

MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS

FISHERIES DIVISION

JOB PROGRESS REPORT

State: Montana

Project Number: F46R1  
Job Number: I-f

Project Title: Statewide Fisheries Investigations  
Study Title: Survey and Inventory of Cold Water Streams  
Job Title: Southwest Montana Major River Fisheries Investigation

[1988]

JOB OBJECTIVES

Madison River

1. Maintain a minimum flow  $\geq 700$  cfs at the Kirby gage below Quake Lake and  $\geq 1100$  cfs downstream from Ennis Dam.

Worked with the Montana Power Company using SCS snow survey information to insure stream flows at both gage sites remain at or above the 700 and 1100 cfs levels, respectively.

2. Maintain wild trout population  $\geq 3000$  age II and older trout/mile below Ennis Dam and determine effects of water temperatures on catch rates.

Spring 1988 wild trout population estimate was made and compared with previous population estimates. Water temperature data was gathered through a thermograph. Data will be analyzed at a later date.

3. Maintain channel and streambanks in present or improved conditions.

A total of five SB 310 stream preservation law projects were inspected with recommendations made to preserve and/or enhance the fisheries habitat.

4. Maintain aesthetic quality of upper Madison River fishing experience (State Project).

No work was done on this objective at this time as the Scenic Easement Committee was not reactivated.

5. Maintain densities of wild trout  $\geq 13$  inches at 1200/mile between Quake Lake and McAtee Bridger (catch-and-release section).

Wild trout population estimates were made for the Pine Butte and Snoball sections for the fall, 1987 period. Data to be analyzed at a later date.

6. Maintain densities of wild trout  $\geq 13$  inches at 1200/mile between Varney Bridge and Ennis Lake with the opportunity of catching large size ( $\geq 18+$  inches) brown trout.

A fall, 1987, wild trout population estimate was made on the Varney section of the river. Data to be analyzed at a later date.

7. Attempt to disperse angler use in the Quake Lake to Ennis Lake reach. Continue to provide spatial segregation for bank and boat anglers, where possible (State Project).

Using public meetings and spot contacts with anglers using the Madison River, the Madison River between Quake Lake and Ennis Lake was redivided into areas of wade only fishing and areas which fishing from a boat was allowed to disperse the two use types to minimize social interaction.

8. Increase amount of public involvement in management of Madison River.

Public meetings were held to discuss future fishing regulation changes and receive anglers input into these changes.

9. Lease new access site on southwest corner of McAtee Bridge from Montana Dept. of State Lands.

A lease was negotiated with the Montana Dept. of State Lands for an access at the southwest corner of McAtee Bridge with plans for a access and a boat ramp.

10. Maintain present water quality in West Fork Madison River.

Review of U.S. Forest timber harvest plans for the Beaverhead Forest.

#### Yellowstone River

1. Reduce magnitude of irrigation season dewatering in

spring tributaries during cutthroat trout spawning and incubation periods.

Graduate student study was set up to determine cutthroat trout spawning and recruitment requirements in the various spawning tributaries.

2. Maintain channel and streambanks in present or improved condition.

A total of 12 SB 310 stream preservation law projects were inspected with recommendations made to preserve and/or enhance the fisheries habitat.

3. Maintain water quality and aesthetics of river.

A cooperative study with Yellowstone National Park was initiated to determine the location and causes of sediment input into the Yellowstone River during summer rain events.

4. Maintain a catch rate of 0.5 fish/hour with trout population densities  $\geq 1000$  fish greater than 9 inches/mile and 50 cutthroat trout over 12 inches/mile.

Four wild trout population sections were electrofished during 1987-88 period. Data will be analyzed at a later date.

5. Increase cutthroat trout numbers in Yellowstone River.

A catch and release angling regulation was adopted for the Yellowstone River to reduce the annual mortality of cutthroat. Cutthroat trout eggs were placed in some of the spawning tributaries to determine if numbers in the river could be increased.

6. Provide increased opportunity to catch large trout in a reach of the Yellowstone River.

A special angling regulation was installed on the section of the river between the Emigrant Bridge and the Pine Creek Bridge (5 trout of which four can be below 13 inches and only one can exceed 22 inches) to provide more large trout.

7. Acquire a suitable fishing access site between Highway 89 and Springdale (State Project).

Attempted to purchase a parcel of land in this area, but failed. Have contacted the Montana Dept of Highways for a possible site near the Highway 89 bridge.

### Big Hole River

1. Insure, within hydrologic constraints, that flow do not fall below minimum of 300 cfs in reach 1, 200 cfs in reach 2 and 100 cfs in reach 3 of the Big Hole River.

Instream flows reservations filings are being prepared for filing in 1989.

2. Maintain channel and streambanks of the Big Hole River in present or improved state of stability.

A total of 20 SB 310 streambed law projects were inspected with recommendations made to preserve and/or enhance the fisheries habitat.

3. Maintain instream sediment levels and flow regime at average current levels.

Reviewed those U.S. Forest Service timber sale and road plans which affected flows and water quality.

4. Maintain fluvial grayling populations at a minimum of 40 age II and older fish per mile upstream from Pintlar Creek.

Electrofished the Big Hole River between Wisdom and Wise River to define characteristics of Grayling spawning run and to determine the amount of Grayling habitat which presently exists. Work with the Grayling study committee to formulate a Grayling recovery plan. Attempted fall population estimates in Wisdom and McDowell study sections but ceased efforts due to extremely low flow conditions associated with drought.

5. Maintain brown trout populations in lower river (Glen Access to mouth) at densities  $\geq 1000$  age II and older fish/mile with limited numbers of rainbow trout.

The Hogback study was electrofished during the spring to determine a population estimate for brown and rainbow trout. Data will analyzed at a later date.

6. Maintain brown trout population in lower, mid-river (Divide to Glen Access) at densities  $\geq 750$  age II and older fish/mile and rainbow trout densities  $\geq 1000$  I and older fish/mile.

Spring and fall brown and rainbow trout population estimates were made in the Maiden Rock section to determine their densities. Data will be analyzed at a later date.

7. Maintain rainbow trout populations in upper mid-river (Pintlar Creek to Divide) at densities  $\geq 1300$  age I and older fish/mile and brown trout densities at  $\geq 200$  age II and older fish/mile with limited numbers of fluvial grayling and brook trout.

Fall population estimates were made on the Jerry Creek study section to provide population data for brown and rainbow trout, plus fluvial grayling. Data will be analyzed at a later date.

8. Maintain native, fluvial grayling populations at a minimum of 40 age II and older/mile in upper river (Headwaters to Pintlar Creek) and densities of age II and older brook trout at  $\geq 400$  per mile.

Fall population estimates were attempted on the study section to determine numbers of fluvial grayling and brook trout.

9. Maintain numbers of larger, brown trout ( $\geq 18$  inches) at densities  $\geq 100$ /mile in special regulation section (Divide to Melrose).

Special angling regulations which allows only a 5 trout limit of which only one can exceed 22 inches and catch and release only fishing for trout between 13 inches and 22 inches was evaluated using spring and fall population estimates from the Maiden Rock study section. Data will be analyzed at a later date.

10. Collect information on fishing pressure, harvest, catch rates, angler attitudes and preferences to assist in responsible management.

No work was accomplished on this objective.

11. Provide increase user access to Big Hole River between the notch and Pennington Bridge (State Project).

Final plans for the development of the Notch Access has been approved with negotiations being made for an additional access site at Pennington Bridge.

12. Provide increased acreage of public land in Big Hole River Corridor.

Continued discussion with the BLM to locate additional public river frontage.

13. Keep Big Hole River management current with angler needs and expanding recreational demand.

The development of the Big Hole River management plan was initiated.

14. Mitigate or eliminate deleterious effects of planned developments in the fishery of the Big Hole River including water quality and quantity and aesthetic values.

Was involved in various USFS and BLM planning processes.

#### Beaverhead River

1. Within hydrologic constraints, seek to obtain minimum non-irrigation season releases of 250 cfs from Clark Canyon Dam and maintain minimum flows of 150 cfs in the river downstream from Barretts. Maintain stable, spawning season flow releases.

Worked with the U.S. Bureau of Reclamation to insure the best possible flows from Clark Canyon Dam for sections of the river above and below Barretts Diversion.

2. Eliminate gas bubble trauma in Beaverhead River trout population.

Trout populations were sampled to determine number, species and sizes having gas bubble trauma. Percent gas saturation was also measured. Data will be analyzed at a future date.

3. Insure that operation of proposed hydroelectric generator does not alter flow regimes or temperatures of discharges and utilize hydro generation to eliminate gas supersaturation problems.

Reviewed plans for proposed hydroelectric generator and made comments necessary to insure adequate protection to fisheries resource in river.

4. Maintain densities of  $\geq 250$  brown trout 18 inches and larger/mile and  $\geq 150$  rainbow trout 18 inches and larger/mile above Henneberry. Maintain densities of  $\geq 1000$  age II and older brown trout and  $\geq 600$  age I and older rainbow trout per mile above Henneberry.

Spring and fall population estimates were made for the Hildreth and Pipe Organ sections of the river above Barretts Diversion for the spring and fall periods. Data will be analyzed at a later date.

5. Collect population information for lower Beaverhead River (downstream from Barretts) to assist in management

decisions (State Project).

Spring brown trout estimates were made for the Fish and Game, Low Flow, and Twin Bridges study sections. Data will be analyzed at a later date.

6. Maintain or increase numbers of rainbow trout in river upstream from Barretts.

Spring and fall rainbow population estimates were made for two sections of the river above Barretts Diversion with rainbow trout numbers being estimated. Data will be analyzed at a later date.

7. Collect information on fishing pressure, harvest, catch rates, angler preferences and attitudes to assist in managing for high quality angling experiences (1991).

No work to be done on this objective until 1991.

8. Increase angler use of Beaverhead River downstream from Barretts in an effort to decrease use of upper river (State Project).

No work done on this objective at this time.

9. Keep Beaverhead River management current with angler needs and expanding recreational demand.

No work on this objective at this time.

10. Maintain channel and streambanks in present or improved state of stability.

A total of 15 SB 310 streambed law projects were inspected with recommendations made to preserve and/or enhance the fisheries habitat.

#### Gallatin River

1. Maintain channel and streambanks in present or improved stability.

A total of 35 SB 310 streambed law projects were inspected with recommendations made to preserve and/or enhance the fisheries habitat.

2. Mitigate and reduce irrigation season dewatering in Gallatin River.

Actively promoted the irrigators to petition a ditch rider to be appointed by the water judge to insure water

reaching all portions of the river.

3. Decrease magnitude of sediment and turbidity from Taylor Fork and Sage Creek.

Worked with the Gallatin Forest to promote better land use practices in these drainages.

4. Maintain wild trout populations of  $\geq 2500$  age II and older fish per mile upstream from Gallatin Gateway.

A fall population estimate was made for a section of the Gallatin River near Porcupine Creek. The population was estimated at 3300 age II and older wild trout per mile.

5. Determine potential of establishing large trout management area between mouth of canyon and Gallatin Gateway (State Project).

There was no work done on this objective.

#### Jefferson River

1. Insure, within hydrologic constraints, that flows do not drop below 550 cfs at the Three Forks gage.

Instream flow reservations filings are being prepared for filing in 1989.

2. Maintain channel and streambanks in present improved state of stability.

A total of nine SB 310 streambed law projects were inspected with recommendations made to preserve and/or enhance the fisheries habitat.

3. Increase numbers of rainbow trout to  $\geq 200$  age I and older/mile.

Special angler regulations were installed on the Jefferson River allowing only catch and release fishing for rainbow trout. The Hell's Canyon Creek rainbow trout spawning run was electrofished obtaining rainbow eggs to hatch and stock in a spring creek to imprint a possible new rainbow spawning run for the river.

4. Maintain densities of  $\geq 450$  age II and older brown trout/mile from mouth to Boulder River and  $\geq 600$  age II and older brown trout/mile between the Boulder river and the head of the river.

Spring brown trout population estimates were made on two