

STATE Texas  
PROJECT NO. F5R3 - Job B-14  
PERIOD May 1, 1955 - May 1, 1956

#### JOB COMPLETION REPORT

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#### TITLE

A Basic Survey and an Inventory of the Species Present in the Canal System within El Paso County, and for Lake Ascarte in the City of El Paso, Texas.

#### OBJECTIVES

To gather fundamental data on the above waters in regard to their physical, chemical and biological aspects and to determine the distribution of species present, their relative abundance and the ecological factors influencing their distribution.

#### PROCEDURE

Eight gill net sets were made in Lake Ascarte. Experimental nylon gill nets, measuring 125 feet long by 8 feet in depth, and made up in five, 25 foot sections were used. Mesh size for these nets increased progressively in each section beginning with one-inch mesh and terminating with a three-inch mesh section.

Seven seining collections were taken. Four locations on the canal system and three locations on the lake were worked. Because of submerged obstructions only  $\frac{1}{4}$  inch mesh, 8 feet by 4 feet common sense seines were used, and for that reason population ratio estimates by seining were impossible.

Water analyses to determine dissolved carbon dioxide and oxygen content were taken for each collection and surface temperature, pH and the climatic conditions were recorded for each netting and seining collection.

In netting collections samples from each species were weighed, measured and sexed in the field. Stomachs containing food were preserved for laboratory study.

#### FINDINGS

El Paso County is sharply divided between the alluvial Rio Grande Valley (about 10% of the area) and upland arid lands. Bounded on the east by the Hueco Mountains and on the west by the Franklin Range; the intensively cultivated valley is about seventy miles long and two to three miles wide. Agriculture, principally cotton, alfalfa, fruit and vegetable crops, is almost entirely dependent on irrigation from a canal system from the river and from subsurface reservoirs in the alluvial and bolsom deposits of the area. About 98 percent of the county population of 245,000 residents live in the valley.

The source of water for the extensive canal system (about 440 miles of canals and laterals) is the Rio Grande River, and is controlled by Elephant Butte and other reservoirs in New Mexico and Colorado. There is some hydrological evidence that this portion of the watershed may be over developed for water conservation, and there is no

evidence that additional water will be available at a future date for fisheries management work. Under present conditions the canal system is dry most of the year and is regarded as too unreliable for any attempt at fisheries management.

Lake Ascarte is located within the city limits in the southeast quarter of the City of El Paso in County owned, Ascarte Park. This reservoir is the only sizable body of water in the county where public fishing is permitted and is excavation and levee type construction. The reservoir impounds virtually no surface run-off and is supplied by two wells having a combined capacity of about three thousand gallons per minute. Lake Ascarte has a maximum area of 40 surface acres and a total capacity of 240 acre feet. The lake water is clear, having no recordable turbidity, has a pH of 8.3, and when water analysis was taken had 7 ppm. dissolved oxygen and 4 ppm. dissolved carbon dioxide. Willows (Salix niger), Pond weeds (Potamogeton natans), Arrowheads (Sagittaria sp.), and Muskgrass (Chara sp.) were observed near the shore. This vegetation was reported to be more dense during much of the year.

#### FISH POPULATIONS

##### Netting Results

Species	Number	% by Number	Total Weight		% by Weight	Avg. K.
			lbs.	oz.		
Carp	3	3.70	10	8	2.99	2.50
River carpsuckers	64	79.01	324	0	92.16	2.41
Gizzard shad	6	7.41	6	6	1.84	1.59
Largemouth black bass	6	7.41	8	4	2.28	2.30
Southern channel catfish	2	2.47	2	8	.72	1.78
Total	81	100.00	351	10	99.99	

As shown in this chart river carpsuckers (Carpiodes carpio) dominate the fish populations of the reservoir, and the average coefficient of condition for largemouth black bass (Micropterus salmoides) may be indicative of a lack of general condition for individuals of that species.

##### Seining Results

Because of submerged obstructions no methodical sampling by this method was possible. Bluegill sunfish (Lepomis macrochirus), green sunfish (Lepomis cyanellus), mosquitofish (Gambusia sp.), Rio Grande Perch (Cichlasoma cyanoguttata) and golden shiners (Notemigonus crysoleucas) were the only species taken. All sunfishes appeared to be in a stunted condition.

#### SUMMARY

1. Waters of the canal system of El Paso County were found to be too unreliable for fishery management.

2. Lake Ascarte is the only reservoir where public fishing is permitted in El Paso county; an area having a total population of about 245,000 residents.

3. Netting and seining results indicate a dominance of the fishery populations by river carpsuckers, and the general condition of game fish takes is regarded as being below the average for Region 3-B.

REMARKS

Because of the dominance of Lake Ascarte by river carpsuckers it is recommended that the lake be treated to eradicate the fishery populations, and that the reservoir should be restocked with suitable game species to improve public fishing.

