

JOB COMPLETION REPORT

As required by

FEDERAL AID IN FISHERIES RESTORATION ACT

TEXAS

Federal Aid Project No. F-3-R-14

Region 3-B Fisheries Studies

Job No. C-1 Pollution Studies

Project Leader: Joe E. Toole

J. R. Singleton
Executive Director
Texas Parks and Wildlife Department
Austin, Texas

Marion Toole
D-J Coordinator

Eugene A. Walker
Director, Wildlife Services

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ABSTRACT

On April 28, 1966 a reported fish kill on LeTorneau Club Lake was investigated. The lake was covered by flood waters of the Sabine River and no indication of pollution was found. Numerous investigations were made on the Sabine River in Harrison County this segment. Limited fish kills occurred at various locations on the river. Chemical water analyses did not indicate any abnormalities in water quality. Salinity is normally high in this area of the Sabine River due to brine from the East Texas oil fields and natural sources. Continued efforts should be made to encourage area industries to improve their effluents to protect the fishery of the Sabine River and various tributary streams. It is recommended that this job be continued to investigate future pollution activities.

SEGMENT COMPLETION REPORT

State of Texas Name: Region 3-B Fisheries Studies
Project No. F-3-R-14 Title: Pollution Studies
Job No. C-1 (Cont.)
Period Covered: February 1, 1966 - January 31, 1967

OBJECTIVES:

To determine the source and nature of natural or man-made pollutants which effect fish populations in the waters of Region 3-B.

TECHNIQUES:

When evidence of pollution was reported or found to be present, a search was made to find the source and nature of the pollution. Standard water analyses including pH, total alkalinity, chlorides and dissolved oxygen were run.

FINDINGS:

LeTourneau Club Lake

On April 28, 1966 an investigation was made on LeTorneau Club Lake in Harrison County at the request of Mr. Bill Turner, Club Officer. Flood waters of the Sabine River had flooded the lake and covered much of the watershed. Local guards reported that an extensive fish kill had resulted three days prior to the investigation. It is probable that the flood waters from the Sabine River introduced a pollutant into the lake although no evidence of pollution was found. Following the flood period, the lake was stocked with additional game fish species. No further reports of fish kills have been received to date.

Sabine River

Numerous reports concerning fish kills on the Sabine River in Harrison County were investigated this segment. Fish populations in this area of the River are subjected to both natural and man-made pollutants from the East Texas oil fields as well as numerous industrial effluents flowing into the river. A limited sport and commercial fishery prevails. The most important phase of the commercial fishery on the Harrison County portion of the Sabine River is minnows. Numerous riffle areas provide good food production and protective cover is adequate.

Data compiled at the United States Geological Survey daily sampling station near Tatum indicate that periodic slugs of saltwater flow through this area. Average chlorides compiled during fish kill investigations is 200 p.p.m. which is considerably higher than other area lakes and streams although well below toxic levels for most aquatic life. It is possible that a concentrated slug of brine could cause a local fish kill in minimum stream flow conditions and disperse into sub-lethal concentrations before being detected.

The most extensive fish kills reported on the Sabine River occurred in July, 1966 near Rocky Ford, a favorite recreational access point in Harrison County.

The first fish kill was reported to have occurred on or about the 4th of July. Numerous fish were observed floating. Water analyses failed to indicate any abnormalities in the water quality.

On July 22, a second fish kill was reported in the same area from Rocky Ford to the mouth of Hatley Creek, approximately 1 mile upstream. Again fish were observed floating, primarily river carpsuckers (Carpodes carpio) and various sunfish species (Lepomis sp.). Routine water analyses again failed to indicate pollution. Heavy phytoplankton blooms were noted during both July investigations in the Rocky Ford area. Significant concentrations of phosphates from upstream municipal sewage effluent could have indirectly caused these fish kills providing excess fertilization. The heavy plankton bloom in low streamflow conditions could have caused oxygen depletion in this area of the river. Table 1 contains water analyses data for respective investigations.

The last investigation made on the Sabine River was on November 12, 1966. A fish kill was reported to have occurred 4 days prior to this date in the vicinity of Stillwell's Store on Highway 59 in Harrison County. Several small sunfish and minnows were observed floating against the banks. As contained in Table 1, analyses data indicated no abnormalities with the exception of the test made on Potter's Creek at Highway 43 bridge. Effluent from Atlas Powder Company in Marshall flows through Potter's Creek which empties into the Sabine River.

There are many possible factors involved in the pollution of the Sabine River in the East Texas area. Usually a pollutant has dispersed or moved downstream before a report is received and can be investigated.

Table 1

Water Analyses Data for Pollution Activities, 1966

Location	Date	pH	Dissolved Oxygen ppm	Chlorides ppm	Total Alkalinity ppm
LeTourneau Club Lake	4/28/66	6.8	6.0	50	20
Sabine River Highway 43 bridge	4/18/66	7.0	5.5	160	20
Sabine River Rocky Ford	7/8/66	6.7	5.0	240	30
Sabine River Rocky Ford	7/22/66	6.9	4.0	220	30
Sabine River Hatley Creek	7/22/66	6.9	3.5	240	30
Sabine River Highway 59 bridge	11/12/66	6.8	6.5	250	30
Sabine River Stillwell Store	11/12/66	6.8	6.0	230	30
Potter's Creek Highway 43 bridge	11/22/66	7.3	6.0	1800	10

Although efforts are being made by many industries to improve their effluents, continued efforts should be made to protect the fishery of the Sabine River and other affected waters. It is recommended that this job be continued to investigate future pollution activities.

Prepared by Joe E. Toole
Project Leader

Approved by Marion Toole
Coordinator

Date March 8, 1967

Charles E. Gray
Fisheries Supervisor

