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

STATE: Montana Project No: F-46-R-5  
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, 1991 through June 30, 1992

ABSTRACT

Warmwater fisheries investigations were conducted on the Missouri River below Morony Dam during August 1991. The advisory group met to request adequate flows for resident and migratory fish in the Marias River below Tiber Reservoir. Stream preservation activities were conducted on eleven projects.

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. Progress made and summarized in this report.

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 March 1993 - March 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

Evaluations of plans for water manipulation in Tiber Reservoir and the Marias River below Tiber Dam were made by the advisory board, which includes representatives from the Bureau of Reclamation, sportsman's clubs, county commissioners, landowners, and the Department of Fish, Wildlife, and Parks. 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 with rectifier settings providing 100-120 volts and 6-8 amps were used during the electrofishing operation. 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).

## FINDINGS

### Habitat Protection

Four applications in Teton, two in Cascade, one in Pondera, and one in Toole County were reviewed under the Natural Streambed and Land Preservation Act of 1975. Three Stream Protection Act permit applications were processed.

### Missouri River between Morony Dam and the Marias River

We collected information on both game and non-game species by electrofishing the Portage Coulee section on 23 and 28 August 1991 (Table 1). We captured similar numbers of freshwater drum, walleye, rainbow and brown trout during 1991 and 1989 (Liknes et al. 1990). However, the number of sauger captured decreased from 15 in 1989 (Liknes et al. 1990) to 3 in 1991. Measured water temperature on 23 August was 70F @ 10:15 AM and 66F on 28 August 1991. Specific electrical conductance was 380 umhos/cm<sup>3</sup> on 23 August 1991.

A maximum of thirty specimens of each nongame species were 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 thirty were captured.

Table 1. Catch statistics from electrofishing surveys of the Portage Coulee Section on the Missouri River, Montana, 23 and 28 August 1991.

Species	Number of fish	<u>Length (inches)</u>		<u>Weight (pounds)</u>		Mean condition factor
		mean	range	mean	range	
Freshwater drum	7	14.6	(9.1-19.9)	2.02	(0.34-4.31)	50.00
Goldeye	30	11.4	(10.2-14.1)	0.52	(0.38-0.81)	35.91
Rainbow trout	2	12.9	(10.3-15.5)	0.72	(0.45-1.00)	34.02
Brown trout	1	17.8	-	1.95	-	
Walleye	1	17.3	-	1.79	-	
Sauger	3	17.4	(16.0-18.5)	1.65	(1.35-1.86)	31.30
Shorthead redhorse	30	16.8	(8.1-20.8)	2.22	(0.22-3.90)	42.49
Longnose sucker	14	10.8	(4.5-18.1)	0.93	(0.04-2.53)	
River carpsucker	1	16.1	-	1.90	-	

## 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 spawning sauger and shovelnose sturgeon from the Missouri River. 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. The MDFWP will continue to cooperate with MPC's relicensing efforts and any studies regarding the Missouri River's fisheries influenced by the Great Falls area hydroelectric projects.

## ACKNOWLEDGEMENTS

The authors wish to thank Paul Hamlin and Anne Tews for their contributions in data acquisition and analysis. Also, the cooperative effort of the Marias River Management Committee and the Bureau of Reclamation has been instrumental in maintaining desired flows in the Marias River.

## LITERATURE CITED

Hill, W.J., G.A. Liknes, and S.A. Leathe. 1990. Northcentral Montana warmwater streams investigations - survey and inventory of Warmwater Streams. Montana Department of Fish, Wildlife, and Parks. Job Progress Report, Project F-46-R-3, Job No: III-a. Helena, Montana.

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### Principal Fish Species Involved:

Sauger, walleye, freshwater drum, goldeye, longnose sucker, shorthead redhorse, river carpsucker, shovelnose sturgeon, rainbow trout, and brown trout.

### Code Numbers Of Waters Referred To In Report:

14-3240 Marias River Sec 01 (Lower)  
14-4320 Pondera Coulee  
14-6000 Teton River  
17-4864 Missouri River Sec. 07  
17-4880 Missouri River Sec. 08  
17-4896 Missouri River Sec. 09