



COLORADO PARKS & WILDLIFE

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J. Signe Snortland, Reclamation Environmental Specialist
 Bureau of Reclamation
 Dakotas Area Office,
 PO Box 1017, Bismarck ND 58502

Subj: CPW Comments on the Arkansas Valley Conduit Draft Environmental Impact Statement

Dear Signe:

Colorado Parks and Wildlife has completed its review of the Draft EIS (DEIS) for the proposed Arkansas Valley Conduit. We appreciate the involvement we have had as a cooperating agency in the development of this DEIS and our continued work together as we move forward with the development of a Fish and Wildlife Mitigation Plan. We respectfully submit the following comments on the Draft EIS to you and the Bureau of Reclamation for your consideration.

General Comments

After extensive review and involvement in the development of the Draft EIS Colorado Parks and Wildlife believes the least damaging alternative from an environmental standpoint is the River South Alternative. This alternative and the Master Contract Only Alternative are the only ones that leave water in the river through Pueblo which currently experiences severely low flows during the late summer and fall, and during the winter water storage period of November 15 – March 15. With proper mitigation to ensure base level flows in the Arkansas River below the Pueblo dam and through Pueblo several of the other alternatives will work as well including Comanche South and Pueblo Dam South.

Language that references the requirement for a Fish and Wildlife Mitigation Plan is present in the DEIS in both Chapter 4 within the Surface Water Hydrology section on page 4-35 and in Chapter 5 in the section dealing with State Laws, Regulations and Policies on page 5-14. We appreciate the discussion surrounding the requirement for a Fish and Wildlife Mitigation Plan. We believe the statute pre-dates the 2010 reference in the DEIS and suggest the correct statutory reference is Colorado Revised Statute 37-60-122.2. We would recommend also that more specific language be included as one of the required mitigation measures outlined in the Record of Decision with the following suggested wording:

"Submit a proposed wildlife mitigation plan to the Colorado Parks & Wildlife Commission (Wildlife Commission) pursuant to C.R.S. § 37-60-122.2. This proposal will include actions the Participants propose to mitigate impacts that the AVC Project may have on fish and wildlife. As required by that statute, the Parks & Wildlife Commission will evaluate the probable impact of the project on fish and wildlife and, if the Participants and the Parks & Wildlife Commission cannot agree upon reasonable mitigation, the Parks & Wildlife Commission will make recommendations to the Colorado Water Conservation Board (CWCB) regarding what it believes to be reasonable mitigation actions. If the Participants and the Parks & Wildlife Commission agree on a mitigation plan, the Parks & Wildlife Commission will submit that agreement to the CWCB, which must adopt the agreement as the state's official position. If the Participants and the Parks & Wildlife Commission do not reach agreement on a mitigation plan, the CWCB will consider the plan submitted by the Participants and the recommendations of the Parks & Wildlife Commission and either affirm the recommendations of the Parks & Wildlife Commission, which then becomes the

STATE OF COLORADO

John W. Hickenlooper, Governor • Mike King, Executive Director, Department of Natural Resources
 Rick D. Cables, Director, Colorado Parks and Wildlife
 Parks and Wildlife Commission: Robert W. Bray • Chris Castilian • Jeanne Home
 Bill Kane, Vice-Chair • Gaspar Perricone • James Pribyl • John Singletary, Chair
 Mark Smith, Secretary • James Vigil • Dean Wingfield • Michelle Zimmerman
 Ex Officio Members: Mike King and John Salazar

State's official position, or submit its own recommendations to the Governor, who will ultimately determine the state's official position on the proposed wildlife mitigation plan."

This language is similar to language used in the ROD for the Southern Delivery System EIS that was also a Bureau action and fairly succinctly outlines the required process that meets the statutory requirements.

AQUATIC RESOURCE COMMENTS

In general, the following aquatic resources addressed in the Draft EIS will not be affected, or only negligibly affected, by AVC alternatives and will not be discussed further:

River segments:

- Lake Fork Creek (below Sugarloaf Dam)
- Lake Creek (below Twin Lakes)
- Grape Creek
- Upper Arkansas River
 - Arkansas River – Segment 1
 - Arkansas River – Segment 2
 - Arkansas River – Segment 3
 - Arkansas River – Segment 4
 - Arkansas River – Segment 5
 - Arkansas River – Segment 6
 - Arkansas River – Segment 7
- Lower Arkansas River
 - Arkansas River – Segment 3
 - Arkansas River – Segment 4
- Fountain Creek
 - Security to Arkansas River

Reservoirs:

- Twin Lakes Reservoir
- Turquoise Reservoir

Hydrological data presented in the DEIS suggests that the following aquatic life resources will be more than minimally affected by operations of AVC. Impacts in reference to those resources listed below will be discussed in more detail.

Lower Arkansas River – Segment 1 (Pueblo Reservoir to Wildhorse Creek)

This reach of the Arkansas River supports a high-quality coldwater fishery for rainbow and brown trout within the metropolitan area of the City of Pueblo. There is also some warm water fishing opportunities for walleye and bass. The quality and accessibility of the fishery has led to its popularity for local anglers and those from across the Front Range, particularly during the period from November through March. Quality fishing regulations on a portion of this reach were enacted in 2011 for purposes of further increasing the size of trout. This fishery was once recognized by *Fly Fisherman Magazine* as one of the "Top 10" trout fisheries in the U.S. Angling use in 2008 was estimated to be 17,500 recreation-days, but fishing continues to grow each year. Overall average monthly streamflow (Appendix D4, Table 74), indicates potential for minor flow reductions in March and September for most alternatives compared to No Action; but are greater for Comanche South, Pueblo Dam South, and Pueblo Dam North, and less for River South and JUP North. Reductions are more pronounced when alternatives are compared to Existing Conditions, and approach -14%.

Flow reductions are greater and evidenced for more months during normal years (D4-Table 75), and particularly during dry years (D4-Table 77). The hydrology for all alternatives (except River South) indicates streamflow reaching maximum decreases (and approaching 30%) for the periods of Feb-Apr and again Sept-Dec, when compared to No Action, and even greater flow reductions when compared to Existing Conditions.

Although this level of flow reduction may not appear significant, the reduction comes in months when flow can occasionally (due to circumstances not related to AVC) get to minimum levels. In March, flows in the past have approached critical levels prior to the end of Winter Water Storage; and again in September if native water inflow to Pueblo Reservoir is unusually low. The potential for convergence of events leading to unacceptable fishery flows is uncommon, but possible, and is exacerbated by AVC.

Low winter flows are considered a controlling factor to fish populations, invertebrates, and also fishing recreation. Winter flows (Jan/Feb and March – at least until the end of WWSP on March 15) suffers from lower overall flows for all alternatives. Evidence of natural rainbow trout reproduction in 2012, suggests that this species has the potential to spawn within this river segment – and likely during the early spring period. The winter and early spring is also the most popular months for fishing, as it is one of the few fishable rivers at this time of the year.

Another factor, only tangent to hydrology, is higher water temperatures that can be detrimental to trout, particularly when coupled with low flows. Higher water temperatures are not typically of concern from Jan-Mar, but can become so in September during warmer years which also normally correspond to dry (hot) years when hydrology model indicates the greatest level of streamflow reduction (D4-Table 77).

Lower Arkansas River – Segment 2 (Wildhorse Creek to Fountain Creek)

The moderation of water temperatures resulting from releases out of Pueblo Dam that support the cold and cool-water fishery and invertebrate community in Segment 1, is lost in Segment 2. In addition, habitat for cold or cool-water sport fishes and invertebrates decreases in quality below the Wildhorse Creek confluence. As a result, the aquatic resource values in this segment shift to native species and some warmwater sport fish.

Hydrology for overall average monthly streamflow (Appendix D4- Table 84) indicates some level of flow reduction for all alternatives when compared against No Action, but is most evident for March. Streamflow reductions are more pronounced during normal years (D4-Table 85), and in dry years (D4-Table 87) for the months of Oct-Dec. These are normally low flow months, but AVC operations further reduce flows generally from 10-30%. Because of the wide and flat dimensions of the river channel in this segment, deeper water habitat sought by fish is restricted, and shallow habitats inhabited by invertebrates can be limited.

Pueblo Reservoir

All months of the year can be important periods for the fishery in Pueblo Reservoir, depending on the aquatic resource and life stage. A water elevation fluctuation plan that favors cool and warm water fisheries really functions in three separate time segments. The first segment would be the period from mid-March through mid-June, when spawning of sport fishes (walleye, yellow perch, bass, bluegill and crappie) takes place, and it is also a critical time for gizzard shad (the dominant forage fish) reproduction. It is important that water levels remain at the highest levels possible during this period and that any changes in elevation are implemented very gradually. Virtually all of these species spawn in shallow water, and the egg development and hatch require constant water elevations for some time post-spawn. Moderate or severe drawdown during this period can result in eggs being exposed to air, subsequent failure of the spawning effort, and a total or partial loss of a year class of fish for a given species. Because of the need for consistent water elevation at this time a reduction in surface water elevation, particularly one that occurs rapidly could be potentially harmful to the fishery.

The second time segment of a beneficial fluctuation plan is the period from mid to late June until late October. During this period negative changes in elevation or a drawdown would be beneficial to the fishery. As a result of the drawdown, shoreline areas and banks become exposed to air, resulting in rock and gravel areas being cleaned and organic material in rock and gravel areas being converted to a more usable status. This process also involves the growth of rooted vegetation on these shores. This process shifts nutrients from organic matter on the banks and in the soil into green vegetation, which becomes very important in the third segment of the fluctuation plan. For the purposes of the fishery only, rapid drawdowns that expose shorelines earlier in the growing season become much more acceptable and

beneficial to the fishery. The second benefit to fisheries from drawdowns during this time involves predator-prey relationships. Late summer and fall drawdowns shrink the reservoir pool and forces predators and prey into the same habitats. This process allows predators to more effectively feed on forage populations and maximize growth during the season. In a proper fluctuation plan that favors fisheries, the summer drawdown would not exceed a level that would expose shorelines that could not be later inundated with water during the third time segment of the plan.

The third segment of the fluctuation plan is the period from late October through mid March, when the reservoir would be refilled. During this phase water storage levels need to increase until all of the exposed shorelines have been inundated. Refill rates are more beneficial when done in a slow controlled manner that is completed in the first half of March. This stage benefits fisheries in a couple of ways. First, it inundates the shorelines that were rejuvenated during the summer drawdown period which provides suitable spawning habitat. The second benefit occurs when vegetation (that grew on the exposed shorelines during the second phase) dies when covered with water and begins to decompose. The nutrients from this decomposition fuel both phytoplankton and zooplankton production in the reservoir. This plankton is the first line of productivity and is a critical food source for juvenile fish.

Water surface elevation hydrology (Appendix D4- Tables 185-188) is most important to the function of the aquatic resources in Pueblo Reservoir, and most easily evaluated. Overall monthly average data (Table 185) indicates minimal changes in WSE, except for the JUP North alternative, where up to 5% WSE reductions are noted. Greater decreases in WSE are seen for the JUP North alternative in both normal (Table 186) and dry years (Table 188), and for nearly all months of the year. Reductions in WSE reach 10-13%.

Only the JUP North alternative poses concerns for fishery impacts due to reductions in WSE. Those reductions are at acceptable levels during the summer months when drawdowns have some benefits; but are detrimental during spring (March to June) when spawning and egg/fry development is occurring. In contrast, the Master Contract Only alternative results in higher WSE for all months across all water years (average, normal, wet and dry).

John Martin Reservoir

The fishery at John Martin Reservoir (JMR) continues to be one of the most important along the lower Arkansas Valley, particularly with the loss of other large reservoirs due to continued drought conditions. Walleye, saugeye, white bass, wipers, crappie, and channel catfish dominate the sport fishery and are all species highly sought after by anglers.

Water management considerations for the fishery at John Martin Reservoir mirror those discussed above for Pueblo Reservoir. However, due to continued drought conditions JMR has experienced exceedingly low water levels in recent years. Total storage fell below 10,000 ac-ft in both 2006 and 2011, and was at or below 30,000 ac-ft every year since 2006.

It is encouraging to see net water benefits to JMR in all of the proposed alternatives. The tables in Appendix D4 used to present the data were a bit misleading however. 2005 was simulated as a "normal" year. In the past decade, 2005 was one of our wetter years. Also, 2004 was simulated to be a "dry" year, but again, it may not truly represent a "dry" year. On table 73 (dry year), water levels never drop below 20,000 acre ft. We know that a true dry year (2006, 2011) has water levels dipping well below 10,000 acre ft. Also, Table 71 shows a wet year (1997) in which water levels were well over 200,000 acre ft. for most of the year. That is not a typical "wet" year. It is an abnormally wet year. It serves to skew the data for the overall average table (Table 70).

Normal operations results in springtime (Mar-Apr) storage maxima, followed by drawdown during the irrigation, and refill during the period of the Winter Water Storage Program (mid-Nov to mid-Mar). This water management scenario benefits the fishery; however the decline in overall storage over the past six years has had significant impacts on the fishery. Reduced reproduction on white bass and crappie, lower success rates on fry stocking, and increased flushing of fish from the reservoir due to greater turnover rates with low storage, has been evidenced.

Monthly storage content hydrological data (Appendix D5- Tables 70-73) project increased storage for all alternatives and for all months, across all water year analyses (overall average, normal, wet, and dry years). The increases in modeled storage content for all alternatives (compared to No Action) generally are limited to less than 10%, but even minor improvements in storage will provide benefits to the fishery. It is also notable that increases in storage during normal and dry years, when compared to Existing Conditions, are generally well above 10% and as much as 45% higher.

Henry and Meredith reservoirs

Although the narrative suggests (Appendix D4- p 248) that the alternative's negative effects would be negligible to minor, it is important to remember that these lakes are large, shallow reservoirs, that even when full, have average depths less than 10 ft. Even at full conditions, these lakes can be considered at the lower limit of the acceptable range for fisheries habitat. The sportfish components of these reservoirs are very popular to area residents and visitors from the Front Range. During normal or wet years, slight decreases to the water supply can have some negative effects to the fishery, especially if the timing of the releases interrupts spawning activity. During dry years, however, decreases to the water supply can be disastrous to the fishery. Table 204 shows dry year changes at Meredith. During the months Jun. - Dec., all of the alternatives show less water storage than current conditions. Many of the changes show more than a 15% reduction in storage content. Currently, we are concerned about fish kills in these lakes during dry years (a good example is the present condition of these lakes). Any alternative that would reduce storage even further could result in the complete loss of the fishery, especially during an abnormally hot summer or cold winter.

Holbrook Reservoir

The fishery at Holbrook Reservoir consists of wipers, walleye, saugeye, crappie, channel catfish, and seasonal stocking of catchable-sized rainbow trout. It is a shallow basin and lacks defined fish habitat structure. Nonetheless, it is a State Wildlife Area that receives fishing pressure from local anglers.

Surface water hydrology modeling for monthly storage contents is exhibited in Appendix D4 (Tables 249-252). The monthly storage contents for overall average (Table 249) and wet year (Table 251) indicates less than 11% change for all alternatives, compared to No Action or even Existing Conditions. However, the situation is much different for normal (Table 250) and dry year (Table 252). In those years there is significant decrease in storage for all alternatives (except JUP North), as compared to No Action; and dramatic loss of storage when compared to Existing Conditions. For a normal year, storage declines up to 67% (compared to No Action) during mid-summer to total storage levels of 100-500 ac-ft.

In those years that align with the "normal" (2005) and "dry" (2004) projections, it is almost certain that all fish will be lost from the reservoir due to low water, and the resulting and expected high water temperatures and low dissolved oxygen levels. Since it takes several years to develop an attractive fishery through stocking of fry and fingerling fish, a loss in any one year will be realized over a much longer time frame. Depending on the frequency of normal or dry type of water years that are encountered in the future, this fishery may not have adequate time to recover and may not be a reasonable option for continued fishery management and recreation.

TERRESTRIAL RESOURCE COMMENTS

CPW appreciates the inclusion of our concerns and recommendations as outlined in Scoping comments dated September 8, 2010 in formulating the Arkansas Valley Conduit Environmental Impact Statement. We feel that adequate attention was paid to delineating impacted habitat and careful consideration was made in regards to the impacts effecting Federal T&E species, State T&E species, and Species of Concern as a result of this project. We commend the commitment to avoiding sensitive wildlife habitats where feasible and would like to emphasize the necessity of preconstruction surveys for wildlife use. The timing of construction in sensitive wildlife habitats is important to avoid or minimize negative impacts to wildlife. Spring timing restrictions are recommended to avoid disruption of critical breeding behaviors or disturbance of important breeding habitats. As with any development project, sound Best Management Practices (as outlined in Appendix B.5) are vital in avoiding negative impacts to wildlife. CPW would

appreciate the opportunity to comment on AVC's Migratory Bird Management Plan and Fish and Wildlife Management Plan to ensure that everything possible will be done to protect the wildlife of Colorado.

The following comments are supplemental to those submitted in 2010-2011.

Federal Threatened and Endangered Species

Two federally listed species, the Interior Least Tern (*Sternula antillarum*) and Piping Plover (*Charadrius melodus*), hereafter terns and plovers, annually return to breeding grounds in the Lower Arkansas River valley. Both occupy breeding, nesting, and foraging sites on the south and north shores of John Martin Reservoir and Tern and Long Islands at Adobe Creek Reservoir.

Regarding tern and plover conservation and management efforts in the Lower Arkansas River basin, the most significant concern is a decrease in water levels during the breeding season (April 1- September 1st) at John Martin Reservoir. Terns and plovers have historically exhibited relatively high fidelity to a core area John Martin Reservoir – i.e. – sandy shorelines devoid of any vegetative cover along with scattered areas of small rock aggregate substrate at Point 5 on the south shore and Dinosaur Island on the north shore.

Due to the reduced risk of predation, island habitats offer the greatest potential for increased nest and fledgling success. Consequently, active management efforts are directed to Dinosaur Island as well as the south shore. Higher water levels maintained throughout the nesting cycle, which preserve the island habitat, coupled with continued vegetation removal, offer the most desirable management strategy for successful tern and plover reproduction at John Martin Reservoir. Conversely, extended periods of reduced water levels would allow expanded, undesirable vegetative growth. Reduced water levels also diminish or eliminate the island effect at Dinosaur Island.

Based on the provided information, there does not appear to be any significant threats or impacts, both direct and indirect, to currently occupied tern and plover habitat at John Martin Reservoir. Water levels under all alternatives are projected to be slightly higher which would enhance tern and plover habitat.

State Threatened, Endangered and Species of Concern

The Black-tailed Prairie Dog (*Cynomys ludovicianus*) plays a vital ecological role on the prairies of southeastern Colorado. The colonies of Black-tailed Prairie dogs offer suitable habitat during all or a portion of the life-history requirements for a number of grassland species of concern– Ferruginous Hawk (*Buteo regalis*), Burrowing Owl (*Athene cunicularia*), Mountain Plover (*Charadrius montanus*), and Swift Fox (*Vulpes velox*). Because Black-tailed Prairie dog colonies tend to support a broad suite of important grassland species, it is recommended that any colonies identified during pre-construction wildlife surveys be avoided, if possible.

Though all pipeline alternatives lie north of the Arkansas River beginning just west of Las Animas and along the Hwy. 50 corridor, there is potential for negative impacts to a small wintering population of Bald Eagles (*Haliaeetus leucocephalus*) at John Martin Reservoir. Seasonal avoidance is suggested during November – March to minimize disturbance due to construction activities.

Vegetation

Upland vegetation will be effected by construction of the pipeline; however, it will be minimal (relative to the amount of upland vegetation in eastern Colorado) and temporary. Best Management Practices (as outlined in Appendix B.5) for vegetation are suitable for the actions proposed for this project and should result in the avoidance/mitigation of negative impacts. Regardless of the footprint of ground disturbance, CPW would like to reiterate the importance of proper revegetation and weed control. Proper revegetation, from a wildlife perspective, involves not only stabilizing the soil and establishing ground cover, but fostering plant communities with a diversity of species and plant types (grasses, broadleaf forbs, and woody vegetation) which will fully serve the nutritional and cover needs of wildlife. All reclamation seed mixes should be suited to on-site soil types, and mirror native plant communities. All reseeding should be completed in a timely manner and should be monitored for success and noxious weed establishment.

CPW would appreciate the opportunity to assist AVC in development of a Reclamation Plan that includes the formulation of suitable seed mixes for all areas of the project.

CPW recognizes that this project has the potential to spread noxious weeds/seeds through ground disturbance and material transport and appreciates the inclusion of noxious weed best management practices (as outlined in Appendix B.5). A comprehensive noxious weed management plan should be developed prior to construction and implemented in areas where there will be disturbance due to construction activities. Noxious weed management is important to the long-term success of the project and should continue throughout the useful life of the project. CPW would also like to have the opportunity to review the project's Noxious Weed Management Plan pending completion.

Riparian and wetland habitats on the plains are used disproportionately to their extent; they are relatively rare compared to other habitat types and approximately 90% of all wildlife utilize them at some point in their life cycle. These areas are critical to fish, waterfowl, neotropical migratory songbirds, amphibians and predators. CPW appreciates the project's commitment to avoid riparian and wetland habitats where feasible. Where avoidance is not possible, CPW would like to see compensatory wetland mitigation conducted properly, with special attention to replacement of wetland type and function as well as size. CPW is interested in working with AVC to ensure that wetland mitigation will benefit the wildlife of Colorado.

OUTDOOR RECREATION – LAKE PUEBLO STATE PARK

Lake Pueblo State Park with Pueblo Reservoir as its centerpiece hosts over 1.8 million visitors annually and is consistently one of the most heavily visited state parks in Colorado. A marketing report on Colorado state parks (Colorado State Parks 2009) estimated annual visitor spending of \$97,848,400 (for all visitors) and \$67,057,000 (for nonlocal visitors – visitors coming from further than 50 miles) on the local economies of Lake Pueblo State Park. The \$97,848,400 spending represents roughly 20 percent of the statewide total for all 42 state parks in Colorado. Visitors to Lake Pueblo State Park contribute significantly to the local community economies (Pueblo, Pueblo West, etc) surrounding Pueblo Reservoir.

The Park recreation facilities and supporting infrastructure at Pueblo Reservoir were designed and constructed in conjunction with the U.S. Bureau of Reclamation in the late 1970's & early 1980's to accommodate water surface elevation fluctuations up to the top of the active conservation pool (4880.5 feet) under reservoir operations of the time.

Park visitation has increased substantially from the early 1980's and fluctuating reservoir levels up into the top of the active conservation pool and into joint use pool elevations do have effects on Park operations and visitors. As an example, since the 2008 water storage year (recognized as above average water years), current reservoir operations has maintained/sustained higher water surface elevations at the beginning and further into the Park's high use season of May 1st to September 30th. The higher water surface elevations and the increased frequency of the higher water surface elevations attract more visitors to the Park while presenting new Park operation challenges.

At water surface elevations above ~4875 feet, parking for access to the reservoir at Sailboard, N-1, and South Fishing and vehicle/trailer parking capacity at the South Boat Ramp, the South Shore Marina, the North Boat Ramp, and the North Shore Marina becomes limited due to less available shoreline for vehicle parking. In addition, the natural land mass located west of the South Shore Marina\Boat Ramp protects these facilities from wind and wave at water surface elevations up to ~4875 feet. Once the water surface begins to exceed the 4875 feet elevation, the land mass goes underwater thus exposing users of the boat ramp and marina to wind and wave.

With the decrease in available parking at the reservoir access points, visitors are parking along the shoulders of Juniper Road and walking to the reservoir creating social trails. Parking along the shoulders of the road creates a safety hazard to visitors. Social trails are not designed or planned, resulting in degradation of the natural vegetation around the rim of the reservoir and, hence, the trails are highly

susceptible to erosion. Visitors using these social trails for access to the reservoir have no access to trash and restroom facilities, which leads to unsanitary conditions along the trails and the shoreline.

In addition to the more frequent/sustained higher water surface elevations, the discovery of zebra and quagga mussels (Aquatic Nuisance Species) in Pueblo Reservoir in 2008 along with the resulting regulatory, management, and operation requirements to prevent their spread to other water bodies has also contributed to the limited parking issue. The public boat ramps located on the Pueblo Reservoir State Wildlife Area were closed and all trailered and motorized vessels must launch from the Park's two boat ramps where vessels/trailers are inspected for Aquatic Nuisance Species has concentrated vehicle/boat trailer traffic to two locations versus three.

Since 2008, additional high water parking areas have been designated and constructed in cooperation with Reclamation to accommodate the need for additional vehicle/trailer parking at the North Shore Marina\North Boat Ramp and the South Shore Marina\South Boat Ramp. The high water parking area at the South Shore Marina\South Boat Ramp has been improved by the addition of gravel and parking delineation however additional parking space is still needed. The high water parking area at the North Shore Marina\North Boat Ramp remains an open field and needs to be improved. Additional designated high water parking areas are needed along and adjacent to Juniper Road along with the establishment of designated access trails. A permanent breakwater is needed to protect the South Shore Marina\Boat ramp.

The maximum historic reservoir water surface elevation of 4888.4 feet occurred in February, 1996. In addition to the effects described above, in 1996 access to the Kettle Creek Loop of the Northern Plains Campground, the North Picnic day use area, and the Sailboard day use area were closed due to water over access roads. Use of the South Boat Ramp was limited to launching/loading of small boats and the northwest corner of the S. Marina Parking Lot was underwater.

Any water surface elevation of Pueblo Reservoir exceeding 4888.4 feet (maximum historic elevation) will have substantive effects on Lake Pueblo State Park facilities/infrastructure and operations. These effects are listed in bullet form below:

- At ~4900 feet the 1200 gallon South Shore wastewater (sewage) lift station is under water and all shoreline parking access points, the South Boat Ramp, the South Marina, the North Boat Ramp, and the North Marina are closed to public access and use.
- At ~4902 feet Juniper Road at N-2 and the 12" potable water main line which parallels Juniper Road goes under water. Juniper Road connects the north side of the park to the south side of the park and is a popular commuter route between the community of Pueblo West and Pueblo. The 12" potable water main feeds the entire north side of the park (Northern Plains Campground, Juniper Breaks Campground, and the North Shore Marina).
- At ~4904 feet the 1200 gallon North Shore wastewater (sewage) lift station is under water.

There are several complexities in the Pueblo Reservoir modeling based on numerous assumptions. Although the direct effects of all alternatives presented in the AVC EIS appear to be minimal, any action or event not assumed in the modeling that would increase the surface elevation above 4888.4 feet, along with the cumulative effects as described above, are substantive to the operation of Lake Pueblo State Park and to the local economies. Since the Arkansas Valley Conduit is a municipal water supply project, it is very likely that water stored for this project would remain in Pueblo Reservoir for a longer duration (typically year-round) than when water is stored for agricultural purposes. While this may provide more stable reservoir water levels which is often desired by boaters, it could increase the frequency of lake level rising due to summer storms or during high runoff periods, which could increase the chances for Pueblo State Park experiencing the problems outlined above. It would be beneficial for Pueblo State Park and the local Pueblo economy if the project proponents would establish a contingency fund for mitigation of those issues raised if the water level elevation exceeds the limits identified above.

OUTDOOR RECREATION – ARKANSAS RIVER ABOVE PUEBLO RESERVOIR

Reference is made in the DEIS that “The Master Contract would include up to 29,938 ac-ft of excess capacity storage in Pueblo Reservoir. The DEIS further states that each identified water provider with requested storage space in Pueblo Reservoir would request that Reclamation release water from Pueblo Reservoir to either the Arkansas River to an existing or future water delivery system, or exchange water to an upstream location (Appendix A).” CPW is concerned that upstream exchanges (other actions associated with AVC) could potentially reduce the amount of water that would be available in the Arkansas River between Lake Pueblo and upstream storage vessels (Twin Lakes, etc) thereby potentially having a detrimental effect on whitewater boating and float fishing.

Additionally, the DEIS notes that all alternatives would cause some minor (less than 10 percent) decreases in streamflow in the Upper Arkansas River Basin during winter and spring months in normal and wet years due to changes in Fry-Ark reservoir storage volumes. A 10% decrease in stream flow during late winter at 300 cfs, the absolute bare minimum for floating lower Browns Canyon, lowers the river potentially to 270 cfs, which creates an un-boatable water level for lower Browns Canyon. This would not be a negligible detrimental effect as noted in the report. Again, upstream Exchanges (other actions associated with AVC) could potentially exacerbate this situation by further reducing the amount of water that would be available in the Arkansas River between Lake Pueblo and upstream storage vessels (Twin Lakes, etc) thereby potentially having a detrimental effect on whitewater boating and float fishing

In summary, CPW would ask that AVC operations, including the Master Exchange Contract, not, in any way, negatively affect the ability of Reclamation to store and/or move water as necessary to maintain the recommended Voluntary Flow Management Program (VFMP) year-round fishery flows of 250 cfs or the targeted 700 cfs augmentation flows (July 1 – August 15) as measured at the Wellsville Gage.

PROPOSED CONCEPTUAL MITIGATION MEASURES

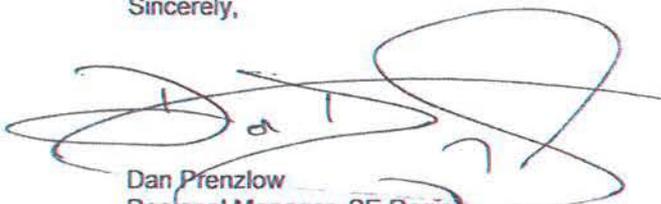
A Fish and Wildlife Mitigation Plan will be developed for this project under the authority of Colorado State Statute 37-60-122.2. More detailed mitigation measures can be developed as part of that process and should include many of the following as well, however, these below listed conceptual mitigation measures should also be included in the Environmental Commitments section of the Record of Decision.

1. Establish and utilize a reserve pool in Pueblo Reservoir to be used in the event of low or no flows in the Arkansas River from Pueblo Dam downstream to the Wildhorse confluence. Water would be released from Pueblo Dam in such situations to maintain a minimum acceptable flow for fish, macroinvertebrates, and fishing recreation. This release of water would not be done to the detriment of hatchery operations at the Pueblo Fish Hatchery.
2. Evaluate and consider the installation of additional instream habitat structures and develop channel modifications in the Arkansas River from Pueblo Dam to the Wildhorse confluence to minimize impact (reduced habitat due to low flow) on rainbow and brown trout, and macroinvertebrates.
3. The Pueblo Fish Hatchery was built as part of the original mitigation for the Fryingpan-Arkansas Project. Reclamation has provided the hatchery the required 25-37 cfs as part of that mitigation since that time, but BOR does not have a decree or adjudicated water right to guarantee these flows. Except for a commitment from BOR for “compensation for evaporation losses from the hatchery ponds” (based on a letter from BOR to CDOW in 1984), there is a lack of evidence that there is a legal decreed water right for that purpose (see status report for #02CW53). In addition, actual flows to the hatchery have only been considered as a “flow through right” (up to 16 cfs) by which downstream senior rights are satisfied. This project (as well as those that have proceeded it) results in less water being released (via hatchery or dam) to satisfy downstream rights. As this trend (agricultural to municipal) continues, at some point hatchery flows may be curtailed or otherwise negatively affected and the original value of the Pueblo Hatchery as mitigation for the Pueblo Reservoir and Fry-Ark project will be lost. We believe it would be prudent and appropriate to establish an adjudicated flow right for operation of the hatchery and secure augmentation for the associated ponds and wells.

4. Holbrook Reservoir is limited by bottom and shoreline (littoral area) habitat. Artificial habitat structures have been added to many of the warmwater reservoirs in the form of trees, tires, or a combination of concrete, PVC, or other materials. These structures provide benefits for spawning, fry/juvenile rearing, and escape cover, and as focus for recreational fishing. Other improvement techniques that would be applicable to Holbrook Reservoir include seeding of shoreline areas prior to inundation and control of excessive vegetation that is an impediment to fisheries and fishing.
5. Expansion of CPW warmwater fish production was a commitment in the Southern Delivery System Record of Decision and Fish and Wildlife Mitigation Plan. Construction of 7.5 acres of warmwater production ponds, are planned and although the Pueblo Fish Hatchery was discussed, no specific location was officially designated. The most appropriate and logical scenario is to construct these new ponds at the existing Pueblo Fish Hatchery to the north of the current ponds. This is land owned by BOR, and as part of AVC mitigation CPW requests that BOR consider the designation of a perpetual easement to allow for the construction and operation of these new production ponds. This designation should be done while also pursuing the establishment of an appropriate flow through water right at the Pueblo Fish Hatchery as outlined in #3 above.
6. With the potential for decreased or affordable "If and When Account" storage in Pueblo Reservoir due to increased storage as part of the AVC and Master Exchange Contract consider the establishment of a permanent guaranteed CPW "If and When Account" at a reasonable price in Pueblo Reservoir for purposes of augmenting flows for the Voluntary Flow Management Program and for release downstream.
7. Formally recognize the Upper Arkansas Voluntary Flow Management Program agreement and the Pueblo Low Flow Agreement as part of the Record of Decision and commit, to the maximum extent practical, to adherence to these agreements through operations of the Arkansas Valley Conduit and Master Exchange Contracts identified within this DEIS.

Colorado Parks and Wildlife appreciates being involved in the Arkansas Valley Conduit Environmental Impact Study process. Please feel free to contact Dave Lovell at 719-227-5209 or Doug Krieger at 719-227-5202 if you should have any questions or require additional information regarding this letter. We look forward to working with the Bureau of Reclamation in the development of the Fish and Wildlife Mitigation Plan and with its successful presentation to the Colorado Parks and Wildlife Commission.

Sincerely,



Dan Prenzl
Regional Manager, SE Region
Colorado Parks & Wildlife