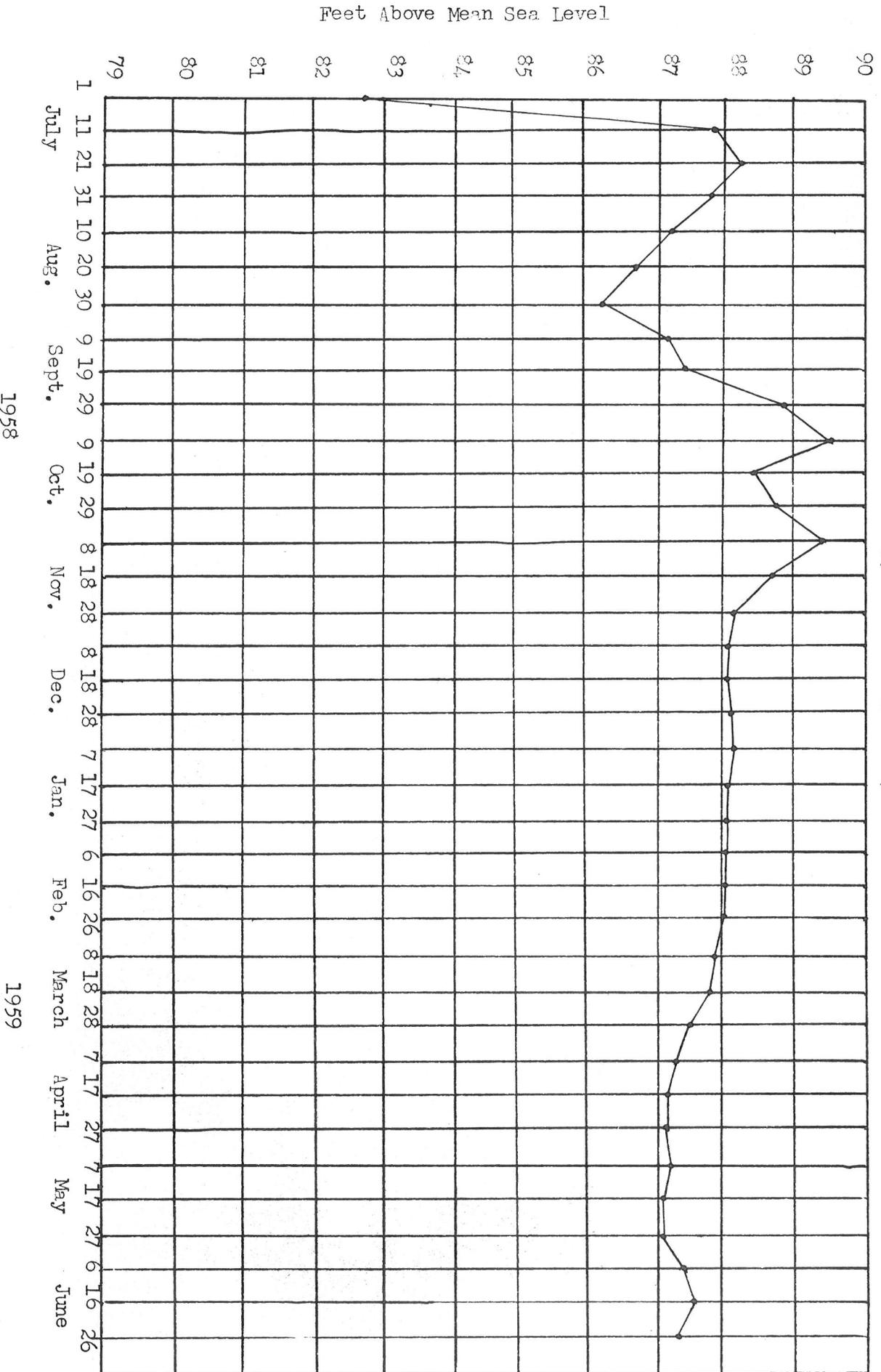
Figure 8. Lengths, Weights and "K" Factors of Fish Caught in Lake Corpus Christi, October and November, 1958.

Species	Standard Length* Min. Max. Avg.			Weight in Grams Min. Max. Avg.			"K" Factors Min. Max. Avg.		
	<u>Lepisosteus spatula</u>	474	955	613.20	851	6,449	241.05	0.68	1.05
<u>Lepisosteus productus</u>	320	625	419.71	190	1,956	578.23	0.53	0.94	0.67
<u>Lepisosteus osseus</u>	444	560	504.21	380	794	591.92	0.32	0.63	0.46
<u>Dorosoma cepedianum</u>	135	270	188.57	50	395	146.84	1.54	2.20	1.95
<u>Ictiobus bubalus</u>	185	426	266.84	240	2,778	856.53	3.31	4.90	4.05
<u>Cyprinus carpio</u>	290	375	310.81	751	1,814	1,014.56	2.98	3.60	3.25
<u>Ictalurus punctatus</u>	110	380	219.58	15	1,049	236.27	1.30	1.97	1.65
<u>Ictalurus furcatus</u>	150	575	359.05	50	3,260	924.00	1.36	1.89	1.64
<u>Ictalurus melas</u>	-	130	130.00	-	55	55.00	-	2.50	2.50
<u>Micropterus salmoides</u>	-	215	215.00	-	280	280.00	-	2.82	2.82
<u>Chaenobryttus gulosus</u>	-	144	144.00	-	140	140.00	-	4.69	4.69
<u>Lepomis macrochirus</u>	-	102	102.00	-	40	40.00	-	3.77	3.77
<u>Pomoxis annularis</u>	101	245	152.01	38	510	132.11	2.02	3.73	3.13
<u>Aplodinotus grunniens</u>	170	345	217.10	95	1,304	348.01	1.96	4.41	3.01
<u>Cichlasoma cyanoguttatum</u>	90	160	106.25	30	255	90.00	4.79	6.22	5.35

\* Length millimeter

- Indicates only one fish

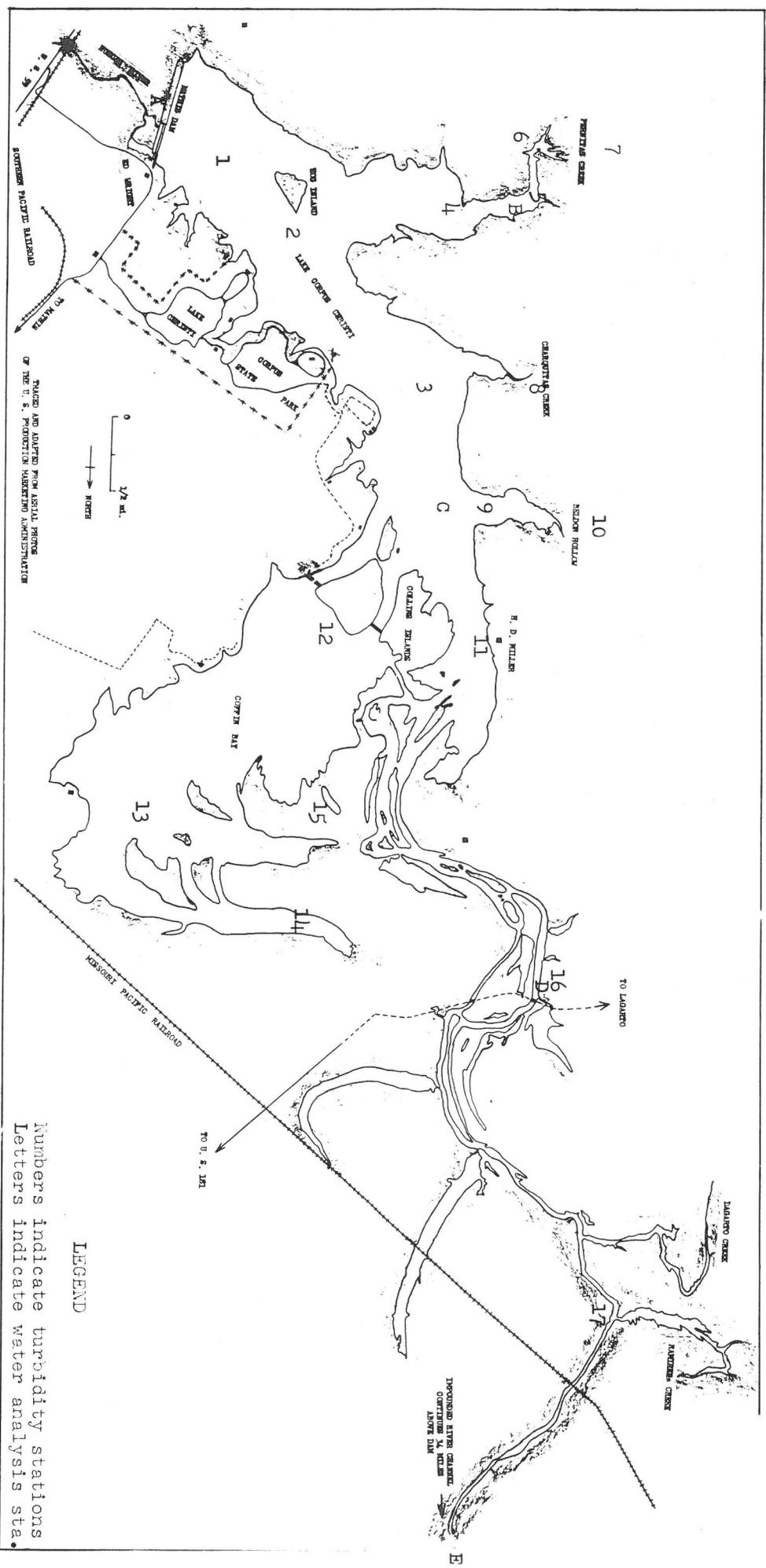
Figure 9. Lake Corpus Christi Water Levels  
July, 1958 through June, 1959



1958

1959

Figure 10. Lake Corpus Christi.



Numbers indicate turbidity stations  
Letters indicate water analysis sta.

LEGEND

Figure 11. Secchi Disk Reading in Inches on Lake Corpus Christi.

Station No.	Date	Lake Level (msl)	Secchi Disk Reading
1	7/16/58	88.21	19
1	3/23/59	87.67	29
2	7/16/58	88.21	19
2	3/23/59	87.67	29
3	7/16/58	88.21	22 $\frac{1}{2}$
3	3/23/59	87.67	30
4	7/16/58	88.21	22
4	3/23/59	87.67	28
5	7/16/58	88.21	24
5	3/23/59	87.67	27
6	7/16/58	88.21	32
6	3/23/59	87.67	25
7	7/16/58	88.21	34
7	3/23/59	87.67	20
8	7/16/58	88.21	28
8	3/23/59	87.67	25
9	7/16/58	88.21	23
9	3/23/59	87.67	24
10	7/16/58	88.21	30 $\frac{1}{2}$
10	3/23/59	87.67	28
11	7/16/58	88.21	23 $\frac{1}{2}$
11	3/23/59	87.67	26
12	7/16/58	88.21	24
12	3/23/59	87.67	15
13	7/16/58	88.21	26
14	7/16/58	88.21	24
15	7/16/58	88.21	24
16	7/16/58	88.21	34
17	7/16/58	88.21	44

Figure 12. Lake Corpus Christi Water Analysis Results.

Station No.	Date	Depth in Feet	°F	O <sub>2</sub> ppm	Ph-th Alk.	M.O. Alk.	pH
A	10/21/58	0	75	8.4	0	146	8.2
A	10/21/58	10	-	6.8	0	150	8.2
A	10/21/58	20	-	6.2	0	146	8.2
B	10/22/58	0	75	7.4	0	158	8.2
B	10/22/58	10	76	8.8	0	158	8.5
C	10/27/58	0	74	8.4	0	146	8.0
C	10/27/58	10	73	8.2	0	150	8.2
C	10/27/58	15	-	8.2	0	156	8.2
D	10/27/58	0	-	10.4	0	170	8.4
D	10/27/58	10	-	10.0	0	170	8.6
D	10/27/58	20	-	10.0	0	172	8.5
D	10/27/58	30	-	10.0	0	168	8.5
E	11/24/58	0	70	10.0	0	216	8.6
E	11/24/58	10	69	5.8	0	204	8.8
E	11/24/58	20	68	6.0	0	196	8.6
E	11/24/58	30	66	6.4	0	198	8.6

- Indicates no reading.

Figure 13. Netting Results, Bentsen State Park Lake, April 1959.

Species	Number	Percent of Total Number	Weight (Lbs.)	Percent of Total Weight
<u>Lepisosteus spatula</u>	5	7.14	27.66	24.98
<u>Lepisosteus productus</u>	5	7.14	4.31	3.89
<u>Lepisosteus osseus</u>	4	5.71	7.73	6.98
<u>Dorosoma cepedianum</u>	12	17.14	5.37	4.85
<u>Ictiobus bubalus</u>	26	37.14	46.62	42.08
<u>Cyprinus carpio</u>	1	1.44	1.56	1.41
* <u>Ictalurus furcatus</u>	14	20.00	14.82	13.38
<u>Aplodinotus grunniens</u>	3	4.29	2.69	2.43
Totals	70	100.00	110.76	100.00
Total rough fish	56		95.94	
Percent rough fish		80.00		86.62
*Total game fish	14		14.82	
*Percent game fish		20.00		13.38

Figure 14. Lengths, Weights and "K" Factors of Fish Caught in Lake Bentsen State Park, April 1959.

Species	Standard Length*			Weight in Grams			"K" Factor		
	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
<u>Lepisosteus spatula</u>	525	745	629.00	1,162	4,026	2,511.80	0.80	1.13	0.92
<u>Lepisosteus productus</u>	360	444	395.80	279	539	391.40	0.60	0.65	0.62
<u>Lepisosteus osseus</u>	445	631	565.00	447	1,162	877.25	0.46	0.51	0.47
<u>Dorosoma cepedianum</u>	140	360	212.00	62	360	203.08	1.52	2.39	1.96
<u>Ictiobus bubalus</u>	198	350	274.23	280	1,616	806.26	3.04	4.00	3.51
<u>Cyprinus carpio</u>	-	295	295.00	-	709	709.00	-	2.76	2.76
<u>Ictalurus furcatus</u>	175	500	274.57	80	2,608	480.42	1.03	2.09	1.53
<u>Aplodinotus grunniens</u>	230	255	245.66	345	488	407.66	2.44	2.94	2.74

- Indicates only one fish caught.

\* Lengths are given in millimeters.

Figure 15. Seining Collections on Bentsen State Park Lake, April 1959.

Species	Sta. 1	Sta. 2	Total	Percent by No.	Rank by No.
<u>Dorosoma petenense</u>	9	7	16	3.72	4
<u>Astyanax fasciatus</u>	0	2	2	0.47	6
<u>Hybopsis aestivalis</u>	0	1	1	0.23	7
<u>Notropis braytoni</u>	23	0	23	5.35	3
<u>Notropis lutrensis</u>	2	0	2	0.47	6
<u>Cyprinodon variegatus</u>	4	0	4	0.93	5
<u>Gambusia affinis</u>	121	212	333	77.44	1
<u>Mollienisia latipinna</u>	1	0	1	0.23	7
<u>Menidia beryllina</u>	26	22	48	11.16	2
Total	186	244	430	100.00	

Figure 16. Netting Results, Campacus Lake, June 1959.

Species	Number	Percent of Total Number	Weight (lbs.)	Percent of Total Weight
<u>Lepisosteus spatula</u>	2	8.33	195.82	92.68
<u>Lepisosteus productus</u>	1	4.17	4.18	1.98
<u>Dorosoma cepedianum</u>	2	8.33	0.15	0.07
<u>Cyprinus carpio</u>	10	41.67	9.50	4.50
<u>Ictalurus melas</u>	1	4.17	0.22	0.10
<u>Chaenobryttus gulosus</u>	4	16.67	0.75	0.36
<u>Lepomis macrochirus</u>	1	4.17	0.07	0.03
<u>Cichlasoma cyanoguttatum</u>	3	12.49	0.59	0.28
Totals	24	100.00	211.28	100.00

Figure 17. Netting Results, Llano Grande Lake, June 1959.

Species	Number	Percent of Total Number	Weight (Lbs.)	Percent of Total Weight
<u>Lepisosteus spatula</u>	24	34.78	221.07	86.52
<u>Lepisosteus productus</u>	5	7.25	10.18	3.99
<u>Dorosoma cepedianum</u>	21	30.43	8.18	3.20
<u>Cyprinus carpio</u>	12	17.39	15.32	6.00
<u>Cichlasoma cyanoguttatum</u>	6	8.70	0.56	0.22
<u>Gobiosoma bosci</u>	1	1.45	0.17	0.07
Totals	69	100.00	255.48	100.00

Figure 18. Success of Check Netting in Campacus Lake in Terms of Numbers and Pounds of Fish Caught, June 1959.

Stations	No. of Nets Set	Number of Feet of Net Set	Number of Fish Caught	Average No. of Fish Per Net	Average No. of Fish Per Foot of Net	Pounds of Fish Caught	Average Pounds of Fish/Net	Average Pounds of Fish Per Foot of Net
1	1	125	2	2	.016	0.65	0.65	.005
2	1	125	1	1	.008	0.21	0.21	.002
3	1	125	4	4	.032	5.43	5.43	.043
4	1	125	4	4	.032	196.51	196.51	1.572
5	1	125	4	4	.032	1.42	1.42	.011
6	1	125	5	5	.040	5.19	5.19	.042
7	1	125	2	2	.016	1.82	1.82	.015
8	1	125	0	0	.000	0.00	0.00	.000
9	1	125	2	2	.016	0.24	0.24	.002
Totals	9	1,125	24	--	----	211.47	----	----
Averages	1	125	--	2.67	.021	----	23.50	.188

Stations	No. of Nets Set	Number of Feet of Net Set	Number of Fish Caught	Average No. of Fish Per Net	Average No. of Fish Per Foot of Net	Pounds of Fish Caught	Average Pounds of Fish/Net	Average Pounds of Fish Per Foot of Net
1	1	125	8	8	.064	25.94	25.94	.208
2	1	125	5	5	.040	34.73	34.73	.278
3	1	125	5	5	.040	16.54	16.54	.132
4	1	125	2	2	.016	10.62	10.62	.085
5	1	125	8	8	.064	35.25	35.25	.282
6	1	125	8	8	.064	61.98	61.98	.496
7	1	125	7	7	.056	38.70	38.70	.310
8	1	125	18	18	.144	6.49	6.49	.052
9	1	125	4	4	.032	17.13	17.13	.137
10	1	125	4	4	.032	8.16	8.16	.065
Totals	10	1,250	69	--	----	255.54	----	----
Averages	1	125	--	6.90	.055	----	25.55	.20

Success of Check Netting in Llano Grande Lake in Terms of Numbers and Pounds of Fish Caught, June 1959.

Figure 19. Success of Gill Netting on All Lakes in Terms of Numbers and Pounds of Fish Caught.

Lake and Date	Number of Nets Set	Number of Feet of Nets Set	Number of Fish Caught	Average Number of Fish Per Net	Average Number of Fish Per Foot of Net	Pounds of Fish Caught	Average Pounds of Fish Per Net	Average Pounds of Fish Per Foot of Net
Falcon Lake August 1958	2	250	55	27.50	0.220	171.56	85.78	0.145
Falcon Lake March 1959	12	1,500	485	40.42	0.323	458.11	38.17	0.254
Lake Corpus Christi October and November 1958	15	1,875	400	26.67	0.213	498.13	33.21	0.266
Bentzen State Park Lake April 1959	3	375	70	23.33	0.186	110.85	36.95	0.295
Llano Grande Lake June 1959	10	1,250	69	6.90	0.055	255.54	25.55	0.204
Campacusas Lake June 1959	9	1,125	24	2.67	0.021	211.47	23.50	0.188