JOB PROGRESS REPORT

As required by

FEDERAL AID IN FISHERIES RESTORATION ACT

TEXAS

Federal Aid Project No. F-5-R-20

REGION 1-B FISHERIES STUDIES

Job No. 14: Fish Stocking Evaluation

Project Leader: B. J. Follis

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September 25, 1973

JOB PROGRESS REPORT

As required by

FEDERAL AID IN FISHERIES RESTORATION ACT

TEXAS

Federal Aid Project No. F-5-R-29

REGION I-A FISHERIES STUDIES

Job No. 14: Fish Stocking Evaluation

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JOB PROGRESS REPORT

State: Texas

Project No. F-5-R-20 Name: Region 1-B Fisheries Studies

Job No. 14 Title: Fish Stocking Evaluation

Period Covered: March 1, 1972 to February 28, 1973

Objectives

PS: To assess the practice of supplementary stocking of hatchery-produced fingerling fish as a management tool.

Segment: To estimate the survival and growth of fingerling largemouth bass (Micropterus salmoides) and channel catfish (Ictalurus punctatus) stocked into established warm-water fish populations.

Procedures:

Selected candidate waters, where previous standard survey data have been collected and have received supplementary stocking, included New Winters Lake, Moss Creek Lake, Oak Creek Lake, and the headwaters of the San Saba River. Hatchery-produced largemouth bass and channel catfish were mass-marked with air-injected fluorescent particles and stocked at the rate of 10 fingerlings per acre. Oak Creek Lake and San Saba River received only catfish. Three collections were made at each study site except Oak Creek where only two collections were made. Collections were made with seines, gill nets, trawls, electro-fishing gear, and trotlines. All largemouth bass and channel catfish, age group I-III, were examined under ultraviolet light to identify returns. Weights and lengths of the returns were recorded for the growth study.

Findings:

This segment's collections from New Winters Lake consisted of 10 marked channel catfish out of 40 catfish caught. All 10 recoveries were from the 1970 year class, and they had grown from an average standard length of 104 mm to 264 mm. Two largemouth bass were collected, and neither could be identified as hatchery-stocked fish.

Twelve marked specimens from three year classes were found in a sample of 22 channel catfish collected at Moss Creek Lake. The increase in average standard length was 265 mm for the fish stocked in 1969, 148 mm for the 1970 stocked fish, and 36 mm for fish stocked in 1971.

Three of a 22-specimen sample of largemouth bass from Moss Creek Lake had been previously marked. Two of these fish came from a stocking in 1970, and they had grown from an average standard length of 64 mm to 306 mm. The one 1971 fish had increased from 108 mm to 146 mm standard length.

Two collections at Oak Creek Lake produced 10 marked channel catfish from the 1971 year class. These fish showed an increase in standard length from an average of 114 mm to 152 mm. Only two unmarked catfish were collected.

Trotlining was the primary collection method used for three collections made on the San Saba River. This effort produced 47 channel catfish; and 39 of these catfish, representing three year classes, were identified as hatchery-stocked fish. Eight catfish from the 1969 stocking had grown from an average standard length of 123 mm to 298 mm. Thirty catfish from the 1970 stocking showed an increase in average standard length from 120 mm to 258 mm. The single 1971 marked fish, from a group of fish that averaged 73 mm in standard length when stocked, had grown to 251 mm.

Discussion and Recommendations:

The returns of hatchery-produced catfish fingerlings were good. The survival is apparently high enough that these catfish form a significant part of the catfish population. The growth rate allowed recruitment into the sport fisheries in less than two years.

The small number of largemouth bass caught indicated to this investigator that more effort and/or better collecting methods are needed before any sound conclusions are drawn. But, evidence at this point indicates stocking largemouth bass into established fish populations is a questionable fishery management practice.

It is recommended that this study be continued through one or more segment(s). Additional sampling from the study sites is needed to fully assess the practice of supplementary stocking of fishes, especially largemouth bass.

Prepared by B. J. Follis

Approved by David H. Prichard

Date September 25, 1973

Leo Lewis
Director, Inland Fisheries, Region I

PERFORMANCE REPORT

As Required By

FEDERAL AID IN FISHERIES RESTORATION ACT

TEXAS

Federal Aid Project No. F-5-R-21

REGION I-B FISHERIES STUDIES

Objective 14: Fish Stocking Evaluation

Project Leader: Billy J. Follis

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March 22, 1974

Abstract

The goal of this study is to determine if fingerling largemouth bass and channel catfish survive and grow when stocked into established fish populations. These fishes were stocked into three lakes and one river beginning in 1969, and samples were made in the years that followed with seines, gill nets, trotlines and electro-fishing gear. Some stocked fishes have been recaptured and apparently have added to the existing population of fishes. But, how much these introductions contribute to a sport fishery is unknown.

PERFORMANCE REPORT

State: Texas Project Number: F-5-R-21

Project Title: Region I-B Fisheries Studies

Project Section: Investigation

Study Title: Fish Stocking Evaluation

Contract Period: From March 1, 1973 To February 28, 1974

Program Narrative Objective Number: 14

Objective: To assess the practice of supplementary stocking of hatchery-produced fingerling fishes as a management tool.

I. Segment Objective:

To estimate the survival and growth of fingerling largemouth bass (Micropterus salmoides) and channel catfish (Ictalurus punctatus) stocked into established warmwater fish populations.

II. Summary of Progress:

Study areas included lakes New Winters, Moss Creek, Oak Creek and the headwaters of the San Saba River. During previous segments, hatchery-produced largemouth bass and channel catfish were mass-marked with air-injected fluorescent particles and stocked at a rate of approximately 10 per acre in all areas except two.

Three collections were made at each study site with seines, gill nets, trotlines and electro-fishing gear. All largemouth bass and channel catfish of appropriate size classes were examined under ultraviolet light for identification and then weighed and measured for growth estimates.

Collections from New Winters Lake produced 72 channel catfish. Eleven of these fish were identified as hatchery-stocked fingerlings representing three year classes. Five belonged to the 1970 year class and they had increased in average standard length from 104 mm to 290; two 1971 year class fish and they increased from 72 mm average standard length to 287; and four 1972 releases increased from 118 mm average standard length to 198. Only two largemouth bass were collected and neither was identified as a marked fish.

Ten marked channel catfish were collected in a 24-specimen sample taken from Moss Creek Lake. All stocked year classes (four) were represented. The increases in average standard length for each year class are: 1969, from 123 to 403 mm; 1970, from 104 to 271 mm; 1971, from 136 to 277 mm; and 1972, from 121 to 210 mm. Eleven largemouth bass were collected from Moss Creek Lake. Only one fish belonging to the

1970 year class was found. This specimen was from a group of fish that averaged 64 mm standard length when stocked. It had grown to 184 mm.

A sample of 29 channel catfish was collected at Oak Creek Lake. Thirteen of these fish were marked. Nine of the marked fish were from the 1971 stocking and they had grown from an average standard length of 114 to 226. The other four fish were stocked in 1972 and they had increased from 121 mm average standard length to 177.

The largest return of marked channel catfish came from the headwaters of the San Saba River. Out of 66 catfish collected, 52 were identified as hatchery-stocked fingerlings. Seven were 1969 year class fish and they increased in average standard length from 123 mm to 392. Thirty-six fish were 1970 stocked fingerlings and they had grown from 120 mm to 342 average standard length. Nine were 1971 stocked fish and they had increased in average standard length from 72 mm to 218.

III. Significant Deviation:

No significant deviations from planned collection procedures occurred.

IV. Conclusions, Evaluations and Recommendations:

Collections made this segment show fishes introduced into established populations can survive and grow. But, how much these introductions contribute to a sport fishery is unknown. Further study along these lines is needed.

V. Prepared by: Billy J. Follis

Date: March 22, 1974

Leo Lewis
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