

Sabine River

SEGMENT COMPLETION REPORT

As required by

FEDERAL AID IN FISHERIES RESTORATION ACT

TEXAS

Federal Aid Project No. F-3-16

Region 3-B Fisheries Studies

Job No. 5 Pollution Studies

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March 19, 1969

ABSTRACT

Investigations of reported fish kills were conducted on the Sabine River, Eagleton Creek, Willow Lake, and Lake Striker this segment. Field observations indicated all of these fish kills were minor.

High phosphate concentrations, with resulting plankton blooms and temporary oxygen depletions were investigated on the Sabine River in Harrison, Panola, Rusk, and Gregg counties.

Oil slicks on Eagleton Creek in Harrison County were traced to an oil well pit overflow.

A fish kill occurred below the spillway of Willow Lake in Henderson due to oxygen depletion. No evidence of pollution was found here.

A minor fish kill occurred in the vicinity of Woodline Camp on Lake Striker. Due to a belated report of this kill, water analyses were made two days after the kill occurred and no evidence of pollution was found.

It is recommended that this job be continued to monitor existing pollution activities and investigate future pollutants of Region 3-B waters.

Region 3-B Fisheries Studies

Job No. 1 Pollution Studies

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SEGMENT COMPLETION

State of Texas
Project No. F-3-16 Name: Region 3-B Fisheries Studies
Job No. 5 Title: Pollution Studies
Period Covered: February 1, 1968 - January 31, 1969

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 pollution was reported or evidence indicating pollution was found, a search was made to determine the source and nature of the pollutant. Standard water analyses were made to determine water quality and type of pollution. These analyses included pH, total alkalinity, chlorides, dissolved oxygen, sulfates, phosphates, turbidity and others when applicable. A portable Hach DR EL chemistry kit was used for field analyses. Stream analyses were made above and below the polluted area for comparison of water quality and to trace the influx of the pollutant into the stream.

FINDINGS:

Investigations of reported fish kills were made on the Sabine River, Eagleton Creek, Willow Lake and Lake Striker this segment. Each of these fish kills were considered minor.

Sabine River - Harrison, Panola, Rusk and Gregg Counties

Two separate investigations were made during the month of August 1968, on the Sabine River in Harrison, Panola, Rusk and Gregg Counties.

Approximately four miles of the river was observed by boat on August 12, from the Rocky-Ford area, upstream to the mouth of Cherokee Bayou. This investigation failed to locate the influx of a high phosphate concentration present in the river. A very heavy plankton bloom was present in this area of the river and dissolved oxygen was low at 4 ppm except at riffle areas where recordings of 6.0 ppm were made. In addition to field analyses, a water sample from this investigation was forwarded to the Texas Water Quality Board field office in Kilgore. No dead fish were observed in the river but a few gizzard shad (Dorosoma cepedianum) appeared to be in distress.

A second investigation was made in this area of the river on August 22, 1968. Heavy plankton blooms were again present and phosphates remained high at 1.6 ppm. Dissolved oxygen ranged from 3 ppm to 1 ppm.

It was concluded from these investigations that the high phosphate concentrations building up during minimal flow periods created excessive algae blooms. Temporary oxygen depletions occurred at night. Evidently many fishes found adequate oxygen near the several riffle areas as only a few dead fish were observed.

Similar conditions were observed in this area of the river in October 1967, as contained in the previous segment's report. Although efforts to trace the high phosphate-bearing effluent upstream to its source have not been successful, it is suspected that discharges from the Longview sewage treatment plant are responsible.

Eagleton Creek

Chemical analysis was conducted on a sample of water from Eagleton Creek in Harrison County. A report of oil slicks on the creek was investigated by Mr. Ray G. Earl, Game Management Officer, on October 14, 1968. The source of the pollutant was traced to an oil well pit overflow. Chlorides exceeded 500 ppm in the sample tested. No dead fish were observed in the creek.

Willow Lake

Willow Lake is a city-owned impoundment within the city limits of Henderson in Rusk County.

A fish kill in the creek immediately below the lake spillway was reported by Mr. Bill Daniel, Game Management Officer in Rusk County, on June 16, 1968.

Upon investigation it was learned that a large number of carp (Cyprinus carpio) and bullhead catfish (Ictalurus sp.) became trapped in a small basin below the lake spillway. Flow from two six-inch pipes, previously supplying water to these fishes, was cut off on June 14. Without this oxygenated water supply an oxygen depletion occurred and killed the entrapped fishes. Water quality on June 16, 1968, was normal and no evidence of pollution was found.

Lake Striker

A reported fish kill and reddish precipitate on Lake Striker was investigated on April 8, 1968. Due to a belated report, water quality results and observations were negative in indicating possible pollution. The limited fish kill and red precipitate occurred on April 6, 1968. Heavy rains prior to this date may have flushed an unknown pollutant into the lake. This fish kill was apparently very light as only approximately 20 fishes were observed by a commercial camp operator on Lake Striker.

CONCLUSIONS AND RECOMMENDATIONS:

Reports of fish kills or pollution activity in Region 3-B have been relatively few in number in relation to the continued industrial and municipal growth in north-eastern Texas. However, it is recommended that this job be continued to investigate and monitor existing and future pollution activities in Region 3-B, in cooperation with the Texas Water Quality Board, the Texas Railroad Commission, and other pollution abatement agencies.

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Approved by Marion Toole
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Date March 19, 1969

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