

# Montana Department of Fish, Wildlife & Parks



## MONTHLY PROGRESS REPORT

Project Title: Coal Creek/Flathead River Basin Monitoring Study  
Project Number: MDFWP 3177-1  
Project Biologist: Thomas Weaver *fw*  
Project Technician: Jeff Hutten  
Project Manager: John Fraley  
Report for the Month: July 1990

### 1. Summary of significant results.

Field data collection for the bull trout incubation study ended in mid July. Fry emergence ended during the high flows which occurred in late June. We could not access the incubation cells for fry sampling between June 15 and July 2. We checked eight of our traps on the evening of the second and observed 73 dead fry. We counted 106 more dead fry from the remaining 10 traps on July 3. These fry were in varying stages of decomposition and in several instances, only the heads remained inside the traps. It is possible that some successfully emerging fry may have passed through the mesh in our samplers without being counted.

Emergence trap results indicate a strong relationship between successful fry emergence and gravel composition in the incubation environment (Table 1.).

Table 1. Percentage of fry successfully emerging from each replicate of the six gravel mixtures tested.

Replicate Number	Percentage of mixture < 6.35 mm					
	0	10	20	30	40	50
1	72.0	74.2	55.9	37.6	26.9	4.3
2	79.6	50.5	35.5	39.8	28.0	3.2
3	<u>87.0</u>	<u>67.7</u>	<u>40.9</u>	<u>41.3</u>	<u>24.7</u>	--
Mean % Success	78.0	64.2	44.1	39.2	26.5	3.8

A major portion of the mortality observed in this study resulted from fry entombment. Upon removal of each incubation cell, we examined its contents to check for mortalities. We noted several dead eggs still present in six of the cells, although they were mostly decomposed and difficult to quantify. We observed dead fry in seven cells. Two replicates of 30 percent and all three replicates of the 40 and 50 percent mixtures contained dead fry. A minimum of 20 percent of the mortality in the 50 percent < 6.35 mm mixture resulted from entombment. This figure could be considerably greater because we observed dead fry in the sealed egg bags excavated on May 5. Fry dying this early in our test would likely be impossible to count by the time we pulled the cells in mid July.

We quantified mortality occurring prior to fry emergence by planting sealed egg bags in each gravel mixture. Results from these sealed egg bags suggest that gravel composition in the incubation environment may not relate strongly to pre-emergence mortality until the percentage of material smaller than 6.35 mm exceeds 40 percent. Embryo survival remained high through hatching in all mixtures. Several dead fry were observed in the sealed egg bags excavated from the 40 and 50 percent < 6.35 mm mixtures on May 5, but survival was still high. We did not observe dead fry in any of the other four mixtures at this time. Fry emergence did not begin until May 9. All alevins in the sealed bags were dead by the July 10 sampling.

Project personnel conducted westslope cutthroat trout redd counts on selected tributaries to Hungry Horse Reservoir (Table 2.).

Table 2. Westslope cutthroat trout redd counts in tributaries to Hungry Horse Reservoir during July 1990.

Stream	Number of Redds
Hungry Horse Creek	48
Tiger Creek	20
Margaret Creek	7
Emery Creek	29

High spring flows immediately prior to surveys made counts difficult. Several redds noted and marked before the final counts had flattened and were unrecognizable by the time we conducted the surveys.

Jeff Hutten continued sieve analysis of the remaining McNeil core samples at the Flathead National Forest Soils Lab. He has completed approximately 85 percent of the 1989 samples. The project biologist participated in the Department of State Lands'

BMP audits on four timber sales, attended the North Fork Preservation Association's 1990 inter-local meeting and contributed to a video taping session related to the Flathead Basin Commission's Forest Practice Study.

**2. Brief discussion of major problems encountered, changes in work plan, or schedule deviations.**

None.

**3. Short description of planned activities for the following month.**

Project personnel will assist the regional fish staff in preparing the 1990 D.J. reports and in conducting a fish population estimate in the North Fork of the Flathead River. Fraley and Weaver will attend a field tour for Flathead Basin Commission study module leaders and technical advisors. Weaver will continue to participate in BMP audits. We will continue sieve analysis of McNeil core samples and Whitlock-Vibert box samples and begin electrofishing for late summer fish population estimates.

**4. Itemized listing of each non-expendable item greater than \$1,000 and each designated sensitive item.**

None.

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