

STATE Texas

PROJECT NO. F-5-R-2, Job B-4

PERIOD June 22, 1954 - May 1, 1955

Segment Completion Report

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TITLE

Inventory of species present in Oak Creek Reservoir at Blackwell, Texas.

OBJECTIVES

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

PROCEDURE

Forty-eight gill net collections were made at twelve netting stations in Oak Creek Reservoir. Experimental nylon gill nets, measuring 125 ft. long x 8 ft. in depth and made up in five, 25 ft. sections were used. Mesh size for these nets increased progressively in each following section at one-half inch intervals, beginning with one-inch mesh and terminating with a three-inch mesh section.

Thirty-three seining collections were made at twelve seining stations in the reservoir. In nearly all collections, both 26 ft. $\frac{1}{4}$ " mesh bag seines and 15 ft. $\frac{1}{4}$ " mesh common sense seines were used. To estimate relative abundance, a count was made of all individuals taken in two hauls with a 26 ft. $\frac{1}{4}$ " mesh bag seine for each collection. In addition to that work other seining collections were made to determine seasonal distribution of species and to secure samples of fry after the spring spawning of fishes. For this latter work, four ft. common sense seines with $\frac{1}{4}$ " mesh and 1/16" mesh were used.

Water analysis for dissolved carbon dioxide and oxygen content was taken each month and surface temperature, pH, and climatic conditions were recorded for each netting and seining collection. Turbidity was taken for six collections.

Netting collection samples were weighed, measured and sexed in the field. A sample of each species were examined for stomach content, and organs requiring laboratory study were preserved in 10% formalin.

FINDING

During the segment the lake receded to approximately 13,370 acre feet volume, a loss of approximately 8,000 acre feet, and refilled to about 30,000 acre feet in May 1955. The lakes water remained clear (0.0 turbidity). The maximum carbon dioxide content recorded during the segment was 7.5 ppm and the lowest dissolved oxygen content was 5ppm. Maximum surface temperature recorded was 83° F. and the minimum record was 58° F. Average pH was 8.4.

Netting Collections:

As shown in Table No. I; forty-eight net collections captured 1,124 individuals of thirteen species. Gray redbreast suckers (Moxostoma congestum) were taken for the first time during the segment as were flathead catfish (Pilodictus olivaris) and white bass (Morone chrysops). The flatheads captured were believed to be fish previously released in stocking. Carp (Cyprinus carpio) were not taken in collections during the segment, although 1953 netting captured one of these fish. Southern channel catfish (Ictalurus punctatus) and sunfishes (Lepomis) were more numerous than in previous collections, and largemouth black bass (Micropterus salmoides), gizzard shad (Dorosoma cepedianum), and river carp suckers (Carpiodes carpio) decreased numerically.

Seining Collections:

During the segment thirty-three seining collections captured 1,474 individuals of seventeen species. New species collected were white bass (Morone chrysops) long nose gam (Lepisosteus osseus), warmouth bass (Chaenobryttus coronarius), golden shiner (Notemigonus chrysoleucas), plains minnow (Hybognathus placitus) and a (Notropis) whose identity has not been confirmed. Increases were apparent in populations of red shiners (Notropis lutrensis), and spotted sunfish (Lepomis punctatus), and mosquito fish (Gambusia affinis), white crappie (Pomoxis annularis), and parrot minnows (Pimephales vigilax) decreased.

Remarks:

A continuance has been requested and approved for this job for next segment.

SUMMARY

1. The volume of the lake receded 8,000 acre feet and refilled to a new maximum of 30,000 acre feet.
2. Netting results indicate increases in southern channel catfish and sunfishes, and decreases in largemouth black bass, gizzard shad, and river carp suckers.
3. White bass and flathead catfish were taken for the first time during the segment, and increases in red shiners and spotted sunfish taken by seining were apparent.
4. A continuation of this job was requested and approved for next segment.

Table I

Netting Collections From Oak Creek Reservoir

Species	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Total	% by No.	% by Wt.	Avg. K
<i>Dorosoma cepedianum</i>	0	12	0	0	0	0	18	12	21	16	114	183	16.28	8.01	184
<i>Carpiodes carpio</i>	5	4	1	4	85	2	3	1	9	21	43	178	15.84	36.18	249
<i>Lepisosteus osseus</i>	0	0	0	0	0	0	0	0	0	2	11	13	1.15	6.41	252
<i>Moxostoma congestum</i>	0	0	0	0	0	0	0	0	0	0	2	2	.17	.66	228
<i>Aplodinotus grunniens</i>	0	0	0	0	0	0	0	2	1	0	8	11	.97	.79	242
<i>Ameiurus natalis</i>	2	4	2	6	9	8	13	13	6	28	116	197	17.54	14.29	240
<i>Piloductus olivaris</i>	0	0	0	0	0	0	0	0	0	0	2	2	.19	.69	248
<i>Ictalurus punctatus</i>	3	2	2	5	1	2	1	0	0	3	126	145	12.91	10.53	234
<i>Micropterus salmoides</i>	0	0	1	0	1	3	1	0	3	3	4	16	1.43	3.02	236
<i>Morone chrysops</i>	0	8	0	0	0	1	0	8	0	0	0	17	1.52	2.97	234
<i>Pomoxis annularis</i>	0	0	2	0	0	1	0	1	71	7	21	43	3.83	2.82	254
Sunfishes	9	9	51	42	12	26	4	14	5	28	117	317	28.21	13.72	398
	19	39	59	57	108	43	20	51	56	108	564	1,124	100.0	100.0	

Table II

Seining Collections From Oak Creek Reservoir

Species	July	Aug.	Oct.	Nov.	Dec.	Feb.	Mar.	Apr.	May	Total	% by No.
<i>Gambusia affinis</i>	13	21	0	0	0	24	12	10	24	104	7.05
<i>Notropis lutrensis</i>	68	102	44	30	22	110	6	73	58	513	34.80
<i>Notropis venustus</i>	0	0	13	0	6	0	21	14	8	62	4.21
<i>Pimephales vigilax</i>	0	11	7	0	23	8	11	16	21	97	6.58
<i>Hybognathus placitus</i>	0	21	8	4	11	5	6	13	8	76	5.15
<i>Notemigonus chrysoleucas</i>	0	0	0	4	16	7	21	28	31	107	7.25
<i>Dorosoma cepedianum</i>	4	4	6	0	0	20	10	31	16	81	5.49
<i>Carpiodes carpio</i>	0	0	0	2	4	0	1	1	6	14	.95
<i>Lepisosteus osseus</i>	0	0	0	0	2	0	0	6	4	12	.81
<i>Micropterus salmoides</i>	2	4	2	1	9	0	0	4	16	38	2.57
<i>Morone chrysops</i>	0	0	0	0	2	0	4	13	2	21	1.42
<i>Lepomis macrochirus</i>	21	13	6	13	14	2	6	12	18	95	6.45
<i>Lepomis cyanellus</i>	4	16	9	2	0	0	21	8	11	71	4.82
<i>Lepomis microlophus</i>	0	0	10	0	2	2	0	8	2	24	1.63
<i>Lepomis megalotis</i>	0	0	0	13	2	0	0	6	12	33	2.24
<i>Lepomis auritus</i>	38	26	19	11	0	4	0	8	2	108	7.33
<i>Chaenobryttus coronarius</i>	0	2	2	0	0	4	3	1	6	18	1.22
	150	220	126	70	113	186	112	252	245	1,474	100.0