MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS

FISHERIES DIVISION
JOB PROGRESS REPORT

STATE: MONTANA PROJECT TITLE: STATEWIDE FISHERIES INVESTIGATIONS

PROJECT NO: F-46-R-2 STUDY TITLE: SURVEY AND INVENTORY OF COLDWATER STREAMS

JOB NO: I-h JOB TITLE: UPPER BIGHORN RIVER INVESTIGATIONS

PERIOD COVERED: JULY 1, 1988 THROUGH JUNE 30, 1989

JOB OBJECTIVES AND DEGREE OF ATTAINMENT

1.) To maintain year around minimum flows in the upper Bighorn River of at least 2,000 cfs in eight out of 10 years and at least 2,500 cfs in five out of 10 years.

Flows were very low in FY89 due to extreme drought conditions in the basin. Flow levels dropped from 2,000 cfs on July 1 to 1,750 cfs on July 17 and remained below 2,000 cfs for the rest of FY89. Mean monthly flows ranged from 1,922 cfs in July to 1,463 cfs in October. Contact with U.S. BuRec was maintained to try and minimize the fishery impacts associated with the drought.

2.) To eliminate gas bubble trauma as a significant cause of trout mortality.

Progress was made in studying and reducing the problem and support was provided for the study team. Assisted the U.S. BuRec in a study to evaluate and establish an operating plan for using different combinations of radial and sluiceway gates to try and reduce gas supersaturation.

3.) To maintain average population densities of 5,000 to 7,000 age one and older brown trout and at least 500 18-inch and longer brown trout per mile in the Bighorn River upstream from Bighorn Fishing Access Site (FAS), and to maintain 1,500 to 2,500 age one and older brown trout per mile between Bighorn FAS and Two Leggins FAS.

Population numbers dropped from peak levels but are still within the desired level for the upper section

and close to the desired level for the lower section. High mortality and reduced growth rates resulting from low flows and colder water temperatures caused a significant decrease in the number of larger brown trout. Monitoring is ongoing to identify the effects of continued low flows and cold water temperatures.

4.) To maintain average population densities of at least 1,000 age one and older rainbow trout and 150 18-inch and longer rainbow trout per mile in the Bighorn River upstream from Bighorn FAS, and to maintain at least 500 age one and older rainbow trout per mile between Bighorn FAS and Two Leggins FAS.

Rainbow population levels continue to increase with 1988 fall populations reaching about 80% of the goal. The number of 18-inch and longer rainbow showed a substantial increase, but very few young-of-year fish were seen. Monitoring continues.

5.) To redistribute angler use to achieve use levels of no more than 3,000 angler-days per month above Bighorn FAS and at least 10,000 angler days annually between Bighorn and Two Leggins FAS.

Peak use levels were just under 3,000 angler days per month above Bighorn FAS in August 1988 using the old car-counter formula. A new equation needs to be developed which takes into account the increased use of a private access site located upstream of Bighorn FAS and the use of Bighorn FAS by anglers floating down to Mallards Landing. Reliable estimates of usage between Bighorn and Two Leggins FAS are not available, but a car counter located at Mallard Landing FAS indicate that this section of river is getting substantial use. Efforts are underway to update car counter formulas.

6.) To make at least 750 creel census contacts per year to assess angler success and opinions. (State funded).

Just over 750 contacts were made through October 1988.

SUMMARY

Progress was made on all objectives during FY89 as detailed above. Efforts to hire a river ranger for the Bighorn River starting in the spring of 1989 are behind schedule due to an extended vacancy in the Bighorn River biologist position and a state-wide hiring freeze. This affected progress on objectives 5 and 6 since this position was developed to increase angler contacts on the river and start collecting data for updating car counter formulas.