

DECISION NOTICE
MURPHY SPRING CREEK IN-STREAM FLOW ENHANCEMENT
PROJECT

Prepared by
Montana Fish, Wildlife and Parks
March 24, 2009

I. Proposal

Montana Fish, Wildlife and Parks (FWP) proposes to provide partial funding through the Future Fisheries Improvement Program for an in-stream flow enhancement project during the 2009 irrigation season on Murphy Spring Creek, a tributary to the North Fork Blackfoot River.

II. Montana Environmental Policy Act (MEPA)

MEPA required FWP to assess the potential consequences of the proposed action for the human and natural environment. The proposal was detailed in an Environmental Assessment (EA) released by FWP on February 20, 2009. The 30-day comment period for this EA ended March 23, 2009.

Issues raised during the public comment period for this EA are addressed in the Comments section of this Decision Notice. The draft EA and Decision Notice will serve as the final document.

III. Summary of Public Comment

One written e-mail comment was received in response to the draft EA. No other comments were received. The commenter stated, **“The Montana Wildlife Federation is supportive of flow enhancement projects. We must withhold our support for the Murphy Spring Creek proposal until such time as corrected values are presented for our evaluation.”**

Issues brought forward from this written comment included:

- 1. The statement is made that the intent of the project is to benefit westslope cutthroat trout and potentially bull trout. No information is presented delineating the genetic integrity of the populations involved. Please provide those data and note that they should be included in all future EAs where these two species are involved.**

Response: The genetic integrity of westslope cutthroat trout residing in the spring creek was tested in 2002 at 87% pure (Pierce et al. 2004). Testing of North Fork bull trout genetics in 1996 detected no hybridization with brook trout (Pierce et al. 1997), nor has brook trout presence been detected near the North Fork bull trout

spawning sites since sampling began in 1989. *References:* Pierce, R., D. Peters and T. Swanberg. 1997. Blackfoot River Restoration Progress Report. Montana Fish, Wildlife and Parks, Missoula, Montana.; Pierce, R., R. Anderson and C. Podner. 2004. The Big Blackfoot River Restoration Progress Report for 2002 and 2003. Montana Fish, Wildlife and Parks, Missoula Montana.

- 2. It is stated that “juvenile bull trout have been found rearing near its mouth.” What data are available to support the assertion that the juvenile bull trout found were “rearing” at this site. Found is likely, “rearing” is an unsupported and inappropriate assertion.**

Response: Lower Murphy Spring Creek has been surveyed 7 of the last 10 years. Juvenile bull trout (age 0 and I) have been sampled in 6 of those 7 years, with catch rates ranging from 0 to 2.6 fish/100' of stream. Within the Blackfoot Basin, the use of small streams by age 0 bull trout for rearing purposes has been identified on many streams, from small tributaries to the larger bull trout spawning streams, such as the North Fork. Robert Behnke (1992) describes rearing as such: "After hatching and during the first months of life, trout need rearing habitat with protective cover and water of low velocity. Such habitats occur along the margins of streams and in spring seeps, side channels, and small tributaries." The lower mile of Murphy Spring Creek fits into this description. *Reference:* Behnke, R. J. 1992. Native trout of Western North America. American Fisheries Society Monograph 6.

- 3. This section presents information regarding water volumes, forage production, AUMs, and values. We are unable to reproduce the calculations reported. The water lease in question is said to maintain 2.2 cfs in the creek which presumably would be dried up by irrigation diversion in the absence of the lease. No explanation of the statement “An acre foot of water is estimated to be equivalent to a loss of \$20.00 in AUMs.” How was this value derived? What is the value of an AUM? How was it generated? It is stated that “This project is expected to cost \$8,120.” It would seem that this figure was the product of the \$20 AUM times the 203 acre feet unavailable for irrigation, but clearly it is not. The \$8K+ value is about twice the cost in lost AUMs that is generated by multiplying the \$20 AUM by 203 acre feet (equals \$4060). This is a serious discrepancy and should be corrected. A complete accounting and reassessment is in order. Where will the additional \$4K originate. We must note that the price of \$3600 per cfs seems very high.**

Response: The applicant presented these computations as part of their application. We agree that their computations, especially their multiplication of AUM values to the volume of water lost to irrigation, do not appear to make much sense. We have been unable to obtain a further clarification from the applicant about how they generated a cost estimate based on AUM valuations and lost water volumes. We surmise that the value of forgone irrigation was determined through

negotiation with the livestock producers and the value was based on an estimated loss of forage production. Lost forage production, due to changing from irrigated to dry land pasture, would result in an increase in the acreage needed to support an AUM.

We also don't know how the applicant calculated the water volume of 208 acre-feet, but the applicant indicated it was based on 2003 flow monitoring. To calculate a flow volume, the applicant would have needed to multiply the flow rate (in this case 2.2 cfs or less) by 1.983471 acre-feet per second-foot-day and then multiply the product by the number of days the flow of 2.2 cfs (or less) would not be diverted into the ditch in order to maintain the minimum in-stream flow rate. The applicant only provided mean daily flow data taken above and below the diversion.

The applicant also provided daily flow information for the 2005, 2006 and 2007 irrigation seasons. A previous in-stream flow agreement was used to maintain a 2.2 cfs in-stream flow during those years. For the period of irrigation, stream flow downstream of the diversion dropped to or slightly below 2.2 cfs for a total of 102 days in 2005, 93 days in 2006 and 104 days in 2007. Because water rights associated with this diversion total 17 cfs, one can assume the irrigators could have diverted all of the water from the stream if it weren't for this previous in-stream flow agreement. As a result, the volume of water maintained in Murphy Spring Creek and not diverted during 2005, 2006 and 2007 totaled 445, 405 and 454 acre-feet, respectively. However, these volumes are calculated under the assumption that flow above the diversion always exceeded 2.2 cfs. A review of the flow data revealed that inflow, at times, dropped below 2.2 cfs. To adjust for these lower inflows, water volumes were recalculated based on mean monthly flow rates derived from using either a mean daily flow of 2.2 cfs or the mean daily inflow, whichever rate was less. In-stream water volumes are reduced when using these adjustments, ranging from 331 to 393 acre-feet among the three years.

The value of water typically is priced by the acre-foot (volume), not a flow rate (cfs). Across the West, the price of water leases varies widely. In the western U.S. for the 1998 - 2005 period, the average lease price per acre-foot was \$39.93 with a range of \$0.28 to \$329.30 per acre-foot on 848 transactions. (Scarborough & Lund, 2007) Using the adjusted water volumes calculated above, this lease is estimated to cost between \$20.76 and \$24.53 per acre-foot - considerably less than the average found across the West. Matching funding for this project would come from the Columbia Basin Water Transaction Program. *Reference:* Scarborough & Lund. 2007. Saving Our Streams. Harnessing Water Markets. Property and Environmental Research Center, Bozeman, MT.

IV. Modifications to the Environmental Assessment

Modifications to the draft EA are deemed to be unnecessary.

V. Decision

After review of the proposal, it is my decision to proceed with funding through the Future Fisheries Improvement Program for the Murphy Spring Creek In-stream Flow Enhancement Project. The action will benefit the fishery in the Murphy Spring Creek drainage.

I find there to be no significant impacts associated with this action and conclude that an Environmental Impact Statement is not needed. The completed EA and the Decision Notice provide an adequate level of analysis.

Jim Darling, Habitat Bureau Chief
Fisheries Division