

JOB COMPLETION REPORT

As required by

FEDERAL AID IN FISHERIES RESTORATION ACT

TEXAS

Federal Aid Project No. F-2-R-11

Fisheries Investigations and Surveys of the
Waters of Region II-B

Job No. B-22: Fisheries Reconnaissance

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May 19, 1964

ABSTRACT

Fish collections were taken from Lakes Austin, Belton, Buchanan, Granite Shoals, Marble Falls, Travis, Town, Brady and the Blanco, Colorado, Frio, Guadalupe, Little, Llano, Medina, Pedernales, San Gabriel and San Marcos Rivers. In addition to the fish collections, gross ecological observations were made on all stream systems and lake basins in an effort to determine changes which could require modifications in present fishing regulations for the areas.

No major changes in habits or fish populations were noted during the study and recommendations for fishing regulations, based on these findings remain the same.

JOB COMPLETION REPORT

State of Texas

Project No. F-2-R-11

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

Job No. B-22

Title: Fisheries Reconnaissance

Period Covered: February 1, 1963 - January 31, 1964

Objectives:

To determine gross changes in fishing conditions and factors influencing fish populations.

1. To determine major changes in the balance between desirable and undesirable fish species and gross changes in abundance and condition of individual fish species.
2. To determine when indicated, major changes in ecological conditions including water quality, turbidity, and fish cover.
3. To determine when indicated, possible sources of pollution.
4. To determine trends in fishing pressure and harvest composition.
5. To insure the adequacy of existing fish harvest regulations.

Procedure:

Fish populations of selected waters were sampled principally by the use of small mesh experimental gill nets. These nets consist of five 25-foot sections ranging between one and three inch square mesh. Mesh size increases by one-half inch per section. Random net sets were used in all cases. Seine samples were made with a 26-foot bag seine and a 32-foot straight seine.

The lakes to be sampled were chosen by the assistant project leader and the choice was dependant on current weather conditions, request for surveys, and known gross changes in habitat. Net sets were made at stations established in the basic survey of each particular lake; if nets were set at random in the basic survey of the concerned lake, random sets were made. Seine samples were made as time and weather permitted.

Water samples were taken and analyzed for O_2 , CO_2 , total hardness, chlorides and pH. Samples, taken from each lake surveyed, were taken from a vertical series, bottom to surface in 10-foot increments.

The data collected in the field were checked monthly to determine any major trends in population ratio or relative abundance of species as well as general condition. Spot checks of creels and talks with camp operators aided in determining the fishing pressure and angler's success.

Table 1 is a checklist of the species mentioned in this report.

FINDINGS:

The results of the water quality studies are not given in this report because there were no unusual readings detected during the project segment. These studies have been recorded and are on file at project headquarters on the State Fish Hatchery, San Marcos, Texas for future comparison.

Menidia beryllina, tidewater silversides minnow, were collected on Lakes Buchanan, Inks, Marble Falls, Granite Shoals, and Belton during the project segment. This species was unrecorded for these Lakes and the particular area. It was recorded in a publication to The Texas Journal of Science.

Lake Austin

Ten experimental gill nets were set in Lake Austin, Travis County, on January 6-8, 1964. Table 2 contains the results of these netting collections. No unusual population changes or trends were noted in this limited sampling.

Lake Belton

Netting trips were made to Lake Belton, Bell County, on May 21-23, August 26-28, and December 17-19, 1963 where a total of 34 experimental gill nets were set. Table 3 contains the results of the netting operations.

Table 3a contains the results of seine sampling on Lake Belton. Menidia beryllina, tidewater silversides, were noted for the first time in Lake Belton. The species seems to be present in large numbers. A very rapid population build-up has been noted in other reservoirs in Central Texas.

White bass and channel catfish seem to comprise the majority of the angler's catch on Lake Belton.

Lake Buchanan

A total of 42 experimental gill nets were set in Lake Buchanan, Burnet and Llano Counties on May 16-18, August 13-15, September 11-13, and November 26-28, 1963. Table 4 gives the results of the netting. Seine samples made in conjunction with the netting are given in Table 4a. Menidia beryllina comprised the majority of the seine collections.

The results of these netting collections offer no great variation from data collected during the previous segment. Fishing pressure on Lake Buchanan is still below normal, although trotline fishermen continue to harvest a number of catfish.

Lake Granite Shoals

Trips were made to Lake Granite Shoals, Llano and Burnet Counties on March 18-20, July 15-17, September 18-20, October 28-30, November 11-13, and December 10-11, 1963. A total of 54 experimental gill nets were set, and the results of these netting collections are given in Table 5. Results of seining collections made in conjunction with netting operations are given in Table 5a. Tidewater silverside were collected

on Lake Granite Shoals, but not in great numbers.

The number of smallmouth buffalo harvested in netting collections has decreased considerably. This reduction could be the effect of the commercial fishermen on the lake; at the same time, the carpsucker population seems to be increasing. A concentrated survey of the lake will be undertaken in the coming segment to determine the overall effect on the fish population of commercial netting of the lake.

Fishermen reports indicate that there has not been a decrease in angling success in the past segment. White bass, black bass, and catfish have all been harvested successfully by fishermen on Lake Granite Shoals.

Lake Marble Falls

Lake Marble Falls, Burnet County was netted on March 11-13, July 15-17, October 22-24, 1963, and January 27-29, 1964. A total of 41 experimental gill nets were set in the lake. The results of these netting collections are given in Table 6. Table 6a contains the results of seine sampling of the lake.

About the only fishing success on Lake Marble Falls is attributed to trotline fishermen. White bass fishing is good seasonally in the upper portions of the lake.

Lake Travis

Netting trips were made to Lake Travis, Burnet and Travis Counties, on August 20-22, 1963, and January 16-18, 1964, where a total of 26 nets were set. Netting results are given in Table 7, and the results of seine samples, done in conjunction with netting, are given in Table 7a. The rough fish population has dropped in both per cent of weight and per cent of number as compared with the previous segment's netting results. Because of the limited sampling, however, no definite conclusions can be drawn as to the decrease.

Fishing pressure on Lake Travis was off considerably, presumably due to the low water level of the lake throughout the project segment. Boat launching sites were difficult to find because of the low water level. The majority of fishing was done from the bank and commercial docks. Limited fishing success was noted on Lake Travis, except for some trotline, and white bass catches.

Town Lake

Twelve experimental gill nets were set in Town Lake, Travis County, on January 9-11, 1964. Results of this netting are given in Table 8. The sampling was too limited to draw any definite conclusions. Turbidimeter readings were taken on the lake above and below dredging operations. These readings will be used for comparison in future work.

Brady City Lake

The fish population in Brady Creek in the basin of the newly completed Brady Lake was eradicated during the past segment. Details of the job may be found in Project Report F-14-D-7, Job No. 16a41. The lake was stocked with approximately 77,000 black bass, 3,000 flathead catfish, and 10,000 channel catfish.

Approximately four months after stocking largemouth bass were collected by project personnel. The bass averaged eight inches in length, with some specimens ten inches in length. The average weight of the bass collected was about one-half pound. Future reconnaissance work will be carried out on Brady Creek to note the progress of the fish population.

RIVERS

The rivers which were netted by project personnel are given below. Seining collections were made on most of the rivers, and the data were recorded. The seining data is on file at the project headquarters on the State Fish Hatchery, San Marcos, Texas. This data will be available for comparison in the future.

Blanco River

Three experimental gill nets were set in the Blanco River, Blanco County, at the Blanco State Park. Results of the netting are given in Table 9.

A die-off of largemouth bass and sunfish, due presumably to a hailstorm, occurred in the park area in the early summer. Black bass from the United States Fish Cultural Station in San Marcos, were placed in the river following the die-off.

Colorado River

Three experimental gill nets were set in the Colorado River, Mills County, on April 23, 1963. Table 10 illustrates the results of these netting operations.

The high population of rough fish in the river has rendered the angler's success negligible. A few catfish are harvested by trotline fishermen, but this method is not overly successful.

Frio River

Three experimental gill nets were set in the Frio River, Real County, on June 27, 1963. Table 11 shows the results of this netting.

Fishing for black bass and sunfish is fair on the river, and fishermen harvest a number of catfish both still fishing and trotlining. Smallmouth bass were stocked in the Frio River in 1961, but no survival has been demonstrated.

Guadalupe River

Ten experimental gill nets were set in the Guadalupe River, Kerr, Kendall, and Comal Counties, during the past segment. Table 12 shows the results of these netting collections.

Despite the absence of black bass on the netting table, there is heavy fishing pressure, and a good harvest of this species along the river. Sunfish and catfish are caught by fishermen the year round on the Guadalupe River.

Little River

Four experimental gill nets were set in the Little River, Milam County on May 23, 1963. The river was on a rise when the nets were set, and only 15 longnose gar and one shortnose gar were collected. Future work on the river is anticipated.

Llano River

Eleven experimental gill nets were set in the Llano River in Kimble, Mason, and Llano Counties on April 23, April 24, and May 30, 1963, respectively. The results of these netting collections are given in Table 13.

The majority of the fish harvested in the river is comprised of catfish and sunfish, with some black bass caught in the larger pools.

Reconnaissance work will be carried on in the future to note any changes or trends in the fish population of the Llano River.

Medina River

Twelve experimental gill nets were set in the Medina River, Bandera County, on June 17-18, and November 19-21, 1963. Table 14 illustrates the results of these netting collections.

Although there had been some discussion among the citizens of Bandera County to eradicate the present fish population, and restock with desirable fish, no such action has been initiated. Future reconnaissance work on the Medina River will be carried out to determine any changes in the fish population.

Pedernales River

Six experimental gill nets were set in the Pedernales River, Gillespie and Blanco Counties on April 25-26 and June 6-7, 1963. Table 15 illustrates the results of these netting collections.

Angling for catfish and carpsuckers comprises the majority of the fishing pressure on this river.

San Gabriel River

Eight experimental gill nets were set in the San Gabriel River, Williamson County, on June 27-29, 1963. Table 16 gives the netting results of these netting operations.

Most of the fishing pressure in the county centers around the carpsuckers, but a limited amount of trotlining is also done on the river.

San Marcos River

Three experimental gill nets were set in the San Marcos River, Hays County, on June 6-7, 1963. Table 17 shows the netting results.

Tourists, college students, and local citizens fish the river quite heavily, and a large number of fish are harvested annually.

Prepared by Richard L. White
Project Leader

Approved by Marion Toole
Coordinator

Date: May 19, 1964

JOHN E. TILTON
Regional Supervisor

Table 1

Checklist of Fishes

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
<u>Lepisosteus oculatus</u>	Spotted gar
<u>Lepisosteus osseus</u>	Longnose gar
<u>Dorosoma cepedianum</u>	Gizzard shad
<u>Cyprinostomus elongatus</u>	Blue sucker
<u>Ictiobus bubalus</u>	Smallmouth buffalo
<u>Carpionotus carpio</u>	River carpsucker
<u>Moxostoma congestum</u>	Gray redhorse
<u>Cyprinus carpio</u>	Carp
<u>Notemigonus crysoleucas</u>	Golden shiner
<u>Notropis venustus</u>	Blacktail shiner
<u>Notropis lutrensis</u>	Red shiner
<u>Ictalurus punctatus</u>	Channel catfish
<u>Ictalurus furcatus</u>	Blue catfish
<u>Ictalurus melas</u>	Black bullhead catfish
<u>Ictalurus natalis</u>	Yellow bullhead catfish
<u>Pylodictis olivaris</u>	Flathead catfish
<u>Fundulus notatus</u>	Blackstripe topminnow
<u>Gambusia affinis</u>	Mosquito fish
<u>Mugil cephalus</u>	Striped mullet
<u>Menidia beryllina</u>	Tidewater silverside
<u>Roccus chrysops</u>	White bass
<u>Micropterus treculi</u>	Guadalupe bass (Texas Spotted Bass)
<u>Micropterus salmoides</u>	Largemouth bass
<u>Chaenobryttus gulosus</u>	Warmouth
<u>Lepomis cyanellus</u>	Green sunfish
<u>Lepomis microlophus</u>	Redear sunfish
<u>Lepomis macrochirus</u>	Bluegill
<u>Lepomis auritus</u>	Redbreast sunfish
<u>Lepomis megalotis</u>	Longear sunfish
<u>Pomoxis annularis</u>	White crappie
<u>Percina caprodes</u>	Logperch
<u>Aplodinotus grunniens</u>	Freshwater drum
<u>Cichlasoma cyanoguttatum</u>	Rio Grande perch

Table 2

LAKE AUSTIN
(Netting data, 1964)

SPECIES	NUMBER	PER CENT BY NUMBER	WEIGHT	PER CENT BY WEIGHT
<i>Dorosoma cepedianum</i>	77	45.83	35.32	19.39
<i>Ictiobus bubalus</i>	3	1.78	17.44	9.57
<i>Carpionodes carpio</i>	28	16.67	76.85	42.18
<i>Ictalurus punctatus</i>	5	2.98	6.82	3.74
<i>Ictalurus fuscatus</i>	8	4.76	19.95	10.95
<i>Roccus chrysops</i>	4	2.38	4.25	2.33
<i>Micropterus salmoides</i>	5	2.98	12.07	6.62
<i>Chaenobryttus gulosus</i>	3	1.78	0.63	0.35
<i>Lepomis macrochirus</i>	11	6.55	1.14	0.63
<i>Pomoxis annularis</i>	15	8.93	4.82	2.65
<i>Aplodinotus grunniens</i>	1	0.59	1.13	0.62
<i>Notemigonus crysoleucas</i>	8	4.77	1.76	0.97
TOTALS	168	100.00	182.18	100.00

Table 3

LAKE BELTON
(Netting data, 1963)

SPECIES	NUMBER	PER CENT BY NUMBER	WEIGHT	PER CENT BY WEIGHT
Lepisosteus oculatus	21	5.17	24.69	4.92
Lepisosteus osseus	18	4.43	79.38	15.81
Dorosoma cepedianum	50	12.32	27.20	5.42
Ictiobus bubalus	18	4.43	75.58	15.05
Carpionodes carpio	20	4.93	37.76	7.52
Moxostoma congestum	11	2.71	15.43	3.07
Ictalurus punctatus	43	10.59	85.01	16.93
Cyprinus carpio	5	1.23	16.82	3.35
Pylodictis olivaris	2	0.49	4.94	0.98
Roccus chrysops	71	17.49	99.66	19.84
Micropterus treculi	2	0.49	0.69	0.14
Micropterus salmoides	7	1.72	5.50	1.09
Chaenobryttus gulosus	3	0.74	0.50	0.10
Lepomis cyanellus	7	1.72	1.12	0.22
Lepomis microlophus	2	0.50	0.51	0.10
Lepomis macrochirus	76	18.72	9.95	1.98
Lepomis megalotis	16	3.94	2.01	0.40
Pomoxis annularis	34	8.38	15.46	3.08
TOTALS	406	100.00	502.21	100.00

Table 3a

LAKE BELTON
(Seining collections, 1963)

SPECIES	May 21, 1963	August 28, 1963
Dorosoma cepedianum	0	11
Carpionodes carpio	0	11
Notemigonus crysoleucas	1	0
Notropis venustus	100	147
Notropis lutrensis	29	0
Menidia beryllina	1110	1202
Micropterus treculi	1	5
Micropterus salmoides	5	16
Chaenobryttus gulosus	0	1
Lepomis cyanellus	0	2
Lepomis macrochirus	1	337
Lepomis megalotis	0	30
Percina caprodes	1	0
TOTALS	1248	1762

Table 4

LAKE BUCHANAN
(Netting data, 1963)

SPECIES	NUMBER	PERCENT BY NUMBER	WEIGHT	PER CENT BY WEIGHT
Lepisosteus osseus	117	6.21	304.72	13.64
Dorosoma cepedianum	760	40.36	278.28	12.45
Ictiobus bubalus	23	1.22	146.20	6.54
Carpionodes carpio	465	24.70	1046.62	46.83
Moxostoma congestum	2	.10	3.32	.15
Cyprinus carpio	69	3.67	115.97	5.19
Ictalurus punctatus	102	5.41	99.57	4.47
Pylodictis olivaris	6	.32	64.20	2.87
Roccus chrysops	193	10.25	117.76	5.26
Micropterus treculi	27	1.44	20.81	.93
Micropterus salmoides	18	.95	16.00	.72
Lepomis cyanellus	2	.11	.32	.01
Lepomis microlophus	5	.26	1.38	.06
Lepomis macrochirus	23	1.22	3.87	.17
Lepomis megalotis	27	1.44	2.46	.11
Pomoxis annularis	17	.90	8.20	.37
Aplodinotus grunniens	27	1.44	5.05	.23
TOTALS	1883	100.00	2234.73	100.00

Table 4a.

LAKE BUCHANAN
(Seining collections, 1963)

SPECIES	May 17, 1964	August 14, 1963	September 9, 1963
Dorosoma cepedianum	0	1	7
Cyprinus carpio	0	0	1
Notropis venustus	45	110	146
Notropis lutrensis	20	0	8
Menidia beryllina	229	412	419
Micropterus treculi	0	3	4
Micropterus salmoides	0	2	8
Lepomis cyanellus	0	0	0
Lepomis macrochirus	1	2	19
Lepomis megalotis	2	53	15
Percina caprodes	0	0	2
TOTALS	297	583	629

Table 5

LAKE GRANITE SHOALS
(Netting data, 1963)

SPECIES	NUMBER	PER CENT+ BY NUMBER	WEIGHT	PER CENT BY WEIGHT
Lepisosteus osseus	66	4.26	213.65	9.69
Dorosoma cepedianum	489	31.54	147.40	6.68
Ictiobus bubalus	218	14.07	998.64	45.29
Carpiodes carpio	350	22.58	463.02	21.00
Moxostoma congestum	2	0.13	2.25	0.11
Cyprinus carpio	15	0.97	64.78	2.93
Ictalurus punctatus	53	3.42	127.80	5.80
Pylodictis olivaris	2	0.13	15.38	0.70
Roccus chrysops	91	5.87	102.74	4.66
Micropterus treculi	8	0.52	6.61	0.30
Micropterus salmoides	22	1.42	24.45	1.11
Chaenobryttus gulosus	9	0.58	2.46	0.11
Lepomis cyanellus	8	0.52	1.45	0.07
Lepomis microlophus	13	0.84	1.43	0.06
Lepomis macrochirus	176	11.35	18.60	0.84
Lepomis auritis	1	0.06	0.44	0.02
Lepomis megalotis	7	0.45	0.76	0.04
Amoxis annularis	15	0.97	7.79	0.35
Aplodinotus grunniens	2	0.13	4.63	0.21
Notemigonus crysoleucas	3	0.19	0.53	0.03
TOTALS	1550	100.00	2204.81	100.00

Table 5a

LAKE GRANITE SHOALS
(Seining collections, 1963)

SPECIES	September 19, 1963	October 28, 1963	November 12, 1963
Dorosoma cepedianum	2	0	0
Notropis venustus	8	3	3
Fundulus notatus	0	5	12
Gambusia affinis	0	1	0
Menidia beryllina	2	0	7
Micropterus treculi	1	0	0
Micropterus salmoides	19	1	6
Lepomis microlophus	16	0	11
Lepomis macrochirus	8	2	12
Lepomis megalotis	11	1	1
Percina caprodes	2	0	1
TOTALS	69	13	53

Table 6

LAKE MARBLE FALLS
(Netting data, 1963)

SPECIES	NUMBER	PER CENT BY NUMBER	WEIGHT	PER CENT BY WEIGHT
Lepisosteus osseus	17	2.15	40.07	4.91
Dorosoma cepedianum	369	46.77	212.04	25.99
Ictiobus bubalus	41	5.19	141.65	17.37
Carpionodes carpio	138	17.49	269.75	33.06
Ictalurus punctatus	73	9.26	57.65	7.07
Pylodictis olivaris	5	0.63	34.82	4.27
Roccus chrysops	22	2.79	25.33	3.10
Micropterus treculi	6	0.76	4.69	0.57
Micropterus salmoides	12	1.52	5.32	0.65
Chaenobryttus gulosus	7	0.89	1.59	0.19
Lepomis cyanellus	3	0.38	0.71	0.09
Lepomis microlophus	1	0.12	0.13	0.02
Lepomis macrochirus	55	6.98	7.28	0.89
Lepomis megalotis	5	0.63	0.73	0.09
Pomoxis annularis	30	3.81	12.89	1.58
plodinotus grunniens	5	0.63	1.25	0.15
TOTALS	789	100.00	815.90	100.00

Table 6a

LAKE MARBLE FALLS
(Seining collections, 1963)

SPECIES	October 23, 1963
Dorosoma cepedianum	3
Notropis venustus	224
Notropis lutrensis	42
Gambusia affinis	3
Menidia beryllina	733
Micropterus treculi	7
Micropterus salmoides	5
Lepomis macrochirus	17
Lepomis megalotis	44
Percina caprodes	11
TOTALS	1089

Table 7

LAKE TRAVIS
Travis and Burnet Counties
(Netting data, 1963)

SPECIES	NUMBER	PER CENT BY NUMBER	WEIGHT	PER CENT BY WEIGHT
Lepisosteus osseus	15	4.56	33.53	7.20
Dorosoma cepedianum	106	32.22	59.23	12.72
Ictiobus bubalus	25	7.60	91.91	19.75
Carpionodes carpio	69	20.97	167.13	35.92
Moxostoma congestum	7	2.13	9.50	2.04
Cyprinus carpio	2	0.61	7.44	1.60
Ictalurus punctatus	36	10.94	17.31	3.72
Ictalurus furcatus	23	6.99	33.06	7.10
Pylodictis olivaris	4	1.23	10.12	2.17
Mugil cephalus	1	0.30	6.81	1.46
Roccus chrysops	19	5.77	22.48	4.84
Micropterus treculi	11	3.34	4.75	1.02
Micropterus salmoides	1	0.30	0.25	0.05
Lepomis macrochirus	2	0.61	0.25	0.05
Lepomis megalotis	2	0.61	0.37	0.08
Aplodinotus grunniens	1	0.30	0.44	0.09
Cichlasoma cyanoguttatum	5	1.52	0.88	0.19
TOTALS	329	100.00	465.46	100.00

Table 7a

LAKE TRAVIS
(Seining collections, 1963)

SPECIES	August 19 and 20, 1963
Dorosoma cepedianum	23
Notropis venustus	285
Notropis lutrensis	1
Menidia beryllina	152
Micropterus treculi	1
Micropterus salmoides	2
Lepomis cyanellus	2
Lepomis macrochirus	6
Lepomis megalotis	8
Percina caprodes	2
Cichlasoma cyanoguttatum	4
TOTALS	486

Table 8

TOWN LAKE
Travis County
(Netting data, 1963)

SPECIES	NUMBER	PER CENT BY NUMBER	WEIGHT	PER CENT BY WEIGHT
Lepisosteus oculatus	1	0.47	1.00	0.35
Lepisosteus osseus	3	1.41	6.26	2.22
Dorosoma cepedianum	60	28.17	68.08	24.13
Cycleptus elongatus	1	0.47	3.75	1.33
Carpionodes carpio	41	19.25	91.18	32.31
Moxostoma congestum	19	8.92	40.90	14.49
Ictalurus punctatus	19	8.92	30.91	10.95
Mugil cephalus	2	0.94	1.81	0.64
Roccus chrysops	2	0.94	2.88	1.02
Micropterus treculi	2	0.94	3.87	1.37
Micropterus salmoides	10	4.69	18.52	6.57
Chaenobryttus gulosus	1	0.47	0.13	0.05
Lepomis microlophus	2	0.94	0.38	0.13
Lepomis macrochirus	32	15.02	3.64	1.29
Lepomis megalotis	1	0.47	0.13	0.05
Pomoxis annularis	14	6.57	7.63	2.70
Cichlasoma cyanoguttatum	1	0.47	0.50	0.18
Notemigonus crysoleucas	2	0.94	0.62	0.22
TOTALS	213	100.00	282.19	100.00

Table 9

BLANCO RIVER, STATE PARK
Blanco County
(Netting data, 1963)

SPECIES	NUMBER	PER CENT BY NUMBER	WEIGHT	PER CENT BY WEIGHT
Notemigonus crysoleucas	4	13.33	9.94	8.24
Ictalurus punctatus	5	16.66	3.37	29.67
Ictalurus melas	5	16.66	2.56	22.52
Pylodictis olivaris	1	3.33	2.75	24.17
Lepomis cyanellus	1	3.33	0.37	3.29
Lepomis macrochirus	13	43.33	1.25	10.98
Lepomis megalotis	1	3.33	0.13	1.09
TOTALS	30	100.00	11.37	100.00

Table 10

COLORADO RIVER
Mills County
(Netting data, 1963)

SPECIES	NUMBER	PER CENT BY NUMBER	WEIGHT	PER CENT BY WEIGHT
Lepisosteus osseus	31	28.70	50.13	26.10
Dorosoma cepedianum	15	13.89	15.07	7.85
Ictiobus bubalus	5	4.63	17.94	9.34
Carpiodes carpio	50	46.30	97.53	50.78
Cyrpinus carpio	2	1.85	6.44	3.35
Ictalurus punctatus	1	0.92	1.88	0.97
Pylodictis olivaris	1	0.93	1.06	0.56
Aplodinotus grunniens	3	2.78	2.01	1.05
TOTALS	108	100.00	192.06	100.00

Table 11

KENT CREEK
Real County
(Frio River, netting data, 1963)

SPECIES	NUMBER	PER CENT BY NUMBER	WEIGHT	PER CENT BY WEIGHT
Moxostoma congestum	1	1.49	2.00	4.74
Ictalurus melas	3	4.47	6.56	15.57
Ictalurus natalis	33	49.25	21.13	50.14
Micropterus salmoides	5	7.46	6.13	14.55
Chaenobryttus gulosus	2	2.99	0.50	1.18
Lepomis microlophus	5	7.46	1.81	4.29
Lepomis macrochirus	13	19.40	3.50	8.31
Lepomis auritus	22	2.99	0.13	0.31
Lepomis megalotis	1	1.49	0.13	0.31
TOTALS	65	97.00	41.89	99.40

Table 12

GUADALUPE RIVER
Kerrville
(Netting data, 1963)

SPECIES	NUMBER	PER CENT BY NUMBER	WEIGHT	PER CENT BY WEIGHT
Lepisosteus osseus	46	17.42	98.99	22.50
Dorsoma cepedianum	80	30.31	107.85	24.53
Carpiodes carpio	24	9.09	57.25	13.03
Moxostoma congestum	59	22.35	103.61	23.57
Ictalurus punctatus	21	7.95	36.07	8.20
Ictalurus melas	11	4.17	2.00	0.45
Pylodictis olivaris	6	2.28	29.13	6.62
Chaenobryttus gulosus	4	1.51	1.69	0.38
Lepomis macrochirus	9	3.41	0.94	0.21
Lepomis megalotis	4	1.51	2.26	0.51
TOTALS	264	100.00	439.79	100.00

Table 13

LLANO RIVER
Kimble, Mason, and Llano Counties
(Netting data, 1963)

SPECIES	NUMBER	PER CENT BY NUMBER	WEIGHT	PER CENT BY WEIGHT
Lepisosteus osseus	33	8.35	54.67	10.47
Dorosoma cepedianum	253	64.05	272.93	52.29
Ictiobus bubalus	24	3.55	56.08	10.74
Carpiodes carpio	41	10.38	53.77	10.30
Moxostoma congestum	4	1.01	6.50	1.25
Cyprinus carpio	7	1.77	39.94	7.65
Ictalurus punctatus	22	5.58	32.61	6.25
Pylodictis olivaris	1	0.25	1.06	0.20
Micropterus salmoides	2	0.51	1.24	0.25
Chaenobryttus gulosus	2	0.51	0.53	0.10
Lepomis cyanellus	6	1.52	1.02	0.20
Lepomis macrochirus	8	2.02	1.02	0.20
Pomoxis annularis	1	0.25	0.15	0.03
Cichlasoma cyanoguttatum	1	0.25	0.39	0.07
TOTALS	405	100.00	521.91	100.00

Table 14

MEDINA RIVER
Bandera County
(Netting data, 1963)

SPECIES	NUMBER	PER CENT BY NUMBER	WEIGHT	PER CENT BY WEIGHT
Lepisosteus osseus	45	17.11	76.54	19.29
Dorosoma cepedianum	112	42.58	116.90	29.46
Ictiobus bubalus	18	6.85	87.07	21.94
Capriodes carpio	2	9.76	5.07	1.27
Moxostoma congestum	25	9.51	29.12	7.34
Cyprinus carpio	19	7.22	36.45	9.19
Ictalurus punctatus	22	8.37	23.21	5.85
Pylodictis olivaris	5	1.90	18.44	4.65
Micropterus treculi	1	0.38	0.38	0.10
Micropterus salmoides	2	0.76	1.19	0.30
Chaenobryttus gulosus	2	0.76	0.38	0.10
Lepomis macrochirus	10	3.80	2.12	0.53
TOTALS	253	109.00	396.87	100.02

Table 15

PEDERNALES RIVER
Gillespie County
(Netting data, 1963)

SPECIES	NUMBER	PER CENT BY NUMBER	WEIGHT	PER CENT BY WEIGHT
Capriodes carpio	118	67.82	182.25	74.60
Moxostoma congestum	7	4.02	8.31	3.40
Cyprinus carpio	10	5.75	34.18	13.99
Ictalurus punctatus	11	6.32	8.06	3.30
Pylodictis olivaris	1	0.57	3.00	1.23
Micropterus salmoides	14	8.05	4.79	1.96
Chaenobryttus gulosus	2	1.15	0.51	0.21
Lepomis macrochirus	7	4.02	1.92	0.79
Pomoxis annularis	4	2.30	1.28	0.52
TOTALS	174	100.00	244.30	100.00

Table 16

SAN GABRIEL RIVER
Williamson County
(Netting data, 1963)

SPECIES	NUMBER	PER CENT BY NUMBER	WEIGHT	PER CENT BY WEIGHT
Dorosoma cepedianum	18	18.56	13.49	19.10
Carpionodes carpio	21	21.64	14.63	20.72
Moxostoma congestum	9	9.28	7.81	11.06
Cyprinus carpio	1	1.03	8.75	12.39
Ictalurus punctatus	8	8.25	8.31	11.77
Ictalurus natalis	3	3.09	0.81	1.15
Pylodictis olivaris	1	1.03	6.88	9.74
Micropterus treculi	6	6.19	2.00	2.83
Micropterus salmoides	2	2.06	1.62	2.29
Lepomis cyanellus	18	18.56	2.31	3.27
Lepomis macrochirus	6	6.19	0.76	1.08
Lepomis megalotis	3	3.09	0.25	0.35
Aplodinotus grunniens	1	1.03	3.00	4.25
TOTALS	97	100.00	70.62	100.00

Table 17

SAN MARCOS RIVER
Hays County
(Netting data, 1963)

SPECIES	NUMBER	PER CENT BY NUMBER	WEIGHT	PER CENT BY WEIGHT
Dorosoma cepedianum	6	17.65	1.31	4.37
Moxostoma congestum	13	38.24	19.94	66.58
Ictalurus punctatus	3	8.82	3.88	12.95
Pylodictis olivaris	2	5.89	2.13	7.11
Micropterus salmoides	2	5.89	1.00	3.34
Chaenobryttus gulosus	1	2.94	0.25	0.84
Lepomis macrochirus	1	2.94	0.13	0.43
Lepomis auritus	2	5.89	0.31	1.04
Lepomis megalotis	2	5.89	0.25	0.83
Pomoxis annularis	2	5.89	0.75	2.51
TOTALS	34	100.04	29.95	100.00