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MONTAND DEPARTMENT OF FISH AND GAME
FISHERIES DIVISION

JOB PROGRESS REPORT
Research Project Segment

State Montana Title Reservoir Investigations

Project No. F-34-R-9 Title Hungry Horse Reservoir Study

Job No. IIa

Period Covered 1 July 1974 through 30 June 1975

ABSTRACT

A total of 65 overnight bottom gill net sets were fished in Hungry Horse Reservoir in November and May 1974. Average catch per net night included 25.4 game fish and 5.6 nongame fish. Thirteen floating gill net sets were made in conjunction with the bottom gill net sets. These nets caught an average of 7.5 game fish and 1.5 nongame fish per net set.

The U.S. Forest Service removed four round road culverts and replaced two of them with open bottom arches and one with a baffled arch multiplate culvert and one timber bridge. Passage of cutthroat trout through these structures was good during the 1975 spawning runs. Department personnel surveyed three cutthroat spawning streams and found no barriers preventing upstream movement.

The project leader attended several meetings of an inter-agency committee examining reservoir drafting for production of advance (provisional) electrical power.

DISCUSSION

Trends in the reservoir fish population are determined by gill net sampling with standard bottom nets in the spring and fall every even numbered year. Sampling was done in 1974 in mid-May with 28 overnight bottom sets and in early November with 37 sets using four netting stations in May and five in November. Cutthroat trout (Salmo clarki supsp.) and Dolly Varden (Salvelinus malma) were recorded separately for each net, weighed and measured (total length). All individual fish of other species were counted, weighed and measured for about one-half the nets. Scales were collected from a representative sample of game fish.

The 65 overnight bottom gill nets fished in the reservoir caught an average of 0.8 westslope cutthroat trout, 5.9 Dolly Varden, 18.7 mountain whitefish (Prosopium williamsoni), 2.0 largescale suckers (Catostomus macrocheilus), 0.3 longnose suckers (C.catostomus) and 3.3 squawfish (Ptychocheilus oregonensis). Average total catch per net was 31.0 fish. A total of 13 overnight floating net sets was fished in conjunction with the bottom sets. Average catch per net night for these sets was 5.8 cutthroat, 0.6 Dolly Varden, 1.1 mountain whitefish, and 1.5 squawfish. Average catch total per net was 9.0 fish. The catch data from the bottom and surface nets indicates that the cutthroat were largely confined to the surface of the reservoir and other species were most abundant near the reservoir bottom.

The United State Forest Service replaced round road culverts on four spawning tributaries with three arched culverts and one timber bridge. Two arch open bottom culverts replaced round culverts on Doris and Lost Johnny Creeks, an arched closed culvert with modified herring bone baffles was installed in Wounded Buck Creek and a timber bridge replaced a culvert in Clark Creek.

Each of these four streams is used for spawning by cutthroat trout. Doris Creek is used by Dolly Varden while Doris, Wounded Buck and Clark Creek are used by mountain whitefish. Observations during spring 1975 indicated that upstream passage through the culverts was good for cutthroat trout. It was recommended a pool be created directly below the lower lip of the Wounded Buck Creek pipe to alleviate high water velocities.

Examination of the three arch pipes will be made in fall 1975 to determine upstream passage of spawning mountain whitefish.

Project personnel made surveys of Clark, Canyon and South Fork Logan Creek to locate man-made or natural barriers to upstream movement of fish. No barriers were found in Clark or Canyon Creeks. Several debris dams, likely to become barriers, were found in South Fork Logan Creek between the reservoir and reservoir road. These obstructions were removed by the Forest Service.

Drafting of hydroelectric impoundments for production of advance energy was discussed at four meetings of the Provisional or Advance Energy Task Force. Agencies represented on this task force included Montana Department of Fish and Game, U.S. Forest Service, U.S. Bureau of Reclamation, U.S. Corps of Engineers, Bonneville Power Administration and B.C. Hydro.

In years prior to 1975, water to generate advance power has been drafted solely from Hungry Horse Reservoir. These releases have usually occurred in midsummer and fall resulting in adverse effects upon the fishery resource, the fishery and other water-based recreational activities. Bonneville Power Administration is negotiating a new twenty year contract with industry to provide up to two billion kilwatt hours of advance energy. If produced from only Hungry Horse Reservoir, this demand would result in summer drawdowns of up to 40-45 feet below the energy content curve.

The tentative task force recommendations included an allowable ten feet of reservoir drafting below energy content curve for Hungry Horse Reservoir and 7.2 to 7.5 feet for other hydroelectric dams of the region including Libby Reservoir in Montana, Dworshak Reservoir in Idaho and Mica, Arrow and Duncan in British Columbia. Grand Coulee Reservoir would be drafted in August but refilled during September from upstream reservoirs.

Montana Department of Fish and Game has stated that Libby Reservoir can be drafted more severely than Hungry Horse Reservoir with less damage to the recreational and fishery resource. Corps of Engineers and Kootenai National Forest believe they have an agreement to keep Libby Reservoir at full pool elevation through September 1 each year. Indians living on the Spokane arm of Grand Coulee Reservoir may react strongly against drafting in August. B.C. Hydro may receive strong criticism for drafting the British Columbia impoundments. Until these questions are settled no firm recommendations on drafting for provisional power can be made.

RECOMMENDATIONS

The major efforts of reservoir investigation personnel will be directed to Corps of Engineers funded Libby Reservoir fishery projects for at least the next eighteen months. Work expended on Hungry Horse Reservoir will be at a minimum during Fiscal Year 1976. Observations on fish passage through the Doris, Lost Johnny and Wounded Buck Creek culverts should be made during the 1975 fall and and 1976 spring spawning seasons. The 1976 biennial population trend sampling should be done. Continued efforts should be made to redirect reservoir operation by Bureau of Reclamation and Corps of Engineers to become more compatible with recreational uses of this impoundment and the aquatic environment.

Prepared by Joe E. Huston

Date September 4, 1975

Waters referred to:		
	Hungry Horse Reservoir	08-8860-05
	Clark Creek	08-6660-01
	Doris Creek	08-2300-01
	Lost Johnny Creek	08-4360-01
	Wounded Buck Creek	08-7920-01
	Canyon Creek	08-1160-01
	S.F. Logan Creek	08-4260-01