



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Bureau of Sport Fisheries and Wildlife

REGION 2
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ADDRESS ONLY THE REGIONAL DIRECTOR
FISH AND WILDLIFE SERVICE

OFFICE OF THE REGIONAL DIRECTOR
ALBUQUERQUE, NEW MEXICO
P. O. BOX 1306

FA-Texas
Project F-4-R-5

March 10, 1959

Make connection sheet.

Mr. H. D. Dodgen, Executive Secretary
Game and Fish Commission
Walton State Building
Austin, Texas

*ThermoFax copy
sent 3-19-59
lf*

Dear Mr. Dodgen:

In review of the completion report for Job B-23 of Project F-4-R-5, Fisheries Investigations and Surveys of the Waters of Region 4-B, it is noted that the poundage catch per 100 feet of gill net is shown as 4.01 (pp. 2 and 6). Should not this figure be 7.52?

While this would seem a minor point, the catch during the '57-'58 period will no doubt be compared to future gill net catches in determining fish population trends, and erroneous conclusions could result.

Sincerely yours,

Carey H. Bennett, Chief
Division of Technical Services

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Report of Fisheries Investigations
Basic Survey and Inventory of Species Present in
Lake Weatherford

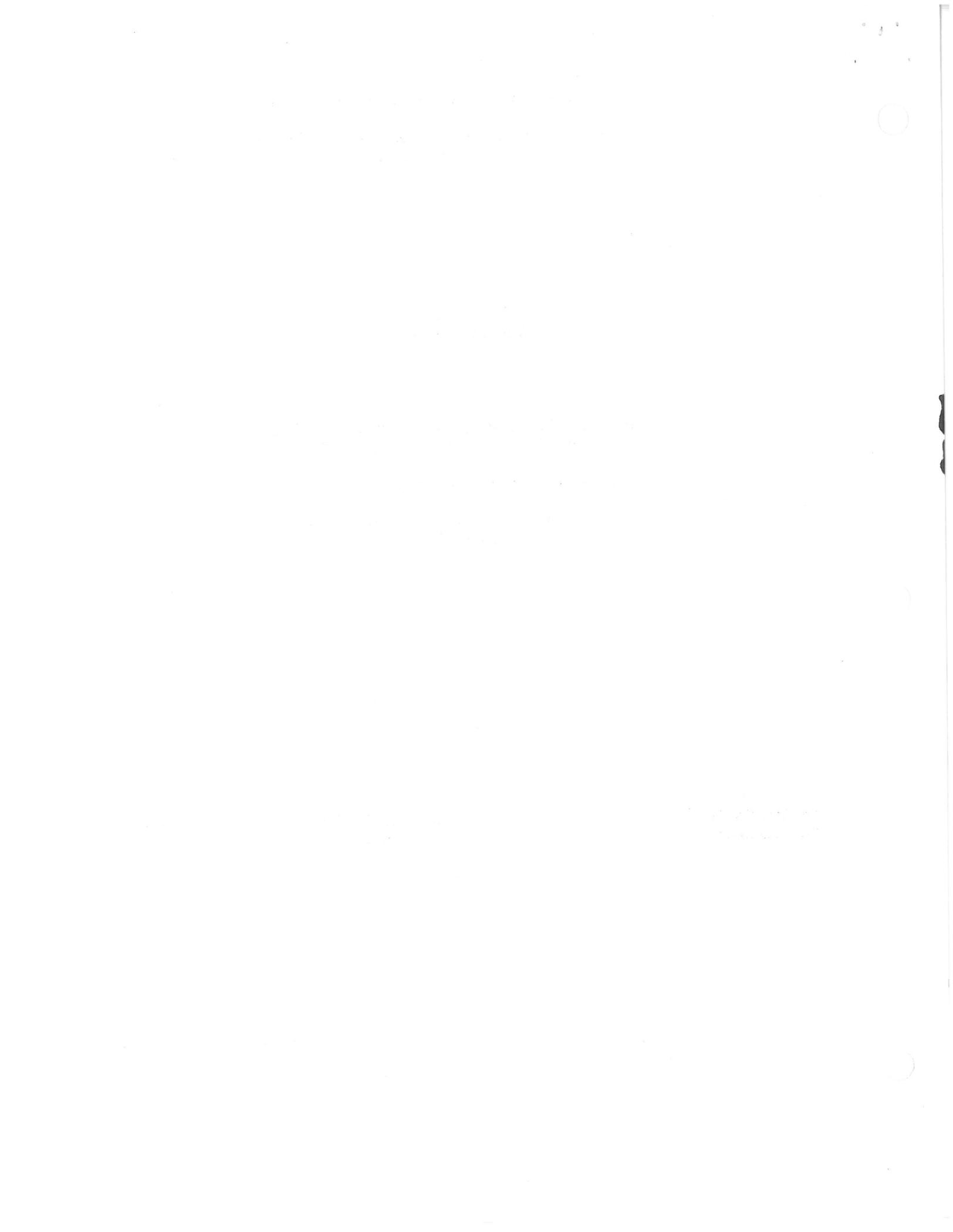
by
L. D. Lamb
Project Leader

Dingell-Johnson Project F-4-R-5, Job B-23
August 1, 1957 - October 31, 1958

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-4-R-5

Name: Fisheries Investigations and Surveys of the Waters of Region 4-B.

Job No. B-23

Title: Inventory of Species Present in Lake Weatherford.

ABSTRACT:

Lake Weatherford is located on the Clear Fork of the Trinity River north of Highway 80 between Ft. Worth and Weatherford, Texas. It was constructed in 1957. This is a comparatively shallow lake and covers about 1800 acres.

Largemouth bass, channel catfish, white crappie and sunfish were stocked from State Fish Hatcheries but some rough species and large game fish came from ranch tanks and farm ponds on the watershed when heavy rains broke their dams.

Gizzard shad and black bullhead provide 27.5 percent and 22.2 percent of the total respectively and appear to be likely to present a problem in the near future.

OBJECTIVES:

To determine the species present and their abundance as well as to determine the ecological factors influencing their distribution.

METHODS:

The net collections from Lake Weatherford were started in August 1958. The City of Weatherford requested a check to determine the size of the fish stocked in May of that year. This data was included with the material collected during the work on the present job.

Net collections were made at stations representing the different areas and habitats and were made at monthly intervals when weather permitted. Since the collections showed little variation, it was decided in June of 1958 to net on alternate months.

The specimens were weighed, measured and examined for parasites and disease as well as checked for sexual maturity and food habits. The data were recorded and filed for use in writing reports and making management recommendations.

Seine sampling was attempted but the brush had grown back on the reservoir floor before flooding so that the margins could not be seined efficiently.

PHYSICAL CHARACTERISTICS:

Lake Weatherford is located on the Clear Fork of the Trinity River just north of Highway 80 between Ft. Worth and Weatherford. The dam was completed in early 1957 and filled in April of that year. Bass fry were planted soon after the lake was filled and channel catfish, crappie, and sunfish were introduced in September. Fishing was prohibited until March 15, 1958.

This lake is comparatively shallow with a rather flat bottom. It covers about 1800 surface acres and drains an area that is largely grassland. There is little protection from the prevailing winds and during much of the year high waves make fishing difficult. Little cover present, except for some rocky banks near the east end of the dam, and the water is likely to be very murky as soon as the grass cover is gone from the bottom.

RESULTS:

The check list of species is limited to those caught in gill nets since brush in shallow water prevented seining. A total of 549 specimens representing five families, seven genera, and eleven species were taken (Table 1). Six of these species were stocked from the Possum Kingdom State Fish Hatchery and the other five came from small lakes and farm ponds on the watershed. The rains that filled the lake broke dams of ranch tanks and farm ponds on the watershed. This accounts for the large rough fish taken in nets soon after the lake filled.

The species stocked from state fish hatcheries were largemouth bass, white crappie, channel catfish, and the three species of sunfish. Some fish of these species also escaped from broken dams during the heavy rains but the majority were introduced by stocking.

A comparison of the game and rough fish species taken in gill nets shows them to be of almost identical average weights (Table 2). That this is generally a young population may be seen in the average weights of .4 pounds for the rough fish and .38 pounds for the game species. Rough fish represented 59 percent of the total weight and 58 percent of the total number. These figures include the channel catfish among the game species since they are highly regarded by the local fishermen.

Table 3 presents data concerning the success of the gill netting in terms of the catch per 100 feet of gill net used on an overnight set. A total of 2850 feet of gill net having 3 inch stretch mesh and 8 foot depth were set in Lake Weatherford in 29 overnight net-sets. These nets produced an average of 19.23 fish, per 100 feet of net, weighing 4.01 pounds.

The length and weight ranges as shown in Table 4 reflect the presence of older fish from the broken dams in the few outside specimens of each species. This is especially true in the case of the channel catfish and carp where specimens were taken that were unusually large for a lake of this age.

Gizzard shad, largemouth bass, and white crappie were taken each month and provided 27.5 percent, 12.7 percent, and 11.3 percent of the total number taken (Table 5). Black bullheads appeared in the catch each month except the last two but the unusually heavy catch of December 1957 raised this species to 22.2 percent of the total. Bluegill sunfish were taken in each month except February and July with 57 taken in May to total 13.3 percent of the catch.

Table 6 presents the data concerning the weight and percentage of each

species taken. The gizzard shad provided 21 percent of the total weight but were exceeded by black bullheads with 25.8 percent. Largemouth bass made up a greater percentage of weight than they did of the total number as they provided 18.8 percent of the total weight.

Prepared by Leonard D. Lamb
Project Leader

Approved by

Marion Toole

Date February 3, 1959

Table 1. Checklist of Fish From Lake Weatherford August 15, 1957 - - October 31, 1958.

SCIENTIFIC NAME	COMMON NAME
<u>Dorosoma cepedianum</u>	gizzard shad
<u>Carpiodes carpio</u>	river carpsucker
<u>Cyprinus carpio</u>	carp
<u>Ictalurus punctatus</u>	channel catfish
<u>Ictalurus melas</u>	black bullhead
<u>Ictalurus natalis</u>	yellow bullhead
<u>Micropterus salmoides</u>	largemouth bass
<u>Lepomis cyanellus</u>	green sunfish
<u>Lepomis microlophus</u>	redeer sunfish
<u>Lepomis macrochirus</u>	bluegill sunfish
<u>Pomoxis annularis</u>	white crappie

Table 2. A Comparison of Game Fish* and Rough Species Caught in Gill Nets From Lake Weatherford, August 15, 1957 to October 31, 1958.

Total number specimens caught	549
Total weight of specimens (pounds)	214.29
Average weight per. specimens (pounds)	.39
Total weight of rough fish (pounds)	127.02
Total weight of game fish (pounds)	87.27
Total number of rough fish	320
Total number of game fish	229
Average weight per. rough fish (pounds)	.40
Average weight per. game fish (pounds)	.38
Percent rough fish (by weight)	59
Percent game fish (by weight)	41
Percent rough fish (by number)	58
Percent game fish (by number)	42

*Channel catfish included in the game fish.

Table 3. Success of Gill Netting at Lake Weatherford, in Terms of Number and Pounds of Fish Caught, August 15, 1957 to October 31, 1958.

MONTH	No. of net sets	No. Ft. net set	No. fish Caught	No. lbs. Fish Caught	Avg. No.	Avg. No. Fish	Avg. No.	Avg. No.
					per net	Per. 100' Net	lbs. Fish Per. net	Pounds Fish Per. 100'
August	3	250'	46	14.00	15.33	18.4	4.66	4.00
September	3	300'	52	19.08	17.33	17.3	6.36	6.36
October	3	300'	19	8.38	6.33	06.3	2.79	2.79
December	3	300'	104	48.49	34.66	34.6	16.16	16.16
February	3	300'	42	17.43	14.00	14.0	5.81	5.81
March	3	300'	52	21.25	17.33	17.3	7.08	7.08
April	3	300'	70	33.32	23.33	23.3	11.11	11.11
May	3	300'	98	27.17	32.67	32.6	9.05	9.05
July	2	200'	32	12.58	16.00	16.0	6.29	6.29
September	3	300'	34	12.59	11.33	11.3	4.19	4.19
TOTALS	29	2850'	549	214.29	18.93	19.23	7.39	4.01

Table 4. Length, Weight and Coefficient of Condition of Fish Collected by Gill Nets From Lake Weatherford, August 15, 1957 to October 31, 1958.

SPECIES	Total No.	Std. (MM) Length		(MM) Length		(gms) weight		(gms) Weight		K. Range	K. Average
		Range	Average	Range	Average	Range	Average				
<u>D. cepedianum</u>	151	140-255	204	54-304	152	1.30-5.00	1.84				
<u>Carpiodes carpio</u>	24	200-275	217	200-340	262	1.90-3.10	2.57				
<u>Cyprinus carpio</u>	16	200-310	229	235-907	479	2.62-3.00	4.10				
<u>I. punctatus</u>	8	250-360	288	195-907	367	1.45-1.95	1.61				
<u>I. melas</u>	122	100-265	211	20-567	253	1.05-2.80	2.69				
<u>I. natalis</u>	7	210-245	222	245-300	260	2.05-2.70	2.39				
<u>M. salmoides</u>	70	110-265	217	78-571	267	1.50-3.40	2.61				
<u>L. cyanellus</u>	1	125	125	60	60	-----	-----				
<u>L. microlophus</u>	15	145-160	155	140-170	142	3.42-5.00	3.79				
<u>L. macrochirus</u>	73	100-140	133	87-310	112	3.80-5.00	4.75				
<u>P. annularis</u>	62	125-235	179	46-300	139	1.70-2.90	2.41				

Table 5. Species Distribution in Net Catches, by Number and Percentage, in Lake Weatherford, August 15, 1957 to October 31, 1958.

Month	August		September		October		December		February		March	
Species	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<u>D. cepedianum</u>	10	21.74	11	21.15	3	15.79	29	27.88	17	40.47	31	59.62
<u>Carpoides carpio</u>							4	3.85	6	14.29	2	3.85
<u>Cyprinus carpio</u>	10	21.74	1	1.92	4	21.05					1	1.92
<u>I. punctatus</u>			2	3.85								
<u>I. melas</u>	12	26.09	16	30.77	4	21.05	56	53.85	6	14.29	9	17.30
<u>I. natalis</u>	1	2.17	1	1.92			1	0.96				
<u>M. salmoides</u>	10	21.74	8	15.39	3	15.79	11	10.58	4	9.52	4	7.69
<u>L. cyanellus</u>	1	2.17										
<u>L. microlophus</u>			7	13.46								
<u>L. macrochirus</u>	1	2.17	1	1.92	4	21.05	1	0.96			2	3.85
<u>P. annularis</u>	1	2.17	5	9.62	1	5.27	2	1.92	9	21.43	3	5.77
Total	46	99.99	52	100.00	19	100.00	104	100.00	42	100.00	52	100.00

Table 5. (Continued) Species Distribution in Net Catches, by Number and Percentage, in Lake Weatherford, August 15, 1957 to October 31, 1958.

Species	April		May		July		September		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
<u>D. cepedianum</u>	17	24.29	12	12.25	19	59.38	2	5.88	151	27.5
<u>Carpoides carpio</u>	6	8.57	4	4.08	2	6.25			24	4.4
<u>Cyprinus carpio</u>									16	2.9
<u>I. punctatus</u>			1	1.02	1	3.12	4	11.77	8	1.5
<u>I. melas</u>	12	17.14	7	7.14					122	22.2
<u>I. natalis</u>							4	11.77	7	1.3
<u>M. salmoides</u>	23	32.86	3	3.06	1	3.12	3	8.82	70	12.7
<u>L. cyanellus</u>									1	0.2
<u>L. microlophus</u>			8	8.16					15	2.7
<u>L. macrochirus</u>	5	7.14	57	58.16			2	5.88	73	13.3
<u>P. annularis</u>	7	10.00	6	6.12	9	28.13	19	55.88	62	11.3
Total	70	100.00	98	99.99	32	100.00	34	100.00	549	100.00

Table 6. Species Distribution, in Net Catch, by Weight and Percentage, Lake Weatherford, August 15, 1957 to October 31, 1958.

Month	August		September		October		December		February		March		April	
Species	Wt.	%	Wt.	%	Wt.	%	Wt.	%	Wt.	%	Wt.	%	Wt.	%
<u>D. cepedianum</u>	1.10	7.86	3.40	17.82	2.30	27.45	7.30	15.05	5.28	30.30	9.53	44.85	5.56	16.91
<u>Carpoides carpio</u>	0.00	0.00	0.00	0.00	0.00	0.00	1.80	3.71	4.31	24.73	1.25	5.88	3.00	9.00
<u>Cyprinus carpio</u>	5.19	37.07	2.00	10.48	0.51	6.09	0.00	0.00	0.00	0.00	1.75	8.24	0.00	0.00
<u>I. punctatus</u>	0.00	0.00	3.00	15.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<u>I. melas</u>	4.48	32.00	0.90	4.72	2.20	26.25	30.40	62.80	3.03	17.38	4.94	23.25	7.25	21.76
<u>I. natalis</u>	0.50	3.57	0.66	3.46	0.00	0.00	0.64	1.30	0.00	0.00	0.00	0.00	0.00	0.00
<u>M. salmoides</u>	1.91	13.64	4.70	24.63	2.00	23.87	7.80	16.05	2.31	13.25	2.50	11.76	13.91	41.74
<u>L. cyaneellus</u>	0.27	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<u>L. microlophus</u>	0.00	0.00	2.40	12.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<u>L. macrochirus</u>	0.28	2.00	0.27	1.42	1.10	13.12	0.22	0.43	0.00	0.00	0.48	2.26	1.00	3.00
<u>P. annularis</u>	0.27	1.93	1.75	9.17	0.27	3.22	0.33	0.66	2.50	14.34	0.80	3.76	2.60	7.80
Totals	14.00	100	19.08	100	8.38	100	48.49	100	17.43	100	21.25	100	33.32	100

Table 6. (Continued) Species Distribution, in Net Catch, by Weight and Percentage, Lake Weatherford, August 15, 1957 to October 31, 1958.

Month	May		July		September		Totals	
	Wt.	%	Wt.	%	Wt.	%	Wt.	%
<u>D. cepedianum</u>	2.75	10.12	7.00	55.64	0.71	5.64	44.93	21.0
<u>Carpiodes carpio</u>	1.50	5.52	1.50	11.92	0.00	0.00	13.36	6.2
<u>Cyprinus carpio</u>	0.00	0.00	0.00	0.00	0.00	0.00	9.45	4.4
<u>I. punctatus</u>	0.57	2.10	0.72	5.57	1.65	13.11	5.92	2.7
<u>I. melas</u>	2.08	7.65	0.00	0.00	0.00	0.00	55.28	25.8
<u>I. natalis</u>	0.00	0.00	0.00	0.00	2.20	17.48	4.00	1.9
<u>M. salmoides</u>	2.56	9.42	0.63	5.01	1.90	15.09	40.22	18.8
<u>L. cyanellus</u>	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.1
<u>L. microlophus</u>	2.47	9.10	0.00	0.00	0.00	0.00	4.87	2.3
<u>L. macrochirus</u>	13.18	48.51	0.00	0.00	0.41	3.25	16.94	7.9
<u>P. annularis</u>	2.06	7.58	2.75	21.86	5.72	45.43	19.05	8.9
Totals	27.17	100	12.58	100	12.59	100	214.29	100

