

JOB PROGRESS REPORT

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FEDERAL AID IN FISHERIES RESTORATION ACT

TEXAS

Federal Aid Project No. F-6-R-17

FISHERIES INVESTIGATIONS - REGION 5-B

Job No. III Trotline Study

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September 15, 1970

SUMMARY

Although trotline fishing is a widespread and popular sport, there is little published information available upon which to base recommendations for regulating and improving the quality of this fishing method. During the second job segment, actual experimental trotlining was initiated by project personnel and conducted in conjunction with fisherman interviews and experimental bait trapping. While certain trends in the data have developed concerning the experimental trotline study and the fisherman interviews, no conclusions should be formulated at this time due to the insufficient quantity of information. Bait trapping has continued to be highly selective toward the trapping of desired bait fishes.

Federal Aid Project No. F-6-R-17

FISHERIES INVESTIGATIONS - REGION 2-B

Job No. III Trotline Study

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September 15, 1970

JOB PROGRESS REPORT

State Texas

Project No.: F-6-R-17

Project Title: Fisheries Investigations
Region 5-B

Job No.: III

Job Title: Trotline Study

Period Covered: January 1, 1969 to December 31, 1969

Background:

Although trotlining is a major form of sport and commercial fishing, the amount of available published data pertaining to freshwater is quite limited. Since trotline fishing could exert a definite influence on a given fishery, more information regarding the means and methods, yields, and effects of this form of fish harvesting is needed.

This report covers the second year of a proposed four-year trotline study being conducted at Lake Corpus Christi, in South Texas. Lake Corpus Christi is a popular trotline fishing lake and offers a suitable area for studying the sport. Presently a hook interval regulation is the only law governing trotline fishing on this lake.

The first segment of the study entailed literature research, fisherman interviews, and experimental bait trapping. Publications dealing with the subject of trotlining are very limited, and difficulty in contacting trotline fishermen resulted in fewer interviews and less data than were anticipated. Short-term bait trapping exhibited a high degree of selectivity for trotline bait species.

Objectives:

To continue gathering trotline fishing information through the use of fisherman interviews at Lake Corpus Christi.

To obtain data on actual trotline yields from Lake Corpus Christi by use of experimental trotlines.

To determine the feasibility of trapping bait for use on trotlines.

Procedures:

Fisherman interviews were continued in order to procure information pertaining to the individuals doing trotline fishing, their methods and equipment, their preferred locations, and their baits and catches.

Creel censusing was intended for the second segment of the study, but was curtailed due to the time element involved and to the difficulty in confronting trotline fishermen. This procedure may possibly be resumed in the forthcoming segment if the obstacles can be eliminated.

Experimental trotlining by project personnel was initiated on Lake Corpus Christi in May and continued monthly throughout the remainder of the year except during August and October. Lines of various construction were used at different locations in a variety of habitat types.

Seven 105-foot trotlines were used with the staging (drop or hook) lines ranging from 12 inches to 24 inches in length and the distance between the staging lines being either 3, 4, or 4½ feet. Eagle Claw, Kirby, O'Shaughnessy, and Limerick hooks were used in sizes varying from 2/0 to 8/0. Eleven different baits were used in various combinations with the hook sizes (Table 1).

The method by which the trotlines were set consisted of tying one end of the line to an object at or above the water surface and sinking the other end, thus enabling the baits to be fished in depths ranging from 12 inches to the maximum depth fished, 30 feet.

Experimental bait trapping was continued in conjunction with the experimental trotlining using traps designed specifically to catch live Rio Grande perch (Cichlasoma cyanoguttatum) and sunfish (Lepomis spp.). Clover leaf and V-mouth bait traps were used containing milo, cob corn, range cubes, cottonseed cubes, or cottonseed cake in various combinations. The traps were set in different locations on the lake, wherever the habitat was thought to be optimum and checked periodically.

Findings:

Nineteen trotline fishermen were interviewed during the second job segment. Due to the low number of interviews obtained, the data were not of sufficient quantity to form conclusions so they are presented in the form of broad ranges of low and high extremes.

The fishermen interviewed had from one to eight trotlines in the water ranging from 36 to 2,400 feet in length. The main lines were usually constructed of nylon and set in water depths varying from 5 to 50 feet. Fishermen indicated no preference between mid-lake and near-shore fishing locations.

Hook size varied from 2/0 to 9/0, and most fishermen interviewed preferred from 20 to 30 hooks per line while some had anywhere from 11 to 250. Hooks were fished at depths ranging from the surface down to 35 feet. The lengths of the staging lines varied from 10 to 24 inches.

Trotlines were left in the water for lengths of time varying from one day to an indefinite period. Preferred seasons, weather, and water conditions were similar to those considered optimum by rod-and-reel fishermen seeking other types of sport fishes.

Table 1
Catch of Trotlines Set in Lake Corpus Christi by Bait Type

Species	Bait Type						Total										
	Tetra	Sunfish	Rio Grande Perch	Cut Buffalo	Blood Bait	Fresh Liver											
Channel catfish	0	1	0	3	1	7	2	2	0	1	0	0	0	0	13	0	4
Blue catfish	0	4	0	0	0	4	0	0	0	0	3	0	0	0	13	4	0
Flathead catfish	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Largemouth bass	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotted gar	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	15	0	3	1	11	4	5	0	1	11	4	5	0	26	4	4

Table 2
Catch of Traps Set in Lake Corpus Christi

Common Name	Scientific Name	Number
<u>Trotline Bait Fishes</u>		
Bluegill	<u>Lepomis macrochirus</u>	248
Longear sunfish	<u>Lepomis megalotis</u>	53
Rio Grande perch	<u>Cichlasoma cyanoguttatum</u>	10
Redear sunfish	<u>Lepomis microlophus</u>	58
Warmouth	<u>Chaenobryttus gulosus</u>	9
Redbreast sunfish	<u>Lepomis auritus</u>	1
<hr/>		
<u>Game Fishes</u>		
Channel catfish	<u>Ictalurus punctatus</u>	4
White bass	<u>Roccus chrysops</u>	2
Largemouth bass	<u>Micropterus salmoides</u>	5
<hr/>		
<u>Rough Fishes</u>		
Gizzard shad	<u>Dorosoma cepedianum</u>	23
Total		413

A total of 16 different bait types were used by those fishermen interviewed. The most popular bait for flathead catfish (Pylodictis olivaris) was Rio Grande perch (Cichlasoma cyanoguttatum), while shrimp was preferred for channel catfish (Ictalurus punctatus). P & G bar soap, sunfish (Lepomis spp.), blood bait, and shrimp were the preferred baits for blue catfish (I. furcatus).

A total of 26 channel catfish, 22 blue catfish, and 1 flathead catfish was caught by the fishermen interviewed.

The fishermen interviewed were males between 21 and 67 years of age, residents of the state, and employed in a variety of occupations.

Experimental trotlining was initiated by project personnel during the second job segment to obtain data on actual yields and to test the materials and techniques involved. Although there are insufficient data to formulate conclusions, certain tendencies have begun to develop.

Project personnel caught a total of 70 fishes in 2,065.5 hours (Table 1). The most species were caught on live sunfish (Lepomis spp.) while the most individuals were taken on Fisherman's Bait Soap. Channel catfish and blue catfish were caught on most of the baits while flathead catfish, largemouth bass (Micropterus salmoides) and spotted gar (Lepisosteus oculatus) were taken only on live sunfish.

Fish were taken at depths varying from 1 to 8 feet while the hooks were fished at depths ranging from several inches below the surface to 30 feet. Although no correlation between the depths at which fish were caught and seasonal variation in weather conditions can be made at this time, an effort will be made to do so in future segments. The largest number of fish were caught on hook size 2/0 while more pounds of fishes were taken on two of the larger sizes, 6/0 and 8/0. Strangely, hook size 7/0 was the least effective. As expected, the trend thus far indicated that small hooks will catch more and smaller fish while large hooks will hook fewer but larger fish.

The bait trapping portion of the study was conducted to determine if preliminary trends would continue to indicate that bait fish consisting primarily of sunfish and occasionally Rio Grande perch could be selectively trapped. Both the clover leaf and V-mouth type traps and all baits used proved to be highly selective towards the trapping of bait fish. The traps were set a total of 1,118 hours. The catch of 415 fish consisted of 92.35 per cent bait fish (Table 2) and 2.65 per cent game fish.

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