

STATE TEXAS

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FILE

JOB COMPLETION REPORT

by
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TITLE

Inventory of species present in those portions of the Sabine River which lie within and along the borders of Van Zandt, Wood, Upshur, Harrison, Panola, and Shelby counties, Texas.

OBJECTIVES

To determine the distribution of species present, their relative abundance, and the ecological factors influencing their distribution.

METHODS AND PROCEDURES

Water Analysis: The pH, Chlorides, Dissolved Oxygen, Dissolved Carbon Dioxide, Turbidity, and Total Alkalinities were run at various stations. Ecological data were also collected in conjunction with the basic survey.

Seining: The most frequently used method of collecting fish was by seining. Collections were made with a 30 x 6 foot bag seine of $\frac{1}{4}$ inch mesh. The fish were preserved in 10% formalin and later counted, identified and recorded in the laboratory. There were 45 seining stations on the river proper and three on creeks on the watershed. In the upper portion of the river, collections were made at all bridge crossings. Further down it was found that crossings were too far apart, so collections were made by boat at approximate 5 mile intervals in Harrison, Panola, and Shelby counties.

Hoop Netting: Hoop nets were used for collecting larger specimens when the river was on a rise, with fish moving up stream. The nets were 8 to 14 feet long, $3\frac{1}{2}$ to 5 feet in diameter, and 1 to 3 inches mesh. All fish were weighed and counted at the river. Game species were brought back to the lab for stomachs and length-weight studies.

Gill Netting: Gill Nets were used in 10 lakes on the watershed, one overflow lake, and on one occasion in the river when the water was very low. The nets were 125 feet long and 8 feet in depth, with mesh from 1 to 3 inches. All fish were weighed and counted. Game fish were brought back to the lab for stomach and length-weight studies.

Rotenone Collections: Rotenone was used on two occasions for collecting the fish when the river was in holes during the summer months. A few species collected in this manner were not taken by other collection means.

RESULTS

Water Analysis: The results of water analysis are shown by station on

Table #1. Van Zandt and Wood counties, where the river bottom has been invaded by black silt, showed a high turbidity, high alkalinity (Ca CO₃), and high pH. Chlorides in this area were low. The lower portion, from Upshur through Shelby counties through the sandy, Pine Forest Belt, showed a low pH, low turbidity, and low alkalinity. Chlorides in this area, due to many local oil wells, were relatively high. Water surface temperatures in the river as a whole ran from 44° F. to 96° F., a range of 52° F.

FISH COLLECTION RESULTS

A total of 120,660 specimens made up by 77 different species were collected in the Sabine River and its watershed from Van Zandt through Shelby counties. Table #2 shows the distribution and abundance of each species by station, and the total number of each species collected. A key to collection stations follows Table #2. Map #1 shows the location of each of the 59 collection stations.

The 240 seining collections took 114,184 fish. Notropis lutrensis was by far the most abundant single species, making up 57% of the seining collection. Notropis sabiniae, Notropis buchanani, and Pimphales vigilax each made up slightly more than 10% of the total. All other species each made up less than 2% of the seining collections.

The 206 hoop net sets caught 385 fish. The total catch was small, but this was the only method available for catching larger specimens when the river was running.

There were 308 gill net sets taking a total of 5,820 fish. The great majority of these sets were in club and private lakes on the watershed. The species taken here were added to the checklist, but numbers were not compared for relative abundance. The value of these collections was the distribution records of the species collected. The lakes varied in size from 10 to 4,000 acres. The two largest lakes were Cherokee (4,000 acres) and Gladewater (900 acres). Reports on individual lakes were made for lake owners, but will not be included here. All the lakes had an abundance of Spotted sucker and/or shubsucker, black and/or yellow bullheads, and bluegill. Some had large populations of shad. Only one, Gladewater, had a large crappie population.

Two Rotenone collections accounted for 241 specimens. The Eel, blue cat, and two species of darters were not collected by other methods. Both collections showed high buffalo and carp populations, with few bass and crappie.

The alkaline turbid waters of Van Zandt and Wood counties contained Etheostoma whipplei, Percina carpoles, Lepomis humilis, Elassoma zonatum, Ictalurus furcatus, Schilbeodes mollis, Schilbeodes noctrunus, Anguilla rostrata, and Notropis umbra-tilis, which were not found further down stream. The clear, acid waters of Upshur, Harrison, Panola, and Shelby counties contained Lepisosteus platostomus, Hybopsis aestivalis, Notropis amabilis, Notropis maculatus, Etheostoma asprigenis, Amocrypta clara, and Amocrypta vivax, which were not found up stream. Notropis sabiniae and Pomoxis nigromaculatus were rarely taken in the turbid alkaline waters.

COEFFICIENT OF CONDITION DATA

All game fish taken in hoop and gill nets in river proper were worked for coefficient of condition. Table #3 lists lengths, weights, and coefficient of condition of the game species. The game fish were in very good condition, probably due to the large numbers of forage fish present.

STOMACH ANALYSIS

A total of 62 game fish stomachs were analyzed for seven species. All stomachs which were not empty contained one or more forage fish. It is interesting to note that minnows were the only identifiable item found in any of the stomachs. Table #4 shows average results of stomach analysis.

OBSERVATIONS

The Sabine River has a tremendous forage fish population, mostly minnows, and a lack of predators to feed on them. Both spotted and largemouth bass are scattered up and down the river, but are few in number. Both species of crappie are in excellent condition and are probably the most numerous game species in the Sabine River.

Catfish are almost nonexistent in the river as of the time of this writing. Very few of any species were collected in the river itself. Commercial fishermen have caught very few over the past several months. Most people living on the river claim that illegal fishermen using electrical devices cleaned all the catfish out when the water was low in the summer of 1954.

Buffalo, drum, and carpsucker are probably the most abundant of the large species in the river at the present time. They are most frequently taken by commercial fishermen.

SUMMARY

- 1) 77 species of fish were collected by all methods during this inventory.
- 2) Watershed lakes have common problem of suckers and bullheads.
- 3) There were 114,184 specimens taken by seining, with Notropis lutrensis the most abundant species.
- 4) Certain species were found restricted to the turbid, alkaline waters up stream, while others were restricted to clear, acid waters further down.
- 5) Minnows and other forage species are very abundant, but few predators present to feed on them.
- 6) Bass and crappie wide spread but few in numbers.
- 7) Catfish of all species very scarce.
- 8) Buffalo, drum, and carpsucker probably the dominant species in the river.

TABLE # 3

Length, Weight, and Coefficient of Condition of Game Species in the Sabine River, 54-55

Species	Number of Specimens	Standard Length Range	Standard Length Average	Weight Range	Weight Average	"K" Range	"K" Average
Largemouth Bass	5	180-225 mm.	205.40	137-280 gms.	208.60	2.23-3.75	2.62
Spotted Bass	10	142-377	216.00	66-1361	322.90	2.16-2.58	2.39
Black Crappie	13	125-215	184.38	44.336	155.38	2.25-4.39	3.39
White Crappie	46	116-248	186.82	41.480	241.40	1.91-4.66	3.20
Drum	27	170-350	254.03	112-1219	431.51	1.78-2.57	2.38
Channel cat	2	361-385	373.00	680-964	532.50	1.45-1.64	1.55
Flathead cat	2	210-272	241.00	135-294	214.50	1.45-1.46	1.45
Bluegill	5	86-133	107.00	19-85	47.00	2.86-4.62	3.54
Warmouth	2	136-166	151.00	90-144	115.00	3.14-3.57	3.35
Longear	3	98-121	109.00	32-72	53.66	3.39-4.53	3.99

TABLE #4

STOMACH ANALYSIS RESULTS

Species	Number	Number Empty	Average Volume	Average No. Forage Fish
Pomoxis annularis	33	15	1.8cc	2.8
Pomoxis nigro-maculatus	9	2	1.3	3.6
Micropterus salmoides	5	5	0	0
Micropterus punctalatus	8	4	1.0	1.5
Lepomis macrochirus	2	2	0	0
Lepomis aaritus	1	1	0	0
Aplodinotus grunniens	4	1	1.5	2.7

KEY TO SABINE RIVER COLLECTION STATIONS IN TABLE #2

1. Sabine River at State Hwy. 47, 9 mi. NE Wills Point, Van Zandt County
2. Sabine River at State Hwy. 19, 8 mi. NE Edgewood, Van Zandt County
3. Sabine River at County Rd. --, 5 mi. NNW Grand Saline, Van Zandt County
4. Sabine River at State Hwy. 17, 4 mi. W Golden, Wood County
5. Sabine River at U.S. Hwy. 80, 4 mi. W Mineola, Wood County
6. Kim-Juan Club Lake, 3 mi. NW Mineola, Wood County
7. Rockfall Club Lake, 5 mi. NE Mineola, Wood County
8. Woodvale Club Lake, 5 mi. E Mineola, Wood County
9. Sabine River at Hwy. 69, 3½ mi. S Mineola, Wood County
10. Sabine River at State Hwy. 14, 2 mi. S Hawkins. Wood County
11. Sabine River 6 mi. NE Lindale, Smith County
12. Sabine River at State Hwy. 155, 2 mi. SW Big Sandy, Upshur County
13. Lake Fork Creek at Hwy. 182, 5 mi. E Alba, Wood County
14. Lake Fork Creek at Hwy. 80, 8 mi. W Hawkins, Wood County
15. Little Sandy Creek at Hwy. 80, 2½ mi. W Hawkins, Wood County
16. Gladewater City Lake 3 mi. NW Gladewater, Upshur County
17. Sabine River 1 mi. S Longview, Harrison County
18. Sabine River 3 mi. SE Longview, Harrison County
19. Sabine River 7 mi. S Hallsville, Harrison County
20. Sabine River 10 mi. SE Hallsville, Harrison County
21. Overton City Lake 1 mi. W Overton, Rusk County
22. Cherokee Lake 6 mi. NW Tatum, Rusk County
23. Long-Glade Lake 11 mi. NW Tatum, Rusk County
24. Nix Club Lake 10 mi. SW Tatum, Rusk County
25. Sabine River 12 mi. S Marshall, Harrison County
26. Sabine River 13 mi. S Marshall, Harrison County
27. Sabine River Hwy. 43, 5 mi. NE Tatum, Panola County
28. Sabine River 7 mi. NE Tatum, Panola County
29. Sabine River 9 mi. NE Tatum, Panola County
30. Sabine River 8 mi. ENE Beckville, Panola County
31. Sabine River 8 mi. NE Beckville, Panola County
32. Sabine River 7 mi. ENE Beckville, Panola County
33. Sabine River 8 mi. N Carthage, Panola County
34. Sabine River 6 mi. NX Carthage, Panola County
35. Sabine River 6 mi. NE Carthage, Panola County
36. Sabine River 7 mi. NE Carthage, Panola County
37. Sabine River 8 mi. NE Carthage, Panloa County
38. Sabine River 7 mi. ENE Carthage, Panola County
39. 3-H Club Lake, 3 mi. W Carthage, Panola County
40. Dixie Club Lake, 3 mi. SW Carthage, Panola County
41. Sabine River 8 mi. E Carthage, Panola County
42. Sabine River 8½ mi. ESE Carthage, Panola County
43. Sabine River 9 mi. SE Carthage, Panola County
44. Sabine River 13 mi. Se Carthage, Panola County
45. Fish Lake Slough, Sabine River, Panola County
46. Sabine River 7 mi. NW Joaquin, Panola County
47. Sabine River 4½ mi. NW Joaquin, Panola County
48. Sabine River 3 mi. NNW Joaquin, Panola County
49. Sabine River 2 mi. N Joaquin, Panola County
50. Sabine River 5 mi. ESE Joaquin, Shelby County
51. Sabine River 8 mi. SE Joaquin, Shelby County
52. Sabine River 11 mi. SE Joaquin, Shelby County
53. Sabine River 13 mi. SE Joaquin, Shelby County
54. Sabine River 14 mi. E Shelbyville, Shelby County
55. Sabine River 16 mi. E Shelbyville, Shelby County
56. Sabine River 9 mi. NE Goober Hill, Shelby County
57. Sabine River 7 mi. ENE Goober Hill, Shelby County
58. Sabine River 7 mi. ESE Goober Hill, Shelby County
59. Sabine River 7 mi. SE Goober Hill, Shelby County

