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MONTANA DEPARTMENT OF FISH AND GAME
FISHERIES DIVISION

ANNUAL PROGRESS REPORT

PROJECT TITLE: Kootenai River Fisheries Investigations

PERIOD COVERED: March 1, 1976 through April 30, 1977

ABSTRACT

Initial barrier and habitat surveys were conducted on ten tributary streams of the Kootenai River from below the "Rereg Dam Site" to the Idaho border. Barriers to fish migration near the tributary mouths are preventing migratory game fish from utilizing three potentially valuable spawning and nursery streams. Heavy metals pollution may be limiting the use of the Granite Creek drainage as a spawning and nursery area.

Rainbow trout spawning runs were monitored in six streams. Pipe Creek, Libby Creek and Bobtail Creek support the largest runs from the river above Kootenai Falls. Libby Creek also supports a significant run of mountain whitefish in the fall.

A gill bacteria disease, Myxobacteria sp. was determined to be the cause of extensive mortalities of adult mountain whitefish during the spawning period in 1976. Myxobacteria is present in most waters, but only become virulent when the fish are in a stressed or weakened condition.

Rainbow trout populations in the Flower-Pipe Section remained stable from 1975 to 1977, but cutthroat populations dropped markedly due to reduced escapement from Lake Koocanusa. Mountain whitefish numbers nearly doubled and the 1975 and 1976-year classes appear quite strong. The growth rates of trout and mountain whitefish have increased markedly since river impoundment in 1972.

A total of 431 anglers were contacted on the creel survey. Catch rates of trout were intermediate between those recorded for the Yellowstone and Big Hole Rivers. Rainbow trout dominated the catch in both the winter and summer fishery.

Eight white sturgeon were collected below Kootenai Falls.

INTRODUCTION

The impoundment of the Kootenai River by Libby Dam in 1972 altered the aquatic environment of the river below the dam by changing flow regimes, water temperatures, water quality, nutrient concentrations, sediment loads, insect drift and fish migration patterns. These environmental changes have resulted in significant changes in the biota of the river downstream below Libby Dam.

Fishing pressure in the remaining free flowing river below Libby Dam has increased markedly since impoundment of the river. The estimated fishing pressure from mail survey conducted for the 1968-69 fishing season was 11,549 man days of angling on the 99.3 miles of river in Montana. The mail survey for the 1975-76 season produced an estimate of 20,352 man days in the 50.1 miles of river in Montana below Libby Dam. The nature of the fishery has also changed since the impoundment of the river in 1972. Releases of warm water (above 39oF) from the reservoir in the winter have resulted in conditions where trout actively feed year-round. Prior to impoundment most of the winter fishery was directed towards mountain whitefish because trout were comparatively inactive at the prevailing water temperatures. Mountain whitefish comprised 99 percent of the catch in the 1971-72 winter fishery (May & Huston, 1975) as compared to only 8-14 percent in the winter fishery of 1977.

The selective harvest of trout in combination with markedly increasing population of mountain whitefish which are being lightly exploited may be limiting trout populations in the river. Rainbow populations remained the same in the Flower-Pipe Section from 1975-1977 even though the gas supersaturation problem was virtually eliminated during this period.

Only eight sturgeon were captured in 36 overnight net sets and 36 overnight setline sets in the spring of 1975 and 1976 (See Table 10). The low catch rate indicates that the population of sturgeon utilizing the area for spawning in the spring is lower than prior to impoundment although little data was collected prior to 1975 on sturgeon. A catch of 15 sturgeon in 102 hours of angling was recorded in the spring of 1968 by two fishermen.

Table 10. Summary of gill net and setline white sturgeon catches below Kootenai Falls

DATE CAUGHT	TOTAL LENGTH IN INCHES	TOTAL WEIGHT IN POUNDS	AGE
April 24, 1975	40.0	13.8	17
May 8, 1975	36.5	12.0	18
May 28, 1975	37.0	12.5	19
May 28, 1975	48.0	21.0	23
May 29, 1975	40.0	14.0	17
June 1, 1975	34.0	11.0	14
May 8, 1976	39.5	13.0	19
June 9, 1976	40.2	20.1	--

The effect of river fluctuations and changes in water temperatures and water quality on the white sturgeon migrations and spawning success are not known. An intensive study of this unique population of white sturgeon in the Kootenai River is needed to determine the effects of river regulation on its population dynamics.