

FISHERIES DIVISION
JOB PROGRESS REPORT

STATE: MONTANA

PROJECT NUMBER: F-46-R-7
JOB #: VI-E

PROJECT TITLE: STATEWIDE FISHERIES INVESTIGATIONS
STATE TITLE: STATEWIDE SURVEY AND INVENTORIES
JOB TITLE: ALTERNATIVE IRRIGATION STRUCTURES
PERIOD COVERED: July 1, 1993 to June 30, 1994

ABSTRACT

Grant funding was provided to the Jefferson Valley Conservation District to install bank barb structures along an eroding bank on the Jefferson River upstream of an irrigation diversion structure and to stabilize river gravels near the diversion intake. The consultant who designed the project was hired to oversee installation of the structure.

An agreement was also entered into with the Jefferson Valley Conservation District to provide funds to design, construct and evaluate the Old Hale Ditch diversion on the Jefferson River.

OBJECTIVES AND DEGREE OF ATTAINMENT

1. To engineer, design and install irrigation diversion structures that have minimal physical effects on stream channels and fish habitat. Diversion improvements were engineered at two sites and installed at one site on the Jefferson River.
2. To evaluate cost, maintenance and effects on stream channel stability of diversion projects for demonstration purposes. No reports were received from conservation districts this period.

PROCEDURES

Landowners with water rights or water use permits may divert water from rivers and streams for beneficial purposes. A common practice throughout Montana is to construct diversion dams by bulldozing up streambed material. This practice disrupts the armoring in the streambed and often causes stream channel instability resulting in erosion and sedimentation, thus adversely affecting fish habitat.

The Natural Streambed and Land Preservation Act (SB 310) administered by County Conservation Districts states that a permit is required on all activities undertaken by private individuals that affect the streambed and banks of perennial streams.

Irrigation diversion structures that alter the streambed require a permit. However, many diversions constructed from streambed material are permitted because of a lack of less damaging alternatives.

A contract was consummated with a private consulting firm to study problem diversion sites and recommend designs that may be environmentally acceptable and affordable. Plans acceptable by the Department are recommended to conservation districts as an alternative and may be eligible for cost sharing benefits.

FINDINGS

During this report period a demonstration project located upstream of the Weingart Ditch Company irrigation diversion on the Jefferson River was completed. The project involved installation of bank barbs to stabilize an eroding bank and river gravels near the diversion intake. Maintenance of the structure is the responsibility of the ditch company. Cost of the project was approximately \$4,000 and was overseen by the consulting engineer who designed the project.

An agreement was also entered into to provide the Jefferson Valley Conservation District with funds to design, construct and evaluate the Old Hale Ditch Diversion on the Jefferson River. Construction is ongoing.

No evaluation reports were received from conservation districts during the reporting period.

RECOMMENDATIONS

The contract with the private engineering firm that has designed and provided oversight of previous projects should be renewed. We should also consider hiring a Colorado consultant who has experience with specialized diversion designs that minimize impacts to fisheries. Funding should continue to be available on a cost share basis for those irrigators who propose projects that will benefit fishery resources. Assistance should also be available to individuals interested in solving diversion problems that have chronically damaged aquatic resources.