

JOB COMPLETION REPORT

As required by

FEDERAL AID IN FISHERIES RESTORATION ACT

TEXAS

Federal Aid Project No. F-2-R-13

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

Job No. B-24(b): Fisheries Resurvey of Lake Lyndon B. Johnson (Granite Shoals)

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ABSTRACT

Data collected during the second of three segments for this job indicated a continued reduction of smallmouth buffalo and concurrent increase in river carp-sucker, seemingly correlated with the selective harvest of buffalo by commercial fishing.

All data collected for this job will be compiled and published at the conclusion of the third segment.

Job Completion Report

State of Texas

Project No. F-2-R-13

Job No. B-24(b)

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

Title: Fisheries Resurvey of Lake Granite
Shoals.

Period Covered: February 1, 1965 - January 31, 1966

Objectives:

1. To determine the effect of commercial netting on the river carpsucker (Carpionoxenus carpio) - smallmouth buffalo (Ictiobus bubalus), population ratio in Lake Lyndon B. Johnson (Granite Shoals).
2. To determine the over-all effect of commercial netting of rough fish on the fish population of Lake Lyndon B. Johnson (Granite Shoals).

Procedures:

Fifteen gill net sets were made monthly at selected sites. Each net consisted of 150 feet of mesh graduated from one inch to three and a half inches square mesh (in 25 feet sections). Seine collections were taken monthly in an effort to supplement gill net data. All data collected were examined to determine fish population changes which might be correlated with commercial fish harvest.

Scientific names of fishes mentioned are included in the checklist (Table 1). Only common names will be used in the body of this report.

Discussion:

During the project segment, the second of three for this job, commercial fishing efforts were continued on the lake. This operation selectively removes smallmouth buffalo almost exclusively, through the use of large mesh gill nets. This technique is representative of that commercial fishing in Texas freshwaters which is done under contract with the Texas Parks and Wildlife Department.

Data collected during the first segment of this job suggested that the selective harvest of smallmouth buffalo had not resulted in an over-all reduction in rough fish. There was, however, a significant shift in the ratios of buffalo to river carpsucker. As buffalo numbers and total weight declined, the corresponding carpsucker figures appeared to increase (Job Completion Report B-24(b), F-2-R-12, June, 1965). That general trend continued during the segment reported here. Percent by number of all rough fish taken indicates some reduction in the ratio of rough fish caught to game fish caught (Table 2). This is accounted for primarily by a significant increase in sunfish, classed among game fish species, and not by an actual reduction in rough fish numbers (Table 3). This view is supported by the fact that percent by weight of rough fish taken did not decline significantly (Table 2).

TABLE 1

A CHECKLIST OF SPECIES

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
<u>Lepisosteus osseus</u>	Longnose gar
<u>Dorosoma cepedianum</u>	Gizzard shad
<u>Ictiobus bubalus</u>	Smallmouth buffalo
<u>Carpionodes carpio</u>	River carpsucker
<u>Moxostoma congestum</u>	Gray redhorse sucker
<u>Cyprinus carpio</u>	European carp
<u>Carassius auratus</u>	Goldfish
<u>Notemigonus crysoleucas</u>	Golden shiner
<u>Notropis venustus</u>	Spottail shiner
<u>Ictalurus punctatus</u>	Channel catfish
<u>Ictalurus melas</u>	Black bullhead
<u>Ictalurus natalis</u>	Yellow bullhead
<u>Pylodictus olivaris</u>	Yellow catfish or flathead catfish
<u>Roccus chrysops</u>	White bass
<u>Micropterus treculi</u>	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 sunfish
<u>Lepomis auritis</u>	Redbreast sunfish
<u>Lepomis megalotis</u>	Longear sunfish
<u>Pomoxis annularis</u>	White crappie
<u>Aplodinotus grunniens</u>	Freshwater drum
<u>Cichlasoma cyanoguttatum</u>	Rio Grande perch

TABLE 2
PERCENT OF ROUGH FISH TAKEN IN GILL NETS
LAKE LYNDON B. JOHNSON

	1959	1960	1961	1962	1963	1964	1965
Percent By Weight	79.02	85.57	88.71	90.14	85.94	87.81	86.25
Percent By Number	70.59	72.54	73.89	75.82	73.88	77.17	67.63

TABLE 3

LAKE LYNDON B. JOHNSON

NETTING DATA 1965

<u>Species</u>	<u>Number</u>	<u>Percent By Number</u>	<u>Weight</u>	<u>Percent By Weight</u>
Longnose gar	216	3.20	559.89	6.40
Gizzard shad	1,909	28.25	950.86	10.87
Smallmouth buffalo	413	6.11	2,344.54	26.81
River carpsucker	1,723	25.50	2,844.89	32.54
Gray redhorse sucker	22	0.33	34.07	0.39
European carp	104	1.54	532.31	6.09
Goldfish	1	0.01	1.69	0.02
Golden shiner	7	0.10	1.39	0.02
Spottail shiner	1	0.01	0.31	0.01
Channel catfish	113	1.67	192.25	2.20
Black bullhead	2	0.03	0.62	0.01
Yellow bullhead	11	0.16	4.01	0.04
Yellow catfish or flathead catfish	79	1.17	413.23	4.73
White bass	111	1.64	126.49	1.45
Texas spotted bass	40	0.59	30.91	0.35
Largemouth bass	113	1.67	112.74	1.29
Warmouth	87	1.29	23.94	0.27
Green sunfish	27	0.40	4.11	0.05
Redear sunfish	89	1.32	11.77	0.13
Bluegill sunfish	1,245	18.42	147.53	1.69
Redbreast sunfish	2	0.03	0.26	0.01
Longear sunfish	50	0.74	4.35	0.05
White crappie	231	3.42	134.28	1.53
Freshwater drum	160	2.37	265.93	3.04
Rio Grande perch	2	0.03	0.44	0.01
TOTALS	6,758	100.00	8,742.81	100.00

TABLE 4
NUMBER OF FISH CAUGHT PER 100 FEET OF NET
LAKE LYNDON B. JOHNSON

SPECIES	1959	1960	1961	1962	1963	1964	1965
Smallmouth buffalo	6.12	5.30	3.20	7.71	3.23	2.32	1.53
River carpsucker	4.17	6.40	5.20	4.19	5.18	5.78	6.38
TOTALS	10.29	11.70	8.40	11.90	8.41	8.10	7.91

TABLE 5
POUNDS OF FISH CAUGHT PER 100 FEET OF NET
LAKE LYNDON B. JOHNSON

SPECIES	1959	1960	1961	1962	1963	1964	1965
Smallmouth buffalo	15.21	15.47	13.07	22.93	14.79	11.65	8.68
River carpsucker	3.63	6.96	5.36	5.13	6.86	8.48	10.54
TOTALS	18.84	22.43	18.43	28.06	21.65	20.13	19.22

Otherwise, the data indicated continued reduction of smallmouth buffalo and concurrent increase in river carpsucker (Tables 4 and 5). As reported in the tables, number and weight of buffalo caught per hundred feet of net have decreased from 7.71 and 22.93 in 1962 to 1.53 and 8.68 in 1965. In the same period, number and weight of carpsucker have increased from 4.19 and 5.13 in 1962 to 6.38 and 10.54 in 1965.

Since the carpsucker is considered less desirable than the smallmouth buffalo (Job Completion Report B-24(b), F-2-R-12), it appears possible that continued selective harvest of buffalo may prove injurious to the fish population as a whole.

Recommendations:

This job has entered the third and final segment. When all field data has been collected, detailed analysis will be made. Results and conclusions will be published, probably as an issue of the Texas Parks and Wildlife Department Inland Fisheries Series.

Prepared by Richard L. White Approved by Marion Toole
Project Leader Coordinator

Date June 16, 1966 GARY WOOD
Regional Supervisor