MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS

FISHERIES DIVISION
JOB PERFORMANCE REPORT

STATE: Montana

PROJECT TITLE: Flathead Lake Fisheries Investigations

PROJECT NO.: F-33-R-16

JOB NO.: I-b

JOB TITLE: Measure annual trends in recruitment and migration of kokanee populations & identify major factors affecting trends

PERIOD COVERED: July 1, 1980 to June 30, 1981

OBJECTIVES

It shall be the primary objective of the job to establish relative abundance of the six major fish species with the present segment emphasizing kokanee, and to identify the environmental factors affecting population changes.

ACCOMPLISHMENTS

All the procedures outlined for the present segment of this job were accomplished. Population indices for kokanee 10 inches and larger were established for the 1981-82 season. These indices were established by reviewing portions of over 40 hours of acoustical tape data. An average of 38.7 fish/hectare (15.7 fish/surface acre) was calculated from data collected on 70 kilometers (43.5 miles) of transects conducted in early September. Estimates of smaller juvenile salmon were made during October and November.

Age composition of mature salmon were determined from otolith bones collected on 9 major spawning sites. The sites represented 3 river and 6 lakeshore spawning areas. Younger fish dominated the river areas where over three-fourths of the fish were four year old spawners. This compared to lake areas where less than half (40 percent) of the spawners were four years old. The average size of the mature males was 366 mm (14.4 inches) total length in the lake and 355 mm (14.0 inches) in the river.

Growth measurements calculated from a sample of 275 scales collected in the purse seine, midwater trawl and creel checks were analyzed and will represent the present years growth patterns. A total of 150 otoliths taken from non-spawning kokanee were read to establish otolith-fish length relationship.

A winter fishery for salmon in a southern bay (Skidoo Bay) was monitored with creel checks and acoustic transects. Tight dense schools of

salmon (30 to 60 feet thick) found at depths from 20 to 40 feet from the surface were providing angling success rates as high as 10 fish per hour. Average catch rates from late December to mid-April was 3.7 fish/hour. Most fish represented the coming years spawners.

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Date: June 8, 1983