COLORADO
Parks and Wildlife
Department of Natural Resources

Water Resources Section - Wildlife and Natural Resources Branch
6060 Broadway
Denver, CO 80216

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Ms. Linda Bassi
Section Chief, Stream and Lake Protection Section
Colorado Water Conservation Board
1313 Sherman, Room 723
Denver, CO 80203

SUBJ: Proposed Acquisition of Interest in Water on the Little Cimarron River - McKinley Ditch

Dear Linda:

The following is Colorado Parks and Wildlife's (CPW) analysis and recommendations regarding the possible acquisition of an interest in the McKinley Ditch water right for instream flow purposes on the Little Cimarron River and Cimarron River in Water Division 4. CPW has been working with CWCB staff and staff of the Colorado Water Trust (CWT) on this project for the past several months in anticipation of the commencement of the formal acquisition process before the Colorado Water Conservation Board (CWCB). This formal process is going to be initiated at the July meeting of the CWCB in Rangely, Colorado. The Board Memorandum prepared by staff describes in detail the nature of the proposed acquisition and the Board's Instream Flow Program. Rule 6 and Policy 19 describe the acquisition process and the requirements of CPW's consultations regarding such acquisitions. For the purposes of the July, 2014 CWCB meeting, CPW is of the opinion that the proposed acquisition should proceed as proposed by staff because it will have immediate and significant benefits to the natural environment in both the Little Cimarron River and the Cimarron River.

General Information

The CWCB staff has requested CPW to evaluate the benefits and possible impacts to the natural environment of the Little Cimarron River and Cimarron River associated with the acquisition of an interest in the McKinley Ditch water right. The CWCB currently holds instream flow water rights on both of these streams, decreed in case numbers 4-84CW396 and 398, to preserve the natural environment to a reasonable degree. The Little Cimarron River decree covers 16.4 miles of stream from the headwaters to the Butte Ditch headgate with a 2 cfs year-round flow; the Butte Ditch headgate is upstream of the McKinley Ditch headgate. The Cimarron River decree covers 3.7 miles of stream from the confluence with the Little Cimarron to the Gunnison River with a year-round flow of 16 cfs. These stream segments are in Hinsdale, Montrose, and Gunnison Counties near Cimarron, CO. The proposed acquisition of the McKinley Ditch water right will provide flow to three reaches; two on the Little Cimarron River (above and below the point of historic return flows) and the entire segment of the Cimarron River described above. As stated above, the Little Cimarron River below the Butte Ditch does not have an existing instream flow water right; this is most likely due to water availability considerations that were recognized at the time of the CWCB's appropriation - these considerations were most likely brought to light in consultations with the Division Engineer for Water Division 4 prior to the time that CWCB initiated the appropriation of water for instream flow uses. Both segments that would benefit from the acquisition of the McKinley Ditch therefore fall within this reach of stream where prior water availability issues existed due to existing points of diversion.

Biologic Data

CPW and consultants for the CWT have conducted several field investigations of the natural environment in the Little Cimarron and Cimarron Rivers during recent years. CPW electrofished the Little Cimarron River in 2009 and CWT consultants (Flywater) sampled in 2013. One Flywater site was established in the Little Cimarron River above the McKinley Ditch headgate; the second Flywater site was established in the vicinity of the CPW site at the lower end of the Little Cimarron River. At the present time, no fishery information exists for the Little Cimarron River between the McKinley Ditch diversion and Stumpy Creek. This reach of the Little Cimarron coincides with the reach of stream that was previously severely dewatered by diversions (including diversions by the McKinley Ditch) and with the reach of stream that will directly benefit from the CWT proposal.

These fishery surveys show that the upper Little Cimarron River has an excellent fishery consisting of wild rainbow trout and brook trout - meeting the biomass criterion for Gold Medal designation. The lower Little Cimarron has a more diverse fishery consisting of brown and rainbow trout, speckled dace, and bluehead suckers. Both segments of the Little Cimarron are not stocked by CPW and as such are managed in the "Wild Trout" management designation category.

Both recent (2009) and historic (1975) fisheries data for the Cimarron River show that the fish population is similar in species composition and population structure to that of the lower Little Cimarron River - a diverse fishery consisting of brown and rainbow trout, speckled dace, and bluehead suckers.

CPW is of the opinion that during times of high flow such as during the peak of the hydrograph, it is reasonable to expect that fish utilize the available habitat in the unsampled reach of the Little Cimarron. As the flows in this section drop off (either naturally or due to diversion), the fish either move out of the section or are currently lost to mortality. CPW is also of the opinion that if sustained flows are restored to this section of the river as a result of the proposed acquisition, it is reasonable to expect that fish will not only utilize this habitat but will establish resident populations there. As this acquisition process moves forward, if the Board feels that it is necessary to obtain fishery information in this reach of the Little Cimarron, CPW will commit to obtaining fishery data for this reach of the river.

Another biologic consideration that relates to the effect and/or benefit of this water right acquisition is the issue of habitat connectivity. The previously dry section of the Little Cimarron River served as a significant disconnection of the aquatic habitat. The effect of this disconnect is partially illustrated in the differences in the fish population upstream and downstream of the dry reach. The acquired water will serve as a bridge to re-connect these fish populations to one another. Generally speaking, habitat connectivity as it relates to fisheries is a statewide and region-wide goal.

Hydraulic/Cross Section Data

CWT consultants have provided CPW with three cross sections that they have collected to support the analyses needed to evaluate this proposed acquisition. CPW is in possession of the original cross section used to support the original instream flow recommendations on both the Little Cimarron River and the Cimarron River. All three cross sections are useful when examining the relative merits of the proposed acquisition of water from the McKinley Ditch. At this point in time, our opinion is that, given the fact that this section of the Little Cimarron River during the typical irrigation season is dry or nearly dry and that the proposed acquisition would add water to the segment during this season, the proposed acquisition will benefit the stream. It also appears from my review of the cross sections that the flows that are being proposed as a result of the acquisition (contained in the CWT engineering) will not be of sufficient magnitude to create hydraulic conditions detrimental to any specific life stages of fish or any other aspect of the natural environment.

As for the effect of the proposed acquisition on the downstream segment of the Cimarron River, CPW has reviewed the existing cross section information for this downstream segment where the additional water (the consumptive use component only) will have a small incremental benefit on the existing aquatic environment.

If, as the acquisition process moves forward, it is determined that any additional cross section or hydraulic modeling is needed to support the Board's deliberative processes or the ensuing water court case, CPW will collect and analyze such data.

Water Right Analysis

The CWT proposal is comprised of three options or scenarios that have varying effects on the instream flow water rights in the vicinity of the McKinley Ditch headgate. These scenarios include (1) a partial season irrigation and instream flow use split, (2) a full season irrigation use, and (3) a full season instream flow use. Obviously, these scenarios all result in different amounts of water being delivered to the stream for instream flow use. Under all of the scenarios, the benefits to the stream flow occur during the irrigation season. As is the case with every irrigation water right change, there are small reductions in delayed return flows that are felt by the stream during the non-irrigation season. The magnitude of these changes in return flows also varies amongst the three scenarios. The following discussion is, therefore, somewhat general in its precision to which the existing instream flow water rights and natural environment will benefit from the CWT McKinley Ditch proposal.

Little Cimarron River

The Little Cimarron River downstream of the McKinley Ditch diversion is divided into two reaches in the CWT proposal. The upper most reach is the section of stream that is above the point of return flow from the irrigation diversions; this section, therefore feel the effects of the entire amount of water diverted from the stream. The lower reach is that section of the Little Cimarron that only feels the effect of the reduction of consumptive use. It is CPW's understanding of the proposal that the proposed acquisition could provide up to approximately 3.5 cfs to the upper reach and up to about 2 cfs to the lower reach. As stated above, these flow benefits will accrue to a stream reach that was previously dry or nearly dry during most years.

As stated above and as stated in the CWT engineering analyses, the Little Cimarron River has long felt the effects of a cluster of irrigation diversions in the lower portion of the watershed. The additional water provided to the stream as a result of the proposed acquisition will have an immediate positive impact on the fishery and natural environment. The proposed acquisition will re-wet a previously dry stream channel and will re-connect aquatic habitats that were previously disconnected by the dry reach of stream. Further, because some lands previously irrigated by the McKinley Ditch will continue to be irrigated, the delayed winter season return flows are therefore minimized and the stream will continue to experience the positive effects from this continued irrigation practice (the provision of winter season base flows - an important beneficial aspect of irrigation to the fishery). Further, from a terrestrial wildlife perspective, because this acquisition does not result in a widespread dry-up of irrigated meadows, there are terrestrial wildlife benefits that will result from the unique provisions of this acquisition proposal.

Cimarron River

According to the CWT engineering analyses, approximately 35% of the average annual headgate diversions are consumed by the irrigated crops. This 35% (or a flow ranging from about 0.7 cfs to about 2 cfs) will potentially flow through the Little Cimarron reaches and down into the Cimarron River instream flow reach. Preliminary hydrologic analyses indicate that the flow in the Cimarron River

rarely falls below the 16 cfs CWCB instream flow appropriation, so in this segment, we are potentially looking at an "improve the natural environment" situation. To evaluate this aspect of the proposal, CPW reviewed the existing cross section data that we have on file to determine if the additional water will improve the hydraulic conditions of the stream thus providing an increment of improvement to the natural environment. The addition of 1.0 to 2.0 cfs to the conditions (in a riffle) that we would expect at the existing CWCB instream flow (16 cfs) results in a 0.03 ft increase in average and maximum depth, a 2% increase in wetted perimeter, and a 0.05 ft/sec increase in the modeled average velocity. Additional data collection would be required to further quantify the benefits of the acquisition to other stream habitat types (pools, runs or glides).

In addition to the above discussion of physical habitat parameters, CWCB Policy 19 requires CPW to opine on the effect that the proposed acquisition might have on temperature, low dissolved oxygen (or other water quality parameters), alluvial/riparian benefits, and if there are any aspects of the acquisition that might be detrimental to the natural environment or the habitat. At this point in time, CPW is not aware of any temperature or dissolved oxygen issues in the subject stream reach. The riparian and upland habitat issues were discussed above in the context of continued irrigation and return flow patterns. Finally, the increment of additional flow is not of sufficient magnitude for CPW to have any concerns with respect to stream hydraulics or habitat degradation.

CPW Recommendation

Based on the above described review of the existing data and analysis thereof, CPW recommends that the CWCB move forward with the acquisition of an interest in the McKinley Ditch to assist in the preservation and/or improvement of the natural environment of the Little Cimarron River and Cimarron River. Acceptance and operation of the water right for the McKinley Ditch will re-wet and re-connect aquatic habitats in the Little Cimarron and provide a small incremental improvement in the water supply available to the existing Cimarron River instream flow water right and to the natural environment in that reach. CPW will continue to assist the CWCB staff and the staff of the Attorney General's Office to make this project a success. As stated above, CPW will also provide any additional data and/or analyses to the staff as they deem necessary to bring this acquisition process to closure. I will be in attendance at the July, 2014 CWCB meeting in Rangely to address any questions that the Board might have relating to this recommendation.

If you have any questions regarding the above recommendation or the data I reviewed to reach any conclusions contained in this letter, please contact me at 303-291-7260.

Sincerely,

Jay W Skinner
Colorado Parks and Wildlife
Instream Flow Program Coordinator

CC: Dorsey, Gerlich, Alves, Davis