

STATE Texas
PROJECT F-2-R-2, Job B-9
PERIOD June 1, 1954 through Novem-
ber 30, 1954

Job Completion Report

by

Billy D. Cooper

TITLE

Inventory of species present and their distribution in those portions of the Lampasas and Little Rivers within Region 6-B, which were not covered in Job B-6, Project F-2-R-1.

OBJECTIVES

To continue and complete the study of these rivers begun under Job B-6, Project F-2-R-1.

METHODS

Seine, gill net and rotenone collections were made in the following waters of Lampasas, Burnet and Milam Counties, Texas: The Lampasas River in Lampasas County, 5 collections; Sulphur Creek, a tributary of the Lampasas River in Lampasas County, 3 collections; the Lampasas River in Burnet County, 1 collection; Rocky Creek, a tributary of the Lampasas River in Burnet County, 3 collections and the Little River in Milam County, 9 collections. The locations of the stations at which collections were made are shown on the attached map, and in Table 1.

All seine collections were made with 6' x 4' and 10' x 4' common sense seines and/or with a 26' x 6' bag seine with a $\frac{1}{4}$ " mesh. Rotenone and gill net collections were made at Station Nos. 5 and 6 on the Little River in Milam County. The nets used were 125 feet in length with square mesh sizes ranging from one to three inches in 25 foot sections. Seined and rotenoned specimens were preserved with ten percent formalin and taken to the laboratory for identification and counting. Larger specimens taken from gill nets and in rotenone collections were identified in the field.

Thermal, chemical and ecological conditions were recorded in conjunction with Job A-3, Project F-2-R-2.

RESULTS

A total of 35 fish species were found to occur in the waters under study. Of these, 21 species were found in the Lampasas River and its tributaries, in Lampasas and Burnet Counties, 29 species were found in the Little River, in Milam County, and 15 species were found to be common to both rivers. The relative abundance and distribution of these species are shown in Table II.

The Lampasas River (Lampasas and Burnet Counties): - Since the Lampasas River was not flowing at the time of the collections, except in a few scattered localities, where a slight flow from pool to pool was discovered, most of the fish

in this river were restricted to small pools, the larger pools being few and far between. Therefore, several species which are known to occur in this portion of the Lampasas River were not collected, and of the species collected, other than a statement to the effect that they were taken in pools, little can be said as to their habitat preferences. This is essentially true of those species which are normally known to inhabit the riffles under normal conditions. Low water conditions also tend to reduce the relative abundance of the predator and rough species. The species which are known to occur here but which were not collected are the yellow or flathead catfish, the shortnose gar and the blue catfish. The blue catfish has been stocked in the river, according to the reports from local fishermen.

The species collected in the Lampasas River and its tributaries, in Lampasas and Burnet Counties, are divided into five categories on the basis of their frequency in the total number of collections. Those species which were most frequently collected and therefore most widely distributed, are the black-tail shiner, the red shiner, the parrot minnow, the stoneroller, the common mosquitofish, the largemouth bass, the green sunfish, the bluegill and the long-ear sunfish. They were taken in 50 or more percent of the collections. Of this group, the largemouth bass has been stocked in many of the more permanent pools and is present in relatively large numbers.

The group of species collected next more frequently, in 33 to 50 percent of the collections, includes the warmouth and the orangespotted sunfish.

The Rio Grande tetra, along with the river carpsucker, the grey red-horse, the blackstripe topminnow, the spotted black bass and the logperch were collected in from 7 to 17 percent of the collections. The Rio Grande tetra is not native to this area and the specimens collected probably represent escaped or introduced bait minnows.

Since all of the pools encountered on trips to the Lampasas River were easily collected with seines, none were treated with rotenone and no gill nets were set.

The Little River (Milam County): - Two of the nine collections made on the Little River in Milam County were rotenone collections and of the other seven, two were made with gill nets and five with seines.

In the basic survey of the Little River, in Milam County, Job A-3, Project F-2-R-2, it was stated that the Little River flows through two ecological regions, the Blackland Prairie and the Post Oak Belt. No such division was apparent in the collection data for the fish taken in these portions of the river.

It was found that certain species, including: the shortnose gar, the gizzard shad, the smallmouth buffalo, the blue sucker, the river carpsucker, the European carp, the channel catfish, the flathead catfish, the largemouth bass and the parrot minnow were frequently collected from medium to large pools with bottoms of gravel and silt and limited cover in the form of aquatic vegetation along the edges of the pools.

Sunfish were also taken in the pools, with smaller individuals being more abundant in the shallower pools and on the riffles.

The tadpole madtom was in all cases collected in association with submerged aquatic vegetation in both the pools and on the riffles, whereas most of the cyprinid species collected were taken from the riffle area where there as at least some current and the common mosquitofish or *Gambusia* was almost always

found along the edges of the pools or the edges of the riffles.

The 29 species of fish taken from the Little River have also been divided, on the basis of their frequency in the collections, into five groups. The most frequently collected species were the gizzard shad, the river carpsucker, the blacktail shiner, the red shiner, the parrot minnow, the channel catfish, the common mosquitofish and the longear sunfish. They were taken in 50 or more percent of the collections.

Next most frequently collected, in from 33 to 50 percent of the collections, were the shortnose gar, the blue sucker, the stoneroller, the flathead catfish, the tadpole madtom, the largemouth bass and the bluegill.

In the third most frequently collected group of species, present in from 18 to 32 percent of the collections, were the spotted black bass, the warmouth, the green sunfish, the dusky darter and the freshwater drum.

The smallmouth buffalo, European carp, speckled dace, ghost shiner, broadhead shiner, mimic shiner, yellow bullhead, spotted sunfish and orangethroat darter were present in from 7 to 17 percent of the collections.

In the collections made at Station No. 5, on the Little River in Milam County, 12 species were collected when using a seine and later, when checking with rotenone, 17 species were proved to be present. Similarly, Station No. 6 produced nine species when seined and 10 species when treated with rotenone. The seine collection at Station No. 5 was made slightly above the area treated with rotenone while the seine collection for Station No. 6 was made in and below the treated area.

A primary objection to the use of rotenone as a collection tool in streams is the danger of killing fish over a long distance downstream from the area to be collected. This was successfully avoided in both of the rotenone collections made as a part of this study by the following method:

1. An area was selected where there was a small pool with a riffle below and a larger pool just below the riffle.
2. Rotenone, calculated to be half enough for a complete kill in a standing body of water of the same size as the upper pool, was applied to the upper pool.
3. A bag seine was then placed below the second pool to collect the fish washed down by the current.
4. All surfacing fish were then collected and 30 to 45 minutes were allowed to pass before the second application of rotenone of the same strength.
5. As before, all fish were collected and 30 to 45 minutes allowed to pass before a final application of rotenone, again of the same strength.

It is noteworthy to mention that fish continued to surface with the second and third applications of rotenone and that the larger catfish did not surface until after the third application. Furthermore, the rotenone was sufficiently diluted by the water in the larger, lower pool so that the only fish of consequence to be killed outside of the test area were gizzard shad and a few carpsuckers.

SUMMARY

1. The field work done for this job was done in conjunction with Job A-3 and is the completion of the work begun under Job B-6, Project F-2-R-1.

2. In all a total of 11 collections were made on the Lampasas River and its tributaries in Lampasas and Burnet Counties and nine collections were made on the Little River in Milam County.

3. A total of 21 species was collected in the Lampasas and its tributaries and 29 species were collected from the Little River.

4. Rotenone was used as a collection method after a technique was developed for its use where the chemical was applied in such a manner that very few fish outside of the test area were killed.

5. Since the fishes of the Lampasas were restricted to the pools, because of drouth, no habitat preferences could be discovered.

6. Ecologically the fishes collected in the Little River were divided into groups:

- a. Those species most frequently found in medium to deep pools.
- b. Those species most frequently found in shallow pools and on the riffles.
- c. Those species most frequently found on the riffles.
- d. Those species most frequently found in association with submerged vegetation.
- e. Those found almost always along the edges of the pools on riffles.

Stream Survey Stations

Lampasas River (Lampasas and Burnet Counties)



Station No.	Location
1.	Lampasas River, 11 mi. N Adamsville
2.	Lampasas River, 6 mi. N Adamsville
3.	Lampasas River, 1 mi. S. Adamsville
4.	Lampasas River, 7 mi. S. E. Adamsville
5.	Lampasas River, Rumely crossing
6.	Donaldson Creek, 5 mi. W. Lampasas, on Farm Road 580
7.	Donaldson Creek, 5 mi. W. Lampasas on Farm Road 1494
8.	Burleson Creek, 1 mi. N. W. Lampasas
9.	Sulphur Creek, 3 blocks W. Lampasas Golf Course
10.	Sulphur Creek, 2 mi. E. Lampasas in City Municipal Park
11.	Lampasas River, at mouth of Sulphur Creek
12.	Lampasas River, 1 mi. N. Oakalla
13.	Rocky Creek, 1 mi. N. Watson on Farm Road 74
14.	Rocky Creek, 2 mi. S. Watson
15.	Rocky Creek, 3 mi. N. E. Watson

Little River (Milam County)

1.	Little River, 4 mi. W. Buckholts
2.	Little River, 6 mi. W. Cameron
3.	Little River, 6 mi. S. W. Cameron
4.	Little River, 1½ mi. E. Cameron
5.	Little River, 4½ mi. N. E. of Station 4
6.	Little River, 3 mi. N. W. Gause

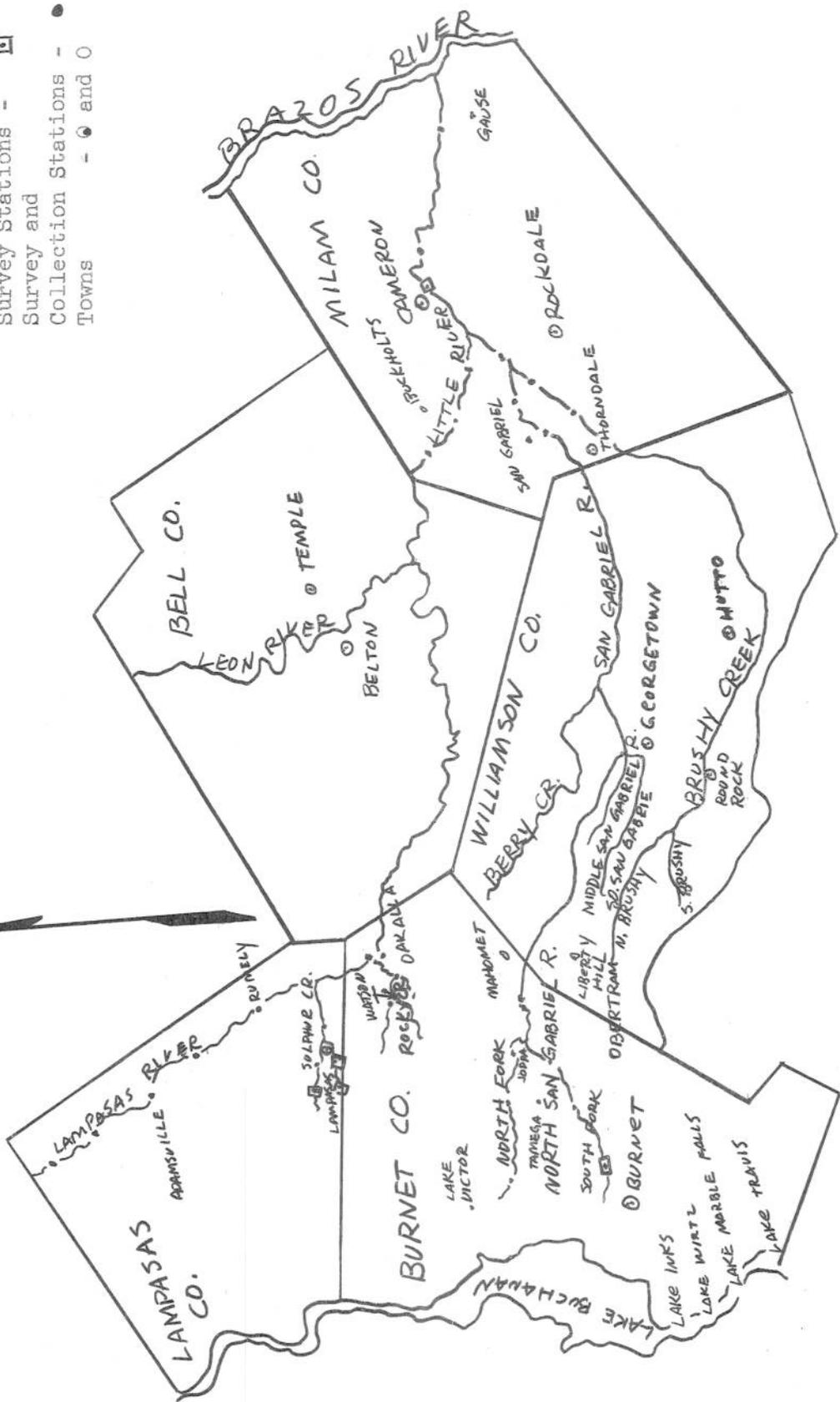
Table 1. Locations of survey stations used during study period for Job B-9, Project F-2-R-2, Basic Survey of the Remaining Portion of the Leon, Lampasas and Little Rivers Within Region 6-B, which were not covered in Job B-6, Project F-2-R-1.

Table 11. Distribution Checklist

Name of Species		Lampasas River Lampasas and Burnet Co. (12 collections)	Little River Milam Co. (9 collections)
Scientific	Common		
<u>Lepisosteus platostomus</u>	shortnose gar	-	A
<u>Dorosoma cepedianum</u>	gizzard shad	-	VA
<u>Ictiobus bubalus</u>	smallmouth buffalo	-	F
<u>Astyanax fasciatus</u>	Rio Grande tetra	F	-
<u>Cycoreus elongatus</u>	blue sucker	-	A
<u>Carpodes carpio</u>	river carpsucker	F	VA
<u>Moxostoma congestum</u>	gray redhorse	F	-
<u>Cyprinus carpio</u>	European carp	-	F
<u>Hybopsis aestivalis</u>	speckled dace	-	F
<u>Notropis potteri</u>	broadhead shiner	-	F
<u>Notropis venustus</u>	blacktail shiner	VA	VA
<u>Notropis lutrensis</u>	red shiner	VA	VA
<u>Notropis volucellus</u>	mimic shiner	A	F
<u>Notropis buchani</u>	ghost shiner	-	F
<u>Pimephales vigilax</u>	parrot minnow	VA	VA
<u>Pimephales promelas</u>	fathead minnow	A	-
<u>Campostoma anomalum</u>	stoneroller	VA	A
<u>Ictalurus punctatus</u>	southern channel catfish	A	VA
<u>Pilodictus olivaris</u>	flathead catfish	-	A
<u>Schilbeodes gyrinus</u>	tadpole madtom	-	A
<u>Amelurus natalis</u>	yellow bullhead	-	F
<u>Fundulus notatus</u>	blackstripe topminnow	F	-
<u>Gambusia affinis</u>	common mosquitofish	VA	VA
<u>Micropterus punctulatus</u>	spotted black bass	F	C
<u>Micropterus salmoides</u>	largemouth black bass	VA	A
<u>Chaenobryttus coronarius</u>	warmouth	C	C
<u>Lepomis cyanellus</u>	green sunfish	VA	C
<u>Lepomis macrochirus</u>	bluegill sunfish	VA	A
<u>Lepomis punctatus</u>	spotted sunfish	-	F
<u>Lepomis humilis</u>	orangespotted sunfish	C	-
<u>Lepomis megalotis</u>	longear sunfish	VA	VA
<u>Hadropterus scierus</u>	dusky darter	-	C
<u>Percina caprodes</u>	logperch	F	-
<u>Etheostoma spectabile</u>	orangethroat darter	A	F
<u>Aplodinotus grunniens</u>	freshwater drum	-	C

Distribution of species collected in the Lampasas and Little Rivers. The distribution figure is based on the number of times each species was found in relation to the number of collections made as follows: VA - very abundant (over 50%), A - abundant (33 - 50%), C - common (18 - 32%), F - frequent (7 - 17%), R - rare (6% or less).

Legend:
 Survey Stations - □
 Survey and
 Collection Stations - ●
 Towns - ○ and ○



LITTLE RIVER DRAINAGE
 Region 6-B

River	Basic Surveys	Inventories of Species
Lampasas River (Lampasas and Burnet Counties)	Job A-3	Job B-9
Little River (Milam County)	Job A-3	Job B-9
North San Gabriel River (Burnet County)	Job A-4	Job B-10
San Gabriel River (Milam County)	Job A-4	Job B-10
Brushy Creek (Milam County)	Job A-4	Job B-10

Note: For work done in Bell County, see Jobs A-1 and B-6, Project F-2-R-1
 For work done in Williamson County, see Jobs A-2 and B-7, Project F-2-R-1