

FILE

JOB COMPLETION REPORT

As required by

FEDERAL AID IN FISHERIES RESTORATION ACT

TEXAS

Federal Aid Project F-3-R-13

Fisheries Investigations and Surveys of the Waters of Region 3-B

Job No. E-1 Evaluation of Copper Sulphate

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ABSTRACT

Fisheries surveys were made on two private lakes in Region 3-B that were previously treated with copper sulphate for control of bullhead catfish.

Soutter's Lake, near Athens, now has a much lower bullhead population than it had prior to the 1961 treatment with copper sulphate. An increase in the largemouth bass population of this lake has served as a natural predation factor against bullhead overpopulation since the treatment.

Wheeler's Lake, near Marshall, was also re-surveyed this segment. This lake was treated with copper sulphate in 1958 as the first attempt to control bullhead catfish with this chemical. Only six bullheads were netted from the lake this segment but a valid conclusion of the original treatment effectiveness cannot be made due to the lake being drained since treatment.

It is recommended that this job be terminated due to the difficulty of obtaining suitable lakes for re-survey. Most of the previously treated waters have been subjected to additional fish control treatments since the original copper sulphate treatment. Surveys of these lakes will not provide conclusive data for evaluation.

JOB COMPLETION REPORT

State of Texas

Project No. F-3-R-13

Name: Fisheries Investigations and Surveys
of the Waters of Region 3-B

Job No. E-1

Title: Evaluation of Copper Sulphate as a
Fish Toxicant.

Period Covered: February 1, 1965 - January 31, 1966

OBJECTIVES:

To further evaluate copper sulphate as a fish toxicant.

TECHNIQUES USED:

Fisheries surveys were made on small private lakes in Region 3-B that were previously treated with copper sulphate for selective control of bullhead catfish (Ictalurus sp.). Data from the original treatment surveys were compared to that collected during this segments surveys to determine if extended control of these fish was achieved. Standardized experimental gill nets were used for collection purposes. These nets are 150 feet in length, 8 feet in depth with mesh size ranging from 1 to 3½ inches.

FINDINGS:

Soutter's Lake, located 15 miles southeast of Athens, was treated June 14, 1961 with 800 pounds of copper sulphate for control of bullhead catfish. Table 1 contains netting data collected immediately before this treatment. Table 2 contains netting data collected on June 20, six days after the treatment. Table 3 contains the netting data collected during the 1965 re-survey.

By comparison of the netting data compiled before and after treatment, it is obvious that a good selective kill of bullhead catfish was obtained. It is interesting to note the greatly increased catch of sunfish after the treatment due to the accelerated rate of activity caused by the chemical.

A comparison of the data contained in Tables 2 and 3 indicates that after a four year period, the bullhead catfish populations in Soutter's Lake are still well below the 1961 pre-treatment populations. Part of this success is attributed to the increased population of largemouth bass (Micropterus salmoides) in the lake. The bass have no doubt provided good predatory control over the bullheads. Ten bass averaging almost three pounds in weight were netted in the re-survey. Only four small bass were netted prior to the treatment in 1961.

In conclusion of the above data, it is evident that the treatment with copper sulphate on this lake was successful. Over 6,000 dead bullhead catfish were counted after the treatment.

Table 1

Netting data from Soutter's Lake June 12, 1961 before treatment

Species	Number	Weight
Largemouth bass	4	4.62
Yellow bullhead	22	7.94
Black bullhead	18	3.69
Black crappie	6	1.06
Golden shiner	1	.25
Bluegill sunfish	<u>46</u>	<u>4.13</u>
	97	21.69

Table 2

Netting data from Soutter's Lake June 14, 1961 after treatment

Species	Number	Weight
Bluegill sunfish	159	13.50
Black crappie	6	.82
Warmouth (Goggle-eye)	3	.62
Green sunfish	<u>1</u>	<u>.25</u>
	169	15.19

Table 3

Netting data for Soutter's Lake re-survey, July 27, 1965

Species	Number	Weight
Largemouth bass	10	28.88
Yellow bullhead	8	6.00
Chubsucker	2	1.50
Bluegill sunfish	34	6.00
Warmouth	<u>1</u>	<u>.13</u>
	55	42.51

WHEELER'S LAKE

Wheeler's Lake, located three miles southwest of Marshall, was treated with copper sulphate on September 25, 1958. This was the first attempt to control bullhead catfish with this chemical in Region 3-B. Complete netting records are not available before or after treatment although many dead bullheads were noted after the treatment.

Three units of experimental gill net were set overnight on September 15, 1965 in Wheeler's Lake. A total of six bullhead catfish were netted. An accurate conclusion of the original treatment of this lake cannot be made due to a partial draining of the lake during enlargement operations. The present bullhead population however is well below normal for comparative area lakes.

CONCLUSIONS AND RECOMMENDATIONS:

The Soutter Lake selective kill was successful in controlling the bullhead catfish population in 1961. This treatment provided a more balanced ratio of game and rough fish species. Effective predation by the game fish has maintained this improved ratio.

Several additional lakes previously treated with copper sulphate were chosen to be re-surveyed during this segment. Due to various reasons, they were found to be either unavailable or non-suitable due to major environmental changes since treatment. Data from these lakes would not provide valid evaluational figures to determine the true value of the copper sulphate treatments.

For these reasons, it is recommended that this job be terminated with the completion of this segment.

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Date October 17, 1966

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