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

Job Completion Report
Development Project

State of Montana

Name Central Montana Fishery Study

Project No. F-24-D-22

Title Statewide Lake and Stream Rehabilitation-Willow Creek Reservoir

Period Covered: September 1, 1959 - April 30, 1960

ABSTRACT:

A project to eradicate rough fish from Willow Creek Reservoir and its incoming waters was started September 14, 1959 and completed October 23, 1959. Pro-Noxfish and Fish-Tox were applied by airplane and boat to incoming waters and to pot-holes which remained following drainage of the reservoir.

A maximum of 90 trout were collected from the 33,000 acre-foot reservoir on which growth data were recorded. The suckers, which formed the bulk of the rough fish, were extremely slow to react in some instances. Toxicant was distributed in the body of water (49° F) above the dam on October 1 and seven to eight hours had elapsed before suckers began to appear. Additional toxicant was added the following day due to the slow reaction. No additional suckers appeared. It is recommended that 240,000 two-to three-inch rainbow trout will be planted in Willow Creek Reservoir during the spring of 1960.

OBJECTIVES:

To eradicate undesirable populations of suckers from Willow Creek Reservoir and as completely as possible from its connecting waters and replace with a population of rainbow trout.

TECHNIQUES USED:

Complete drainage of the reservoir resulted in approximately ten pot-holes left standing. They ranged in size from one to sixty acres and one to ten feet in depth. A large boat was used to apply Pro-Noxfish to the large pot-hole (60 acres, 10 feet maximum depth). The toxicant-water solution was pumped into the water through two hoses on either side of the boat's bow and distributed by the boat's wake and mixing action of the motor.

Toxicant was applied to the six acre area of water above the dam by means of a hand pump and a 12-foot boat. After observing an extremely slow fish-kill three sacks of Fish-Tox were added by towing them behind the boat with a rope.

The remainder of the pot-holes were sprayed by air since the ooze prevented work with a boat.

Approximately four miles of the West and South Forks of Willow Creek were killed out with Fish-Tox. The entire Willow Creek Supply Canal and pot-holes along the canal were killed out from Diversion Dam on the Sun River to Willow Creek Reservoir. Pro-Noxfish was used in the larger pot-holes and Fish-Tox in the canal proper.

FINDINGS:

On September 21, Pro-Noxfish was applied to the largest (approximately 60 acres, Maximum depth 10 feet) and most accessible pot-hole by boat. Trout began to appear within one hour and suckers shortly thereafter. Nine rainbows and one Yellowstone cutthroat were recorded. Dead and dying suckers were extremely numerous along the shore.

Pro-Noxfish was applied to the six-acre body of water above the dam on October 1. The water temperature was 49° F., and was thought to be the main reason for the slow reaction of the fish to the toxicant. Approximately three hours had elapsed before trout were completely killed and seven to eight hours before suckers began to appear. Fish-Tox was added the following day due to the apparent light kill of suckers, however, there were no further signs of distressed fish. It was thought most of the fish in this water had previously gone out the outlet.

The stream below the dam was killed out on September 28, because it was feared suckers might get back into the reservoir when water began to overflow again. Suckers were so numerous, there appeared to be a large mortality due to suffocation.

The remainder of the pot-holes in the reservoir basin were sprayed by airplane. Seven hours of flying time were required to distribute 165 gallons of Pro-Noxfish mixed with 235 gallons of water. John Nordhagen of the Choteau Flying Service was very cooperative in this project. Only small fish were observed after the first covering of toxicant. Another application was made and numerous large fish appeared. It was virtually impossible to operate a boat in the pot-holes due to the ooze, however, a somewhat exaggerated estimate was made of the total volume contained in the pot-holes and 165 gallons of toxicant was a more than ample concentration for a complete kill.

Anderson Lake was poisoned on September 11. It is a lake of approximately 65 acres with a maximum depth of 11 feet. It was believed this lake would drain into Willow Creek with high water. Common suckers were the only species observed and were present in large numbers. The local game warden counted 52 dead fish per foot of lake shore. It is possible this lake can be made available for the public in the near future.

Frenchie Lake on the Willow Creek Supply Canal was poisoned October 2. The lake is approximately 35 acres with a maximum depth of 10 feet. There was local opinion that this lake was a good trout lake and that large trout were present. Four trout were killed and the largest was fifteen inches in length. Small suckers and minnows were numerous.

Several days were required to finish work on the remainder of the canal and connecting pot-holes. The entire length of the canal was covered with a back pump on September 23 and 29, and several small connecting pot-holes were killed. On October 5, six bags of Fish-Tox were added to the canal and a complete kill was expected down stream to the reservoir. Water had just arrived there from Diversion Dam to commence filling Willow Creek Reservoir. The following day fish were observed down to the inlet to the reservoir. Two bags of toxicant were added to the stream one-half mile up from the inlet and followed down. No additional kill was observed.

The West and South Forks of Willow Creek were killed approximately four miles up from the inlet to the reservoir on October 23. No suckers were observed. Brook trout, long nose dace and creek chubs were numerous.

RECOMMENDATIONS:

It is recommended that 240,000 two-to three-inch rainbow trout be planted in Willow Creek Reservoir when sufficient food is available in the spring of 1960. This plant is approximately 170 fish per surface acre. Willow Creek Reservoir has an apparent low fertility and fair accessibility.

Prepared by Eugene B. Welch

Date November 6, 1959

Approved by George D. Holton
Assistant Coordinator