

END OF YEAR PERFORMANCE REPORT

STATE: MONTANA PROJECT TITLE _____
PROJECT: F-46-R-4 STUDY TITLE: Water Reservations -
Missouri
STUDY VII
JOB #: C
JOB TITLE: Little Missouri Instream Flow
PROJECT PERIOD: JULY 1, 1990 - JUNE 30, 1991

JOB OBJECTIVES AND DEGREE OF ATTAINMENT

1. Compile existing biological and stream profile data to identify data needs.

This objective was completed. There was practically no file information regarding the fishery of the Little Missouri River Basin and there were no stream profile data available. These data had to be collected in the field.

2. To determine species composition and distribution and the relative abundance of fish populations.

This objective was completed on all streams -- Little Missouri River, Box Elder Creek, Little Beaver Creek and Beaver Creek.

3. To collect stream profile data on streams where fish population assessments are made.

Stream profile measurements were attempted on the four streams in the Little Missouri Basin; however, it soon became apparent that the wetted perimeter inflection point program would not be a suitable way to determine instream flow requests on this low gradient, prairie stream. Therefore, the wetted perimeter method was not utilized on these streams. Instead, instream flow requests were based on the dominant discharge/channel morphology concept and the baseflow approach. Both of these methods are discussed on pages 22 and 23 of DFWP's Application for Reservations of Water in the Lower Missouri River and Little Missouri River Basins which we submitted to the Board of Natural Resources and Conservation on June 28, 1991.

4. To compile existing recreational data as may be available and perform an economic analysis of recreational use.

Limited information exists on recreational activity in the Little Missouri River Basin. What little information is available was derived from the Montana Rivers Information System at Montana State

Library. Brooks (1991) calculated the net economic value of warmwater stream fishing through a survey of both resident and non-resident anglers in the fall of 1989. He estimated the net economic value of warmwater stream fishing to be \$65.00 per day. Although the survey only included the Milk, Lower Yellowstone and Middle Missouri rivers, the \$65.00 per day estimate could be applied with confidence to the warmwater streams in the Little Missouri River Basin.

5. To summarize the impacts of the reservation on existing and potential water users in the basin.

This objective was completed. The analysis is also contained in DFWP's water reservation application for the Lower Missouri and Little Missouri River basins.

6. To summarize the acquired data base into individual write-ups of the streams which will be included in the reservation application.

This objective was completed. Write-ups of the four streams in the Little Missouri River Basin previously mentioned are included in the DFWP reservation application.

Objectives 5 and 6 were funded with state money only and were not a part of any field investigations described in this report.

SUMMARY

Meeting the objectives of this study culminated in the inclusion of the Little Missouri River Basin and its three principal tributary streams into DFWP's Application for Reservations of Water in the Lower Missouri River and Little Missouri River Basins which was submitted to the Board of Natural Resources and Conservation prior to the required legislative submittal date of July 1, 1991.

Literature Cited

- Brooks, R. 1991. Bio-economist, Fisheries Division, Montana Dept. Fish, Wildlife and Parks, Bozeman. Conversation with Carolyn Sime, Montana Dept. Fish, Wildlife and Parks, Helena, February 20, 1991.