MONTANA STATE DEPARTMENT OF FISH AND GAME
FEDERAL AID IN FISH RESTORATION SECTION
HELENA, MONTANA

JOB COMPLETION REPORT
INVESTIGATIONS PROJECTS

State of Montana

Project No. F-5-R-3 Work Plan No. III Job No. III-A

Title of Job: Missouri River Fishery Study

Abstract:

During 1953 fifty percent of the rainbow trout planted in the Missouri River, between Wolf Creek and Cascade, Montana, were marked by clipping the left pelvic fin. Creel census and fishermen-car count checks were made during 1953 continuing into 1954. Although rainbow trout were found frequently in creels checked during the summer months, few marked fish were observed until September when, during a fishing contest the return of 1953 hatchery trout contributed 10.5 percent to the game fish caught. The contribution to the creel of hatchery plants made in previous years has not been determined and it is recommended that future planted fish be marked and checks made to provide a basis for future management.

Objectives:

The Missouri River in Cascade and Lewis and Clark counties, Montana, provides an all year fishery since there is no closed season and a variety of game fish is present.

During 1948 and 1949 a fisheries survey* was conducted on a section of the Missouri River between Holter Dam and Cascade, Montana. The survey disclosed that trout growth is comparatively rapid in the river and that rainbow are the most important trout species present from the standpoint of fisherman catch.

Substantial numbers of legal-sized rainbow trout are planted annually in the Missouri River canyon area between Cascade and Wolf Creek, however, there is little or no information available regarding the return to the fishermen's creel of the fish stocked.

In an effort to effect the best possible fishery management of this water resource it is important to possess information concerning the return of planted fish to the creel. Without this information it is not known if the numbers of planted fish should be increased, maintained or curtailed. It would also be desirable to have information concerning the fishing pressure exerted on the river in order to better evaluate the fishery.

Techniques Used:

During 1953, fifty percent of the fish planted in a study section bounded by two highway (U. S. 91) bridges were marked (left pelvic clipped) fish. Six

* Kathrein, Joseph W.
1951 Growth Rate of Four Species of Fish in a Section of the Missouri River between Holter Dam and Cascade, Montana. Trans. Am. Fish. Soc., Vol. 80 (1950), pp. 93-98.

thousand marked and unmarked rainbow trout were planted from the Great Falls hatchery on May 20 or shortly thereafter. One hundred of these fish were weighed and measured prior to planting. The average length was 8.4 inches (T.L.) and the average weight was 0.21 pounds.

A partial creel census and a car-fisherman count was made throughout 1953 and continuing into 1954. Spot checks were made of fishermen on the river and on September 13, 1953 a check was made of fish caught during a fishing contest sponsored by a Great Falls civic organization.

A section of the river approximately twenty miles in length is paralleled by highway U. S. 91. Most of the fishing water in the area is clearly visible from the highway making it possible to conduct a census of fishermen use.

Findings:

Abnormally high flood conditions during the early part of June 1953 prevented any appreciable fisherman use of the river during this period. The flood waters from tributary streams washed out highway bridges, closing the road to travel. The effect of the flood conditions on the fish planted during the latter part of May is not known.

Since the regular fishing season had opened May 17, many of the fishermen of the central Montana area were fishing waters other than the Missouri River and concentrations of fishermen were difficult to find.

During the latter part of June and the month of July considerable effort was made to collect pertinent information on the Missouri River fishery. In this period the average car count in the study section was approximately five cars per week day. The Sunday and holiday car count averaged twenty-six. However, many of those contacted on Sundays and holidays had fished for only short periods and their main objective was to picnic or just to get out-of-doors. In the June and July checks forty fishermen were contacted. Twenty-three rainbow trout were found in their creels, only one of which was a marked fish. These fishermen had fished 112.58 hours making the catch per hour on rainbow trout 0.20 or one of these trout caught in every five hours of fishing.

In the fishery survey of 1948 and 1949 (Kathrein) the catch per hour for all species of trout varied from 0.70 in the first year to 0.29 in the second. Rainbow were the main trout caught but return of hatchery fish was not reported in this study.

Mountain whitefish are the predominant game fish caught when both the winter and summer fishery are considered, a fact pointed out the previous survey. Numerous perch and suckers were caught by fishermen during 1953 but few carp although they are present.

On September 13, 1953 approximately 2,500 contestants were entered in a fishing contest in the study area. Of the 189 trout and whitefish checked during this contest ten marked trout were counted. Since only half of the 1953 plant were marked, it can logically be assumed that there were twenty 1953 hatchery rainbows in this total creel, or 10.5% of it. In considering the rainbow trout alone the 1953 plant made up 11.6%. Five mountain whitefish were sub-

mitted in the contest and twelve brown trout, one of which won the first prize of $1,000.00 for the largest game fish caught. The prize winning brown weighed 2.91 pounds. One other brown trout weighing 3.97 pounds was caught just outside the contest area.

Analysis and Recommendations:

In the section of the Missouri River between Wolf Creek and Cascade, rainbow trout are an important game fish from the standpoint of fishermen catch. It has not yet been determined if the rainbow stocks are made up primarily of naturally spawned wild fish or if previous hatchery plants have assisted materially in providing the present stocks.

It is recommended that all the rainbow trout planted in this portion of the river be marked and creel checks made until enough information is secured to provide a sound basis for future management practices.

Summary:

During 1953 fifty percent of the rainbow trout planted in the Missouri River, between Wold Creek and Cascade, Montana, were marked by clipping the left pelvic fin. Creel census and fishermen-car count checks were made during 1953 continuing into 1954. Although rainbow trout were found frequently in creels checked during the summer months few marked fish were observed until September when, during a fishing contest the return of 1953 hatchery trout contributed 10.5 percent to the game fish caught. The contribution to the creel of hatchery plants made in previous years has not been determined and it is recommended that future planted fish be marked and checks made to provide a basis for future management.

Data and Reports:

The original data is in the files of the fisheries biologist at Belt, Montana.

Prepared by Nels A. Thoreson Approved by _____

Date April 28, 1954

Duplicate

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