

JOB COMPLETION REPORT

FILE

As required by

FEDERAL AID IN FISHERIES RESTORATION ACT

TEXAS

Federal Aid Project No. F-2-R-14

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

Job No. B-24: Fisheries Resurvey of Lake Lyndon B. Johnson

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THE COMMISSION REPORT

as reported by

THE BOARD OF INVESTIGATION

XXIX

Special Report No. 10-1-11

REMARKS: THE FOLLOWING IS A SUMMARY OF THE WORK OF THE BOARD

IN THE YEAR 1904

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THE BOARD OF INVESTIGATION

AMERICAN SURETY

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May 11, 1904

Job Completion Report

State of Texas

Project No. F-2-R-14

Job No. B-24

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

Title: Fisheries Resurvey of Lake Lyndon B.
Johnson

Period Covered: February 1, 1966 - January 31, 1967

Objectives:

1. To determine the effect of commercial netting on the river carpsucker, (Carpionodes 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).

Techniques Used:

Fifteen gill net sets were made monthly at selected sites. Each net consisted of 150 feet of mesh graduated from 1 inch to 3½ 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 harvest.

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

Findings:

During the final project segment of this job, commercial fishing efforts were continued on the lake. This operation selectively removes smallmouth buffalo almost exclusively, through the use of large (3-3½ inch) 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.

Table 2 summarizes the data collected during this segment. Data collected during the first two segments 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 and Job Completion Report B-24, F-2-R-13, June 1966). Per cent by number of all rough fish taken indicates an increase in the ratio of rough fish caught to game fish caught (Table 3). The per cent by weight of all rough fish taken shows a 1 per cent decrease over the previous segment.

Table 1

A Check List 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>Notemigonus crysoleucas</u> | Golden shiner |
| <u>Ictalurus punctatus</u> | Channel catfish |
| <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

Lake Lyndon B. Johnson

Netting Data 1967

| Species | Number | Per cent By Number | Weight | Per cent By Weight |
|----------------------------|--------|-----------------------|----------|-----------------------|
| Longnose gar | 34 | 0.56 | 99.41 | 1.37 |
| Gizzard shad | 1,972 | 32.70 | 895.37 | 12.31 |
| Smallmouth buffalo | 246 | 4.08 | 1,532.03 | 21.06 |
| River carpsucker | 2,014 | 33.40 | 3,189.36 | 43.84 |
| Gray redhorse sucker | 47 | 0.78 | 68.47 | 0.94 |
| European carp | 50 | 0.83 | 250.67 | 3.44 |
| Golden shiner | 14 | 0.23 | 2.72 | 0.04 |
| Channel catfish | 121 | 2.01 | 219.38 | 3.02 |
| Yellow or flathead catfish | 60 | 1.00 | 367.83 | 5.06 |
| Yellow bullhead catfish | 1 | 0.02 | 0.88 | 0.01 |
| White bass | 149 | 2.47 | 185.18 | 2.54 |
| Texas spotted bass | 19 | 0.32 | 21.70 | 0.30 |
| Largemouth bass | 69 | 1.14 | 58.40 | 0.80 |
| Warmouth | 65 | 1.08 | 15.16 | 0.21 |
| Green sunfish | 17 | 0.28 | 2.68 | 0.04 |
| Redear sunfish | 27 | 0.45 | 3.22 | 0.04 |
| Bluegill sunfish | 789 | 13.08 | 87.12 | 1.20 |
| Redbreast sunfish | 14 | 0.23 | 1.97 | 0.03 |
| Longear sunfish | 23 | 0.38 | 1.87 | 0.02 |
| White crappie | 192 | 3.18 | 123.36 | 1.69 |
| Freshwater drum | 106 | 1.76 | 148.24 | 2.04 |
| Rio Grande perch | 1 | 0.02 | 0.06 | 0.001 |
| Totals | 6,030 | | 7,275.08 | |

Table 3

Per Cent of Rough Fish Taken in Gill Nets

Lake Lyndon B. Johnson

| | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 |
|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Per cent By Weight | 79.02 | 85.57 | 88.71 | 90.14 | 85.94 | 87.81 | 86.25 | 85.19 |
| Per cent By Number | 70.59 | 72.54 | 73.89 | 75.82 | 73.88 | 77.17 | 67.63 | 73.96 |

Table 4

Number of Fish Caught Per 100 Feet of Net

Lake Lyndon B. Johnson

| Species | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 |
|--------------------|-------|-------|------|-------|------|------|------|------|
| Smallmouth buffalo | 6.12 | 5.30 | 3.20 | 7.71 | 3.23 | 2.32 | 1.53 | 0.91 |
| River carpsucker | 4.17 | 6.40 | 5.20 | 4.19 | 5.18 | 5.78 | 6.38 | 7.46 |
| Totals | 10.29 | 11.70 | 8.40 | 11.90 | 8.41 | 8.10 | 7.91 | 8.37 |

Table 5

Pounds of Fish Caught Per 100 Feet of Net

Lake Lyndon B. Johnson

| Species | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Smallmouth buffalo | 15.21 | 15.47 | 13.07 | 22.93 | 14.79 | 11.65 | 8.63 | 5.67 |
| River carpsucker | 3.63 | 6.96 | 5.36 | 5.13 | 6.86 | 8.48 | 10.54 | 11.81 |
| Totals | 18.84 | 22.43 | 18.43 | 28.06 | 21.65 | 20.13 | 19.22 | 17.48 |

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 0.91 and 5.67 in 1966. In the same period, number and weight of carpsucker have increased from 4.19 and 5.13 in 1962 to 7.46 and 11.81 in 1966.

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

Recommendations:

The field work for this job has been completed. This data will be compiled and detailed analysis will be made. It is anticipated that the results and conclusions will be published, probably as an issue of the Texas Parks and Wildlife Inland Fisheries Series.

Prepared by Richard L. White
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Approved by

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Date: May 25, 1967

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