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Ms. Linda Bassi
Mr. Jeff Baessler
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, Colorado 80203

Dear Ms. Bassi and Mr. Baessler,

Trout Unlimited in conjunction with the Colorado Division of Wildlife (CDOW) is formally submitting this instream flow recommendation for the West Prong South Fork of Slater Creek, located in Routt County, District 6.

Location and Land Status. The West Prong South Fork of Slater Creek (West Prong) originates on the northern flank of the Elkhead Mountains just west of Bears Ears Peaks at an elevation of 10,082 feet. It flows generally northward for 5.5 miles through the Routt National Forest to its confluence with the South Fork of Slater Creek at an elevation of 8,034. The proposed ISF reach covers the 4.6 mile segment from the headwaters to the headgate of the Decker Ditch. This segment is located entirely on Forest Service Land (Fig. 1).

Biological Summary and R2CROSS Analysis. In July and September of 2009, TU and CDOW collected stream cross sectional data, natural environment data, and other data needed to quantify instream flow needs. Previous survey data collected by CDOW indicated the stream supports healthy populations of Colorado River cutthroat trout.

Table 1. Summary of R2CROSS datasets

DATE	MEASURED FLOW (cfs)	MODELING RANGE (cfs)	FLOW MEETING 3 CRITERIA	FLOW MEETING 2 CRITERIA
07/07/09	14.5	5.8-36.1	6.9	2.3
09/17/09	1.0	2.0-12.7	2.9	2.5
Average of flows within modeling range			4.9	2.5

Note: Table entries appearing in italicized font indicated flows that were either not met in R2CROSS staging table or outside of 0.4 to 2.5 times measured flow R2CROSS modeling window.

Stream cross sectional data were analyzed using the R2CROSS program, and the output was evaluated using the methods described in Nehring (1979) and Espegren (1996). The R2CROSS models how average depth, percent wetted perimeter and average velocity vary with discharge. According to the criteria established by Nehring (1979), the relevant minimum requirements are an average depth of 0.2 feet, a wetted perimeter of 50%, and an average velocity of 1.0 ft/sec. Protecting salmonids during the summer season is accomplished by insuring all three criteria are met while during the winter protection can be accomplished by protecting 2 of three criteria. Thus, the fishery of West Prong South Fork Slater Creek can be protected with minimum summer flows of 4.9 cfs and minimum winter flows of 2.5 cfs. TU and CDOW recommend that the CWCB appropriate the following flow amounts to preserve the natural environment of West Prong South Fork Slater Creek to a reasonable degree:

- From **March 1 through July 31** a flow appropriation of **4.9 cfs** is recommended to maintain the three principal criteria of average depth, average velocity, and percent wetted perimeter;
- From **August 1 through October 31** a flow appropriation of **3.5 cfs** is recommended based on water availability limitations; and
- From **November 1 through February 28** a flow appropriation of **2.5 cfs** is recommended to maintain the average depth and wetter perimeter criteria.

Water Availability. The preliminary instream flow recommendation we submitted in February 2008 was based on an aerial apportionment of USGS gage 09245500 on the North Fork of Elkhead Creek, CO. Subsequent to that preliminary analysis, the CWCB provided us with a geometric mean analysis of daily flows on West Prong South Fork Slater Creek. We used the CWCB's water availability analysis to adjust the seasonality and quantities of the instream flow recommendation so that the estimated daily flow through West Prong South Fork Slater Creek typically exceeds the recommended instream flow. These seasonal adjustments are reflected in the final instream flow recommendation above.

Relationship to Existing State Policy. Trout Unlimited and the CDOW are forwarding this stream flow recommendation to the CWCB to meet the State of Colorado's policy "that the wildlife and their environment are to be protected, preserved, enhanced, and managed for the use, benefit, and enjoyment of the people of this state and its visitors ... and that, to carry out such program and policy, there shall be a continuous operation of planning, acquisition, and development of wildlife habitats and facilities for wildlife-related opportunities." C.R.S. 33-1-101(1). Further, the CDOW Strategic Plan states "Healthy aquatic environments are essential to maintain healthy and viable fisheries, and critical for self-sustaining populations. The Division desires to protect and enhance the quality and quantity of aquatic habitats." TU and CDOW recommend that West Prong South Fork Slater Creek be considered for inclusion in the Instream Flow Program because doing so would help meet these stated policies. Specifically, establishing minimum flows through this reach would preserve the natural environment of the stream to a reasonable degree.

Attached, please find copies of the field data sheets, the R2CROSS modeling runs, and stream photographs. If you have any questions regarding the attached information or the instream flow recommendations, please feel free to contact me at (303) 440-2937.

Trout Unlimited thanks the Colorado Division of Wildlife and the Colorado Water Conservation Board Staff for their support in preparing this recommendation.

Sincerely,



Greg Espegren
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Aquatic Specialist

Cc: Jay Skinner, CDOW Water Unit Program Manager – w/o attachments
Mark Uppendahl, CDOW Instream Flow Program Coordinator

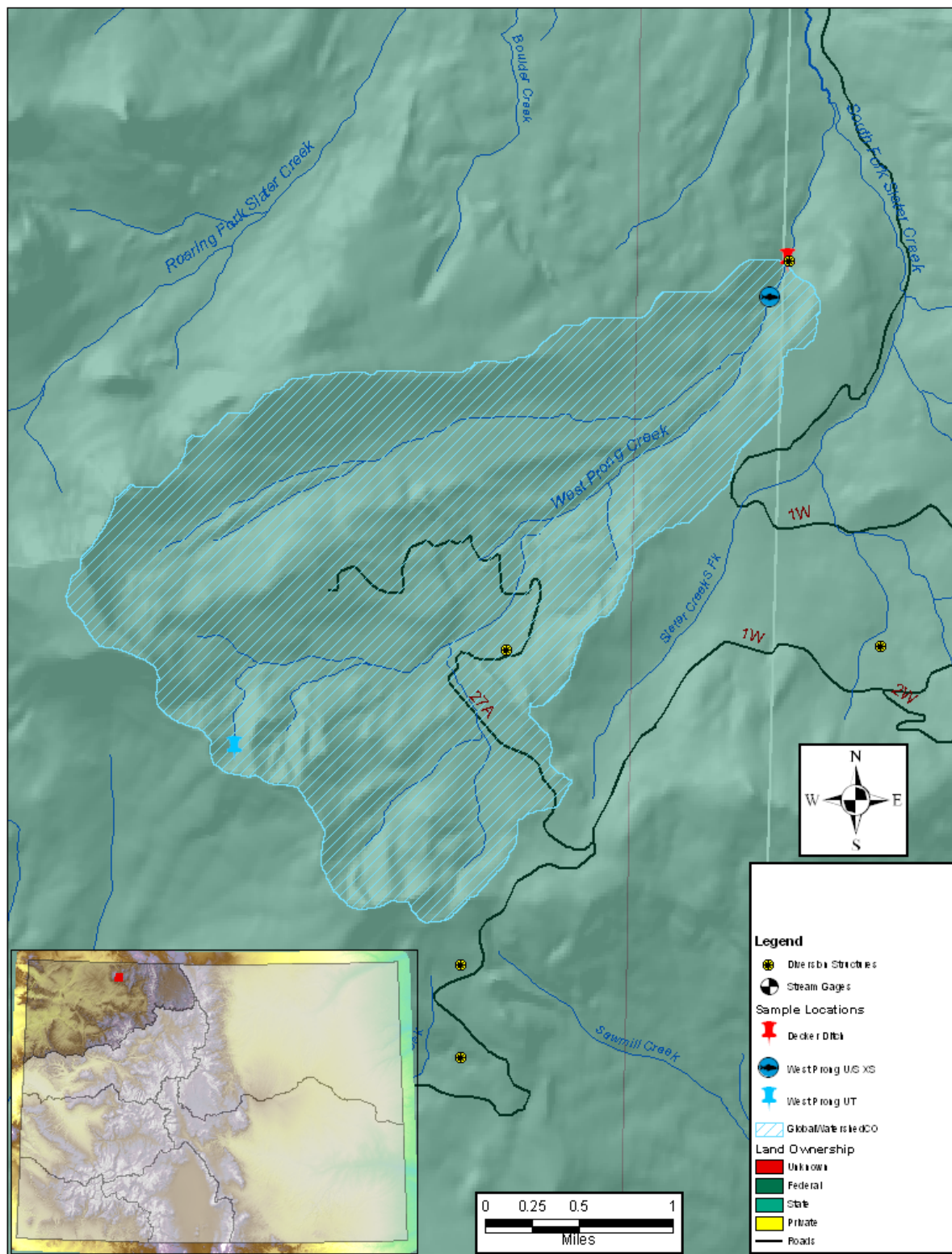


Figure 1. Map of West Prong South Fork Slater Creek watershed. Positions of upper and lower termini of the proposed instream flow reach are noted as is the location of the R2CROSS cross section. Additionally, locations known diversion structures are plotted. The watershed's location within Division 6 is indicated by the red box on the inset map of Colorado