STATE Texas

PROJECT NO. F-5-R-2, Job B-3

PERIOD June 22, 1954 - May 1, 1955

Segment Completion Report

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TITLE

Inventory of Species Present in San Angelo Reservoir.

OBJECTIVES

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

PROCEDURE

Thirty-nine gill net collections were made at twelve netting stations in San Angelo 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.

Nineteen seining collections were made at fourteen localities along the lake shore. 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 at each seining station a count was made of all individuals taken in two hauls with a 26 ft. $\frac{1}{4}$" mesh bag seine. In addition, a four ft. common seine with 1/16" mesh was used to collect samples of fry following spring spawning.

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

In net collections, most fish were identified, counted, weighed, measured and sexed in the field. A sample number of each species was examined for stomach content and a scale sample taken. On occassion it was necessary to preserve an individual, its stomach or some other organ for more detailed examination in the laboratory. When this was required, the specimen was preserved in 10% formalin.

FINDING

During the segment the reservoir receded from elevation 1893 to elevation 1885, a loss of approximately 12,107 acre feet volume. In 1954 the city of San Angelo purchased all water stored between elevations 1886 and 1908 from the Upper Colorado River Authority. The first water withdrawn for city use was released during the late spring months of 1955. The method of lowering the lake and the time of the releases may have been detrimental to

the spawning activity of several game species, primarily largemouth black bass (Micropterus salmoides). The lowest dissolved oxygen content recorded during the segment was .7 ppm. and the maximum carbon dioxide content obtained from water analysis checks was 7 ppm. Minimum surface water temperature recorded was 51° F. and the maximum record was 88° F. Turbidity, except following the rainfall run-off in June 1954, was 0.0.

Netting Collections:

Thirty-nine net sets captured 1,345 individuals of twelve species. As recorded in Table No. I, few significant population ratio changes are indicated by this method of sampling. Numerical increases for gizzard shad (Dorosoma cepedianum), river carp suckers (Carpiodes carpio), and white bass (Morone chrysops) are apparent, and percentages for southern channel catfish (Ictalurus punctatus), white crappie (Pomoxis annularis), and largemouth black bass (Micropterus salmoides) decreased. No flathead catfish (Pilodictus olivaris) were taken in netting collections, but a number of these fish are known to have been taken by sportsmen.

Seining Collections:

During the segment nineteen seining collections captured 1,742 individuals of sixteen species. Mosquito fish (Gambusia affinis), gizzard shad (Dorosoma cepedianum), and spotted sunfish (Lepomis punctatus) were less numerous than in 1953-54, and percentages for red shiners (Notropis lutrensis), Blacktail shiners (Notropis venustus), and parrot minnows (Pimephales vigilax) increased. Juvenile white bass (Morone chrysops) were taken for the first time in October 1954. Because recession of the lake made it necessary to move the location of several seining stations, a duplication of the first segment work was impossible.

emarks:

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

SUMMARY

1. The volume of the lake was decreased by 12,107 acre feet during the segment.

2. The method and time of withdrawal of water for municipal purposes may have been detrimental to the spawning of some game species. Notably largemouth black bass.

3. Netting results indicated an increase in gizzard shad, river carp suckers, and white bass and a decrease in southern channel catfish, largemouth black bass, and white crappie.

4. Seining collections indicated increases in red shiners, blacktail shiners, and parrot minnows. Decreases were noted in mosquito fish, gizzard shad and spotted sunfish.

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

Table I

Netting Collections From San Angelo Reservoir

Species	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Total	% by No.	% by Wt.	Avg. K
Dorosoma cepedianum	14	0	21	40	24	37	35	49	99	33	352	25.99	6.89	185
Carpiodes carpio	31	13	14	34	60	87	119	68	17	56	499	36.89	67.32	246
Cyprinus carpio	0	0	0	0	0	0	3	0	1	0	4	.30	.925	260
Moxostoma congestum	0	0	0	0	0	0	3	1	0	0	4	.30	.431	227
Aplodinotus grunniens	0	0	8	0	6	4	5	3	8	2	36	2.66	2.54	240
Ameiurus natalis	0	0	0	0	0	0	1	0	0	0	1	.07	.077	210
Micropterus salmoides	21	5	6	4	0	2	2	12	0	2	54	3.69	6.58	252
Morone chrysops	0	0	9	0	0	2	0	4	3	0	18	1.33	.693	223
Pomoxis annularis	30	21	0	21	15	12	6	20	1	0	126	9.30	6.87	337
Lepisosteus osseus	0	0	0	0	0	0	0	1	1	0	2	.147	.423	251
Ictalurus punctatus	4	12	18	13	0	11	2	36	15	19	130	6.90	6.60	197
Lepomis (sunfishes)	0	60	19	12	1	0	2	21	1	1	128	9.50	.69	408
	100	111	95	124	106	167	176	196	166	113	1,354	100	100	

Table II

Seining Collections From San Angelo Reservoir

Species	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Mar.	Apr.	Total	% by No.
Gambusia affinis	36	100	48	12	8	0	0	36	25	265	15.22
Notropis lutrensis	140	90	45	147	12	21	25	12	40	532	30.53
Notropis venustus	12	0	20	12	0	10	9	0	0	63	3.62
Pimephales vigilax	8	10	9	21	13	0	0	25	9	95	5.45
Dorosoma cepedianum	20	10	30	8	8	14	8	0	17	115	6.60
Carpiodes carpio	4	0	4	0	2	0	9	0	0	19	1.09
Micropterus salmoides	8	4	10	21	0	2	3	2	12	62	3.56
Morone chrysops	0	0	0	12	3	2	0	12	4	33	1.89
Pomoxis annularis	8	3	14	20	4	2	4	0	2	57	3.27
Ictalurus punctatus	1	0	0	1	0	0	0	0	2	4	.23
Lepomis cyanellus	27	12	20	30	12	0	12	21	11	145	8.32
Lepomis macrochirus	35	14	31	30	18	14	11	38	28	219	12.57
Lepomis microlophus	2	2	4	10	0	0	5	5	6	34	1.95
Lepomis megalotis	12	6	4	4	0	0	3	21	2	52	2.98
Lepomis humilis	0	0	2	0	0	0	3	0	2	7	.40
Lepomis auritus	0	0	1	6	0	0	2	20	11	40	2.30
	313	251	242	334	80	65	94	192	171	1,742	100.00