MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS
FISHERIES DIVISION
JOB PROGRESS REPORT

STATE: Montana PROJECT NO. F-46-R-2
PROJECT TITLE: Statewide Fisheries Investigations JOB NO. I-g
STUDY TITLE: Survey and Inventory of Coldwater Streams
JOB TITLE: Northcentral Montana Trout Stream Investigations
PERIOD COVERED: July 1, 1988 through June 30, 1989

ABSTRACT

Electrofishing surveys were conducted on 11 streams to update management files. Data for population estimates were gathered on 2 sections of both the Missouri River and Big Springs Creek and on one section of Tenderfoot Creek. Approximately 65 projects under the Natural Streambed and Land Preservation Act were reviewed along with 22 projects under the Stream Protection Act.

OBJECTIVES AND DEGREE OF ATTAINMENT

1. To establish viable trout fisheries in Marias River below Tiber Dam and in the Sun River below Diversion Dam for recreational fishing.

2. To ensure within hydrologic constraints, that flows in streams supporting trout populations do not fall below 1976-86 averages.

3. To maintain summer survival flow of at least 50 cfs in the Smith River at Camp Baker.

4. To maintain streambanks and channels in as natural a condition as possible. **(State funded).**

5. To maintain undisturbed riparian zones where they currently exist on Smith and Missouri Rivers. **(State funded).**

6. To maintain water quality at or above 1975-85 average levels as monitored at USGS stations.

7. To maintain habitat and species of special concern at present levels or better in streams affected by resource development activities. **(State funded).**

8. To ensure that mid-Missouri reservoir operations maintain a minimum flow of 4100 cfs 8 years out 10 in the Missouri River from Holter Dam to Ulm.

9. To evaluate contribution and influence of hatchery rainbow trout flushed from upstream reservoirs on wild trout fishery in Missouri River downstream of Holter Dam.

10. To increase rainbow and brown trout spawning habitat in three tributaries to the Missouri River from Holter Dam to Cascade. **(State funded).**

11. To maintain trout populations at or above 1984 levels in Tresch Section and 1978 levels in Burleigh Section of Big Spring Creek near Lewistown.

12. To provide 80,000 angler-days annually and average catch rate of 0.4 trout/hour in Missouri River between Holter Dam and Cascade.

13. To evaluate special slot-limit for trout on Smith River and modify regulations to balance angler harvest with population structure if warranted.

14. To maintain trout populations in Regional streams at present levels or higher.

15. To allow harvest of one trout over 12" in USFS streams along Rocky Mountain Front if compatible with stream fishery resources. **(State funded).**

16. To obtain at least two fishing access sites on the Sun River between the towns of Augusta and Sun River, and one each on the lower Dearborn River and upper Smith River. **(State funded).**

Progress was made on all federally funded objectives during the report period and is summarized in this report. Data for some state objectives is included to provide current information for regional streams.

PROCEDURES

An advisory board consisting of personnel from the Bureau of Reclamation, Sportsman's Clubs, County Commissioners, landowners and Department of Fish, Wildlife and Parks evaluated plans for water manipulation in the Marias River below Tiber Dam. Trout populations in Big Springs Creek were surveyed using a fiberglass drift boat equipped with a mobile electrode powered by a 120 volt generator with a rated capacity of 2000 watts. A Fisher Shocker (Model FS 101) was used to convert AC electricity from the generator to straight DC. The Missouri River was electrofished at night using an 18-foot aluminum jet boat and a fiberglass drift

boat powered by a small outboard motor. Both boats were equipped with headlights and fixed booms with stainless steel droppers suspended in front of the bow. Electricity from 120 or 240 volt portable generators was converted to pulsed DC using Coffelt VVP-2C or VVP-15 rectifying units. Rainbow and brown trout populations from Big Springs Creek and the Missouri River were estimated by a mark-recapture method described by Vincent (1971). We analyzed the data with a computer program developed by MDFWP for use on an IBM-PC compatible microcomputer. Trout populations in other regional streams were surveyed by electrofishing, snorkeling and hook and line. Periodic creel interviews on the Missouri River were obtained by a roving clerk. A two-pass population estimate was performed on Tenderfoot Creek.

FINDINGS

Electrofishing Surveys

Eleven streams were electrofished in the western portion of Region 4 to determine the species present, size range of the fish, and relative abundance (Table 1). Most of the streams surveyed contained fish identified as cutthroat trout based on morphological characteristics; cutthroat trout were the only fish captured in four streams. We found brook trout in six streams and mountain whitefish were captured in three of the waters. Deep Creek was the only stream where brown trout were collected while both Deep and Falls creeks contained rainbow trout.

Tenderfoot Creek

A two-pass population estimate was performed in a 500 foot section of Tenderfoot Creek in late August 1988. Presentation of the data will occur in the next annual report.

Habitat Protection

Approximately 65 proposed projects that would alter streambeds or banks in nine different counties were reviewed during this report period under provisions of the Natural Streambed and Land Preservation Act of 1975 (SB 310). Seventy-five percent of these were in Cascade and Lewis and Clark counties. In addition, approximately 22 projects were reviewed by regional and Helena staff pursuant to the Stream Preservation Act (SPA). Site inspections were made on many but not all of the "310" and SPA projects. No significant water discharge permit applications or renewals were received and no significant pollution complaints were received during the report period.

Table 1. Catch statistics from electrofishing operations on selected streams in Region 4 during 1988.

Stream (Date surveyed)	Legal Description	Species	Number of Fish	Range Length (in)	Range Weight (lbs)
Deep Ck (7/11/88)	T23N,R7W,S24	rainbow trout	13	5.0-11.0	-
		brown trout	9	6.0-17.5	-
Falls Ck (10/20/88)	T17N,R7W,S3	rainbow trout	23	2.6-8.3	-
		brook trout	14	3.6-9.8	-
		mountain whitefish	4	7.0-10.0	-
Muddy Ck (8/11/88)	T26N,R6W,S29	brook trout	12	5.2-10.5	-
N. Fk. Dupuyer Ck (7/13/88)	T27N,R9W,S22	cutthroat trout	13	4.3-11.9	0.07-0.72
		brook trout	21	4.0-11.5	0.04-0.66
N. Fk. Teton River (8/10/88)	T25N,R9W,S16	cutthroat trout	6	3.7-15.0	-
		brook trout	3	4.0-8.0	-
		mountain whitefish	2	5.4-16.1	-
S. Fk. Teton River (8/10/88)	T24N,R9W,S1	cutthroat trout	9	2.3-9.0	-
		brook trout	13	3.8-9.4	-
		mountain whitefish	15	5.1-9.2	-
W. Fk. Teton River (8/8/88)	T25N,R9W,S6	cutthroat trout	7	2.0-6.1	-
N. Fk. Waldron Ck (8/8/88)	T25N,R9W,S17	cutthroat trout	24	2.7-8.2	-
Waldron Ck (8/10/88)	T25N,R9W,S16	cutthroat trout	16	3.0-10.5	-
N. Fk. Willow Ck (7/25/88)	T24N,R8W,S9	cutthroat trout	17	3.7-8.1	-
Swamp Ck (8/9/88)	T24N,R7W,S18	brook trout	39	2.9-14.4	-

Big Springs Creek

Mark-recapture population estimates were made by electrofishing two sections of Big Springs Creek as scheduled in fall 1988. Data analysis and ageing of trout scales was not completed in time for inclusion in this report so results will appear in the next annual report.

Missouri River

Trout population estimates were conducted in the Craig and Cascade sections during fall 1988 as scheduled and brown trout estimates were obtained in the same sections in spring 1989. Data analysis and ageing of trout scales was not completed in time for inclusion in this report so results will appear in the next annual report.

ACKNOWLEDGEMENTS

Paul Hamlin, Les Evarts and Ken Sinay were fisheries fieldworkers who conducted or assisted on nearly all of the field activities conducted on this project during the report period. They also assisted in compiling and summarizing data presented and their dedicated efforts are appreciated.

LITERATURE CITED

Vincent, E.R. 1971. River electrofishing and fish population estimates. Progressive Fish Culturist 33(3):163-169.

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Principal Fish Species Involved:

Rainbow trout, brown trout, cutthroat trout, brook trout, and mountain whitefish.

Code Numbers Of Waters Referred To In Report:

14-0800	Muddy Creek
14-1280	Deep Creek
14-3840	N. Fk. Dupuyer Creek
14-4000	N. Fk. Teton River
14-	N. Fk. Waldron Creek
14-4040	N. Fk. Willow Creek
14-5640	S. Fk. Teton River
14-	Swamp Creek
14-6360	Waldron Creek
14-6480	W. Fk. Teton River
17-2688	Falls Creek
17-4896	Missouri River Sec 09
17-6832	Smith River Sec 02
17-7532	Tenderfoot Creek