

MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS
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FISHERIES DIVISION

Summary of Annual Progress Report

April 23, 1979 to May 31, 1980

LAKE KOOCANUSA POST-IMPOUNDMENT FISHERIES STUDY

Libby, Montana

By

Bruce May and Joe E. Huston

Reservoir Investigations Project

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ABSTRACT

This report details major job accomplishments during April 23, 1979 through May 31, 1980 on Lake Koocanusa, Montana. Brief descriptions are given on spawning run monitoring of Tobacco River drainage in 1979, Young Creek in 1979 and 1980 and Big Creek in 1980, reservoir sampling done for fish depth distribution and population trends in 1979 and 1980 and analysis of fish tissue for mercury levels.

A complete report of these activities will be submitted to Corps of Engineers, Seattle District, on or about August 1, 1980 which will include data collected from April 23, 1979 through July 15, 1980.

BACKGROUND

Lake Koocanusa is the reservoir created by Libby Dam impounding the Kootenai River, near Libby, Montana. Data from pre- and post-impoundment studies have been used to mitigate damages to the fishery resource and to develop a management program for the reservoir.

Eight years after impoundment Lake Koocanusa is providing an excellent sport fishery for cutthroat, rainbow and bull trout. A fair winter and spring fishery for ling has developed the last two years. The rainbow trout population is derived from a continuation of natural reproduction and hatchery escapement while the ling and bull trout are both from natural reproduction. Cutthroat trout populations established by large plants of hatchery fish from 1970 to 1976 have been maintained by natural reproduction.

Maintenance of a good sports fishery in the future can be accomplished by: 1) continued management of tributaries as spawning and nursery areas for game fish from the reservoir, 2) supplementing natural reproduction of cutthroat with hatchery plants from Murray Springs Hatchery, and 3) providing a good environment for game fish growth and survival in the reservoir.

SUMMARY OF WORK ACCOMPLISHED

Spawning runs of rainbow and cutthroat trout ascending the Tobacco River system were monitored in April and May of 1979. Fish were collected near the mouth using fyke nets, electrofishing gear and gill nets. Most

fish were measured, weighed, tagged and released upstream. Fish were recaptured in box traps and fyke nets placed in tributaries of the Tobacco River. A total of 469 rainbow trout was captured, tagged and released.

Mark and recapture calculations were used to estimate a rainbow run of 5,770 fish. These data indicate that the Tobacco River system supports an excellent rainbow trout spawning run and may be Montana's major source of rainbow trout reproduction.

Adult rainbow trout were collected from Tobacco River drainage throughout the entire length of their spawning season. Fish traps were put into the river in early April and cutthroat trout started ascending in mid-May. No estimate of the numbers of cutthroat trout spawning in Tobacco River can be made since only a part of the spawning run was sampled.

Approximately 240 adult rainbow trout were collected near the mouth in April and May, 1980 and examined for tags. None of these fish had been marked in 1979. The absence of marked fish could have been a result of little repeat spawning, high total mortality or a large rainbow population.

The spawning run of cutthroat trout ascending Young Creek was monitored in 1979 and 1980. The spawning run in 1979 was only 315 fish as compared to 750 in 1977. The number caught in 1980 through May 31 was 320 fish. These 320 cutthroat do not represent the total 1980 spawning run as fish are still ascending the creek. The exact reasons for the reduced run in 1979 are not known but suspected reasons will be investigated in 1980.

The spawning run of rainbow and cutthroat trout ascending Big Creek is being monitored in 1980 starting in April and extending into late June. Through May 31, 1980, 545 rainbow, cutthroat and rainbow-cutthroat trout hybrids had been captured.

A large run of rainbow trout in the British Columbia part of the Kootenai River was documented in 1979 and 1980. Spent rainbow trout from the reservoir were collected as far upstream as Skookumchuck, 70 miles upstream from the head of the reservoir. This work was done by British Columbia Fish and Wildlife Branch with some aid from Montana personnel.

The fall netting series conducted in 1979 indicated that the population of cutthroat trout was slightly less than in 1978. Populations of rainbow trout were significantly less than in 1978. Populations of peamouth and northern squawfish appeared to change little from 1978.

The spring netting series was conducted the first week of May in the Rexford area. The catch rates of ling and largescale suckers were higher in 1980 than 1978, whereas, the catch rates of mountain whitefish, bull trout and longnose suckers were lower than in 1980. The decline in mountain whitefish catch rate from 1978 (7.2/net) to 1980 (0.8/net) was very significant. The cause of this large decline will be explored.

The depth distribution of major fish species was determined in the forebay area in the summer of 1979. Surface water temperatures were warm enough to force rainbow and cutthroat into the deeper waters. The depth distribution of fish in relation to temperature isotherms was comparable to previous years.

Fish scales were collected and aged. A computer program was used to develop body-scale relationships and back calculate lengths.

Tag return data was collected from fish tagged during the study. A total of 80 tags was returned from fish caught by anglers.

Rumors concerning mercury contamination of fish in the reservoir prompted us to have fish tissue analyzed. Seven salmonids were sent to Montana State University for mercury analysis. Two bull trout had concentrations of 0.45 PPM, while 3 cutthroat and 2 rainbow averaged 0.25 PPM. The FDA standard is 0.5 PPM. Fifty-six tissue samples from cutthroat, rainbow and bull trout, mountain whitefish and ling were collected in May, 1980 for mercury level analysis.