

**FILE**

JOB COMPLETION REPORT

As required by

FEDERAL AID IN FISHERIES RESTORATION ACT

Texas

Federal Aid Project No. F-2-R-9

FISHERIES INVESTIGATIONS AND SURVEYS OF THE WATERS OF REGION 2-B

Job No. B-22      Fisheries Reconnaissance

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#### ABSTRACT

An effort was made to determine the extent of a fish kill which occurred on the Colorado River during January 1961. Counts of dead fish along selected stretches of the 200 river miles affected, plus seining collections, were made for this purpose. A near total kill was indicated for the first 50 miles of polluted stream.

Routine netting trips were made to Lake Travis, Marble Falls Lake, and Lake Granite Shoals on the Highland Chain of the Colorado River, and to Lake Belton, where routine physical and ecological notes were made. These investigations reveal no major fish population changes, except that in Lake Travis there is evidence indicating a sharp reduction in blue catfish since 1954. Marble Falls Lake continues to provide poor largemouth bass fishing.

In Lake Granite Shoals, Myriophyllum sp. continues to interfere with boating and fishing activities. A lake drawdown in January 1962 may relieve the problem during the coming segment.

There has been a recent reduction in commercial facilities at Lake Belton, concurrent with poor white crappie fishing.

## JOB COMPLETION REPORT

State of Texas

Project No. F-2-R-9

Name: Fisheries Investigations and Surveys of  
the Waters of Region 2-B.

Job No. B-22

Title: Fisheries Reconnaissance

Period Covered: February 1, 1961 - January 31, 1962

### Objectives:

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

### 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. An effort was made to note ecological conditions which might affect the fisheries complex. Turbidity, siltation, aquatic vegetation, land use in the surrounding terrain, and pollution indicators were routinely observed.

Field samples were compiled and analyzed to determine major changes in population ratios or relative abundance of species as well as general condition. These data will be used in planning future survey or management work in the concerned waters. A checklist of species mentioned in this report is given in Table 1.

### Findings:

#### Colorado River

During February 1961 an effort was made to determine the extent of a fish kill which occurred on the Colorado River below Austin in January of that year. Details of the kill are reported in Job C-1, F-2-R-9, 1962.

Kill estimates, based on visual counts along selected stretches of the river, reached 1,000 pounds per stream mile for the initial 200 miles of the kill area. A near total kill was apparent for the first 50 miles of that distance, as seining collections at selected points in the area revealed no fish life except at the mouth of a small tributary where one blackstripe topminnow, one bluegill, and a few gambusia were taken.

Beyond the approximate 200-mile stretch of heavily affected river, the extent of the kill apparently diminished rapidly. The section of river concerned has since been removed from Project F-2-R boundaries, and work in this area was consequently abandoned.

Lake Travis

Sixteen experimental gill nets were set in Lake Travis, Travis and Burnet counties, on October 25-26, at the confluence of the Pedernales River with the lake. An effort was made by the project leader to inspect commercial facilities, interview fishermen, and reconnoiter the general area, as most of Lake Travis is largely unfamiliar to current project personnel.

Netting data for Lake Travis are presented in Table 2. A comparison was made between the collected data and that of the basic inventory (Job B-1, F-2-R-1, 1954) since no resurvey work of consequence has been accomplished on the lake since that report. While the data is too sketchy to draw conclusions, it is noted that gizzard shad comprised 43.59 per cent of numbers and 9.78 per cent of weight during the period of the original inventory, as compared with 35.57 per cent of numbers and 16.69 per cent of weight as shown in Table 2. If these data may be compared, it appears that the change in relative abundance of shad in 22-year-old Lake Travis has not been significant since 1954, but that average size has increased.

Selected comparisons between the 1954 inventory data and data collected during this segment are indicated below:

	Per Cent	Number	Per Cent	Weight	Fish/100 Ft. Net Set	
	1954	1961	1954	1961	1954	1961
Gizzard shad	43.59	35.57	9.78	16.69	5.88	3.45
Smallmouth buffalo	1.85	6.70	6.54	17.84	0.24	0.65
River carpsucker	7.02	6.18	11.95	11.97	0.94	0.60
Channel catfish	3.62	5.67	3.29	4.70	0.48	0.55
Blue catfish	15.76	1.55	15.01	0.86	2.12	0.15
Spotted bass	1.60	1.03	2.57	0.59	0.21	0.10
Largemouth bass	1.98	2.58	3.47	0.69	0.26	0.20

Comparisons were made on these species (in the absence of other data) despite the fact that it is obvious that quantitative, seasonal, and other sampling variations are great. The most striking comparison from the above is that pertaining to blue catfish, which were almost absent from the 1961 collections. This is felt to reflect an accurate trend, since all sources (fishermen, news reports, and observations by project personnel) have indicated a steady decline in this species.

Marble Falls Lake

On July 20-21, ten experimental net sets were made on Lake Marble Falls, Burnet County. During the period of this brief reconnaissance, an effort was made to interview fishing camp operators and fishermen regarding angling success. As reported in earlier segments, angling success for largemouth bass appears well below the norm for the six lakes comprising the Highland Chain of the Colorado River. Trotlining for channel and flathead catfish remains the most popular and productive fishing method, and seasonally, white bass fishing is fair in the upper lake.

A sandy terrance bordering the west side of the lake for some two miles is eroding at a rapid pace and resulting siltation is serious. The shoreline along this area is receding so quickly that pecan groves whose borders were located 10 feet to 25 feet from the waters edge 3 years ago, are now rapidly disappearing into the lake. Results of the Marble Falls netting are shown in Table 3.

#### Lake Granite Shoals

Trips were made to Lake Granite Shoals, Llano and Burnet counties on August 30-31 and November 21-22, where a total of 26 experimental gill net sets were made. Results of this netting are included in Table 4.

No significant variations between these and previous net collections were noted. It is felt that the nettable fish population complex remained essentially unchanged during the segment.

The most serious fisheries problem existing in this lake is that of submerged aquatic vegetation, chiefly Myriophyllum sp., which chokes most coves, tributary mouths, and inlets to the exclusion of sport fishing. Vast areas of open lake are also inaccessible to fishermen because of the vegetation. Considerable money is spent each year by fishing camp and dock owners for chemical control of the vegetation around boat and fishing docks and their approaches. A lake drawdown, accomplished during January 1962 by the Lower Colorado River Authority, may help to relieve this problem during the coming growing season.

#### Lake Belton

Netting trips were made to Lake Belton in Bell County on June 13-14 and December 20-21 where a total of 21 experimental net sets were made. Results of these collections are shown in Table 5. At least from this limited data, no major population changes or trends are considered apparent when compared to previous data for this lake.

There has occurred a reduction in commercially operated facilities at Lake Belton during the past two or three years; apparently, a direct reflection of a concurrent drop-off in fishing pressure and success. Most significant has been the almost complete lack of success of white crappie fishermen during this time. White bass, while increasing in creel reports and in project survey work, have not yet reached a population concentration which will attract large numbers of sport fishermen.

#### Recommendations:

It is recommended that this job be continued. The opportunity to make periodic visits to project waters and obtain fish samples and other data is considered vital for determining areas needful of extensive resurvey or development programs. Data used in compliance with Job B-21 (proposed harvest regulations) of this project will be gathered as a part of this work. Since Project F-2-R has been extensively

realigned during the past segment, it is anticipated that considerable time will be utilized under this program during the next segment to familiarize project personnel with new waters and their fisheries problems.

Prepared by John G. Wood  
Project Leader

Approved by Marion Toole  
Coordinator

Date: April 4, 1962

John E. Linton  
Regional Supervisor

Table 1. A Checklist of Species Mentioned in Report

Common Name	Scientific Name
Spotted gar	<u>Lepisosteus oculatus</u>
Longnose gar	<u>Lepisosteus osseus</u>
Gizzard shad	<u>Dorosoma cepedianum</u>
Smallmouth buffalo	<u>Ictiobus bubalus</u>
River carpsucker	<u>Carpionodes carpio</u>
Gray redhorse sucker	<u>Moxostoma congestum</u>
Carp	<u>Cyprinus carpio</u>
Golden shiner	<u>Notemigonus crysoleucas</u>
Channel catfish	<u>Ictalurus punctatus</u>
Blue catfish	<u>Ictalurus furcatus</u>
Flathead catfish	<u>Pylodictis olivaris</u>
Blackstripe topminnow	<u>Fundulus notatus</u>
Common mosquitofish	<u>Gambusia affinis</u>
White bass	<u>Roccus chrysops</u>
Texas spotted bass	<u>Micropterus treculi</u>
Largemouth black bass	<u>Micropterus salmoides</u>
Warmouth	<u>Chaenobryttus gulosus</u>
Green sunfish	<u>Lepomis cyanellus</u>
Redear sunfish	<u>Lepomis microlophus</u>
Bluegill	<u>Lepomis macrochirus</u>
Longear sunfish	<u>Lepomis megalotis</u>
White crappie	<u>Pomoxis annularis</u>
Freshwater drum	<u>Aplodinotus grunniens</u>
Rio Grande cichlid	<u>Cichlasoma cyanoguttatum</u>

Table 2. Lake Travis Netting Results, 1961.

Species	Number	Per Cent of Number	Weight	Per Cent of Weight
Longnose gar	16	8.25	63.08	31.19
Gizzard shad	69	35.57	33.75	16.69
Smallmouth buffalo	13	6.70	36.07	17.84
River carpsucker	12	6.18	24.22	11.97
Gray redhorse sucker	1	.52	.88	.44
Carp	2	1.03	6.06	2.99
Channel catfish	11	5.67	9.50	4.70
Blue catfish	3	1.55	1.75	.86
White bass	12	6.19	9.38	4.63
Texas spotted bass	2	1.03	1.19	.59
Largemouth black bass	5	2.58	1.38	.69
Warmouth	2	1.03	.38	.18
Green sunfish	3	1.54	.45	.23
Bluegill	2	1.03	.19	.09
White crappie	31	15.98	11.85	5.86
Freshwater drum	1	.52	.50	.24
Rio Grande cichlid	9	4.63	1.64	.81
Totals	194	100.00	202.27	100.00

Table 3. Lake Marble Falls Netting Results, 1961.

Species	Number	Per Cent of Number	Weight	Per Cent of Weight
Longnose gar	6	4.25	37.45	24.63
Gizzard shad	38	26.95	14.00	9.20
Smallmouth buffalo	14	9.93	45.13	29.69
River carpsucker	16	11.35	24.31	15.99
Carp	1	.71	3.31	2.17
Channel catfish	16	11.34	11.13	7.32
Flathead catfish	1	.71	10.63	7.00
White bass	1	.71	.44	.29
Warmouth	3	2.13	.44	.28
Green sunfish	2	1.42	.25	.17
Bluegill	39	27.66	4.44	2.92
Longear sunfish	4	2.84	.51	.34
Totals	141	100.00	152.04	100.00

Table 4. Lake Granite Shoals Netting Results, 1961.

Species	Number	Per Cent of Number	Weight	Per Cent of Weight
Longnose gar	3	.48	8.25	1.10
Gizzard shad	179	28.69	44.35	5.95
Smallmouth buffalo	104	16.66	424.83	56.99
River carpsucker	169	27.09	174.36	23.40
Gray redhorse sucker	3	.48	5.81	.78
Carp	1	.17	3.00	.41
Golden shiner	2	.32	.57	.08
Channel catfish	25	4.00	44.04	5.91
Flathead catfish	1	.16	2.19	.29
White bass	7	1.12	3.31	.44
Texas spotted bass	1	.17	3.06	.41
Largemouth black bass	4	.64	4.00	.54
Warmouth	7	1.12	1.21	.17
Green sunfish	2	.32	.32	.04
Redear sunfish	1	.16	.13	.02
Bluegill	56	8.97	5.58	.74
Longear sunfish	9	1.44	1.14	.15
White crappie	50	8.01	19.19	2.57
Totals	624	100.00	745.34	100.00

Table 5. Lake Belton Netting Results, 1961.

Species	Number	Per Cent of Number	Weight	Per Cent of Weight
Spotted gar	18	6.55	17.33	6.09
Longnose gar	5	1.81	17.19	6.04
Gizzard shad	58	21.09	14.61	5.14
Smallmouth buffalo	15	5.45	35.51	12.49
River carpsucker	7	2.55	11.20	3.94
Gray redhorse sucker	6	2.18	9.06	3.18
Carp	24	8.73	48.42	17.02
Golden shiner	1	.36	.19	.07
Channel catfish	32	11.63	65.97	23.19
White bass	40	14.55	37.73	13.27
Largemouth black bass	10	3.64	13.25	4.66
Green sunfish	4	1.46	.63	.23
Redear sunfish	2	.73	.51	.18
Bluegill	26	9.45	6.83	2.40
Longear sunfish	6	2.18	.63	.22
White crappie	19	6.91	4.47	1.57
Freshwater drum	2	.73	.88	.31
Totals	275	100.00	284.41	100.00

