Report of Fisheries Investigations

Experimental Management of the Rita Blanca Lake Fishery

by

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Dingell-Johnson Project F-7-R-7, Job B-16
June 1, 1959 - December 31, 1959

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ABSTRACT

Attempts were made to restore balance in Rita Blanca Lake by controlling excessive populations of golden shiners and black bullhead catfish, as well as threatening populations of carp and goldfish.

Predation on golden shiners was increased by stocking predator-size black bass. An undisclosed number of adult black bass were stocked by state fish hatchery personnel. An additional 10,000 bass, ranging from 4 to 7 inches in length, were stocked by the U. S. Fish and Wildlife Service.

Predation on bullheads, shiners, carp and goldfish was increased by stocking flathead catfish at the rate of one per acre. A total of 285 flatheads, averaging 11.1 pounds and comprising a total weight of 3,171 pounds, was successfully transferred from Lake Stamford.

Experimental seining was conducted to remove all species of undesirable fish. More than 20,000 shiners were also removed by commercial bait dealers under supervision of game wardens and their appointed deputies.

Specialized nets and traps were used experimentally in an effort to remove unwanted fish. These methods proved to be impractical and were discoutinued.

In an effort to decrease turbidity and improve habitat for game fishes, as well as fishing conditions for sportsmen, water levels were controlled by the addition of sub-surface, highly mineralized water.

Suitable spawning sites were located so that artificial facilities can be provided if, and when, they are necessary.

Studies will continue to determine additional requirements for establishing and maintaining the fishery at Rita Blanca Lake.

Segment Completion Report

State of TEXAS

Project No. F-7-R-7 Name: Fisheries Investigations and Surveys of the Waters of Region 1-B.

Job No. B-16 Title: Experimental Management of the Rita Blanca Lake Fishery.

Period Covered: June 1, 1959 - December 31, 1959

OBJECTIVES

To initiate and conduct experimental management practices at Rita Blanca Lake to restore balance through the control of excessive populations of golden shiners and black bullhead catfishes.

TECHNIQUES

Predation on golden shiners and bullheads, as well as the threatening populations of carp and goldfish, was increased by stocking flathead catfish and predator-sized black bass.

Extensive seining was conducted in an effort to reduce populations of all problematical species. This was accomplished partly by commercial bait seining under the supervision of game wardens and their appointed deputies.

Specialized hoop nets and small-meshed gill nets were used for capturing bullhead catfish and large golden shiners.

Water levels were controlled by the addition of sub-surface, highly mineralized water. This also decreased turbidity and improved habitat for game fishes, as well as fishing conditions for sportsmen.

A search was made for suitable spawning sites for all game fishes so that artificial facilities can be provided if, and when, they are necessary. These spawning devices will be placed between the extreme levels at which the water level may fluctuate during the spawning season.

DISCUSSION

This report is for a segment of short duration, covering a period of only 7 months between June 1 through December 31, 1959.

Experimental Introductions

Black Bass - Results of previous fisheries surveys at Rita Blanca indicate that black bass comprised only 0.9 percent of the total population. Details of these

investigations are given in the Report F-7-R-5, Job B-13. Scarcity of this species in Rita Blanca is a significant factor because several sizable stockings of bass fry and fingerlings have been made during previous years. It was quite obvious that very few, if any, of these fish survived, and those that did survive failed to reproduce.

The survey also disclosed that the golden shiner was the most abundant species present, comprising approximately 21 percent of gill net collections and 50 percent of seine collections. Since this species reputedly feeds on fry of other fish, their overabundance may have been responsible for the lack of successful reproduction of bass, crappie and other bottom-nesting game fishes. An attempt was made to reverse the order of predation by stocking yearling or adult-sized black bass.

Earlier in the segment, an undisclosed number of adult black bass were transferred from the state-owned lake near Canadian by state fish hatchery personnel. Then on July 23, 1959, an additional 10,000 cannibal-size bass were stocked by the U. S. Fish and Wildlife Service Fish Cultural Station at Tishomingo, Oklahoma. These fish, which ranged from 4 to 7 inches in length, were too large to be eaten by the larger golden shiners, and large enough to begin feeding upon the smaller shiners.

Flathead Catfish - In November 1959, 288 flatheads were captured from Lake Stamford and transferred to Rita Blanca. This was a very successful operation, since only 3 out of the 288 fish that were transported during sub-freezing temperatures were lost.

A total of 285 flatheads, ranging from 3 to 28 pounds, was successfully transplanted. The average weight was 11.1 pounds and comprised a total weight of 3,171 pounds.

The primary purpose of the introduction of these reputedly, very efficient predators, which were stocked at the rate of one per acre, was to increase predation on golden shiners and bullhead catfish. No restrictions were placed on their capture by sports fishermen, however, which makes them an additional sports fish for the upper Panhandle region.

Manual Controls

An attempt to reduce populations of all undesirable species was made by experimental seining operations. Numerous drags were made with a 200-foot, $\frac{1}{2}$-inch mesh seine at various locations around the lake. Seining was also done at night in the shallow cove areas. Although large numbers of fish were removed by this method, it is slow, restricted, laborious, and too expensive to constitute an effective control measure.

In order to reduce labor costs, commercial bait dealers were permitted to seine golden shiners on an experimental scale under supervision of game wardens and their appointed deputies. More than 200 gallons of shiners, averaging 100 shiners per gallon, or a total in excess of 20,000 were removed by this method.

Specialized "bullhead nets" were used on one occasion. These nets consisted of small, double-throated hoop nets connected in a series by lead nets. Since these nets caught more crappie than either bullhead catfish or shiners, they were discontinued.

Small-meshed gill nets were also tried on two occasions. Although these nets caught numerous bullheads and large shiners, they were too destructive to small channel catfish and crappie. Therefore, their use was discontinued.

All undesirable species that were caught during these seining, trapping and netting operations, including bullheads, shiners, carp and goldfish, were removed.

Habitat Improvements

In an effort to decrease turbidity and improve habitat for game fishes, as well as fishing conditions for sportsmen, water levels were controlled by the addition of sub-surface, highly mineralized water. All pumping costs were provided by the courts of Hartley and Dallam Counties.

Suitable spawning sites for all game fishes were located so that artificial facilities can be provided if, and when, they are necessary. These spawning devices will be placed between the extreme levels at which water levels may fluctuate during the spawning seasons.

Studies will continue to determine additional requirements for establishing and maintaining good fishing at Rita Blanca Lake.

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Date March 31, 1960