MONTANA DEPARTMENT OF FISH AND GAME
FISHERIES DIVISION

JOB PROGRESS REPORT

State: Montana

Project No: F-34-R-12 Title: Reservoir Investigations

Job No: IV-a Title: North Fork Flathead River Survey

Period Covered: July 1, 1977 through June 30, 1978

OBJECTIVES

The objectives of this job were: 1) determine migration patterns of Dolly Varden and cutthroat trout, from Flathead Lake, spawning in North Fork Flathead River drainage, 2) determine those streams tributary to the North Fork used for spawning by migrant Dolly Varden and cutthroat trout, 3) determine spawning run strengths and determine habitat types used for spawning by Dolly Varden and cutthroat trout.

WORK ACCOMPLISHED

During the months of February, March and April, 1976 and 1977, a total of 493 adult cutthroat trout from Flathead Lake were captured, tagged and released in the lower Flathead River near Kalispell, Montana. Of these fish a total of 103 recaptures were obtained, mostly from anglers. Thirty-three of the recaptures were from the North Fork Flathead River drainage all of which were caught during the months of May, June, and July, 1976 and 1977. Two tagged fish were caught in a downstream trap operated in Akakola Creek and one was caught by an angler in Coal Creek. The remaining 30 fish were caught by anglers from the North Fork proper at locations from near its mouth to 90 miles upstream. The uppermost tag recovery was from a tributary mouth about 35 miles into British Columbia.

Upstream and/or downstream fish traps were operated in several North Fork tributary streams in summer 1976 and 1977. Trapping done in British Columbia was done by Aquatico under contract with Rio Algom but under the supervision of British Columbia Fish and Wildlife Branch. Aquatico is a consulting firm while Rio Algom is the company seeking development of an open pit mine in the Howell Creek-Cabin Creek drainage. Upstream traps were intended to capture all adult Dolly Varden moving out of the North Fork into that stream for spawning. Downstream traps were designed to recapture spent Dolly Varden and Dolly Varden and cutthroat trout juveniles emigrating from the stream into the North Fork.

Stream found to be used for spawning by Dolly Varden from Flathead Lake included: Big, Coal, Red Meadow, Whale, Trail, Howell, Cabin, and Couldrey Creeks. Redd counts also indicated small numbers of Dolly Varden spawning in Sage and Kishenehn Creeks. Ranking of these streams by number of fish captured moving upstream to spawn is as follows: Whale, Coal, Howell, Couldrey, Big, Red Meadow, Trail, Kishenehn, Sage, and Cabin Creeks. A total of 260 adult Dolly

Varden were trapped in Whale Creek while about 6 fish were trapped entering Cabin Creek. Howell, Couldrey, and Cabin Creeks are entirely within British Columbia while Kishenehn and Sage Creeks are international streams entering the North Fork in Glacier National Park.

Those streams used for spawning by cutthroat trout included:Big, Coal, Red Meadow, Trail, Whale, Akakola, Couldrey, and Howell Creeks. Ranking of these streams, based entirely upon catch of juvenile fish emigrating into the North Fork, is as follows: Coal, Akakola, Howell, Red Meadow, Couldrey, Whale, Big, and Trail Creeks. Catch of juvenile cutthroat trout moving downstream ranged from 535 in Coal Creek down to 83 in Trail Creek.

Streams apparently not used for spawning by either species included only Logging and Moran Creeks. Large numbers of juvenile and adult mountain whitefish were also caught in downstream traps in all creeks except Logging Creek. Catch of mountain whitefish from the British Columbia tributaries (Howell, Cabin, Couldrey Creeks) totalled about 7000 fish. Catch from Montana tributaries ranged from a high of 1,703 in Whale Creek to 5 fish in Moran Creek.

Egg counts were taken from 34 adult female Dolly Varden. Egg numbers were determined by counting and weighing 500 eggs per adult then weighing the entire egg skein. The average female fish of this sample was 25.7 inches long, total length, weighed 6.5 pounds and contained 6,010 eggs. Gravel size was measured from one Dolly Varden redd. Eighty percent of the gravel ranged in size from 0.03 to 2.0 inches in diameter. The most dominant size was 0.03 to 0.25 inches in diameter both by volume and weight.

Physical habitat survey using the "Harrington-Dunham" method was completed on Coal and Red Meadow Creeks.

RECOMMENDATIONS

The North Fork Flathead River investigational work was funded by a grant from the U.S. Environmental Protection Agency effective August 1, 1978. This D-J project has and will provide field-level administration and technical expertise after this date. The F-34-R-13 Job Progress Report will include detailed analysis of data collected from the North Fork Flathead River Investigation and associated surveys since its inception in July, 1976 through August, 1978.

Prepared by: Joe E. Huston

Date: October 13, 1978

Waters Referred To:

Big Creek	08068001
Coal Creek	09162001
Red Meadow Creek	08576001
Trail Creek	07478010
Whale Creek	08770001
Moran Creek	08492001
North Fork Flathead R	08510001
Howell Creek	British Columbia
Cabin Creek	British Columbia
Couldrey Creek	British Columbia
Sage Creek	BC and Glacier Ntl.Park
Kishenehn Creek	BC and Glacier Ntl. Park
Akakola Creek	Glacier National Park
Logging Creek	Glacier National Park