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

STATE: Montana Project No: F-46-R-7
TITLE: Statewide Fisheries Investigations Job No: III-a
STUDY TITLE: Survey and Inventory of Warmwater Streams
JOB TITLE: Northcentral Montana Warmwater Streams Investigations
PERIOD COVERED: July 1, 1993 through June 30, 1994

ABSTRACT

Stream preservation activities were conducted on six projects. Minimum flows to maintain resident and migratory fisheries in the Marias River below Tiber Dam were coordinated with various interests through the meeting of the Marias River Management Committee. Electrofishing surveys on the Marias River indicate that walleye are using this water for spawning purposes. Warmwater fisheries investigations were conducted on the Missouri River below Morony Dam during September 1993; shorthead redhorse was the most common fish in the section.

OBJECTIVES AND DEGREE OF ATTAINMENT

1. **To maintain a minimum flow of 500 cfs in the Marias River for habitat enhancement.** Progress made and summarized in this report.

2. **To ensure, within hydrologic constraints, that flows in streams supporting cool/warm water gamefish do not fall below past ten year averages.** Progress made for Marias River and summarized in this report.

3. **To maintain the regions streambanks and channels in their present or improved condition. (State funded).** Progress made and summarized in this report.

4. **Maintain water quality at or above 1983 levels as measured at USGS water quality monitoring stations.** No discharge permit applications or pollution complaints were received for warmwater streams during the report period.

5. **To assess existing sauger, walleye and freshwater drum populations to determine population densities in the Missouri River between Morony Dam and the Marias River.** Electrofishing monitoring in this area was performed during this report period.

6. **To maintain sauger populations in the Missouri River to provide 10,000 angler days use annually.** See objective 5 above.

7. **To determine angler use and harvest of fish species and maintain at least the existing quality of the fishery in the lower Marias River.** This objective was canceled.

8. **To increase and diversify angling opportunity in the upper 50 miles of the Marias River and 10 miles of Cut Bank Creek (State funded).** Plans to introduce smallmouth bass and sauger were not pursued because of possible forage limitations. This may occur in the future if the forage situation improves in Lake Elwell.

9. **To determine walleye distribution and angler harvest in the Missouri River between Holter Dam and Great Falls.** Objective achieved in FY89. Angler harvest will again be assessed from May - September 1994.

10. **To evaluate need and develop fishing access sites on the Missouri River downstream from Morony Dam (State funded).** Objective achieved in FY89.

11. **To acquire public fishing access site on lower Marias River (State funded).** Objective achieved in FY89.

PROCEDURES

We evaluated and made recommendations for water manipulation in Tiber Reservoir and the Marias River below Tiber Dam through the Marias River Management Committee. The committee includes representatives from the Bureau of Reclamation, sportsman's clubs, county commissioners, landowners, and the Department of Fish, Wildlife, and Parks. Recommendations and alternatives for projects involving stream banks and channels were made through participation in the Stream Protection Act (SPA) and Natural Streambed and Land Preservation Act (SB310).

The upper Marias River was electrofished with a fiberglass drift boat equipped with fixed booms and stainless steel droppers suspended in front of the bow. Electricity from a 240 volt portable generator was converted to pulsed or straight DC using a Coffelt VVP-15 rectifying unit. Fish populations in the Missouri

River were surveyed with an electrofishing boat, equipped with a 220-volt generator, and a Coffelt VVP-15 rectifying unit. A continuous DC waveform was used during the electrofishing operation.

FINDINGS

Habitat Protection

Meetings of the Marias Management Committee were attended in April and October. Discussions centered around reservoir elevations and releases from Tiber Reservoir into the Marias River. Dependent on snow conditions and inflows, the reservoir will be maintained above elevation 2980 feet m.s.l. through April and minimum flows will be 500 cfs or greater.

Two projects in Cascade and two in Toole County were reviewed under the Natural Streambed and Land Preservation Act of 1975. Information about projects in Fergus County was unavailable for review. Two Stream Protection Act permit applications for projects in Cascade County were processed.

Marias River

Two sections of the upper Marias River were electrofished on June 30 and July 1, 1993. The upper, or Layne section, stretches approximately nine miles from the Sullivan bridge to Willow Rounds. This section is the start of the Marias River near Cut Bank. The lower, or Fretheim section, covers about four miles from above the F-bridge to the Robertson bottoms. This section is approximately ten miles above Tiber Reservoir.

Electrofishing results appear in Table 1. Walleye were the most abundant game fish in both sections, with larger fish found in the upper section. Other game fish include rainbow trout, northern pike, mountain whitefish, channel catfish and burbot. Other species taken during the survey include, mountain sucker, white sucker, longnose sucker, carp, longnose dace, emerald shiner, lake chub, flathead chub, spottail shiner and mottled sculpin.

The majority of the walleye in the lower section were less than thirteen inches in length and represented age groups one through three. These fish are thought to be reproduction of fish moving upstream from Tiber Reservoir. The presence of larger, adult fish in both sections suggest there may also be a resident population of walleye living in the river. Several walleye were taken that were tagged in the reservoir in 1993 or previous years. A total of 18 walleye were tagged during this survey to help determine whether or not these fish are migratory.

Table 1. Electro-fishing results of game fish from two sections of the upper Marias River, 1993.

Date	Section	Species*	No. of fish	Length range (avg.)	Weight range (avg.)
6-30-93	Layne	WE	2	10.5-11.3 (10.9)	0.38- 0.44 (0.41)
			2	15.1-15.7 (15.4)	1.24- 1.26 (1.25)
			10	16.3-19.3 (17.5)	1.48- 2.52 (1.93)
			2	21.5-24.9 (23.2)	4.37- 6.25 (5.31)
		Rb	3	8.1-12.8 (10.8)	0.22- 0.80 (0.48)
		Wf	10	6.1-14.2 (9.6)	0.11- 1.14 (0.42)
		Ling	1	(25.7)	(3.50)
7-1-93	Fretheim	WE	5	4.7- 5.7 (5.0)	0.03- 0.04 (0.03)
			13	8.6-12.7 (10.1)	0.21- 0.60 (0.32)
			6	13.0-15.4 (14.3)	0.66- 1.22 (0.93)
			2	16.5-17.9 (17.2)	1.40- 1.73 (1.57)
		NP	1	(28.2)	-
		Cat	2	23.6-29.1 (26.4)	5.00-10.75 (7.88)
		Rb	1	(22.9)	(4.55)
		Ling	1	(12.6)	(0.46)

* Species abbreviations: WE = walleye; Rb = rainbow trout; Wf = mountain whitefish; Ling = burbot; NP = northern pike; Cat = channel catfish.

Missouri River between Morony Dam and the Marias River

The Portage Coulee Section was sampled on 14 September during the reporting period (Table 2). A greater number of species were captured during the reporting period than in previous years. The number of freshwater drum, rainbow trout, brown trout, and walleye captured was greater than in 1989 or 1991 (Hill et al. 1990; Liknes et al. 1992). The number of sauger captured was less than in 1989 but greater than in 1991 (Hill et al. 1990; Liknes et al. 1992). A smallmouth bass and a stonecat were also sampled in the section (Table 2).

A maximum of twenty specimens of each nongame species, except carp and other fish that mature at a small size, was measured and weighed. Consequently, the sample size reported is an indication of relative abundance in the section only for game fish or those species where less than twenty were captured. Carp were not captured; due to selectivity of the sampling equipment, small fish such as mottled sculpins, longnose dace, and emerald shiner were not expected to be sampled relative to their actual abundance. Sampling suggested that shorthead redhorse were the most abundant fish, followed by goldeye, carp, and other sucker species in that order.

Table 2. Catch statistics from electrofishing surveys of the Portage Coulee Section on the Missouri River, Montana, 14 September 1993.

Species	Number of fish	Length (inches) mean	Length (inches) range	Weight (pounds) mean	Weight (pounds) range	Mean condition factor
Freshwater drum	20	15.7	(10.4-20.0)	2.16	(0.48-5.01)	49.86
Goldeye	20	11.7	(10.3-14.3)	0.53	(0.37-0.97)	32.83
Rainbow trout	7	7.7	(4.5-16.9)	0.39	(0.05-1.94)	43.99
Brown trout	10	10.2	(7.6-19.1)	0.61	(0.19-3.06)	38.78
Mountain whitefish	1	11.5	-	0.65	-	42.74
Walleye	6	19.3	(15.7-28.0)	2.11	(1.52-2.82)	38.70
Sauger	11	14.5	(12.1-19.2)	1.03	(0.57-2.32)	31.55
Smallmouth bass	1	11.7	-	1.00	-	62.44
Stonecat	1	7.8	-	0.28	-	59.00
Shorthead redhorse	20	17.2	(15.1-20.6)	2.24	(1.37-4.03)	43.09
Longnose sucker	20	10.8	(7.2-18.9)	0.73	(0.16-2.52)	43.93
White sucker	20	11.9	(5.3-19.7)	1.07	(0.06-3.06)	44.49
River carpsucker	5	17.3	(16.6-18.7)	2.59	(2.20-3.45)	49.41
Longnose dace	1	2.6	-	0.02	-	-
Emerald shiner	3	3.0	(2.7-3.3)	-	-	-
Mottled sculpin	2	3.8	(3.5-4.1)	0.03	(0.02-0.03)	45.09

DISCUSSION AND RECOMMENDATIONS

The advisory group formed to develop operating guidelines for maintaining sufficient flows in the Marias River below Tiber Dam should continue to work with the Bureau of Reclamation through the Marias Management Committee to maintain adequate flows for the fishery. Although no discharge permit applications or pollution complaints were received during the report period, these will be handled on a case by case basis as they arise. We will continue to process permits for stream alteration projects as they occur. Additional effort should be directed at the Marias River above Tiber Reservoir in determining what potential this water has for a fishery and whether or not that fishery is resident or migratory. We will continue to monitor the fishery resource below Morony Dam.

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Principal Fish Species Involved:

Sauger, walleye, freshwater drum, goldeye, longnose sucker, shorthead redhorse, river carpsucker, rainbow trout, brown trout, burbot, channel catfish, and northern pike.

Code Numbers Of Waters Referred To In Report:

14-3240 Marias River (above Tiber Reservoir)
14-3280 Marias River (below Tiber Dam)
17-4864 Missouri River Sec. 07
17-4880 Missouri River Sec. 08
17-4896 Missouri River Sec. 09

LITERATURE CITED

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