

## STATE OF COLORADO

## OFFICE OF THE EXECUTIVE DIRECTOR

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SLG-01

April 1, 2011

Via E-Mail and U.S. Mail

Ms. Carol DeAngelis, Mr. Steve McCall  
Bureau of Reclamation  
Western Colorado Area Office  
2764 Compass Drive, Suite 106  
Grand Junction CO 81506



John W. Hickenlooper  
Governor

Mike King  
Executive Director

Re: State of Colorado Comments on the *Preliminary Final Environmental Impact Statement: Aspinall Unit Operations*

Dear Carol:

On behalf of the Colorado Department of Natural Resources (DNR), the Colorado Water Conservation Board (CWCB) and the Colorado Division of Wildlife (DOW), I submit the following comments on the *Preliminary Final Environmental Impact Statement: Aspinall Unit Operations* (the "PFEIS") released by the Bureau of Reclamation ("Reclamation") in December 2010. We would like to thank the Bureau of Reclamation (BOR) for the opportunity to serve as cooperating agencies during this effort and we appreciate the opportunity to comment on the PFEIS. We appreciate the cooperation and consideration that Reclamation has provided during this EIS process, and believe it has resulted in better understanding and cooperation with regard to the management of the relevant federal reservoirs within Colorado. We look forward to continuing working with Reclamation and other stakeholders as this process moves forward.

As cooperating agencies, the DNR, DOW and CWCB have worked closely with Reclamation through this NEPA compliance process and believe that the current document reflects Reclamation's efforts to work with all affected stakeholders and arrive at the best possible conclusions. While we still have concerns, we acknowledge and again, appreciate, all of the work and effort by Reclamation and other Federal agencies in this process. Attached are specific comments from the CWCB and the DOW. DNR has worked closely with both agencies and fully supports all of the comments enclosed.

I would like to highlight two issues that are addressed in more detail in the attached letters.

First, we remain concerned regarding how the EIS seeks to articulate the interaction of SLG-01-01 Aspinall Unit operations under the EIS and the National Park Service Black Canyon water right decree. We have made this point several times before, but it is important enough to repeat at this time. As you know, the Aspinall Unit, as a Colorado River Storage Project Act (CRSPA) project,

Board of Land Commissioners • Division of Reclamation, Mining & Safety • Colorado Geological Survey  
Oil & Gas Conservation Commission • Colorado State Parks • Division of Forestry  
Water Conservation Board • Division of Water Resources • Division of Wildlife

is very important to the state of Colorado. In this instance, the state of Colorado supported a meaningful water right for the National Park Service (NPS) conditioned upon protecting Reclamation's ability to store in the Aspinall Unit and meet CRSPA objectives. Supporting a Federal Reserved Right was a marked change from previous Colorado positions regarding federal reserved rights. The State's willingness to support a Federal Reserved Right is significant. For many decades, the State has generally opposed all Federal Reserved Water Rights and committed significant resources to fighting such rights, often with success. Our position was based, in part, upon concern that the federal government would seek to manage Colorado's water resources without meaningful consultation and input from the State and in ways detrimental to Colorado's interests. In the case of the NPS Black Canyon water right, we were willing to find a compromise that created a balance between the NPS' water right and protecting water in storage. The balance was critical to Colorado's support for the Black Canyon Decree and the compromise rests in part on continued and regular dialogue between the State and Federal agencies concerning the water resources. Continued dialogue and a positive resolution of the issues will be important to continuing support for Federal Reserved Rights. We believe that the EIS should only attach the decree, acknowledge the seniority of the water right and the Secretary's discretion in exercising the decree. We do not think the EIS should seek to interpret the decree. However, our understanding is that the federal agencies will not be satisfied leaving it thus described. We have provided detailed suggestions about how to change the current proposed language to language that we believe is more appropriate.

SLG-01-01  
cont.

Second, DOW remains very concerned about Dolores and Dallas Creek Project issues. To be clear, it is not their intent, or ours, to call into question, in any way the Programmatic Biological Opinion. The DOW letter requests that the Reclamation engage in and perhaps broker a series of meetings with the relevant stakeholders, (including state and federal agencies, water users, etc), to seek resolution of, and agreement regarding, the issues we raise, prior to the Record of Decision issuing. DNR requests that Reclamation work with DOW, CWCB and other stakeholders on these issues.

SLG-01-02

We recognize and appreciate Reclamation and the Department of the Interior's efforts in pursuing the NEPA compliance process for the Aspinall Unit. It is our understanding that the comment period for this PFEIS ends April 1, 2011. As cooperating agencies dedicated to working with Reclamation and the Department of Interior to promote the effective operation of the Aspinall Unit, we ask that you consider our comments when finalizing the NEPA compliance documentation for the Aspinall Unit.

We look forward to working with you with regard to future management of the Aspinall Unit. Please let me know if there is any additional information that you may need from us.

Sincerely yours,



Alexandra L. Davis

cc: Anne Castle, Assistant Secretary, Water and Science, U.S. Department of Interior  
Michael L. Connor, Commissioner, U.S. Bureau of Reclamation  
Larry Walkoviak, Regional Director, U.S. Bureau of Reclamation  
John Wessels, Regional Director, National Park Service

Action Alternative). Table 2 also shows the significant difference in economic impact with the inclusion of the BC water right. Notice that in 1984, when one compares the New NA with the New Alt B, the impact of Alt B is a cost of almost \$189,000. In contrast, when one compares the Old NA with the New Alt B, the economic impact of Alt B is a cost of over \$6.1 million.

Conclusions

This analysis provides evidence that the impact values included in the Draft EIS are significantly different than those of the PFEIS – in which all alternatives includes the BC water right. That the differences are not linear (e.g. that the impacts of the PFEIS are not universally larger or smaller than the DEIS) and that, for at least one of the 31 years, the direction of the impact changes.

Another important conclusion is that by comparing the Old NA with the New NA, the impact of adding the BC water right can be parsed out. The analysis shows that impact of adding the BC water right is, on average, about twice as much as the impact of Alt B alone (as described in the DEIS).

SLG-01-03

**ATTACHMENT A**  
**Aspinall Unit PFEIS**  
**Language Excerpted for Cooperating Agency Discussions**

Flow Recommendations call for flows decreasing below 1,050 cfs after the Colorado pikeminnow migration period. During wetter periods, base Flow Recommendations are higher.

The Flow Recommendations recognize uncertainties in understanding the biology of the fishes and the response of the fish and their habitat to flow changes. For that reason, the recommendations call for using adaptive management to respond to new knowledge and using monitoring to evaluate the physical response of the habitat and biological response of the fish to the flow regimes. It is expected that any refinements in operation of the Aspinall Unit would be within the scope of the current proposed action and that implementation of refinements would occur with appropriate Section 7 consultation as necessary.

Physical uncertainties discussed in the recommendations include:

- While relationships among initial motion, significant motion and streamflow are well defined, duration of flows necessary to accomplish habitat work is not completely known. Because flow duration recommendations were developed based on a wet period, the recommended durations require a large volume of water that may not always be available. According to the Flow Recommendations, "...the duration of flows necessary to accomplish in-channel and out-of-channel habitat maintenance objectives is not known."
- Water availability may limit the ability of the Gunnison River to meet the Flow Recommendations under certain conditions.
- Because of timing and other differences in runoff patterns of the Colorado and Gunnison rivers, it is difficult to predict the effect of Gunnison River flow changes on the Colorado River.
- Flow Recommendations for wet periods may cause flooding problems for which management activities may be necessary to prevent potential problems.

1 Research under the Recovery Program is ongoing in the Gunnison River. Under one sediment-monitoring project the primary objective "...is to address key uncertainties in priority reaches of the Colorado, Gunnison, and Green Rivers relevant to the role of streamflows and sediment transport on the formation and maintenance of backwater habitats and spawning bars. A secondary objective is to collect the necessary sediment data to aide in the evaluation of Service Flow Recommendations for the Aspinall Unit and Flaming Gorge Reservoir." (Fish and Wildlife Service 2006).

In summary, the Flow Recommendations call for peak flows to periodically prepare cobble and gravel spawning areas, to connect backwaters, and to maintain channel diversity; and sufficient flows to cue and allow migration. Base flows that promote growth and survival of young fish during summer, fall, and winter are also included.

**1.2.6 Black Canyon NP Water Right**

On December 31, 2008, the Colorado Water Court issued a decree quantifying the 1933 federal reserved water right for the Gunnison River through the Black Canyon NP. The decree quantifies the March 2, 1933 priority date direct flow water right as a year-round minimum flow and with variable peak and shoulder flow flows for each year, the magnitudes of which are dependent upon current that year's Gunnison River Basin hydrologic conditions. The negotiations for the right were mentioned in the DEIS. The DEIS stated: "The Federal reserved water right for the Gunnison River through the

Black Canyon is nearing quantification. In general, the right will call for higher flows in the spring similar to flow recommendations for endangered fish. Thus the reserved right and the preferred alternative for Aspinall Unit operations will have similar impacts on resources. The Secretary of the Interior's exercise of the federal reserved right will be with due regard for, and shall be coordinated with, implementation of the Aspinall Unit reoperations. To the extent practicable, this water right will be exercised so that it is coordinated with implementation of the preferred alternative to achieve a single peak flow, subject to Aspinall Unit authorized purposes, including, but not limited to, flood control to protect human health and safety and prevent the loss of property along the Gunnison River."

Now that the right is in place, additional detail has been included in the narrative of this FEIS and a copy of the decree, including a full statement of the terms and limitations, is included in Volume II, Appendix G.

The Black Canyon NP Water Right is a subordinated to all water rights with adjudicated priorities that are senior to the Aspinall Unit water rights. The Black Canyon NP Water Right is a downstream water right senior to the Aspinall Unit. As such, along with other senior water rights, it is a condition that is common to all alternatives. In accordance with state water law and the decree, when the Secretary exercises the right Black Canyon NP Water Right, Reclamation must take necessary shall undertake operational actions to meet consistent with Black Canyon Decree and in accordance with state laws. If the terms and conditions Secretary places a water right call in the exercise of the decree. The actions taken by Black Canyon NP Water Right, Reclamation to meet shall also comply with valid administrative orders from the Colorado State and Division Engineers' Offices for administering the decree are non-discretionary under state water law, for the Aspinall Unit and the Black Canyon Decree, both of which is made applicable to Reclamation in this circumstance pursuant to the decrees for the Aspinall Unit and by section 8 of the Reclamation Act of 1902. The analysis contained in Chapter III, Section 3.3.1, of

As discussed below, this EIS depicts those year types, based on provides examples of historical record, when year types and describes examples of operational actions that Reclamation may undertake to coordinate the ESA fish flows for meeting ESA needs downstream will also satisfy the decreed water right and identifies when Reclamation will have to take the Black Canyon NP Water Right in a given water year.

For further non-discretionary actions to satisfy the decree. The narrative supporting this analysis provides an example of the types of non-discretionary actions that may be taken in such circumstances, as long as such actions are consistent with the terms and conditions in the decree. The discussion of these non-discretionary actions how the Black Canyon NP Water Right fits within the alternatives and is meant to provide examples of the types of actions that may be necessary to satisfy the decree and is consistent with the historic range of Aspinall Unit operations. Thus, the finalization of the decree on December 31, 2008, did not significantly change the impacts analysis. See section analyzed see sections 2.3.1.1 and 3.3.1.2C for further information.

### 1.2.7 Programmatic Biological Opinion

The Service has prepared a programmatic biological opinion (PBO) under the ESA (Volume II, Appendix B). The proposed action in the PBO differs from the proposed action in this EIS in that the PBO covers effects on endangered species of all water uses and depletions in the Gunnison Basin in addition to the Aspinall Unit operation changes addressed in this EIS. The proposed action in the PBO includes:

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• Modification of the Aspinall Unit operations to address flow needs for endangered fish in the Gunnison and Colorado rivers by meeting or attempting to meet targets on the Gunnison River and in concert benefit Colorado River mainstem habitat as outlined in the Flow Recommendations.

• The continuation of operations of all existing Reclamation projects in the Gunnison River Basin (Smith Fork, Paonia, Fruitgrowers, Bostwick Park, and Uncompahgre).

• The continued operation of the Dolores Project in the Dolores River Basin, included based on a prior biological opinion's reasonable and prudent alternative, and reinitiation of consultation on it to address new listed species and depletions.

• The continued operation of the Dallas Creek Project, included based on a prior biological opinion's reasonable and prudent alternative and reinitiation of consultation on it to address new listed species and depletions.

• The continued operations and depletions of other Federal projects (e.g. BLM, the Service, NPS, and Forest Service) and all non-Federal projects and water uses in the Gunnison Basin.

• The future depletion for beneficial use within the Gunnison River Basin of 3,500 af of unspecified depletions in the Gunnison Basin as well as and 30,800 af of Aspinall Unit water rights subordinated to water users upstream users of the Aspinall Unit.

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The PBO provides ESA coverage for existing and specified future water uses and depletions in the Gunnison River Basin, as well as, completes ESA reconsultation on the Dallas Creek and Dolores Projects.

Two main operational elements of the PBO are:

• The reoperation of the Aspinall Unit addressed in this FEIS, and

• The preparation and implementation of a selenium management program (SMP).

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The SMP calls for developing a plan that will reduce selenium levels in the Gunnison and Colorado rivers. An estimated 90 percent of selenium loading to the Gunnison River results from operation of Federal and private irrigation projects in the basin (Reclamation 2006b). Seepage from irrigation ditches and deep percolation of irrigation water into the Mancos shale derived soils mobilize naturally occurring selenium in the shale which is then carried in groundwater to basin waterways. Irrigation in the Uncompahgre Valley is the most significant source with the majority of the irrigation in this valley provided by the Uncompahgre Project. Sixty percent or more of the selenium loading in the Gunnison Basin originates from an area encompassing the Uncompahgre River basin and the service area of the Uncompahgre Project (Reclamation 2006b). Other Federal Projects such as the Bostwick Park, Smith Fork, Paonia, Fruitgrowers, and Dallas Creek provide irrigation water that adds to seepage and deep percolation and selenium loading to waterways. Private irrigation systems in the Uncompahgre Valley and other portions of the lower Gunnison basin drainage are also significant sources also mobilize naturally occurring selenium. Other selenium loading sources include seepage from unlined ponds, urban lawn and park watering, and natural runoff from soils with high selenium content.

The Aspinall Unit itself does not furnish irrigation water and is not a source of selenium loading, although its operation can impact dilution volumes and thus, selenium concentrations in the lower Gunnison River.

The Service describes the selenium issue in the PBO as follows:

*"The ongoing operation of irrigation projects and other water uses in the basin will continue to contribute selenium to the Gunnison and Colorado Rivers at levels that adversely affect the endangered fishes and their designated critical habitat and are inhibiting the survival and recovery of the*

endangered fishes. Reclamation will develop and implement a Selenium Management Program (SMP), in cooperation with the State of Colorado and Gunnison River basin water users to reduce adverse effects of selenium on endangered fish species in the Gunnison and Colorado rivers (see Effects of the Proposed Action section). The SMP will incorporate and accelerate ongoing selenium reduction efforts in the Uncompahgre Valley and other areas of the Gunnison Basin and will add several new elements. The overall long-term goal of the program is to assist in species recovery per the Recovery Goals. The SMP will use the best available scientific information for all elements of the program. Elements of the SMP will include:

- Accelerated implementation of salinity/selenium control projects for irrigated agriculture
- Reduction of other non-point source selenium loading
- Technology development
- Water quality monitoring
- Monitoring of endangered fish populations
- Coordination with lower Gunnison River Basin watershed management plan
- Regulatory support
- Public information and education
- Adaptive management
- Institutional support

Reclamation is in the process of working with cooperators to develop the SMP, with finalization of the plan scheduled for December 2011. Once elements of the plan are identified, a determination can be made on the need for future NEPA compliance and compliance with other related regulations and laws.

The PBO concluded that the "...effects of the proposed action (including the proposed operation of the Aspinall Unit, the new and historic water depletions and the mandatory conservation measures), and the cumulative effects, it is the Service's biological opinion that the proposed action as described in this biological opinion, is not likely to jeopardize the continued existence of endangered fish and is not likely to destroy or adversely modify designated critical habitat."

The SMP is also described in the PBO in Volume II. Dependent on the actions in the program, additional NEPA compliance may be required for its implementation.

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**1.3 Issues of Concern**

Issues raised in the public meetings held in 2004 and in written comments and internal scoping are discussed in Chapter 5 and Volume II, Appendix F. Briefly, the major concerns centered on possible effects to the following: water rights, water quality, recreation, fish and wildlife, endangered species, vegetation and wetlands, flood control, length or duration of peaks. When the reserved right is included in the No Action or Alternative A, spring peak targets would be similar to those that would occur under the other alternatives.

**2.3.1 No Action Alternative**

The No Action Alternative represents a projection of current operating practices to the most reasonable future conditions that would occur without any action alternatives being implemented. The No Action Alternative should not automatically be considered the same as the existing or past conditions, since reasonably foreseeable future actions may take place whether or not any of the project action alternatives are chosen and because the environment is not static and environmental consequences would still occur. Under the No Action Alternative, elements of the Recovery Program would

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continue—for example, stocking of endangered fish, non native fish control, operation of the Redlands Fish Ladder and Screen, management of backwaters, and monitoring. However, altering operations of the Aspinall Unit to specifically assist in meeting the 2003 Flow Recommendations for endangered fish in the Gunnison and Colorado rivers would not occur.

**2.3.1.1 Black Canyon NP Water Right**

On December 31, 2008, the Colorado Water Court issued a decree confirming and quantifying the federal reserved water right for the Gunnison River through the Black Canyon NP (Black Canyon NP Water Right). The decree quantifies the March 2, 1933 priority date Black Canyon NP Water Right as a direct flow water right with a year-round minimum base flow and with variable one-day peak and runoff season “shoulder” flows for each year; the magnitude of which are dependent upon the May 1 forecast of the April 1 through July 31st unregulated inflow into Blue Mesa Reservoir. The negotiations for the Black Canyon NP Water Right were mentioned in the DEIS. Now that the right is decreed, additional detail has been included in the narrative of the FEIS (and Volume II, Appendix A) and a copy of the decree, including a full statement of the terms and conditions, is included in Volume II, Appendix G.

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~~The As a senior water right downstream of the Aspinall Unit, the Black Canyon NP Water Right is a senior downstream water right to the Aspinall Unit. As such, along with other senior water rights, it is a condition that is common to all alternatives. In accordance with state exercise of the water law and the decree, when the Secretary exercises the right, Reclamation must take will undertake the operational actions necessary actions to meet the terms and conditions of the decree. The actions taken by the Secretary places a water right call in the exercise of the Black Canyon NP Water Right. Reclamation to meet the decree are non-discretionary under state water law, also will comply with administrative orders from the Colorado State and Division Engineers’ Offices regarding any administration on the Gunnison River including administration of the decree for the Aspinall Unit and the Black Canyon Decree, both of which is are made applicable to Reclamation in this circumstance pursuant to the decrees for the Aspinall Unit and by section 8 of the Reclamation Act of 1902. The~~

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According to the Black Canyon Decree, the Secretary’s exercise of the Black Canyon NP Water Right “shall be with due regard for, and shall be coordinated with, requirements of the Endangered Species Act.” (Decree, Paragraph 32.4.3). “In order to implement the [negotiated resolution of the decree] and efficiently allow the streamflow patterns contemplated [therein], the use of the Aspinall Unit, including its storage and release capacity, may be needed in some years. Such operation of the Aspinall Unit in conjunction with the exercise of the [decreed Black Canyon NP Water Right], is within the scope of the Aspinall Unit’s federally authorized purposes and its Colorado Water Court decrees.” (Decree, Paragraph 25). The Decree also provides that ... “[n]othing in th[e] decree modifies the Aspinall Unit water rights or the federally authorized purposes of the Unit in any way.” (Decree, Paragraph 26).

Regarding the peak flow component of the water right, the Decree expressly notes as a Finding of Fact that:

“the United States recognizes that exercising the right to peak flows described in this claim will require careful consideration of numerous factors, including the structural capacity of upstream dams and potential downstream flooding, among other river management issues. Therefore, the Secretary of the Interior will confer with the State of Colorado, The National Park Service, the Bureau of Reclamation, the Western Area Power Administration, the Fish and Wildlife Service and other affected interests in order to ensure that operational decisions to exercise this right are in accord

with the best available information and with full consideration of the river management issues noted.”

(Decree, Paragraph 13). The Decree further provides that “[t]he Secretary shall exercise the Peak Flow . . . including any operation of the Aspinall Unit necessary to exercise the Peak Flow . . . with due regard for to the efficient use of water.” (Decree, Paragraph 31.5.2.8). The Decree instructs that “[t]o the extent practicable, [t]he Black Canyon NP Water Right shall be exercised so that timing of the Peak Flow is coordinated with releases made [for the endangered fish flows] to achieve a single peak flow, subject to [flood control considerations]” with the understanding that “it may be necessary in some years to de-synchronize the [NP Water Right] Peak Flow from the peak runoff of the North Fork of the Gunnison River to reduce the potential for downstream flooding.” (Decree, Paragraph 32.4.4).

In view of this context, the analysis contained in Chapter III of this EIS depicts these year types, based on historical record, when flows for meeting ESA needs downstream will also satisfy the decreed water right and identifies when Reclamation will have to take further non-discretionary actions to satisfy the decree. The narrative supporting this analysis provides an example of the types of non-discretionary actions that may be taken in such circumstances, as long as such discusses examples of historical year types and a range of operational actions that Reclamation may undertake to coordinate the recommended endangered fish flows and the Black Canyon NP Water Right. Discussion of these operational actions is for illustrative purposes only and does not pre-determine the administrative requirements or specific actions that Reclamation may undertake when the Secretary exercises the Black Canyon NP Water Right conditions in the decree. The discussion of these non-discretionary actions is meant to provide examples of the types of actions that may be necessary to satisfy the decree and is consistent with the historic range of Aspinall Unit operations. Thus, the finalization of the decree on December 31, 2008, did not significantly increase or change the impacts analyzed and described in the DEIS. Operations for the Black Canyon NP Water Right will be consistent with the Aspinall Unit Operation’s PBO.

See section 3.3.1.2C for further information.

**2.3.1.2 Other No Action Alternative Elements**

The No Action Alternative would include the following elements in addition to elements common to all alternatives discussed later: Aspinall Unit in place, regulating the river using current operating practices as a guide, and operating for authorized Aspinall Unit purposes under a full range of annual inflow conditions. These current operational practices include:

• Filling Blue Mesa Reservoir at the end of runoff season would be a goal. Full reservoir is 7519.4 feet; however, operations are designed to reach around 7517 feet (or less, dependent on forecast) which provides a safety factor for controlling the reservoir in case of sudden high inflow events due to thunderstorms or high rate of snowmelt.

• The reserved water right for the Black Canyon NP as discussed above.

• The type of spring peak that could be provided for endangered fish would be determined annually by

<sup>1</sup> Note: Reference to specific provisions of the Black Canyon Decree is NOT meant to interpret, imply or otherwise emphasize meaning from the Decree. Rather, its sole purpose is to provide a general context for the discussion and analysis of the Black Canyon Water Right in conjunction with the recommended fish flows as contemplated in this EIS.

**Comment [kmk2]:** Stakeholders have not yet reached consensus on proposal for subsequent sentence: “The examples of operational actions are consistent with the historical range of Aspinall Unit operations; thus, inclusion of the Black Canyon NP Water Right within the NEPA alternatives does not significantly change the impacts analyzed in this FEIS as compared to the Draft EIS.

STATE IN PROCESS OF REVIEW FOR ACCURACY

HYDROPOWER INTERESTS IN PROCESS OF REVIEWING THE IMPACTS IN THIS REGARD

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Reclamation with input received from the Aspinall Unit operations meetings. The peak would be planned to occur during the spring-early summer period. From January through April the goal would be to operate the Aspinall Unit to release all forecasted excess water through powerplants and to reduce future bypasses of powerplants while still giving priority to filling Blue Mesa Reservoir (flood control may occasionally require early bypasses). It is recognized that if the May 1 forecast proves to be higher than the actual inflow, there is some risk of not filling Blue Mesa Reservoir. Adjustments would also be made in the spring peak plan if the May 15 forecasted inflow changes significantly upward or downward.

Existing spring flood control operations would be continued by using discretion and being proactive to keep 14,000 cfs, or normally considerably less in the Gunnison River, above the Uncompahgre River confluence at Delta. The flood control manual requires that efforts be made to keep flows below 15,000 cfs.

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The Aspinall Unit would be operated in accordance with Colorado State Water Law including but not limited to bypassing inflow for downstream senior water rights as necessary.

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agencies and interested organizations as appropriate and as determined by regulation or policy in as timely manner as practical for advice on measures to minimize the effects; and formal consultation, if needed, will be conducted in accordance with Section 7 emergency consultation procedures, if the emergency requires ESA consultation.

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**2.3.6.4 Coordination of Operations**

Reclamation will continue to conduct Aspinall Unit operations meetings three times per year. The purpose of operation meetings-- held in January, April, and August-- is to share information between Reclamation and Aspinall Unit stakeholders regarding issues in the Gunnison River Basin related to the operation of the Aspinall Unit. The meetings are used to coordinate activities among agencies, water users, and other interested parties concerning the Gunnison River. These meetings allow interested parties meaningful input to operations planning. Reclamation considers the information exchange at these meetings in preparing operation plans for the Aspinall Unit. The projected operation of the Aspinall Unit is used by Reclamation in the development of the overall 24-month Study, a comprehensive planning model for the operation of Reclamation projects in the Upper and Lower Colorado River Basins, and includes operating plans for Glen Canyon, Flaming Gorge, and Navajo Units, as well as the Aspinall Unit. Operation of the Aspinall Unit considers projected hydrologic factors, authorized Aspinall Unit purposes, existing water rights, target elevations for reservoirs, implementing the preferred alternative for endangered fish, and other factors.

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As discussed previously, Reclamation will monitor inflow forecasts for operation planning beginning in January. Throughout this process, Reclamation will keep the NPS, US Fish and Wildlife Service, State of Colorado, Western Area Power Administration and others apprised of current operations; specifically on the ability of projected operations to allow coordination of the endangered fish flows and the Black Canyon NP Water Right to be met. Coordination will occur throughout the January to May period and formal notification will be made to NPS on April 1 concerning anticipated status of the potential of meeting the water right Water Right.

Reclamation will communicate with appropriate federal, state, local, non-governmental and non-profit agencies/organizations prior to scheduled operation meetings, or as needed, to gather information useful in developing proposed operation plans to be presented at the meetings.

2.3.6.5 Climate Change

In determining what future effects are reasonably certain to occur, Reclamation must determine the difference between future effects that are speculative, and effects that are likely to occur under the No Action Alternative as compared to the proposed actions. The hydrologic and water quality models

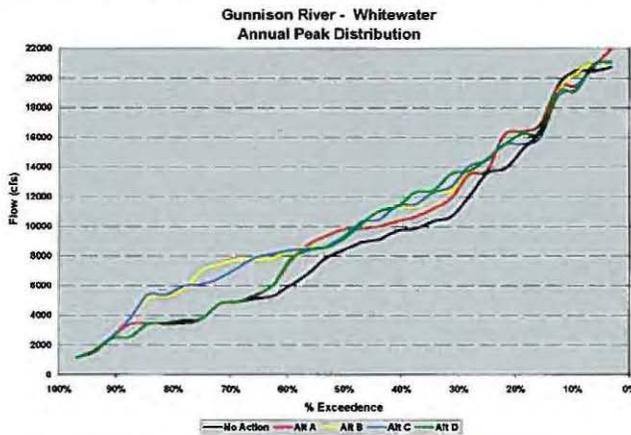
included variability designed to reflect conditions likely to occur in the future based on the period of record. However, future climatic conditions could be warmer, wetter, cooler, or drier than the modeled conditions.

There is some general consensus among the scientific community that the West will experience warmer temperatures, longer growing seasons, earlier runoff of snowmelt, and more precipitation occurring as rain rather than snow. Specific predictions for the

**Flows at Whitewater**—Figure 3.3-14 shows the annual peak flow distribution under each alternative at Whitewater. All alternatives result in higher peak flows than the No Action. Of particular note, in the 6,000 to 8,000 cfs range, Alternative B results in a higher occurrence than all other alternatives.

**Colorado River Flows**—Changes in flows in the Gunnison River would then affect the Colorado River flows between the Gunnison River confluence and Lake Powell. These changes are discussed under Special Status Species in Section 3.3.7.2A.

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Figure 3.3- 14—Annual Peak Distribution at Whitewater

**3.3.1.2C. Water Rights**

Each alternative under consideration will operate under the applicable water rights, contracts, law, interstate compacts, court decrees, and various rules, regulations, policies, and directives in place. ~~No specific Aspinall Unit storage releases are modeled for downstream senior water rights in any alternative.~~

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Each action alternative ~~sets assumes a minimum downstream release for in-stream base flow in the Black Canyon NP of generally 300 cfs, but can be higher based on the previous year's operations which consider factors such as the fall brown trout spawn or downstream senior water rights.~~

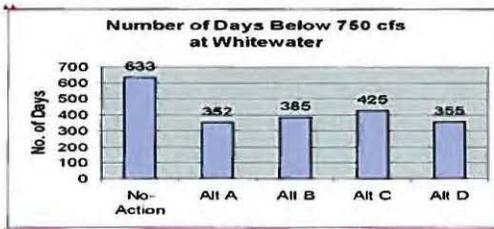
Base flow releases attempt to meet fish flow targets from the Flow Recommendations as measured at Whitewater and are provided under each of the action alternatives and can vary under different hydrologic conditions. In most years, a base flow of 1,050 cfs will be maintained at the Whitewater gage; however, these targets will be reduced in dry or moderately dry years.

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Table 2.3 2 in Chapter 2 previously summarized base flow targets. Additional releases will be made, ~~when sufficient water is available, and to the extent consistent with authorized purposes of the Aspinall Unit, to provide 100 cfs to the Redlands Fish Ladder as needed in April through September and 40 cfs for the Redlands Fish Screen from March through November, using storage water if necessary.~~

Comment [kmk3]: Stakeholders have not reached consensus on this edit.

The Redland's water rights senior to the Aspinall Unit total 750 cfs. Occurrences of flows below 750 cfs over the 31-year study period in the action alternative models, as shown in Figure 3.3.15, can be attributed to the lag between the time the model recognizes flows are dropping below 750 cfs at Whitewater and the time releases are adjusted and reach Whitewater. Actual operation should provide more foresight of flows dropping thus reducing the days below 750 cfs even further. By operating to the base flow targets, the days which the Redlands Diversion would potentially be calling are actually reduced over the period of record in each of the action alternatives as compared to the No Action. Therefore significant negative impacts on water rights are not expected under the action alternatives.



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Figure 3.3- 15—Number of Days Below 750 cfs at Whitewater over the 31-Year Study period.

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~~As projected in the DEISAs mentioned above, the Black Canyon NP Water Right is a senior downstream water right to the Aspinall Unit. As such, along with other senior water rights, it, and is a condition that is common to all alternatives. In accordance with state water law and the decree, when~~

the Secretary exercises the right, Reclamation must take necessary actions to meet the terms and conditions of the decree. The actions taken by Reclamation to meet the decree are non-discretionary under state water law, which is made applicable to Reclamation in this circumstance pursuant to the decrees for the Aspinall Unit and section 8 of the Reclamation Act of 1902. Table 3.3.8 below depicts those year types, based on historical record, when flows for meeting ESA needs downstream will also satisfy the decreed water right and identifies when

Reclamation will have to take further non-discretionary actions to satisfy the decree. The further discussion, for purposes of illustration, provides an example of the types of non-discretionary actions that may be taken in such circumstances, as long as such actions are consistent with the terms and conditions in the decree. The discussion of these non-discretionary actions is meant to provide examples of the types of actions that may be necessary to satisfy the decree and is consistent with the historic range of Aspinall operations. Thus, the finalization of the decree on December 31, 2008, did not significantly change the impacts analysis. Operations for the Black Canyon NP Water Right will be consistent with the Aspinall Unit Operation's PBO.

The one day peak flow under the Black Canyon NP Water Right is based on the May 1 forecasted inflow into Blue Mesa Reservoir for the April through July period and is determined by formulae in the decree. These peak flows are summarized below.

**Spring Peak for Range of Forecasted Inflows**

Blue Mesa Reservoir Forecasted April-July Inflow (af)	One-day peak flow in Black Canyon (cfs)
272,000 or less	1,010 or less
272,000-500,000	1,010-2,068
500,000-715,000	2,068-6,246
715,000-925,000	6,246-6,512
925,000-1,001,000	6,512-7,609
1,001,000-1,050,000	7,609-11,034
1,050,000-1,100,000	11,034-11,366
1,100,000-1,200,000	11,366-12,636
1,200,000-1,350,000	12,636-14,238
1,350,000-1,500,000	14,238-15,510

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In addition to the one day peak, the Black Canyon NP Water Right includes a minimum year-round direct flow right of 300 cfs and May 1 to July 25 shoulder flows flow right of 300-1,000 cfs, which is based on forecasted inflow.

Comment [kmk 4]: See Cmt. #1

However, alternatives in this FEIS have not been specifically modeled to include the right. The, but the right, as decreed, will be included in operational planning undertaken each year by Reclamation, as are other senior water rights on the river. As discussed in the DEIS, recommended flow regimes for endangered fish and the Black Canyon NP Water Right are generally compatible in that they both are based on hydrologic conditions and both provide for spring peak flows in the Gunnison River. With the Black Canyon NP Water Right assumed to be exercised and included in each of the alternatives, the incremental impacts of the action alternatives for the endangered fish flows are generally lessened, in comparison to the impacts portrayed in the DEIS. Endangered fish flows are targeted further downstream in critical habitat and also call for a longer duration of the peaks while the Black Canyon NP Water Right calls for a one day peak. Thus, impacts from operating to meet endangered fish peak flows are not significantly altered by meeting/accomplishing the one day Black

Canyon NP Water Right peak flow.

Subject to the decree, including the framework set forth in Section 2.3.1.1, *supra*, Table 3.3-8 below depicts those year types, based on analysis of the historical record, when flows for meeting ESA needs downstream will also satisfy the Black Canyon NP Water Right. Table 3.3-8 compares the model-derived peaks which occur in the Black Canyon under the preferred alternative with the Black Canyon NP Water Right peak flows. It further identifies those year types when further operational actions would be needed to accomplish both the recommended endangered fish flows and the Secretary's exercise of the Black Canyon NP Water Right. The accompanying discussion provides examples, for purposes of illustration only, of the types of operational actions that Reclamation may take in such circumstances.

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Modeled Year	Reserved BC Right Peak Flow per decree (cfs)	Preferred Alternative- Modeled BC Peak flows (cfs)	Impact on Decreed Peak (See Notation A and B below)
1975	7595	6839	A
1976	4188	4387	MetXXXXX
1977	829	806	Met
1978	6484	6051	A
1979	11034	6684	B
1980	11568	6253	B
1981	886	753	Met
1982	6433	6451	Met
1983	5864	10707	Met
1984	13437	10458	B
1985	6513	9063	Met
1986	7595	6782	A
1987	5635	6346	Met
1988	3273	2921	A
1989	2176	3314	Met
1990	1673	903	A
1991	4492	4720	Met
1992	3578	3330	A
1993	8922	7587	B
1994	3883	4167	Met
1995	6866	11871	Met
1996	6484	8475	Met
1997	7595	7808	Met
1998	5864	3843	A
1999	4492	5093	Met
2000	3730	6204	Met
2001	3426	5537	Met
2002	778	858	Met
2003	2740	2863	Met
2004	2359	2863	Met
2005	6312	1535	A

Comment [kmk6]: STAKEHOLDERS HAVE NOT YET REACHED CONSENSUS ON PROPOSAL FOR SUBSEQUENT SENTENCE AS FOLLOWS: "Each of these examples is within the historical range of Aspinall Unit operations. Furthermore, each of the operational actions described also is consistent with the Gunnison Basin PBO. Thus, their implementation does not significantly change the impacts analyzed in this FEIS."

STATE REVIEWING FOR ACCURACY

HYDROPOWER INTERESTS IN PROCESS OF REVIEWING THE IMPACTS IN THIS REGARD.

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Table 3.3-8—Black Canyon NP Water Right peak flow impact analysis

Notation A: In years identified with notation A, under actual operations, both the peak flow for model demonstrates that the Black Canyon NP Water Right and the peak flow target for the endangered fish as described in the preferred alternative will be met. As described in more detail later, releases from

Comment [kmk6]: Stakeholders agree "Met", should be revised to "N/A" = No additional operational action.

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the historical range of Aspinall Unit facilities operations will be adjusted to meet ensure that the one-day peak flow for the Black Canyon NP Water Right identified in the decree will be accomplished, although in some years operational adjustments are necessary. Adjustments will may involve operational changes that include including, but are not limited to, increased powerplant releases, timing releases with higher tributary inflows to the Aspinall Unit, or increased bypasses at Crystal or Morrow Point dams. All operational adjustments would be encompassed within operations already contemplated under alternatives being considered. Accordingly, as discussed more fully below, in 27 of the 31 years modeled in the study period, Aspinall Unit operations will ensure that both the one-day peak flow identified for the Black Canyon NP Water Right and the peak flow target for the endangered fish as described in the decree will be met, although in some years operational adjustments preferred alternative are necessary, accomplished. The model is based on historical hydrology. Future conditions may not replicate the modeled historical hydrology.

**Notation B:** In the four out of the 31 years of the study period with notation B, the model was able to achieve the peak flow targets for the endangered fish but did not meet the Black Canyon NP Water Right peak flow. In general, the model limited releases from the Aspinall Unit to avoid flooding at Delta due to high North Fork tributary flows. These high tributary flows provided most of the water that helped meet the endangered fish peak flow target and therefore higher releases from the Aspinall Unit into the Black Canyon were not required to meet the endangered fish peak flow target.

In these year types of years, when the Secretary exercises the Black Canyon NP Water Right peak flow can be met as decreed through operations of consistent with the terms and conditions of the decree and other applicable laws, operational adjustments at the Aspinall Unit will be required to accomplish the peak flows. Generally, when April-July inflows exceed 1,000,000 af, an operations plan to meet accomplish the Black Canyon NP Water Right peak can be developed. However, due to the increased risk of flooding in high water years, operational decisions may require the flexibility to make adjustments on a daily basis. To reduce the risk of flooding at Delta, Reclamation may look for opportunities to shift the operation to meet accomplish the Black Canyon NP Water Right peak flow (and/or the endangered fish peak flow target) to later in the spring/summer after high tributary flows have receded.

If the Black Canyon NP Water Right peak flow requires the usage  
Examples of the spillways at Blue Mesa Reservoir, the peak release operation may be returned to a period when water levels in Blue Mesa Reservoir potential adjustments are high enough to allow use of the spillways.

In those 12 years where the Black Canyon NP Water Right peak flows were not met as modeled, the paragraph listed below provide further detail, by year, as to the operational changes which would have been needed in order to achieve the Black Canyon NP Water Right peak flows, however it is important to note these modifications would take place with examples are based on "perfect knowledge" of past conditions using the results of the Riverware Hydrology model, and are being discussed solely to serve as examples of how operations could be modified in the future under similar conditions to meet the peak flow accomplish the Black Canyon Water Right peak flows. Future conditions may not replicate the modeled historical hydrology. Actual operational conditions will require adjustments to be made in real time under constantly changing conditions. Modeling of the study period has shown that during actual operations in high water years, there may be significant risks of flooding Delta and the Black Canyon decree requires Reclamation to give highest priority to flood control.

List of Sample Operational Adjustments:

- Bypassing water at Aspinall Unit facilities
- Use of the spillways at Aspinall Unit facilities
- Re-timing of Aspinall Unit storage operations to accomplish the peak flow with anticipated re-capture of any storage released within that water year.
- Timing of peak releases with higher side/tributary inflows above Crystal Dam to reduce the need to use spillways at Aspinall Unit facilities
- Timing the peak releases with peak runoff of the North Fork Gunnison in order to achieve one peak flow for both the Whitewater target flows and the Black Canyon
- In some cases it may be necessary to time peak releases from the Aspinall Unit to either before or after the peak runoff of the North Fork Gunnison River in order to meet the Whitewater target flows but avoid flooding in Delta

Yearly operation plans to meet the Black Canyon NP Water Right, endangered fish flow recommendations, and Unit purposes will be developed and coordinated through the established Aspinall Unit stakeholders' process. Wetter years will require an increased level of planning, analysis, and intense coordination and communication among all stakeholders.

1976

Under assumptions of the modeling process, the only option for meeting the Black Canyon Right peak flow is to use the spillway at Morrow Point to release an additional 800 cfs. In the modeled peak operation, Blue Mesa Reservoir releases are at the maximum capacity of the powerplant and bypass. Side inflows to the Aspinall Unit are not high enough at other times of runoff to justify retiming the peak release. This modified operation would not cause flooding at Delta under the modeled scenario.

1978

One option for meeting the Black Canyon Right peak flow is to utilize the spillway at Morrow Point to release an additional 500 cfs within the established drawdown limitations. During the modeled peak operation, Blue Mesa Reservoir releases are at the maximum capacity of the powerplant and bypass. Another option for meeting the peak flow is to time the peak release operation with higher side inflows to Crystal Reservoir. Side inflows are 600 cfs higher in the middle of June compared to the time of the modeled peak operation. If this additional inflow could be utilized, it would remove the necessity of using the spillway at Morrow Point Dam. This modified operation would not cause flooding at Delta under the modeled scenario.

1979

As modeled under the preferred alternative, the peak release operation for the endangered fish was timed to meet the high flows of the North Fork and set to occur on May 28th. Releases were reduced once the peak target of 14,350 cfs for endangered fish was reached at Whitewater. Releases were increased again to try and return to the 14,350 cfs duration flow target (10 days) at Whitewater. Releases are then reduced with the goal of maintaining the 9,070 cfs duration flows for 40 days.

The first issue in meeting the 11,034 cfs Black Canyon NP Water Right peak flow in this year is to avoid flooding at Delta. This requires moving the peak release operation to either before or after the runoff of the North Fork. Since the spillways at Blue Mesa Reservoir will be needed to some degree to completely meet the peak flow, the peak release operation is moved to after the North Fork runoff when the reservoir will be at a higher elevation.

With Blue Mesa Reservoir contents relatively low this year, the best option is to rely on the Morrow

Point spillway to reach the Black Canyon NP Water Right peak flow. The magnitude of the release from Morrow Point to meet the water right requires the use of Morrow Point Reservoir storage. This is because Blue Mesa Reservoir releases and side inflows are less than required for Morrow Point Reservoir releases. However, the ramping rate guidelines for Crystal releases can result in a violation of the drawdown rate criteria at Morrow Point Reservoir, because Blue Mesa Reservoir releases do not keep up with Morrow Point Reservoir release requirements. The maximum release from Morrow Point Reservoir that will not violate the drawdown rate criteria for the reservoir or the ramping rate guidelines is 10,156 cfs, assuming Morrow Point Reservoir is at an elevation of 7,158.5 ft before the start of the spill operation and Blue Mesa Reservoir is at full powerplant and bypass release with no spilling.

In order to avoid flooding at Delta and to make maximum benefit of the side inflows into the Aspinall Unit, the peak release is moved from May 28th to June 16th. Under this scenario the peak flow in the Black Canyon can be met, providing Blue Mesa Reservoir has reached an elevation high enough to provide some water through the spillways. This additional water beyond the maximum powerplant and bypass release is needed to keep Morrow Point Reservoir from drawing down too quickly. Flows at Delta are just under 15,000 cfs at this time. This operation would be extremely difficult to carry out under real-time conditions due to the "perfect foresight" required to accomplish the peak and avoid flooding at Delta.

Thus, the 1979 operation, as modeled using Riverware, resulted in a peak flow at Whitewater at the end of May, however this peak release did not meet the Black Canyon NP Water Right. Thus, a modified operation was developed that makes a peak release on June 16th which meets the Black Canyon NP Water Right.

#### 1080

Under the preferred alternative the modeled peak release for endangered fish was timed to coincide with high flows on the North Fork and set for May 24th. Releases were reduced once flows at Delta exceeded 15,000 cfs. North Fork flows receded by 2,000 cfs over two days allowing for the Aspinall Unit to go to full powerplant and bypass releases for duration flows in the lower Gunnison River.

The primary constraint to meeting the Black Canyon NP Water Right peak flow in this year is flooding at Delta. This requires moving the peak release operation to either before or after the runoff of the North Fork. It is estimated that if the peak was set for earlier in the year, it would have to occur sometime before the last week in April due to higher flows on the North Fork. Spillway releases at Blue Mesa Reservoir would not be possible this early in the year due to the water level elevation of the reservoir.

Water level elevation in Blue Mesa Reservoir is high enough by June 5th for the spillways to make a release that would meet the peak flow but flooding at Delta remains a problem for the next two weeks. The earliest peak date that does not cause flows at Delta to exceed 15,000 cfs is June 20th. Water levels in Blue Mesa Reservoir are high enough at this time that spillway releases can assist in meeting the full extent of the peak portion of the Black Canyon NP Water Right. Moving the spring peak operation from May 24th to June 20th coincides with the time when water levels in Blue Mesa Reservoir are high enough that spillway releases can assist in meeting the full extent of the peak portion of the Black Canyon NP Water Right.

#### 1084

In this year there is basically no opportunity to make an attempt at an operation to meet the Black Canyon NP Water Right peak flow. High runoff begins during the 2nd week of May and continues until the middle of June. Flooding issues at Delta remain a concern throughout May and June. Early in the runoff, releases from Blue Mesa Reservoir are reduced to zero and flows at Delta still exceed 15,000 cfs.

Blue Mesa Reservoir begins spilling on June 16th and continues through the first week of July.

The primary constraint to meeting the Black Canyon NP Water Right peak flow in this year is flooding at Delta. This requires moving the peak release operation to either before or after the runoff of the North Fork. Since Blue Mesa Reservoir was drawn down to handle the runoff volume, the spillways would not be available to assist in meeting the water right peak prior to the start of runoff. Therefore the Black Canyon peak could be moved to a time after the runoff when the water elevation in Blue Mesa Reservoir is high enough to permit the spillways to assist in meeting the Black Canyon Right peak flow.

The earliest peak date that does not cause flooding at Delta is July 21st. The spillways at Blue Mesa Reservoir can contribute enough water to prevent excessive drawdown at Morrow Point Reservoir during the peak release operation. The flow at Delta on July 21st is 14,888 cfs. During real-time operations it would be impossible to forecast flows on the North Fork and other tributaries to this level of accuracy, meaning a safer operation may require moving the peak to even later in the year to ensure there would be no further flooding at Delta. The peak target for endangered fish flows was previously met during the peak of the runoff by side inflows alone, with no additional release from Blue Mesa Reservoir. Since the Black Canyon NP Water Right was not met at this time, and an operation later in the year to meet the water right would create a second high water event along the length of the river downstream of the Aspinall Unit.

1986

The only option for meeting the Black Canyon NP Water Right peak flow is to use the spillway at Morrow Point to release an additional 800 cfs. During the modeled peak operation, Blue Mesa Reservoir releases are at the maximum capacity of the powerplant and bypass. Due to low water levels in Blue Mesa Reservoir, the spillways at Blue Mesa would not be able to contribute additional water until the middle of June. Side inflows to the Aspinall Unit are not high enough at other times of runoff to bother with retaining the peak release. This modified operation would not cause flooding at Delta under the modeled scenario.

1988

The Black Canyon NP Water Right peak flow could be met by increasing the bypass release at Crystal Dam by 400 cfs. Since this additional release would put Crystal Dam at the maximum capacity of the bypass release, it is possible that some water (up to 100 cfs) would need to be released over the spillway at Crystal to ensure the Black Canyon peak flow was met. Morrow Point Dam would need to increase powerplant releases to fill the reservoir at Crystal to initiate the spill. This would also require increasing the bypasses at Blue Mesa Dam by 400 cfs (or greater to fill Crystal Reservoir). Side inflows are too low this year to justify retaining the peak release operation.

1990

The Black Canyon NP Water Right peak flow could be met this year by bypassing up to 800 cfs at Crystal Dam, depending on the timing of the peak operation. Variations in the diversion rate of the Gunnison Tunnel would determine how much water needed to be bypassed at Crystal Dam.

1992

The Black Canyon NP Water Right peak flow could be met this year by spilling at Crystal Reservoir. Since Crystal Dam is at full powerplant and bypass release at the time of the modeled peak operation, the reservoir would need to spill 300 cfs to meet the Black Canyon peak flow. Releases would need to be increased at the powerplant at Morrow Point Dam to fill Crystal Reservoir to initiate the spill. It is possible that Blue Mesa Dam would need to release at full powerplant capacity and maybe even bypass up to 200 cfs during this modified peak release operation. Side inflows are too low this year to justify

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# STATE OF COLORADO

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## Colorado Water Conservation Board

### Department of Natural Resources

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SLG-02



April 1, 2011

Via E-Mail and U.S. Mail

Ms. Carol DeAngelis, Mr. Steve McCall  
 Bureau of Reclamation  
 Western Colorado Area Office  
 2764 Compass Drive, Suite 106  
 Grand Junction CO 81506

John W. Hickenlooper  
 Governor

Mike King  
 DNR Executive Director

Jennifer L. Gimbel  
 CWCB Director

Re: Colorado Water Conservation Board Comments on the *Preliminary Final Environmental Impact Statement: Aspinall Unit Operations*

Dear Ms. DeAngelis and Mr. McCall,

The Colorado Water Conservation Board (CWCB) appreciates the opportunity to comment on the *Preliminary Final Environmental Impact Statement: Aspinall Unit Operations* (the "PFEIS") released by the Bureau of Reclamation ("Reclamation") in December 2010. We understand that the comment period for this PFEIS ends April 1, 2011. As a cooperating agency dedicated to working with Reclamation to promote the effective operation of the Aspinall Unit, we ask that you please consider the comments provided herein when finalizing the NEPA compliance documentation for the Aspinall Unit.

**CWCB's Interests:** The CWCB is interested in Reclamation's operation of the Aspinall Unit for two primary reasons. First, we want to assure that Reclamation's operation of the Unit remains consistent with state water law and the state's administrative authority over the Gunnison River. Reclamation, through section 8 of the Reclamation Act of 1902, is subject to administration of the decrees for the Aspinall Unit and Black Canyon.

Second, the CWCB has a vital interest in maintaining the authorized purposes of the Aspinall Unit as the primary Colorado River Storage Project Act ("CRSPA") facility in Colorado. Storing water in the Aspinall Unit for beneficial consumptive use helps Colorado develop and utilize its Colorado River Compact apportionment and in the process provides additional benefits such as flood control. Decisions by Reclamation to adjust management of the Unit can potentially affect water supplies and compact compliance, change power production, boost or reduce recreation, and harm or enhance wildlife and other important natural resources. Accordingly, the CWCB remains interested in working closely with Reclamation, the Department of the Interior as a whole, and others to strike and maintain an appropriate balance between the exercise of state and federal authorities concerning the Aspinall Unit, and between authorized purposes of the Aspinall Unit and the retiming of releases to better meet the United

Page 2 of 7  
April 1, 2011

States Fish and Wildlife Service (“USFWS”) Endangered Fish Flow Recommendations for the Gunnison River.

**Overview of Comments:** The CWCB supports completion of NEPA compliance for operation of the Aspinall Unit to further ESA compliance consistent with the Upper Colorado River Recovery Implementation Program (“UCRRIP”) and consistent with the authorized purposes for the Unit. To assure the accuracy and integrity of the PFEIS, the CWCB recommends that Reclamation revise the PFEIS to:

- \* Revise the purpose and need statement to reflect what was carefully crafted in the DEIS and to remain consistent with the Federal Register Notice for this NEPA process, Vol. 74, No. 29, February 13, 2009);
- \* Provide more accurate descriptions of the National Park Service’s (“NPS”) Black Canyon Water Right as set forth in the Black Canyon Decree;
- \* Clarify coordination of Aspinall Unit operations with regard to the Black Canyon Water Right and the endangered fish flow recommendations for the Gunnison River;
- \* Include an understanding that storage releases from the Aspinall Unit to provide for endangered fish flows or additional flows at the Redlands Fish Ladder and Screen must be administrable under state water law and consistent with the authorized purposes for the Aspinall Unit;
- \* Revise the geographic scope to coincide with what has been analyzed under the PFEIS; and
- \* Consider and incorporate the proposed changes to excerpted text as developed by the CWCB in conjunction with other interested stakeholders within the state of Colorado. (See Attachment A);
- \* Address the CWCB’s additional comments to the specific text of the PFEIS.

**Revisions to the Purpose and Need:** The purpose and need statement in the PFEIS should directly follow the language provided in the DEIS and remain consistent with the Federal Register Notice for Aspinall Operations, Vol. 74, 29, February 13, 2009. The purpose and need statement provides the general framework and basis for conducting a NEPA analysis for the Aspinall Operations. It establishes why Reclamation is proposing re-operation of the Unit and identifies the scope and process for alternatives consideration, in-depth analysis, and ultimate decision making. Variations to the statement during the course of the NEPA analyses risks altering the scope of the process and necessitating different or additional analyses to coincide with the changed purposes and needs of the proposed action. SLG-02-01

The PFEIS’ purpose and need statement reflects a departure from the carefully crafted statement provided in the DEIS. It overlooks the importance of recognizing both the need to maintain and meet the congressionally authorized purposes for the Aspinall Unit. It further asserts for the first

Page 3 of 7  
April 1, 2011

time that Aspinall Unit operations “*will be*” modified to avoid jeopardy of endangered fish and adverse modification of habitat without qualifying “to the extent possible” or recognizing the concurrent goal of maintaining the congressionally authorized purposes for the unit. *See e.g.*, PFEIS at 1-2. As such, the PFEIS indicates a change from the DEIS and evidences an inconsistency with the Federal Register Notice for Aspinall Operations, Vol. 74, 29, February 13, 2009 that may undermine the integrity of the PFEIS and risk the need to conduct additional impact analyses.

**Black Canyon Decree and NPS Water Right:** The PFEIS includes new descriptions and discussions of the NPS Black Canyon Water Right based on the recently finalized Black Canyon Decree. The CWCB appreciates the need to expand on the DEIS to include this right in each of the alternatives so as to inform the impact analyses associated with operating Aspinall Unit for endangered fish flows. However, Reclamation’s description of the right in various sections of the PFEIS, *See e.g.*, ES-6, 1-19, 2-2 to 2-4, 3-35 to 3-38, presents concerns for the CWCB for the reasons that follow:

SLG-02-02

- 1) The description does not fully consider the state of Colorado’s appropriate role regarding administration on the Gunnison River. Reclamation is subject to state administration of the decrees for the Aspinall Unit and the Black Canyon through section 8 of the Reclamation Act of 1902.
- 2) The description overlooks key nuances to the Black Canyon Decree, including, but not limited to:
  - \* The right, as quantified, is subordinated to all water rights with adjudicated priorities senior to the Aspinall Unit water rights. Without clarification, therefore, it is misleading to describe the water right as having a “March 2, 1933 priority date.” PFEIS at 1-19;
  - \* The peak and shoulder flows of the NPS Water Right are not separate from and in addition to the year-round flow right as set forth in the Decree. Rather, the year-round flow is subsumed and made a part of the peak and shoulder flows. Accordingly, it is inaccurate to describe the right as including “a year-round minimum flow *and* variable peak and shoulder flow (sic) for each year.” *See e.g.*, PFEIS at 1-19;
  - \* As decreed, the water right is a direct-flow right, not a storage right. As such, the year-round, peak or shoulder flows available to “meet the right” do not provide for a minimum or guaranteed flow amounts. *See* PFEIS at 2-2, 2-3, 3-24, 3-36. Rather, such flows are dependent on annual hydrology and the direct flows available for each year.
  - \* The existence of the NPS Water Right does not result in a “call.” Rather, it depends on both physically available direct inflows and the discretion of the Secretary to exercise the right. *See* PFEIS at 1-19, 1-21.

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 April 1, 2011

- \* The Decree does not authorize releases from the Aspinall Unit under the NPS Water Right to provide for fish flows at the Redlands Ladder or Fish Screen. *See* PFEIS at 3-35 (describing base flow targets and additional releases, including storage releases, for the Redlands Fish Ladder as a component of the Water Rights Section of the impacts analyses); SLG-02-02
- \* Discussion of Reclamation’s non-discretionary obligations to meet the Decree, *see e.g.*, PFEIS at 1-19, 2-3,3-35,3-36, implies a determination of what “meeting the decree” means, despite it being beyond the purview of this NEPA process or the Department of the Interior to determine the Decree’s appropriate interpretation;
- \* Without further clarification, the description’s discussion of what Reclamation must do to accomplish peak flows to satisfy both the endangered fish flow recommendations and the NP Water Right under certain hydrologic conditions, *see* PFEIS at 3-36 to 3-37, presumes a Secretarial decision to require multiple peak flow releases from the Aspinall Unit regardless of express consultation and consideration provisions set forth in the Black Canyon Decree.

**Coordination of the NPS Black Canyon Water Right and Endangered Fish Flows:** The PFEIS identifies actions that Reclamation may have to take at Aspinall to accomplish both the NPS Water Right and endangered fish flows under certain hydrologic conditions. *See* PFEIS at 3-36 to 3-42. Although the CWCB recognizes that Reclamation must assess impacts associated with any possible actions taken to accomplish the fish flows under each of the alternatives, we disagree with some of the implications that result from the description provided therein. SLG-02-03

First, the description overlooks the Secretary’s discretionary authority to exercise the NPS Water Right. In so doing, it implies the Secretary of the Interior must authorize releases to accomplish both the NPS Water Right and the fish flow recommendations in all water years. This is simply not true. The Secretary has the discretion under the Black Canyon Decree to decide whether or not to exercise the NPS Water Right based on consideration of a number of factors, including but not limited to structural capacity of upstream dams and potential downstream flooding, among other river management issues. The Decree also recognizes the NPS Water Right will be coordinated, “to the extent practicable,” with the ESA endangered fish flows to provide for a single peak flow. A Secretarial decision not to accomplish a peak flow under the NPS Water Right due to flooding or for other reasons is consistent with the terms and conditions of the Black Canyon Decree.

Second, the hypothetical scenarios inserted in the PFEIS to describe how the NPS Water Right could be implemented under historical, hydrologic year types should be revised and/or deleted. As stated, these examples provide no information relevant to analyzing the impacts of re-operating the Aspinall Unit to implement the endangered fish flow recommendations. The NPS Water Right is common to all alternatives and falls outside the scope of this NEPA process. Nonetheless, if Reclamation finds it necessary to include hypothetical scenarios, it should limit them to those that were modeled to determine the impacts analyzed.

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**Use of Storage:** Without further clarification, the CWCB cannot support Reclamation's reliance on safe yield storage from Blue Mesa Reservoir to accomplish elements of the proposed action. Reclamation contemplates "use of storage" in discussing the alternatives for downstream endangered fish habitat. *See e.g.*, PFEIS at 2-7, 3-10, 3-35. In particular, Reclamation relies on safe yield storage from Blue Mesa Reservoir to generate a spring peak flow or "additional flows" under certain circumstances. *Id.* However, Reclamation does not identify any water right or decreed place of use to justify release of such storage under state water law. Without an adjudicated or contract water right for fish protection purposes downstream of Aspinall, Reclamation's reliance on "safe yield storage" to accomplish elements of the proposed action appears to be inadministrable under state water law. SLG-02-04

For example, the PFEIS explains at 3-35: "Additional releases will be made to provide 100 cfs to the Redlands Fish Ladder . . . and 40 cfs . . . for the Redlands Fish Screen . . . , using storage water if necessary." Without clarification, the CWCB cannot discern the water right or decreed point of use that would enable Colorado's State and Division Engineers to shepherd the released storage water to the Redlands area. Furthermore, it remains unclear to CWCB whether Reclamation has taken transit losses into consideration in contemplating these safe yield storage releases. Finally, the CWCB needs to understand whether and to what extent "use of safe yield storage" can be accomplished without impacting current water users on the River – i.e., will water users have to provide augmentation water to assure the released storage water actually reaches the Redlands structures? Until Reclamation can provide such clarifications, the CWCB cannot determine whether it can support use of safe yield storage releases as part of the Aspinall Unit operations.

**Geographic Scope:** The geographic scope of the PFEIS has increased in size to include the downstream Colorado River. The impacts analyses, however, only address the effects of Aspinall operations within the Gunnison River Basin. *See* PFEIS at 2-2 (regarding modeling). The CWCB recommends revising the geographic scope to coincide with what was analyzed during the NEPA process. In the alternative, Reclamation should explain the basis for expanding the geographic scope and clarify how the NEPA analyses remain applicable. SLG-02-05

**Proposed Language:** The CWCB coordinated with other interested Colorado stakeholders to develop proposed language as provided in Attachment A. This language focuses primarily on descriptions regarding the Black Canyon Decree and NPS Water Right, Coordination of the NPS Water Right and endangered fish flows, and Use of Storage. Specifically, the language edits the excerpts from the PFEIS for discussion among the Cooperating Agencies and Reclamation. We ask that Reclamation consider and adopt the edits as proposed in Attachment A. There are, however, three outstanding issues within the language that require additional time and coordination before the stakeholders reach consensus. (See CWCB's comments as incorporated into Attachment A). The CWCB will continue to work with the Colorado stakeholder group and the Department of the Interior to reach consensus on these outstanding issues. SLG-02-06

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**Specific Textual Comments:** SLG-02-07

In addition to the proposed language, the Colorado stakeholders recognized that some, if not all, interested parties would provide comments to the PFEIS as distributed to the Cooperating Agencies. Below are the CWCB’s specific textual comments to the PFEIS as a whole:

No.	Page	Comments
1	ES-1	Incorporate the footnote regarding authorized purposes into the body of the text.
2	ES-2	Please clarify the authority for relying on “using storage when necessary” to accomplish spring peaks and duration flows. See comments regarding “use of storage” above.
3	ES-6	It is remains unclear how the state standard for SE is relevant for purposes of ESA.
4		Revise “the right calls for a spring peak” to “the right provides for a spring peak.” See comments regarding Black Canyon Decree and NPS Water Right above.
5		Revise language regarding the NPS Water Right to correspond with proposed edits in Attachment A.
6	1-1	Clarify the purpose for changing “maintain congressionally authorized purposes” to “meet congressionally authorized purposes.”
7	1-2	Clarify the basis for identifying the geographic scope as including “the downstream Colorado River.” See comment regarding Geographic Scope above.
8		See comments regarding Purpose and Need above.
9	1-5, 1-7	The newly inserted sentences regarding the Black Canyon Water Right are out of place and unnecessary to the discussion in these paragraphs. Recommend moving to end of section on page 1-8
10	1-17	Please verify that the table with Flow Recommendations contemplates the negotiated qualifiers regarding targets, maximums and durations.
11	1-19	Revise language regarding NPS Water right to correspond with proposed edits in Attachment A. See comments regarding Black Canyon Decree and NPS Water Right, above.
12	1-20	Revise language to correspond with proposed edits in Attachment A.
13	1-21	The selenium standard for fish purposes remains uncertain.
14	2-1	The list of non-discretionary operations should be all inclusive.
15	2-2	Revise “the right generally calls for a one-day spring peak” to “the right generally provides for a one day spring peak. . .” The right does not call for anything. Revise “and a 300 cfs minimum flow” to “and a 300 cfs year-round flow.” See comments regarding the Black Canyon Decree and NPS Water Right above.
16	2-3, 2-4	Revise language to correspond with proposed edits in Attachment A.
17	2-7	See comment regarding “use of storage” above.
18	2-14	Uncertainties regarding selenium should be reinserted.
19	2-15 2-16	Revise language to correspond with proposed edits in Attachment A.
20	2-18	The “minimum flow” refers to the year-round, non-peak and non-shoulder flows as a quantified portion of the NPS Water Right. There is no guarantee that these flows will exist and no obligation to provide release of stored safe-yield water to produce this amount. . .” See comments regarding the Black Canyon Decree and NPS Water Right above.
21	2-24	The table should note direct flows are assumed to available for the NPS Water Right.
22	2-27	Revise “This is because both now call for an increased . . .” to “this is because both now provide for an increased . . .” Also the modeling for the NPS Water Right should note that it is assumed direct flows are available to accomplish the water right. . .” See comments regarding the Black Canyon Decree and NPS Water Right above.
23	3-1	Revise language to correspond with proposed edits in Attachment A. See comments

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 April 1, 2011

		regarding Black Canyon Decree and NPS Water Right above.
24	3-5	Under "Scope" why was the scope changed to include the Colorado River? See comment regarding Geographic Scope above.
25	3-9	Why change from "passed through" to "storage released from?"
26	3-10	See comment regarding "use of storage" above.
29	3-17	Revise "This right calls for a spring peak ..." to "This right provides for a spring peak"
30	3-20	There remains uncertainty in the applicability of state selenium standards for human drinking water to address endangered fish concerns.
30	2-38 3-29	Make format of tables consistent; correct typo in last table on 3-29 – i.e., change "Ave" to "Avg."
31	3-30	What is the "recommended flow regime for the reserved right?"
32	3-34 to 3-42	Revise language to correspond with proposed edits in Attachment A. See comments regarding the Black Canyon Decree and NPS Water Right, Coordination between endangered fish flows and NPS Water Rights and Use of Storage above.
33	3-45	What is the basis for the claimed source of selenium?
34	3-55	Why change from CRSPA obligations to contract obligations?
35	3-64	What is the basis for presuming that the No Action has the same amount of release?
36	3-66 3-69 3-74 3-83 3-94 3-133 3-147	It would be helpful to clarify why the NPS Water Right alters the No Action alternative.

**Reservation of Rights:** In the course of reviewing the material included in the PFEIS, the CWCB may have overlooked other factual or legal assertions that impact Colorado. CWCB's failure to raise such concerns in these comments, or to correct what it believes to be inaccurate assertions, shall not be construed as an admission with respect to any factual or legal issue, or a waiver of any rights for the purposes of any future legal, administrative or other proceeding.

The CWCB thanks Reclamation for the opportunity to provide these comments. We remain committed to working with Reclamation and other interested stakeholders to finalize NEPA compliance and assure the successful operation of the Aspinall Unit for years to come. In this effort, we ask that Reclamation please consider the above comments and revise the PFEIS to address them.



\_\_\_\_\_  
 Jennifer Gimbel  
 Director  
 Colorado Water Conservation Board

cc: Anne Castle, Assistant Secretary, Water and Science, U.S. Department of Interior  
 Michael L. Connor, Commissioner, U.S. Bureau of Reclamation  
 Larry Walkoviak, Regional Director, U.S. Bureau of Reclamation  
 John Wessels, Regional Director, National Park Service

returning the peak release operation—

1003—

Under the preferred alternative as modeled, the operation to meet endangered fish peak flow targets at Whitewater would have centered a peak release on May 17th. Due to the magnitude of tributary flows, no additional water from the Aspinall Unit was needed to meet the peak targets at Whitewater. The peak flow in the Black Canyon actually occurred near the middle of June when Aspinall Unit releases increased to manage high water levels in Blue Mesa Reservoir—

Again the primary constraint to achieving the peak flow of the Black Canyon NP Water Right in this year is the flooding issue at Delta. The earliest date the peak can occur without flooding Delta is June 4th. Water level elevations at Blue Mesa Reservoir are also high enough to permit releases from the spillway that can assist in meeting the Black Canyon Right peak flow and prevent Morrow Point Reservoir from violating the drawdown rate criteria during the peak operation—

1008—

The Black Canyon NP Water Right peak flow could be met this year by increasing the spill at Crystal Reservoir by 2,100 cfs. In order to do this, Morrow Point powerplant releases would have to increase to full powerplant capacity and 1,100 cfs would need to be bypassed at Morrow Point Dam. Likewise Blue Mesa Powerplant bypasses would have to be increased by 2,100 cfs to minimize drawdown of Morrow Point Reservoir. Side inflows are not significantly higher at other times during the runoff to make returning the peak release operation worthwhile—

2005—

Meeting the Black Canyon NP Water Right peak flow would require full powerplant and bypass releases from Crystal Dam as well as spilling the reservoir. Total release from Crystal Reservoir would have to exceed 7,100 cfs. In order to reach this release rate, Morrow Point Dam would have to release at full powerplant and bypass capacity. Depending on the side inflows to Crystal Reservoir it is possible that the spillways at Morrow Point Dam would be needed to achieve this total release rate at Crystal Dam. Likewise Blue Mesa Dam would also need to release at full powerplant and bypass capacity. Since the water level in Blue Mesa Reservoir is low enough that spillway releases are not possible, there would be some level of drawdown at Morrow Point Reservoir. If the peak release operation was moved to the middle of June, water levels in Blue Mesa Reservoir would be high enough to utilize the spillways. This modified operation would not cause flooding at Delta under the modeled scenario, even if the peak release operation coincided with the high tributary flows of the North Fork—

### 3.3.1.2D Water Quality—

**Upper Gunnison and Aspinall Unit Water Quality Impacts**— In general, water quality in Upper Gunnison basin will not be affected by any of the proposed alternatives.—

### 3.3.7.2 Impacts—

#### 3.3.7.2A General—

The Service has prepared a PRO on the proposed action and this report should be referred to for more information on impacts to the endangered fish (see Appendix B in Volume II). The opinions conclusion stated:

“After reviewing the current status of the Colorado pikeminnow, humpback chub, bonytail, and

razorback sucker, the environmental baseline for the action area, the effects of the proposed action (including the proposed operation of the Aspinall Unit, the new and historic water depletions and the mandatory conservation measures), and the cumulative effects. It is the Service's biological opinion that the proposed action as described in this biological opinion is not likely to jeopardize the continued existence of endangered fish and is not likely to destroy or adversely modify designated critical habitat.

The implementation of the proposed action is expected to result in overall beneficial effects to the species and critical habitat in the Gunnison and Colorado Rivers downstream from the Aspinall Unit and induce a positive species response due to a more natural hydrologic regime and an improvement in water quality through the Selenium Management Program. The basis for the determination of no jeopardy and no adverse modification of critical habitat is summarized below. If the conservation measures are not implemented within the proposed timeframes, the effects to critical habitat will likely result in adverse modification to critical habitat that appreciably diminishes the value of critical habitat for both survival and recovery.

The action alternatives would have varying degrees of beneficial effects on the four listed fish and their critical habitat within the action area when compared to No Action. Benefits result from the increased frequency, magnitude, and duration of spring peak flows and protection of base flows. The flow changes would assist in improving and maintaining habitat conditions for spawning and recruitment and for maintenance of adult pikeminnow and razorback suckers. For Colorado pikeminnow (and probably other endangered fish), Osmundson and Burnham (1998) reported that the success of recovery efforts will largely depend on providing environmental conditions that increase reproductive success and survival of early life stages. In general, the implementation of a flow regime that more closely resembles a natural flow regime of the river would provide benefits to the endangered fish and their habitat.

Figure 3.3-33 and Table 3.3-23 summarize a comparison of peak flows and Table 3.3-24 presents a comparison of the frequency of selected flows in critical habitat. As discussed, flows adequate to move sediment through the Gunnison River system are essential to maintaining and improving critical habitat for the listed fishes. Reaching flows that are half bank full or bank full is considered key in the sediment movement. Goals of 8,070 and 14,350 cfs were established in the Flow Recommendations. At a flow of 8,070 cfs one half (27) of the river cross sections identified by Patrick et al. (1999) reach half-

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STATE OF COLORADO

John W. Hickenlooper, Governor  
DEPARTMENT OF NATURAL RESOURCES  
**DIVISION OF WILDLIFE**  
AN EQUAL OPPORTUNITY EMPLOYER  
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March 31, 2011

SLG-03

Mr. Ed Warner  
Bureau of Reclamation  
Western Colorado Area Office  
2764 Compass Drive, Suite 106  
Grand Junction CO 81506

SUBJECT: Comments on Preliminary Draft Final EIS – Aspinall Project Re-Operations

Dear Mr. Warner:

In early December, 2010, the Bureau of Reclamation (the Bureau) provided to the cooperating agencies, including the Colorado Division of Wildlife (DOW), a Preliminary Draft Final Environmental Impact Statement for the Reoperation of the Aspinall Unit. The DOW appreciates the opportunity to review and comment upon the Preliminary Final EIS for the Aspinall Unit. In April, 2009, DOW submitted comments on the Draft EIS for this project wherein we highlighted a number of issues. It appears that some of these concerns remain unaddressed. Therefore, we refer the Bureau back to those earlier comments. DOW submits the following comments and observations:

SLG-03-01

1. In general, DOW supports the selected preferred alternative – Alternative B (Fish Peaks with Duration), because it strikes an appropriate balance between native fish habitat protection and sport fishery protection in Blue Mesa Reservoir and in the Gunnison Gorge downstream. In particular:
  - a. Although the preferred alternative runs the risk of having some impacts to the Gunnison Gorge sport fishery due to the timing of peak flows with respect to the timing of trout emergence, we are of the opinion that these risks are (1) acceptable, and (2) can be mitigated by the Bureau's adoption of the suggestions we make regarding the Dallas Project's operations (below).
  - b. Alternative B maximizes the potential benefits to native fish habitats in both the Gunnison River and the Colorado River downstream of the Gunnison River confluence.
  - c. Alternative B also protects the designated Gold Medal trout fishery of the Gorge by identifying Crystal Reservoir's importance as a re-regulating reservoir in overall Aspinall Unit operations. Crystal Reservoir's operation minimizes flow fluctuations in the Gorge thus dampening the effects of power generation operations at the two upstream reservoirs (Blue Mesa Reservoir and Morrow Point Reservoir).
  - d. DOW is also pleased that the document incorporates ramping rate limitations in the

DEPARTMENT OF NATURAL RESOURCES, Mike King, Executive Director  
WILDLIFE COMMISSION, Tim Glenn, Chair • Robert Streeter, Vice Chair • Mark Smith, Secretary  
Members, David R. Brougham • Dennis Buechler • Dorothea Farris • Allan Jones • John Singletary • Dean Wingfield  
Ex Officio Members, Mike King and John Salazar

- e. Preferred alternative that will protect emerging trout fry (daily flow increases not to exceed 25% or 500 cfs, and daily flow decreases not to exceed 15% or 400 cfs). These ramping rates are critically important to wild trout reproduction and recruitment in the Gunnison River.
  - f. We also support the inclusion of the 300 cfs minimum flow in the preferred alternative as an important measure to protect the Gunnison River's trout fishery.
2. DOW remains concerned about the EIS's reliance upon the Programmatic Biological Opinion (PBO) for Aspinall Reoperation, the Dallas Creek Project, and the Dolores Project. The PBO does not adequately address either the native fish issues relating to the Dolores Project or the sport fish issues regarding the Dallas Project. Specifically:

SLG-03-02

**Dallas Creek Project:**

- a. In our 2009 comment letter on the Draft EIS, DOW raised several concerns with respect to the operation of Ridgeway Reservoir. In that comment letter we stated that, "In the event that the Bureau of Reclamation is looking for mitigation measures to offset sportfish impacts associated with Aspinall re-operation, DOW has a suggestion relating to Ridgeway." As stated above, we believe that there are some potential sportfish impacts as a result of the timing of peak flow discharges from Aspinall to meet the endangered fish flow recommendations. DOW refers Bureau staff to our 2009 letter for information and suggestions regarding the operation of Ridgeway. We remain of the belief that these minor changes to the operation of Ridgeway are within the scope of the EIS and would not affect Dallas Creek Project yield. We would be pleased if we could have the opportunity to address these issues in more detail with Bureau staff and water users associated with the Dallas Creek Project prior to a Record of Decision (ROD) in this matter.

SLG-03-03

**Dolores Project:**

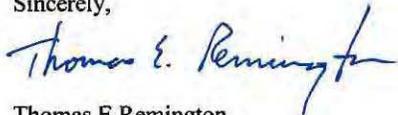
- b. Both the PBO and the EIS place a great deal of reliance upon stakeholder processes to address issues relating to the Dolores Project. DOW is committed to and has remained engaged in these stakeholder processes to improve conditions in the Dolores River for native fish. Nevertheless, the native fish continue to decline, the volume of fish pool water has not met the goal specified in the 1996 Environmental Assessment, and efforts to buy or lease water have not progressed. We are concerned about the reliance upon a non-binding stakeholder processes in both the EIS and the PBO without specific performance goals. We believe that since DOW, the Bureau, and the Fish and Wildlife Service are all signatories to the Range-wide Conservation Agreement for the three species (2006), the ROD on this EIS should incorporate metric(s) for progress toward mitigating or reversing the on-going impact of the Dolores Project's operation on the hydrology and biology of the Dolores River basin.
- c. Following submission of DOW's 2009 comment letter, DOW and the Department of Natural Resources collaborated on an issue and strategy document on the Dolores River (September, 2010; copy attached) that we believe would usefully inform the Bureau's examination of these Dolores River basin issues. This document makes five main recommendations, which we believe apply directly to the implementation of the PBO:
  - i. Enlarge the McPhee Reservoir "fish pool" to the 36,500 acre foot level that was identified in the 1996 Environmental Assessment.
  - ii. Improvement of McPhee Reservoir operations to specifically benefit native fish.
  - iii. Adoption of adaptive spill management principles with specific management oversight by the Dolores Biological Team.

- iv. Establish instream flow protections within the Dolores River system, to protect existing native fish populations and their habitat, and,
- v. Secure sources of water (either by purchase or lease) for the McPhee Reservoir fish pool.

The DOW believes that these recommendations should become results-oriented metrics for stakeholder progress. We look forward to continuing our discussions with the Bureau and Dolores Project representatives regarding the advantages of integrating these recommendations into the ROD for the Aspinall EIS.

Once again, the DOW appreciates the opportunity to review and comment upon the Final EIS prior to its finalization. A number of items are identified in this letter with specific invitations for further collaboration between the relevant water users, Bureau staff and DOW staff. I am hopeful that appropriate solutions can be found (prior to the issuance of a ROD) through this continued collaboration. If you have any questions regarding this matter, please contact the DOW's Water Resources Unit Manager, Jay Skinner at 303-291-7260.

Sincerely,



Thomas E Remington  
Director

## **DOLORES RIVER NATIVE FISH HABITAT RECOMMENDATIONS AND ALTERNATIVES TO WILD AND SCENIC DESIGNATION**

Prepared by:  
Colorado Department of Natural Resources  
Southwest Aquatic Section-DOW  
Southwest Wildlife Conservation-DOW  
DOW Water Resources Unit

September 24, 2010



### **INTRODUCTION**

The native warmwater fish of the Dolores River in southwest Colorado have declined in range, abundance, and species diversity. One native fish species, Colorado pikeminnow, has been extirpated from the river, and was last documented in the river in Colorado in 1973. Three other native fish species; flannelmouth sucker, bluehead sucker and roundtail chub now occur in only 63% of historically occupied habitat in the main stem river. Historically, these three fish were present in the river upstream to the town of Dolores and today are considered rare above Disappointment Creek (see map). The primary cause of native fish declines in the Dolores River is habitat loss associated with trans-basin diversion of water, main stem river impoundment, and the alteration of downstream hydrograph and habitat associated with the impoundment.

Recently, with the Bureau of Land Management updating resource management plans, stream segments are being reviewed for designation under the Wild and Scenic Rivers Act (WSRA). Several segments of the Dolores have been identified as suitable by the BLM and several others have been found eligible, with the suitability decision upcoming. One of the Outstandingly Remarkable Values (ORV) being considered in the eligibility and suitability phases of the reviews concerns native fish. The DOW has supported suitability in one segment of the Dolores but generally has only participated in the stakeholder groups and provided input specifically on the fish ORV's and management alternatives to protect them. Suitability and designation under the WSRA would provide enhanced protections to native and sport fish resources as well as other wildlife species dependent upon the river and riparian ecosystems (e.g. river otters, peregrine falcons, bighorn sheep). Designation could also bring with it a Federal Reserved Water Right to protect ORV's identified in the suitability process. It is unclear if a reserved water right would add any water to the stream but it would possibly protect the river from any future depletion. A federal water right may have significant benefits for native fish in the Dolores River, but is objectionable to certain state interests and many in the local water communities. Because of these objections, interested parties to WSRA designation in Colorado have initiated discussions regarding the issues; several stakeholder planning efforts have been underway to explore management

alternatives to Wild and Scenic River designation. The DOW has participated in these efforts, but believes the alternatives currently being proposed in the stakeholder groups do not sufficiently protect the native fish ORV. The objective of this document is to present alternatives to Wild and Scenic designation that would sufficiently protect the native fish in the Dolores in lieu of a federal water right.

***Background***

The two largest historical events that affect flows in the Dolores River were the 1886 trans-basin water diversion below the town of Dolores and the 1983 construction of the Bureau of Reclamation's Dolores Project and McPhee Reservoir. The trans-basin diversion removed late summer perennial flows from the river downstream of the diversion point. Alternatively, the development of McPhee returned perennial flows to the river below the reservoir but allowed for capture of spring peak flows, substantially reducing the total annual volume of water flowing downstream. This has greatly altered the fluvial geomorphological processes of the river and had large impacts on native fish habitat. These habitat changes have resulted in the conversion of lotic to lentic habitat (fast moving water to slow moving water), alteration of aquatic environmental parameters including temporal and seasonal fluctuations of temperature, nutrient, and hydrograph patterns, and the restriction of fish migration to previously occupied habitat above the impoundment.

The impacts to the downstream river environment were addressed by several key federal documents including the 1977 Environmental Impact Statement and Definite Plan Report (EIS/DPR) for the construction of the Dolores Project and the 1996 Environmental Assessment (EA) for the reoperation of the project. The 1977 EIS/DPR committed to establishing 11 miles of "good quality cold water sport fishery" in the Dolores River downstream of the Project. However, due to water appropriations, contractual obligations, and operational management practices, this commitment has not been met. The river currently supports trout biomass around 26 kg/ha or 38% of the Gold Medal biomass standard. The 1996 EA attempted to address deficiencies in the mitigation of downstream impacts by establishing a goal of a fish pool of 36,500 acre feet of water available for downstream release. The concept behind this change in operation was to provide state and federal biologists with some operational flexibility (seasonal base flow management to address habitat utilization issues as well as summer season temperature and dissolved oxygen issues) over the previous strategy which was a static dry-normal-wet year flow schedule. The realization of a 36,500 acre foot pool has not occurred and total downstream releases (fish pool and supplemental non-Project sources) currently total 31,798 acre feet, 87% of the identified fish pool target.

***Status of Fish Populations below McPhee Dam***

The Dolores River from McPhee Dam to the San Miguel River confluence has one of the most depauperate native fish populations of any large river in western Colorado. The river supports less than 1 kg/ha of native fish compared to 100-400 kg/ha in other rivers, and the range of native fish has contracted significantly over the last twenty-seven years. The native fish are of smaller average size, smaller size at maturity and there is poor age class representation compared to other similarly sized rivers. Sportfish populations in this reach of the river have been impacted as well. Trout populations below McPhee peaked above Gold Medal biomass in 1993 and have deteriorated dramatically since. The decline of native and coldwater sport fish populations in the Dolores River is due to a lack of suitable habitat as a result of inadequate flows, non-native fish interactions (primarily smallmouth

bass, black bullhead and channel catfish) and water quality issues. Habitat modeling for both native fish and coldwater sport fish indicates that minimum instream flows necessary to support viable fish populations are not being met. The Colorado Water Conservation Board (CWCB) retains a 78 cfs instream flow (ISF) appropriation from McPhee Dam to the confluence of the San Miguel River, a distance of approximately 105 river miles, which was determined to be the biological minimum flow necessary to protect the river environment to a reasonable degree. The instream flow water right is junior to the Montezuma Valley Irrigation District and Dolores Project water rights and is typically not met for most of the year. For example, between September 6, 2000 and April 1, 2005, the ISF was met for only 9 days. The current downstream allocation from McPhee Dam (31,798 AF) is about 46% of the pool required to meet the 78 cfs ISF appropriation year-round. Current reservoir operations annually produce base flows of less than 30 cfs and habitat modeling indicates this flow regime supports less than 42% of potential trout habitat and less than 5% of potential native fish habitat.

#### ***Status of Fish Populations below the San Miguel River Confluence***

The Dolores River below the San Miguel River confluence supports more abundant native fish populations than upriver. Good densities of the three native fish exist and the population size structure improves considerably. Above the San Miguel River confluence, routine fish sampling efforts for the three native fish species reveal 14 fish per mile, while below the confluence numbers increase to 64 fish per mile. Although the loss of one major fish species, the Colorado pikeminnow, is significant, generally the native fish community in this reach of river is intact. The character of the Dolores River changes dramatically below the San Miguel River confluence as tributary inputs reduce the magnitude of the flow alterations associated with McPhee Reservoir. The San Miguel River does not have any major stem impoundments and has a relatively intact hydrograph. The irrigation diversions on the San Miguel River are significant and do remove perennial flows from some reaches of the river in late summer but because the water is used in basin, the river benefits from return flows and groundwater accretions. The lower San Miguel River below Tabeguache Creek (see map) has adequate base flows and an intact peak flow hydrograph to support all life stages of the three native fish. This reach of river to the confluence with the Dolores River supports abundant populations of all three species of native fish and provides the flows to the Dolores below the confluence to adequately sustain native fish populations. The San Miguel River and the water it contributes to the Dolores River under current water use patterns are vital to sustaining native fish populations in the greater Dolores River basin. There are currently no instream flow appropriations protecting flows for native fish in the Dolores River below the San Miguel.

#### **RECOMMENDATIONS**

The alternative recommendations focus on two broad objectives that reflect the different flow regimes of the river above and below the San Miguel River. From McPhee Dam to the San Miguel River confluence, new management strategies must be explored and implemented to ensure the persistence of native fish in the river. The current situation has likely caused the significant decline in the range and abundance of native fish and any alternative that does not alter the current water release patterns and volumes below McPhee will not be as effective in protecting the native fish ORV within that reach (with or without a federal water right). Below the San Miguel River confluence, the current flow and water use patterns are sufficient to preserve native fish populations, but the current conditions should be protected from future significant alterations and depletions.

**Recommended Minimum Strategies to Protect Native Fish in the Dolores River**

The State of Colorado's instream flow right for 78 cfs year round from McPhee Reservoir to the San Miguel River confluence should be recognized as the goal to protect both native and sport fish to a reasonable degree. Senior upstream water rights can prevent this biological minimum flow from being met every year, however, five major strategies could attempt to meet this minimum flow more frequently and increase protection against future depletions on the San Miguel River as well as the Dolores River downstream from the confluence with the San Miguel; 1) a guaranteed annual increase to the fish pool; 2) improvement of reservoir operation to benefit native fish populations; 3) adaptive spill management oversight by the Dolores Biological Team; 4) establishment of instream flow protection for existing native fish populations and stream flows on the San Miguel River and the Dolores River represented by 4A and 4B below downstream of the San Miguel River confluence, and, although it is a temporary and more costly solution to long term issues, 5) potential increase of water to the Fish Pool through a lease via the CWCB.

1. Enlarging the fish pool water in McPhee Reservoir to at least 36,500 acre feet as identified in the 1996 EA. This can be accomplished through the leasing and/or purchase of existing water supplies from willing sellers. A permanent fish pool of 36,500 acre feet would provide enough water for a year-round minimum flow of approximately 50 cfs, depending on release patterns determined by the Dolores Biology Team. With periodic reservoir spills, which are not debited against the fish pool, a flow of 78 cfs could be met more frequently as hydrologic conditions allow.
2. Native fish habitat improvement should be an explicit goal of spill management. The use of existing stream flow forecasts in a new adaptive spill management strategy should be used to provide an adequate hydrograph for native fish while ensuring the best possibility for a full reservoir given the hydrologic conditions. The strategy should be similar to the operations of other federal reservoirs (e.g., Flaming Gorge on the Green River, Aspinall Unit on the Gunnison River) where the April 1<sup>st</sup> runoff forecast from the Colorado River Basin Forecast Center is used to plan for a managed spill that accomplishes multiple objectives. Using current reservoir elevations and the forecasted April to July inflows, a predicted spill volume could be used to plan for a managed spill that minimizes debts to the fish pool by declaring spills earlier and starting low volume spills that mimic the pre-dam hydrograph and current reservoir inflow patterns. This operation would be in contrast to current operations where a spill is only declared when the reservoir is assuredly going to fill. In most recent cases, the spill declaration has occurred late in the run off season which has led to an abrupt increase in flows from the reservoir. This unnatural hydrograph pattern (one without a gradual ascending limb) leads to a cold water thermal shock to native fish in the river when they are physiologically preparing to spawn. It also increases the amount of time when downstream releases are debited against the fish pool account in the reservoir. It is important to note that this reoperation of the spill would require some stakeholder interactions with the recreational boating community as well as some type of formal agreement with the Bureau of Reclamation defining the principles of this managed spill concept. DOW staff is confident that the rafting community representatives would work with us on this issue; they have been quite cooperative with DOW biologists regarding reservoir operations issues in recent years.

3. The fish pool water and new adaptive spill management would be administered by the Dolores Biology Team, as designated by the EA, with input from the water managers from both MVIC and the DWCD. This administration team has the explicit objective of improving native fish habitat and maintaining the existing cold water sport fishery.
4. A.) Two new Colorado Water Conservation Board instream flow water rights could be filed on the San Miguel River from Calamity Draw (a key point on the river where significant irrigation return flows accrue to the river) to the confluence with the Dolores River and on the Dolores River below the San Miguel River confluence to protect minimum flows necessary to preserve native fish habitat. Instream flow studies have already been completed on the San Miguel and a new ISF study would have to be done on the lower Dolores.
4. B.) File new Colorado Water Conservation Board instream flows to protect tributary flows to the Dolores River, both perennial and ephemeral, to benefit native fish. Many tributaries downstream from McPhee Reservoir seasonally contribute water that is important in preserving native fish habitat and minimizing debts to the fish pool during spring runoff. Tributaries that should be explored for future instream flow protection include Glade Creek, Narraguinep Creek, Cabin Creek, Salter Creek, Disappointment Creek, McIntyre Canyon Creek, Big Gypsum Creek, Bull Canyon Creek, Spring Canyon Creek, Coyote Wash, Wild Steer and La Sal Creek.
5. The Environmental Fish Pool in McPhee Reservoir could be increased through potential leases or purchases of water. As stated above, leasing has the potential to address issues in the short term but lacks certainty for longer term solutions. Leasing of water, in general, also tends to be more costly than other potential solutions.

#### **DISCUSSION**

The decline of native fish in the Dolores River is primarily related to habitat limitations. The recommended changes in spill management and an increase in fish pool water would dramatically improve the chance for maintaining and enhancing the native fish populations. These changes in management would essentially be fulfilling earlier federal commitments and Records of Decision made to the downstream environment as outlined in the 1977 EIS/DPR and the 1996 EA. Throughout the BLM's planning process many ideas for alternatives to Wild and Scenic Designation have been proposed. Special land use designations such as wilderness areas, national conservation areas, and areas of critical environmental concern may be appropriate for areas of the Dolores. Such designations would provide some land use protections for the river, but would do little to address the major factor affecting the native fish ORV.

Collaborative stakeholder groups have also been suggested as an alternative that could facilitate protection of resource values on the Dolores River. Collaborative groups have been very active on Dolores River issues for over 15 years and while the dialogue and educational aspects of these groups has been positive, native fish continue to decline, the volume of fish pool water has decreased, and efforts to buy or lease water for instream flows have been stalled. Cooperation and collaboration for

educational purposes should continue and be encouraged. The Dolores Biology Team, as outlined in the 1996 EA, should be recognized as the proper and final authority on management of the fish pool releases to the Dolores River downstream of McPhee. However, as mentioned above, the Dolores Biology Team should have an expanded role in spill management. Additionally, because of the potential for multiple beneficial results from a well managed spill program, the Dolores Biology Team should continue to work with stakeholder input. This would allow for other user groups, such as rafters, to help the DBT understand how an efficient spill program could facilitate more predictable and better flows for rafting while achieving the main goal of restoring native fish habitat. It should be stressed that it is in the state's interest and in the best interest of the water users to follow through on all prior commitments and take such steps as are necessary to conserve and enhance the Dolores River native fish populations.

The Colorado Division of Wildlife and the BLM are both signatories to the Rangeland Three Species Conservation Agreement for the protection and conservation of flannelmouth sucker, bluehead sucker, and roundtail chub populations throughout their ranges. This agreement between the upper basin states, federal agencies including the USFS, BLM, and BOR, Tribes, and Non-Governmental organizations is intended to proactively prevent a federal listing of these three native fishes. Alternatives to Wild and Scenic designation that do not adequately protect these species will not fulfill the responsibilities of state and federal agencies under this agreement. The roundtail chub is currently classified as a state species of special concern and all three species are considered BLM sensitive species. The range wide decline of these native species has prompted listing petitions under the Federal Endangered Species Act (ESA). The DOW and the State of Colorado have a responsibility and inherent interest to maintaining adequate populations and habitat for these species to prevent ESA listing.

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# STATE OF COLORADO

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## Colorado Water Conservation Board

### Department of Natural Resources

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SLG-04



September 23, 2011

Via E-Mail and U.S. Mail

Ms. Carol DeAngelis, Mr. Ed Warner  
 Bureau of Reclamation  
 Western Colorado Area Office  
 2764 Compass Drive, Suite 106  
 Grand Junction CO 81506

John W.  
 Hickenlooper  
 Governor

Mike King  
 DNR Executive  
 Director

Jennifer L. Gimbel  
 CWCB Director

Re: Colorado Water Conservation Board Comments on the *Preliminary Final Environmental Impact Statement: Aspinall Unit Operations*

Dear Ms. DeAngelis and Mr. Warner,

The Colorado Water Conservation Board (CWCB) appreciates the opportunity to comment on the *Preliminary Final Environmental Impact Statement: Aspinall Unit Operations* (the "PFEIS") released by the Bureau of Reclamation ("Reclamation") in August of 2011. As a cooperating agency dedicated to working with Reclamation to promote the effective operation of the Aspinall Unit, we ask that you please consider the comments provided herein when finalizing the NEPA compliance documentation for the Aspinall Unit. The CWCB received a draft of the August PFEIS August 30, 2011 and a redline-strikeout version on September 7, 2011. At a meeting held September 12, 2011 among the cooperating agencies, Reclamation received a number of oral comments on the PFEIS and invited the cooperators to identify language inconsistencies within the PFEIS by September 23, 2011. Given this short timeframe to respond, we thank Reclamation for its ongoing willingness to consider these and other comments from the CWCB throughout the NEPA process.

**Overview of Comments:** The CWCB supports completion of NEPA compliance for operation of the Aspinall Unit to further ESA compliance consistent with the Upper Colorado River Recovery Implementation Program ("UCRIP"), consistent with the authorized purposes for the Unit, and consistent with Colorado water law. To this end, the CWCB acknowledges changes made in the August PFEIS to improve upon the prior PFEIS in a number of places. In particular, the August PFEIS incorporates, in certain sections, an improved, streamlined description of the Black Canyon NP water right. *See e.g.*, Section 2.3.1.1, ¶ 1. Although the CWCB welcomes Reclamation's efforts to adopt this and other improvements, we remain concerned, that such revisions are not reflected throughout the voluminous documentation. As a result, the current PFEIS still contains apparent inconsistencies and inaccuracies that may compromise the PFEIS' assessment of No Action, and Action Alternatives and implicate the

SLG-04-01

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state of Colorado's rights and obligations in the Gunnison River Basin. To assure the integrity of the PFEIS, the CWCB recommends that Reclamation revise the PFEIS to address the following language inconsistencies and inaccuracies:

1. The term "call" is used throughout the PFEIS without regard to its place as a term of art for water rights administration. The term call is explained in 3.3.4.1 in relation to water rights administration. The use of this term "calls for," etc., elsewhere when referencing adjudicated amounts for a water right should be replaced with the word "describes" to accurately explain both the volumes confirmed in a decree, Flow Recommendations, Action Alternatives, etc. Importantly, the term call should not be used in reference to undecreed water rights such as the Flow Recommendations or the Action Alternatives. SLG-04-02

2. The PFEIS describes operations of the Aspinall Unit made to "meet" the Black Canyon NP water right. Unless the Secretary of Interior decides, at his or her discretion, to place a call for water for this right, Reclamation is not under an obligation to meet the right under Colorado water law. In accord with *Englewood v. Burlington Ditch Co.*, 235 P.3d 1061 (Colo. 2010), a senior water right may exercise its rights without placing a call, thus allowing diversions by upstream junior water rights. Therefore any actions by Reclamation with regard to the Black Canyon NP water right in the absence of a valid call from that right are discretionary and should not be part of a No Action Alternative. SLG-04-03

3. The PFEIS still contains references to a Black Canyon NP water right "minimum flow" or "base flow." The decree, which refers to a direct flow water right, speaks for itself and provides the definitive explanation of this water right. However, the following sentence from section 2.3.1.1 of the PFEIS adequately expresses the nature of the direct flow right for the Black Canyon NP: "The decree quantifies the March 2, 1933 water right as a year-round flow with variable peak and shoulder flow for each year, the magnitude of which are dependent upon that year's Gunnison River Basin hydrologic conditions." This language should be used to refer to the year round water right decreed in the Black Canyon water right case. SLG-04-04

4. The PFEIS may inconsistently use the term "release" or "use of storage" to describe one or more of the following: a release of water previously stored pursuant to the Aspinall Unit's storage water rights, release of direct flow water through Aspinall Unit structures pursuant to the Aspinall Unit's direct flow water rights, or bypasses of inflow using the Aspinall Unit's storage and release capacity in response to a valid downstream call. Because not all of the options are consistent with Colorado law in all contexts, which operation is intended in each instance should be clarified. SLG-04-05

5. The PFEIS states that a range of actions potentially necessary to satisfy the Black Canyon NP water right and Fish Flow recommendations are within the "historic range of operations" for the Aspinall Unit, including bypassing water, using spillways, and retiming of storage and release activities. The CWCB recognizes that these and other types of operations have been implemented in the past to accomplish authorized purposes for the Aspinall Unit consistent with existing law. It remains unclear to the CWCB, however, as to how these same operations will be implemented to accomplish the Black Canyon NP water right and Fish Flow recommendations consistent with Colorado water law and according to the authorized purposes of the Aspinall Unit. Changes in the frequency of certain operations will have impacts that are only described in this EIS to the extent they are already included in the modeling of Alternative B. It has yet to be SLG-04-06

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clarified whether increases in frequency due to the Black Canyon NP water right will have additional impacts on some resources.

6. The CWCB appreciates the need to consider the Black Canyon NP water right in the PFEIS for purposes of determining whether application of the right alters the alternatives and impact analyses for accomplishing the Fish Flow Recommendations. We have yet to determine whether consideration of the water right for this purpose also serves as NEPA compliance for the Secretary’s discretionary decisions regarding the Black Canyon NP water right itself. Nonetheless, it is important to clarify that regardless of the water descriptions provided in the PFEIS, actual application and enforcement of the Black Canyon NP water right is and will remain subject to the terms and conditions of the decree as interpreted pursuant to applicable federal and state law. SLG-04-07

**Specific Textual Comments:** Below are the CWCB’s specific textual comments to the PFEIS with regard to language consistency and accuracy: SLG-04-08

No.	Page	Section	Comments
1	ES-1		Refers to minimum downstream flow requirements. <i>See Overview #3, supra</i>
2	ES-2		Refers to use of storage. <i>See Overview #4, supra.</i>
3	ES-3		Reference to settlement negotiations for the Black Canyon NP water right should be deleted
4	ES-5		Omits the Black Canyon NP water right from the list of discretionary actions analyzed as part of Reclamation’s proposed federal action regarding water operations and management of the Gunnison Basin. <i>See Overview #5, #6.</i>
5	ES-6		References to Black Canyon NP water right minimum flows and proposition that Reclamation will meet the water right when exercised. <i>See Overview #2, 3, supra.</i> Instead Reclamation would be curtailed in response to a call as directed by the State water administration officials.
6	ES-6		Uses term “calls for” in relation to a water right without regard to placing a valid call. <i>See Overview #1, supra.</i>
7	ES-6		Foreshadows that range of actions necessary to “satisfy” the decree are discussed to demonstrate how such actions are consistent with the historic range of operations for the Aspinall Unit. Yet, the subsequent discussion does not clarify how the historic operations can be used to “satisfy” the decree consistent with existing laws. <i>See Overview # 5, supra.</i>
8	1-1	1.1.2	To avoid unintended expansion of authorized purposes for the Aspinall Unit, recommend inserting “maintain and” between “would” and “meet” in the second paragraph of Section 1.1.2. <i>See Section 1.1.4</i> for consistency.
9	1-5	1.2.1	What are the minimum downstream flow requirements as referenced? Also, recommend moving reference to the Black Canyon NP water right in the paragraph referring to non-discretionary actions to avoid mischaracterization or misunderstandings. Finally, it may be inappropriate to characterize litigation settlement negotiations in the NEPA documents.
10	1-6	1.2.2	Uses term “calls for” in relation to fish flows. <i>See Overview # 1, supra.</i>
11	1-18	1.2.6	Refers to flow of no less than 300 cfs out of context. <i>See Overview # 3, supra.</i>
12	1-18	1.2.6	States that Reclamation will meet the Black Canyon NP water right when

			exercised. <i>See Overview # 2, supra.</i>
13	1-18	1.2.6	Does not describe all water rights subordinations in the Black Canyon NP water right. <i>See Overview #6 re:NEPA analysis of Black Canyon right, supra.</i>
14	2-2	2.2	Potential Scoping Inconsistency - Description of modeling encompassing the Gunnison River Basin to the confluence of the Colorado River is inconsistent with the description of the scope in Section 1.1.3., including the downstream Colorado River.
15	2-2	2.3	Refers to Black Canyon NP water right minimum flow. Uses terms calls for. <i>See Overview #3, #1 supra.</i>
16	2-3	2.3.1.1	Does not describe all water rights subordinations in the Black Canyon NP water right. <i>See Overview #6 re:NEPA analysis of Black Canyon right, supra.</i>
17	2-3	2.3.1.1	States that Reclamation will meet the Black Canyon NP water right when exercised. <i>See Overview #2, supra.</i>
18	2-4	2.3.1.1	Same as specific comment 7, <i>supra.</i>
19	2-4	2.3.1.2	3 <sup>rd</sup> bullet item – To avoid unintended expansion of authorized purposes for the Aspinall Unit, the new term “environmental purposes” should be changed back to “endangered fish.”
20	2-6	2.3.2.3	Although CWCB remains unclear about reference to use of storage water, <i>see Overview #4, supra</i> , the remainder of this text should be changed to be consistent with the language in section 2.3.1.2.
21	2-7	2.3.3.1	Refers to minimum downstream release for instream flow through the Black Canyon NP and Gunnison Gorge NCA. <i>See Overview #3, supra.</i>
22	2-9	2.3.3.3	Refers to minimum release criteria to provide at least 300cfs and minimum flow rate for Black Canyon NP water right. <i>See Overview #3.</i>
23	2-14	2.3.6.4	The CWCB appreciates the PFEIS’ inclusion of State of Colorado among those to be appraised on current Aspinall Unit operations, including the Black Canyon NP water right. For consistency sake, we recommend referencing Fish Flow targets in addition to the water right, and providing notice to the CWCB and others in addition to NPS on April 1 regarding project operations.
24	2-16	2.3.6.6	The second bullet point references a minimum flow right of 300 cfs. <i>See Overview #3, supra.</i>
25	2-17 to 2-18	2.3.6.6	Refers to use of storage water from remaining yield that may be developed. <i>See Overview #4, supra.</i>
26	2-18 to 2-19	2.4	Refers to releases of water and use of storage for No Action and Action Alternatives. No action alternative refers to releases in excess of the Aspinall Unit’s needs. <i>See Overview #4, supra</i>
27	2-21	2.4.2.1	The indented paragraph starting with “Forecasted Blue Mesa Reservoir . . .” is missing a closing parenthetical or a phrase.
28	2-24	2.5.1	Refers to Black Canyon NP water right minimum flow amount. Overview #3, <i>supra.</i>
29	2-25	2.7	Reference to Black Canyon NP water right negotiations, rather than to decree, should be removed.
30	2-25	2.7	Uses the term “call for” in describing the need for an increased frequency of high spring peaks. <i>See Overview #1, supra.</i>
31	2-25	2.7	Although the PFEIS surmises that all operations will remain within the range

			of historical flows, CWCB is still unclear as to how these operations will fit within the authorized purposes of the Aspinall Unit and whether changes in operations (historic release pattern) within the range of historical flows will have unforeseen impacts. <i>See Overview #5, supra.</i>
32	3-1	3.1	Uses term “calls for” with regard to discretionary operation of the Black Canyon NP water right and regard to “fish flows.” <i>See Overview #1, supra.</i>
33	3-7	3.3.1	Refers to impacts to storage based on yield for end of month and end of storage year without apparent regard to water rights analysis. <i>See Overview #4, supra.</i>
34	3-9 to 3-11	3.3.1.1.B	Reference to “use of storage” releases needs clarification, including how storage analysis considers impact to water rights. <i>See Overview #4, supra.</i>
35	3-25	3.3.1.2	It is unclear that Reclamation considered an impact to its water rights when concluding that the Aspinall Units may “re-set” themselves. This should be clarified.
36	3-25	3.3.1.2	Uses term “calls for” in reference to the discretionary exercise of the Black Canyon NP water right. <i>See Overview #1, supra.</i>
37	3-25	3.3.1.2	Reclamation should clarify the potential inconsistency associated with asserting that exercise of the water right exercise for Black Canyon NP water right is both within the No Action Alternative and “calls for” flows similar to Alternative B.
38	3-27	3.3.1.2.B	Uses term “calls for.” <i>See Overview #1, supra.</i>
39	3-27	3.3.1.2.B	“Use of storage” is mentioned or charted without explanation of how storage is used. <i>See Overview #4, supra.</i>
40	3-31	3.3.1.2.C	Refers to releases from Aspinall Unit and “use of storage when necessary”. <i>See Overview #4, supra.</i>
41	3-32	3.3.1.2.C	Description of Black Canyon NP water right is not consistent with the description in the first paragraph of section 2.3.1.1, including reference to minimum flows. <i>See Overview #3, supra.</i>
42	3-32	3.3.1.2.C	Uses term “calls for.” <i>See Overview #1, supra.</i>
434	3-32	3.3.1.2.C	Refers to operations to meet Black Canyon NP water right. <i>See Overview #2, supra</i>
44	3-32	3.3.1.2.C	The PFEIS should clarify how adjustments to provide for both the Black Canyon NP water right and fish flow recommendations will comport with existing law and the authorized purposes for the Aspinall Unit. It should further clarify how such adjustments will avoid impacts. <i>See Overview #5, supra.</i>
45	3-34	3.3.1.2.C	Use of releases.
46	3-34	3.3.1.2.C	Refers to Aspinall Unit releases. <i>See Overview #4, supra</i>
	3-34	3.3.1.2.C	Refers to operations to meet the Black Canyon NP water right. <i>See Overview, #2, supra.</i>
47	3-33 to 3-35		“Notation B” explains that adjustments in operations “will be required to meet peak flows.” Table 3.3-8 sets forth peak flows above that allowed by the Flood Control Manual. On page 3-35, the PFEIS correctly states that “in high water years, there may be significant risks of flooding Delta and the Black Canyon decree requires Reclamation to give highest priority to flood

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			control.” Given these statements, Reclamation should clarify how operations will be implemented to avoid flooding and to remain consistent with authorized purposes and existing laws. <i>See Overview #4,#5, #6.</i>
48	3-56	3.3.2.2.C	Uses term “call.” <i>See Overview #1, supra.</i>
49	3-65	3.3.4.1	Uses term “call” in water rights administration context. <i>See Overview #1, supra.</i>
50	3-75	3.3.5.1.D	Refers to minimum flow. <i>See Overview #3, supra.</i>
51	3-144	3.3.10.2.B	Refers to level of assurance for mainstem flows based on Black Canyon NP water right. Refers to Reclamation meeting the Black Canyon NP water right. <i>See Overview #2, #3, supra.</i>
52	4-1	4.2.2	Refers to minimum flow. <i>See Overview #3, supra.</i>

**Reservation of Rights:** Between April and August 2011, Reclamation incorporated a number of changes to the PFEIS. As a result of the expedited scheduling for reviewing and commenting on these changes over the course of a couple weeks, the CWCB may have overlooked factual or legal assertions that impact Colorado. CWCB’s failure to raise such concerns in these comments, or to correct what it believes to be inaccurate assertions, shall not be construed as an admission with respect to any factual or legal issue, or a waiver of any rights for the purposes of any future legal, administrative or other proceeding.

The CWCB provides the above comments to clarify potential inconsistencies or inaccuracies and preserve the State of Colorado’s positions, rights and obligations in the Gunnison and Colorado River Basins. That said, we recognize and appreciate the extensive time and effort dedicated to completing the NEPA compliance process for re-operation of the Aspinall Unit for ESA purposes. Furthermore, we firmly believe that finalizing this NEPA process is important to the future operation of the Unit for the benefit of all stakeholders. We, therefore, support completing NEPA compliance for the Aspinall Unit as timely as possible, and remain committed to working with Reclamation and other interested stakeholders to assure the successful operation of the Aspinall Unit for years to come.



\_\_\_\_\_  
Jennifer Gimbel  
Director  
Colorado Water Conservation Board

cc: Anne Castle, Assistant Secretary, Water and Science, U.S. Department of Interior  
Michael L. Connor, Commissioner, U.S. Bureau of Reclamation  
Larry Walkoviak, Regional Director, U.S. Bureau of Reclamation  
John Wessels, Regional Director, National Park Service



March 29, 2011

PWI - 01

Steve McCall  
Bureau of Reclamation, Western Colorado Area Office  
2764 Compass Drive, Suite 106  
Grand Junction, Colorado 81506

Re: Comments on Aspinall Unit Preliminary Final EIS, December, 2010

Dear Mr. McCall,

Thank you for the opportunity to stay engaged in the Aspinall E.I.S process.

When we learned through our Cooperating Agency in the EIS process that at the last EIS meeting some within the CDOW intended to make additional comments on the Preliminary Final EIS, I revisited the CDOW comment letter on the DEIS of April 29, 2009 and traced the language in the April 29 letter directly into the Conservation Recommendations in the PBO. I assumed that once this fact was recognized it would become apparent that no further comments were necessary, but this is apparently not the case.

The other thing that is surprising about the April 29 letter is that CDOW appears to take absolutely no responsibility for what is characterized as "significant decline" in Native Species of Special Concern. The fishery holds the second largest storage allocation in the Dolores Project, which along with supplemental sources currently involves 31,798 acre feet per year. For the 15 years since the "fish pool" was created in 1996, the Biology Committee which advises Reclamation has deferred to CDOW in setting annual release patterns.

The April 29 CDOW comment letter references the Three Species Conservation Agreement and talks about "reaffirming commitments" of USBR, USFWS and CDOW "to take affirmative steps toward protection of these fish species." In reality the CDOW has done very little since signing the Conservation Agreement in 2004 that gives any priority to native fish. Releases into a river channel that all but dried up in summer during the Century prior to the construction of McPhee Reservoir were driven by trout management prior to the Agreement, and have continued to be released in virtually the same pattern since they signed the 2004 native species agreement. Any reaffirmation of this commitment to the native fish populations needs include an objective evaluation of how the fish pool would be managed to benefit the natives and how such changes should be prioritized, implemented and monitored.

There is currently a great deal of hope that "affirmative steps" can be identified and taken. A process to objectively evaluate what is known about the status of the three native species on the Dolores and what opportunities can be identified for improving the status of natives by making the best possible use of spill and fish pool management to their benefit is underway. This process has a broad base of funding and support. While there appears to be a pocket of resistance to this inquiry within CDOW, partners to this effort are heartened by the support of upper management of CDOW and CDNR who have selected excellent CDOW representatives to join in the oversight of this inquiry.

This inquiry is being conducted as a serious and transparent investigation of native fish status, needs and opportunities intended to provide the basis for developing substantive and broadly supported strategies to affirmatively find a way forward consistent with the intent of the Three Species Conservation Agreement and compatible with full range of obligations associated with the operation of McPhee Reservoir. DWCD does not support any changes in the Preliminary Final EIS or the PBO with regard to the Dolores River. Rather DWCD supports the "affirmative steps" that are being actively pursued with a broad and committed base of support.

PWI-01-01

Sincerely,



Michael Preston, General Manager  
Dolores Water Conservancy District



**THE SOUTHWESTERN WATER CONSERVATION DISTRICT**  
Developing And Conserving the Waters in the  
SAN JUAN AND DOLORES RIVERS AND THEIR TRIBUTARIES  
IN SOUTHWESTERN COLORADO

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Carol DeAngelis, Area Manager  
Bureau of Reclamation  
Western Colorado Are Office  
2764 Compass Drive, Suite 106  
Grand Junction, Colorado 81506

PWI-02

March 31, 2011

Re: Comments on December, 2010 Preliminary Final EIS for the Aspinall Unit

Dear Ms. DeAngelis:

Southwestern Water Conservation District (SWCD) has appreciated the opportunity to be a cooperating agency in the preparation of the Preliminary Final Environmental Impact Statement (Preliminary Final EIS) for the Aspinall Unit. This has been a long process but looks like it is reaching a satisfactory conclusion.

The primary concern of SWCD during the process has been that the Aspinall Unit continue to provide the Dolores Project with the reasonable and prudent alternative for the ESA Section 7 consultation for endangered fish. SWCD supports the conclusions in the Preliminary Final EIS and the associated December 4, 2009 Programmatic Biological Opinion (PBO) regarding the Dolores Project. SWCD does not support any modifications to the existing language and the commitments expressed in the current Preliminary Final EIS and the PBO.

PWI-02-01

The only technical comment regarding the Preliminary Final EIS is a statement on page ES-6 (first sentence at top of page) that indicates selenium concentrations exceed state standards continuously. However, Table 3.3.5 and Figure 3.3.4 indicate the exceedance is intermittent. SWCD suggests modifying the sentence on page ES-6 to more accurately reflect the actual water quality condition.

PWI-02-02

Attached are comments from the Dolores Water Conservancy District which SWCD requests be considered as part of the SWCD comments.

Please contact Steve Harris (970-259-5322, [steve@durangowater.com](mailto:steve@durangowater.com)) who represented SWCD in the cooperating agency process and has reviewed the Preliminary Final EIS.

Sincerely,



John Porter, President  
Board of Directors

PWI-03

**PRELIMINARY FINAL ENVIRONMENTAL IMPACT STATEMENT –  
 ASPINALL UNIT OPERATIONS – December, 2010 (PFEIS)  
 Platte River Power Authority Comments – April 1, 2011**

Following are comments and a request for information submitted by Platte River Power Authority (PRPA) on the above-referenced document, distributed December 20, 2010. PRPA is a long-term firm power contractor for resources from the Salt Lake City Area Integrated Projects (SLCA/IP), and has been a cooperating agency in the Aspinall process since its inception. PRPA is also a member of the Colorado River Energy Distributors Association (CREDA), who was a participant in the mediated settlement of the Black Canyon of the Gunnison water right case. PRPA and CREDA have a direct interest in this EIS and associated processes.

In addition to prior comments on the Draft Final EIS (DEIS), which we believe are still relevant and should be afforded due consideration, PRPA offers the following General and Specific Comments, as well as reaffirming our request made at the February 2, 2011 Cooperating Agency meeting for all technical analysis work products undertaken between the DEIS and issuance of the PFEIS on December 20, 2010. In addition, we hereby request a copy of all mediation notes prepared by Chris Moore during the Black Canyon mediation process, which culminated in a reserved right decree (Decree) to the National Park Service (NPS) on January 8, 2009 (nunc pro tunc December 31, 2008). We also herein reiterate our comments made at the Cooperating Agency meeting that until we have had the ability to review and consider these materials, our comments should be considered as preliminary and subject to revision and update.

PWI-03-01

We understand from the March 14, 2011 Cooperating Agency meeting that daily data will be provided by Reclamation to the Cooperators, and that Western Area Power Administration will then have the ability to model power impacts. Because we have been asked to submit these comments by April 1, we may have supplementary comments regarding Western's power impact analysis.

Since the March 14 meeting, the State of Colorado, the River District, PRPA, WAPA, Trout Unlimited and Western Resource Advocates developed language related to treatment of the Black Canyon Decree. This language is attached hereto as Exhibit A. We strongly encourage Reclamation to adopt this language as submitted by the State and PRPA and to adopt language consistent with the comments thereon by the State of Colorado.

PWI-03-02

We recommend that once Reclamation has had an opportunity to review comments submitted by the Cooperating Agencies, that a revised draft be resubmitted to the Cooperators for additional review and comment.

**I. TOPICAL AREAS OF CONCERN**

**DISCRETION:** Secretarial discretion in exercise of the Decree needs to be reemphasized in the PFEIS. The Decree states it is to be exercised consistent with the congressionally authorized purposes of the Aspinall Unit. Unfortunately, the PFEIS appears to implement the Decree and the preferred alternative in a way that would have dramatic impacts to water storage and hydropower production in contravention of the authorized purposes enacted by Congress.

PWI-03-03

**SCOPE AND IMPACTS:** The scope of the EIS has been changed. No explanation is given for the change in scope despite years of careful and deliberate public involvement in a process predicated on parameters that have now been discarded. This committed Reclamation and its

resources to a predetermined outcome in which none of the alternatives assessed the real cost or the cumulative impacts to water storage and hydropower.

PWI-03-03  
Cont.

The preferred alternative in the PFEIS no longer reflects the careful balance that the cooperating agencies and other stakeholders have long sought to achieve, through review and comment on the DEIS as well as through the periodic Aspinall Operations meetings. For example, the PFEIS contemplates double peaks in certain year types and reservoir releases for the Redlands fish ladder. The preferred alternative also calls for the use of 19,000 AF of storage in dry years and up to 37,000 AF in wetter years.

PWI-03-04

Changes made between the DEIS and the PFEIS are substantial: the Decree has been added to all alternatives (but not modeled with Riverware); references to power system reliability requirements have been deleted; and the affected area appears to have expanded to include the Colorado River downstream to Lake Powell. These changes are also inconsistent with Reclamation's approach and level of impact analysis in the Flaming Gorge EIS and ROD.

PWI-03-05

The cost to the "human environment" has not been adequately assessed. Impacts to hydropower are not adequately assessed in the PFEIS. Prior estimates of impacts by CREDA and Reclamation's power office during negotiations and mediation of the Black Canyon settlement process suggested annual *energy*-related costs of \$5 million to \$11 million. CREDA estimated a total *capacity* impact of over \$104 million. Cumulative impacts to hydropower have not been analyzed. Impacts to poor rural areas and on the 53 Tribes have not been adequately analyzed. And the true costs of the preferred alternative cannot be assessed given Reclamation did not consider an alternative reflective of historic Aspinall operations for congressionally authorized purposes such as occurred from 1969 to 1991. In 1992, operations were changed to provide environmental benefits, and which impacted water storage and hydropower production without NEPA being undertaken.

PWI-03-06

RIP: Participation in the Upper Colorado and San Juan Recovery Programs (RIP), and compliance with NEPA and the Endangered Species Act (ESA) does not change an agency's statutory mission. Congress enacted the Colorado River Storage Project Act (CRSP) to bring water and power to the arid West. The Aspinall Unit reservoirs are lynchpins in the CRSP system. As written, the PFEIS is inconsistent with Aspinall Unit authorized purposes.

PWI-03-07

BALANCE: The PFEIS no longer reflects the careful balance that the cooperating agencies and other stakeholders have long sought to achieve, through review and comment on the DEIS as well as through the periodic Aspinall Operations meetings, and mediated settlement of the Decree. We support a preferred alternative that accomplishes environmental goals with the least harmful impacts to Congress' stated purposes for the Aspinall Unit. Adjustments to ramp rates; consideration of weighted averages of year types in the period of record; Secretarial discretion related to the Decree; operational flexibility; and timing peak flows with the North Fork would help maintain and continue to meet all of the Aspinall Unit authorized purposes and would assist in the recovery of endangered fish species while giving due consideration to the terms of the Black Canyon decree. As recognized by Judge David Campbell in his June 29, 2010 Order, and reaffirmed on March 29, 2011 in the Grand Canyon Trust v. United States<sup>1</sup>:

PWI-03-08

This experience aptly illustrates the complex set of interests Reclamation must balance in operating the Dam. Those interests include not only the endangered species below the Dam, but also tribes in the region, the seven Colorado River basin states, large

<sup>1</sup>No. CV-07-8164-PHX-DGC, at p. 13

municipalities that depend on water and power from Glen Canyon Dam, agricultural interests, Grand Canyon National Park, and national energy needs at a time when clean energy production is becoming increasingly important.

This statement is as relevant to the Aspinall Unit and the Black Canyon National Park as it is to Glen Canyon and Grand Canyon National Park. Judge Campbell issued a Final Order in this matter, deeming all previous orders final, and terminated this case on March 29, 2011.

**II. PURPOSE AND NEED**

NEPA scoping, through the purpose and need, frames the entire process and determines the scope of alternatives considered. The Aspinall purpose and need statement was carefully crafted and should not have been altered from what was contained in the DEIS. The purpose and need stated, and should continue to state: PWI-03-08

Reclamation proposes to operate the Aspinall Unit to avoid jeopardizing the continued existence of downstream endangered fish species while maintaining and continuing to meet all of the project's authorized purposes. . . .<sup>2</sup>

**III. DISCRETION AND THE BLACK CANYON RIGHT**

The Black Canyon Decree carefully gave consideration to the ongoing operations of the Aspinall Unit in light of the Black Canyon right. The Secretary's discretionary actions must consider that the decree is a direct flow right, not a storage right, and his or her exercise of the decree must be subject to other laws (such as CRSP). PWI-03-09

Please replace the language of the following sections with the attached consensus language in Exhibit A regarding the Black Canyon Decree: Sections 1.2.6, 1.2.7, 2.3.1.1, 2.3.6.4, 3.3.1.2C, 3.37.2A.

**IV. OPERATIONAL FLEXIBILITY AND ADAPTIVE MANAGEMENT**

On September 29, 2008, CREDA, WAPA and the State of Colorado proposed carefully crafted language relative to adaptive management and operational flexibility. We urge Reclamation to incorporate that language in the PFEIS as it is consistent with the terms and conditions of the Decree as well as the Purpose and Need of the EIS. See attached Exhibit B. PWI-03-10

**V. THE DECREE SHOULD BE IMPLEMENTED CONSISTENT WITH AUTHORIZED PURPOSES**

The Black Canyon water right is a state decree that expressly states it will be exercised, "consistent with the terms and conditions of the decree [regarding Secretarial discretion on when to exercise a call for the decree]. The Secretary should exercise his discretion to ensure the authorized purposes of the Aspinall Unit are met. The preferred alternative in the PFEIS is inconsistent with the water storage and hydropower purposes of the Aspinall Unit. PWI-03-11

**VI. THE PFEIS MAY NOT ALTER RECLAMATION LAW NOR THE CRSP**

<sup>2</sup> Fed. Reg. Vol. 74, No. 29, (Feb.13, 2009) (emphasis added).

The PFEIS proposes to implement the Decree in a way that negatively impacts Aspinall Unit purposes of water storage and hydropower.

PWI-03-12

Section 8 of the Reclamation Act provides that water for reclamation projects shall be acquired and distributed in conformity with state law. But Congress did not intend that state decrees would override the federal purposes of CRSP units.<sup>3</sup>

Congress enacted the CRSP to solve long-term water supply problems and generate hydroelectric power in the arid West.<sup>4</sup> No subsequent legislation has changed CRSP purposes.<sup>5</sup> Reclamation's participation in the RIP, this NEPA process and ESA consultation must be consistent with its statutory authority under the CRSP.

**Peak flows and ramping rates for non-native trout in the preferred alternative run counter to CRSP purposes and NEPA scoping. For example, the PFEIS states:**

- “Recognition of minor to moderate impacts to resources such as sport fisheries, hydropower generation, and recreation.” ES-7. This improperly lumps hydro (a purpose) with unit *benefits*.
- “moreover, that specific authorized purposes of the Aspinall Unit may not be fully maximized for limited durations in certain year types does not invalidate the actions of the Secretary, as long as the overall purposes of CRSO are met and Reclamation expects in this instance, these purposes will be met.” 1-4.
- Reclamation should consider water storage, flood control and hydropower nondiscretionary action. See 2-1.

PWI-03-13

**Reservoir releases (for peak flows and for flows at the Redlands fish ladder) in the preferred alternative are contrary to CRSP purposes and NEPA scoping. For example, the PFEIS states:**

- “Alternatives B, C and D differ from Alternative A in that they attempt to meet specific downstream spring peak and duration flow targets, using reservoir storage as necessary.” ES-2 (emphasis added).
- “Adjustments will involve operational changes that include but are not limited to increased powerplant releases, timing releases with higher tributary inflows to the Aspinall Unit, or increased bypasses at Crystal or Morrow Point dams. All operational adjustments would be encompassed within operations already contemplated under alternatives being considered.... 3-33 (emphasis added).
- Spring peaks are “moved” to a time that meets the Decree and results in two separate peaks. See 1-33 to 1-38. This results in increased use of storage, increased powerplant bypasses and other adverse impacts to CRSP purposes.

PWI-03-14

<sup>3</sup> See *California v. United States*, 438 U.S. at 665, 667-68 (1978).

<sup>4</sup> Kent Holsinger, *Colorado River Storage Project Act Purposes: Does the Tail Wag the Dog?* Univ. of Denver L. Rev. 78-80 (2005).

<sup>5</sup> *Id.* at 91, 94-95.

- There is no authority that requires steady flows from Crystal dam for environmental resources. *See* 2-5.
- Reclamation should reinsert information relating to the use of Aspinall for hydropower to meet regulation, reserves and assist in meeting power pool events has been removed. *See* 2-16.

PWI-03-14  
Cont.

#### VII. THE RIP DOES NOT ALTER CRSP NOR RECLAMATION LAW

Reclamation is to “assist in meeting instream flow requirements for the rare fish through the refined operations of Flaming Gorge, Blue Mesa [Aspinall], and Ruedi Reservoirs in a manner consistent with all applicable laws.”<sup>6</sup> No action taken pursuant to, or in furtherance of, the RIP is to affect Reclamation Law.<sup>7</sup>

PWI-03-15

RIP purposes are mischaracterized in the PFEIS. The RIP was implemented to recover and delist the species while allowing water development in accordance with the “Law of the River” to continue.

#### VIII. THE ESA DOES NOT ALTER CRSP NOR RECLAMATION LAW

Reclamation is limited to its existing authority in carrying out its obligations under the Endangered Species Act (ESA).<sup>8</sup> Nor does the ESA amend Reclamation’s statutory mandate under the CRSP.<sup>9</sup> Reclamation’s improper characterization of operations for CRSP purposes as “discretionary” does not change this analysis.

PWI-03-16

#### IX. THE PFEIS IS FLAWED UNDER NEPA

A. Reclamation failed to prepare an EIS on significant changes to reservoir operations from 1992 to the present. By doing so, Reclamation committed itself to an Action before making a Final Decision. This could also be construed as pre-decisional and an irreversible, irretrievable commitment of resources. For example, the PFEIS states:

PWI-03-17

- “From 1969 to 1991, the Aspinall Unit was operated to maximize water storage and hydropower production...” 1-6.
- “...1992 to 2003 period, which reflects modified releases that mimic a natural hydrograph.” 1-6.
- “Over the last decade, the pattern for releasing water from the Aspinall Unit has been modified to accommodate endangered fish research, other resources, and general

<sup>6</sup> *RIP Blue Book*, note 13 at 1-7.

<sup>7</sup> Public Law 106-392 (2000).

<sup>8</sup> 16 U.S.C. § 1536(a)(1).

<sup>9</sup> *See Nat’l Ass’n of Home Builders v. Defenders of Wildlife*, No. 06-340 slip op. at 15 (U.S. June 15, 2007); *American Forest and Paper Ass’n v. U.S. EPA*, 137 F.3d 291, 298-299 (5<sup>th</sup> Cir. 1998) (EPA cannot invoke the ESA as a means of imposing requirements that are not authorized under the Clean Water Act); *Platte River Whooping Crane Trust v. Fed. Energy Reg. Comm’n*, 962 F.2d 27, 33-34 (D.C. Cir. 1992) (the ESA “does not expand the powers conferred on an agency by its enabling act”).

environmental goals in the Gunnison River while continuing to meet authorized purposes.” 1-7.

**B. Impacts to Hydropower (an Authorized Purpose) are Not Adequately Assessed**

**1. Reclamation failed to take a “Hard Look”**

PWI-03-18

Reclamation relied upon 1992 through the present operations as its No Action alternative. In doing so, it failed to take the requisite “hard look”<sup>10</sup> at impacts to CRSP purposes, including hydropower in the PFEIS. See 2-18 (No Action Alternative).

**2. Modeling is Inadequate**

Hydropower is a significant factor and “connected action” which the EIS must address. Reclamation should also consider impacts to the “human environment.” Impacts to hydropower should be assessed in proportion to their significance.<sup>11</sup>

Reclamation failed to accurately model and portray the impacts to hydropower from changing reservoir operations and failed to analyze cumulative impacts. In addition, recognition of annual minor to moderate impacts to resources such as sport fisheries, hydropower and recreation have been inappropriately combined. Authorized purposes (hydropower) should be identified separately from unit benefits. Reclamation failed to consider present and future needs for hydropower in its analysis.<sup>12</sup>

Including the Decree in the PFEIS as an element of all alternatives skews analysis of impacts. The PFEIS itself states, “The water right has not been included in the model.” 3-1. Implementation of the Decree could have real consequences to CRSP purposes. The period of record should also be modified to be more representative of all year classes.

In regard to authorized purposes, the narrative in Volume 1 doesn’t square with the modeling described in the appendix. The No Action alternative must be modeled independently of the Black Canyon right to appropriately assess impacts.

Appendix A, p. 44 states “As designed, spillway use is limited to periods when the reservoirs have reached high contents.” In other words, the facilities were designed for flood control purposes, and not for “routine” or artificially imposed frequent usage. What structural analysis has been undertaken to determine impacts to these facilities from more frequent and different uses than they were designed for? Increased use of spillways and increased maintenance costs should be addressed in more detail. Cumulative impacts associated with bypasses and flooding have not been identified.

**3. Economic Impacts to Hydropower in the PFEIS are Outdated or Missing**

PWI-03-19

Around 2007, CREDA analyzed impacts to power production and presented to one of the mediation sessions related to the Decree. At that time, CREDA estimated a potential reduction in Aspinall Unit water storage due to increased Black Canyon flows to be about 100,000 AF. This

<sup>10</sup> See, e.g. *All Indian v. United States*, 975 F.2d 1437 (10<sup>th</sup> Cir. 1992).

<sup>11</sup> See 40 CFR § 1502.2(b).

<sup>12</sup> See 40 CFR § 1508.8(b).

would result in an average capacity reduction range from 45-65 MW for July-September months due to the spring peaks called for in the Decree.

PWI-03-19  
Cont.

CREDA included a capital construction cost of \$1,600,000/MW, and an energy cost of \$50/mwh. So the calculation was  $\$1,600,000/\text{MW} \times 65 \text{ MW} = \$104,000,000$  and energy cost of  $\$50/\text{mwh} \times 84,684 \text{ MWH}$  amounted to \$5.081M annually. Reclamation should consider the cost of constructing new storage and new hydropower plants to make up for losses to storage and power production as part of the analysis in the PFEIS.

We understand Reclamation's power office (in 2002) modeled the following power impacts: (annual figures): Dry year: \$8.2 – \$9.2 M; Average year: \$5.3-\$6.4 M; Wet year: \$8.1 - \$11.6 M. No such analysis is present in the PFEIS.

The PFEIS modeling did not incorporate any capacity impacts, and economic impacts appear to have gone without further analysis since 2005 or 2006. Without additional information from Reclamation, it is our understanding that Western Area Power Administration is also unable to analyze impacts to the hydropower resource.

**4. Environmental Justice**

Impacts to hydropower negatively impact the 57 Native American Tribes served by CRSP power. The PFEIS fails to adequately assess and quantify these impacts as required by NEPA and environmental justice.

PWI-03-20

**5. The Aspinall PFEIS is inconsistent with Reclamation's prior EIS at Flaming Gorge.**

In the Flaming Gorge EIS, a cumulative impact analysis considered the, "economic value of power from environmental constraints enacted since 1973."<sup>13</sup> In that case, Reclamation used the same models to look at the No Action and Action alternatives, and performed an additional model run to reflect REMOVING biological constraints. NEPA requires this type of analysis at Aspinall too.

PWI-03-21

The Flaming Gorge EIS recognized that implementation of flow recommendations, in concert with other Recovery Program actions, is intended to avoid jeopardy and assist in recovery." Here, Reclamation should reinsert similar language it deleted from the Aspinall DEIS, "the exercise of Black Canyon water right will be coordinated with Aspinall reoperations to the extent possible."

**6. Reclamation's preferred alternative in the PFEIS was pre-decisional and an irreversible, irretrievable commitment of resources. For example, the PFEIS states:**

- "negotiations for the reserved right closely considered alternatives being developed for the DEIS, in particular the alternative that would eventually be selected;"
- "As indicated previously in the EIS, the Black Canyon NP right has been decreed. This right calls for a spring peak flow as well as shoulder and base flows and generally results in peaks similar to action alternatives, in particular, Alternative B peaks. Peak flows for endangered fish have a longer duration than the Black Canyon NP Water Right peak.

PWI-03-22

<sup>13</sup> [http://www.usbr.gov/uc/envdocs/eis/fgFEIS/appdx/5\\_power.pdf](http://www.usbr.gov/uc/envdocs/eis/fgFEIS/appdx/5_power.pdf)

Because of this, as referenced in the DEIS, the differences between the No Action and action alternatives are reduced when the right is exercised. The hydrologic impacts are based on hydrology modeling of alternatives, without the reserved right being modeled. Therefore, when exercising the reserved right, differences in impacts between No Action and action alternatives are reduced.” 3-25.

7. A Supplemental EIS may be Required

The PFEIS is a dramatic departure from scoping and the DEIS in that Spring peaks are “moved” to a time that meets the Decree and results in two separate peaks. 1-33 to 1-38. Yet the Decree, “water right has not been included in the model” such that the PFEIS has not accurately modeled or portrayed the impacts of the Decree on alternatives. 3-1.

PWI-03-23

In the PFEIS, Reclamation has deleted that it will “continue[ing] to meet,” authorized purposes. This change is significant enough that additional NEPA compliance may be necessary. We also question whether analysis “downstream to Lake Powell” (PFEIS at 1-2) was contemplated in scoping or the DEIS.

Information relating to the use of Aspinall for hydropower to meet regulation, reserves and assist in meeting power pool events has been removed. 2-16.

X. ADDITIONAL SPECIFIC COMMENTS

PWI-03-24

1	ES-1		Revise “water development facility” to “multi-purpose project”
2			Insert “and produces hydropower” after “manages water” in last sentence, first paragraph.
3			Purpose and Need sentence 1 should include “and continuing to meet all of the congressionally” after “maintaining” to ensure consistency with the FRN.
4	ES-2		Revise “flow needs of” to “flow recommendations for”
5			Delete the parenthetical “(such as in excess of filling Blue Mesa Reservoir and in excess of producing hydropower)”, or revise the hydropower reference to describe bypassing the powerplant.
6	ES-3		Revise first sentence to “while maintaining and continuing to meet all the congressionally authorized purposes”
7			Is the last sentence correct or is it pre-decisional?
8	ES-7		Delete “minor to moderate” in bullet referring to impacts to resources such as sport fisheries, hydropower generation, and recreation, as it is a subjective assessment of comments received.
9	1-1	1.1.2	What was the purpose for changing “maintain” to “meet” in the second paragraph?
10	1-2	1.1.3	Why was “in western Colorado” deleted? As drafted, it is unduly broad. It is also inconsistent with the description of the Unit’s operational modeling scope on p. 2-2
11		1.1.4	Why was the Purpose revised? At a minimum, re-insert “while maintaining and continuing to meet all” before “the authorized purposes” in first paragraph
12			Delete the newly added last sentence of paragraph 2. It goes beyond “assist in the recovery of” and is unduly broad by referring to “and other reservoirs”.

			This EIS is for the Aspinall Unit only.
13	1-3		Recommend substituting first full paragraph with language proposed by CREDA, WAPA and State of Colorado <sup>14</sup>
14	1-6	1.2.1	Why was the last sentence of the first paragraph revised? The original DEIS language must be reinstated: "The flexibility offered by Blue Mesa and Morrow Point dams is very important for meeting peaking, automation generation control, and reserve sharing obligations of CRSP." Not all reliability obligations are "contractual".
15	1-7	1.2.2	Why was "other resources" added? Please be specific.
16	1-18	1.2.6	See attached Exhibit A.
17		1.2.7	See attached Exhibit A.
18	1-21	1.4	Colorado Water Conservation Board is listed twice
19	1-22	1.6.1	Why was the reference to CRSPA section 8 changed? This change is inconsistent with, for example, the same table in the Navajo Dam Operations PFEIS.
20	2-1	2.1	The parenthetical "(i.e. flood control, water contracts, regulatory requirements)" should be deleted as it is not complete. Reference could be made to page A-28 of Vol. 2 of the PFEIS. For instance, river regulation is non-discretionary.
21	2-1	2.2.1	Why was the first sentence revised? Hydrologic modeling and operational discretion should be reinserted in the introductory sentence.
22	2-3	2.3.1.1	See attached Exhibit A.
23	2-4	2.3.1.2	Why was the "excess water" discussion removed? The redraft appears to imply two peaks. The deleted language regarding a single peak should be reinstated: "The Secretary's exercise of the federal reserved water right for Black Canyon of the Gunnison National Park will be coordinated with the implementation of any of the Aspinall action alternatives. To the extent practicable, this water right shall be exercised to achieve a single peak flow, subject to all Aspinall Unit authorized purposes."
24		2.3.1.2	The Crystal Reservoir ramp language should be reinstated to "ramping up at a maximum of 15 percent." and the "totaling 15 percent" should be deleted.
25	2-6	2.3.2.3	Please provide additional information regarding the newly included language on FERC hydro license limitations at Redlands. What are the impacts of this restriction, and what is the effective date and term of the license?
26	2-7	2.3.3.1	Please explain the changes to the Preferred Alternative description, particularly regarding the inclusion of "Minimums can reach 200-250 cfs in severe droughts." Is there a difference between <i>modeling</i> Alternative B and <i>operating under</i> Alternative B? The model should be considered a tool for Reclamation to utilize in exercising its discretion.
27	2-8	2.3.3.2	What is the basis for changing from May 1-June 15 to "late April to late June?"
28			The revised language implies a mandate that the duration flows follow the Flow Recommendations, and removes the premise that the target is minimum duration and 90% of the desired peak. The previous language should be reinstated: "Releases for duration of higher flows in conjunction with the

<sup>14</sup> Flow recommendations developed for use by the Recovery Program are intended to be evaluated, and revised through an adaptive management process. The operation of the Aspinall Unit under the preferred alternative is intended to meet the Gunnison River Flow Recommendations to the extent Reclamation can do so while maintaining and continuing to meet the congressionally authorized purposes. Reclamation's operations to assist in meeting the flow recommendations shall be implemented through adaptive management consistent with the authorized purposes of the Aspinall Unit. This allows flexibility to adjust management actions as additional understanding is gained and in the face of changing hydrologic conditions allows decision-makers at each juncture to make the best decisions they can with the information available at that time (4/23/09).

			desired peak at Whitewater will be made if it is possible to reach 90 percent of the desired peak. The length of duration of flows is dependent on the Year Type category in the Flow Recommendations. Minimum duration is targeted and may be exceeded at times.” Also, why was the April-July period changed in Table 2.3.1? Lastly, see comment 26 above re modeling v. operation.
29	2-9	2.3.3.3	Why has the minimum release criteria been revised to indicate that <i>at least 300 cfs will apply “except in severe drought conditions”?</i>
30	2-12	2.3.6.2	What is the science basis for removing the language regarding selenium uncertainties? Clarifying the effects of long-term selenium concentrations on endangered fish should be a requirement prior to making any operational changes.
31	2-14	2.3.6.4	See attached Exhibit A. Reclamation has an obligation to balance multiple stakeholder interests in its operation of the Aspinall Unit, and one stakeholder/interest should not be afforded priority.
32	2-16	2.3.6.6	The following language must be reinstated: “Alternatives would continue to meet power system requirements of the North American Electrical Reliability Council and the Western Electricity Coordinating Council such as generation control, voltage regulation, black start capability, and reserves. For example, Aspinall Unit operations--such as Morrow Point Powerplant peaking--can be used in emergency situations to prevent major power problems in the West.”
33	2-25	2.7	Please define “historical flows” in the statement that all operations remain within that range.
34	3-6	3.3.1	Why was the scope expanded to go beyond the “downstream Gunnison River” to now include the Gunnison and Colorado Rivers? The previous language should be reinstated.
35	3-8	3.3.1	Why was the flood probability language deleted?
36	3-28	3.3.1.2	Please explain the language “if managed properly, the reservoir can easily “reset” itself.” This could be read to mean that the only reason Blue Mesa doesn’t refill is mismanagement. What about hydrology?
37	3-27	3.3.1.2B	See comment 23 above – The second paragraph should be revised to reflect the single peak concept. Please revise “endangered fish alternatives” to “alternatives analyzed in this EIS.”
38	3-27		See Section III of our comments above
39	3-30	3.3.1.2C	Why was the scope expanded to the Colorado River? This is inconsistent with p. 3-48. See attached Exhibit A.
40	3-49	3.3.2.1B	What was the purpose of expanding the CRSPA citation? If it is going to be expanded, please ensure that the language is verbatim. These provisions of 43 U.S.C. Sec. 620 and 620f provide explicit direction regarding the <i>development</i> of water for hydropower purposes. Section 620f also addresses the <i>allocation</i> of water for and between hydropower and other purposes in a manner that both confirms that it does not affect the allocation of water between the Upper and Lower Basins and resolves and avoids any possible conflict between the use of water for hydropower purposes and the other uses of water. In other words, the hydropower resource is inextricably related to the Unit’s water uses. <sup>15</sup>
41	3-51		See comment 14 above. The previous language must be reinstated. Also, CRSP rate information is out of date. (from WAPA)
42	3-55		Why was reference to Blue Mesa deleted after “Morrow Point” when referring to fluctuations?  Table 3.3.9 (impacts to power generation by year) is missing.

<sup>15</sup> Case No: 3:07-CV-8164-DGC, Supplemental Reply in Support of Federal Defendants’ Cross-Motion for Summary Judgment on Claims 6-8, Feb. 20, 2009

43	3-59	3.3.2.1D	Please update the dollar amounts shown for Salinity, GCDAMP, RIP, and total power revenue expenditures for those programs.
44			The last sentence of this section should be revised to acknowledge that it is not just monthly variations in generation and seasonal variations in power prices that affect Western's purchase power impacts. Daily and hourly fluctuations, shifting monthly volumes also have impacts. The sentence should also be modified to include "and its customers", as CRSP customers may also have to make additional purchases to compensate for impacts to the CRSP hydropower resource.
45	3-91	3.3.7	See comment 14 above re Colorado River. Also, the language regarding the selenium program should state that it is "intended to assist in the recovery", not "will benefit the recovery" of the fish. Until sufficient monitoring of the not-yet-created program is in place, that conclusion can't be drawn.
46	3-115	3.3.7.2A	See attached Exhibit A.
47	3-117		What is the purpose for including so much detail on CROS in this document? Also, is appropriate to single out one specific efficiency project? Reference in the following paragraph to the Recovery Program should be sufficient. Lastly, see comment 14 above regarding Colorado River reference.
48	3-128	3.3.8.2A	Why was reference to "if beyond the capacity of the tour boat dock facilities" deleted?
49	3-139	3.3.9.2C	If there was no specific non-use studies undertaken, which there were not, then the language regarding non-use valuation, which includes speculative commentary and inferences should be deleted.
50	3-148	3.3.10.2B	It is inappropriate to use "to a lesser extent" regarding Alternative A. The sentence should indicate that ALL Alternatives are consistent with the decreed right flows. See also our comments in Section III above.
51	3-153		Does the environmental justice analysis take into consideration the 57 tribal CRSP customers? CRSP customers who are tribes will experience the same impacts as other CRSP customers in terms of financial impacts due to rate adjustments and increased purchased power requirements. These communities are likely in some of the most distressed economies in the West.
52	4-1	4.2.2	Delete "In most cases the total daily change will be made in two steps during the day".
53	5-4	5.4	The correct name is "Irrigation and Electrical Districts Association of Arizona"; and "AZ" should be removed after "Colorado River Energy Distributors Association". (CREDA is a Colorado non-profit corporation with members in six Colorado River basin states).

**Exhibit A**

**Black Canyon Water Right Language Developed by  
Colorado, River District , WAPA, PRPA, Trout Unlimited and  
Western Resource Advocates**

Note: PRPA recognizes that some formatting problems may have occurred with the following language. Where necessary, PRPA recommends Reclamation contact the State of Colorado for clarification and confirmation as to those points where consensus was reached amongst the participating stakeholders.

**ATTACHMENT A**  
**Aspinall Unit PFEIS**  
**Language Excerpted for Cooperating Agency Discussions**

Flow Recommendations call for flows decreasing below 1,050 cfs after the Colorado pikeminnow migration period. During wetter periods, base Flow Recommendations are higher.

The Flow Recommendations recognize uncertainties in understanding the biology of the fishes and the response of the fish and their habitat to flow changes. For that reason, the recommendations call for using adaptive management to respond to new knowledge and using monitoring to evaluate the physical response of the habitat and biological response of the fish to the flow regimes. It is expected that any refinements in operation of the Aspinall Unit would be within the scope of the current proposed action and that implementation of refinements would occur with appropriate Section 7 consultation as necessary.

Physical uncertainties discussed in the recommendations include:

- While relationships among initial motion, significant motion and streamflow are well defined, duration of flows necessary to accomplish habitat work is not completely known. Because flow duration recommendations were developed based on a wet period, the recommended durations require a large volume of water that may not always be available. According to the Flow Recommendations, "...the duration of flows necessary to accomplish in-channel and out-of-channel habitat maintenance objectives is not known."<sup>1</sup>
- Water availability may limit the ability of the Gunnison River to meet the Flow Recommendations under certain conditions.
- Because of timing and other differences in runoff patterns of the Colorado and Gunnison rivers, it is difficult to predict the effect of Gunnison River flow changes on the Colorado River.
- Flow Recommendations for wet periods may cause flooding problems for which management activities may be necessary to prevent potential problems.

<sup>1</sup> Research under the Recovery Program is ongoing in the Gunnison River. Under one sediment-monitoring project the primary objective "...is to address key uncertainties in priority reaches of the Colorado, Gunnison, and Green Rivers relevant to the role of streamflows and sediment transport on the formation and maintenance of backwater habitats and spawning bars. A secondary objective is to collect the necessary sediment data to aid in the evaluation of Service Flow Recommendations for the Aspinall Unit and Flaming Gorge Reservoir." (Fish and Wildlife Service 2006).

In summary, the Flow Recommendations call for peak flows to periodically prepare cobble and gravel spawning areas, to connect backwaters, and to maintain channel diversity; and sufficient flows to cue and allow migration. Base flows that promote growth and survival of young fish during summer, fall, and winter are also included.

#### 1.2.6 Black Canyon NP Water Right

On December 31, 2008, the Colorado Water Court issued a decree quantifying the 1933 federal reserved water right for the Gunnison River through the Black Canyon NP. The decree quantifies the March 2, 1933 priority date direct flow water right as a year-round minimum flow and with variable peak and shoulder flows for each year, the magnitudes of which are dependent upon current that year's Gunnison River Basin hydrologic conditions. The negotiations for the right were mentioned in the DEIS. The DEIS stated: "The Federal reserved water right for the Gunnison River through the

Black Canyon is nearing quantification. In general, the right will call for higher flows in the spring similar to flow recommendations for endangered fish. Thus the reserved right and the preferred alternative for Aspinall Unit operations will have similar impacts on resources. The Secretary of the Interior's exercise of the federal reserved right will be with due regard for, and shall be coordinated with, implementation of the Aspinall Unit reoperations. To the extent practicable, this water right will be exercised so that it is coordinated with implementation of the preferred alternative to achieve a single peak flow, subject to Aspinall Unit authorized purposes, including, but not limited to, flood control to protect human health and safety and prevent the loss of property along the Gunnison River."

Now that the right is in place, additional detail has been included in the narrative of the this FEIS and a copy of the decree, including a full statement of the terms and limitations, is included in Volume II, Appendix G.

The Black Canyon NP Water Right is a subordinated to all water rights with adjudicated priorities that are senior to the Aspinall Unit water rights. The Black Canyon NP Water Right is a downstream water right senior to the Aspinall Unit. As such, along with other senior water rights, it is a condition that is common to all alternatives. In accordance with state water law and the decree, when the Secretary exercises the right Black Canyon NP Water Right, Reclamation must take necessary shall undertake operational actions to meet consistent with Black Canyon Decree and in accordance with state laws. If the terms and conditions Secretary places a water right call in the exercise of the decree. The actions taken by Black Canyon NP Water Right, Reclamation to meet shall also comply with valid administrative orders from the Colorado State and Division Engineers' Offices for administering the decree are non-discretionary under state water law, for the Aspinall Unit and the Black Canyon Decree, both of which is made applicable to Reclamation in this circumstance pursuant to the decrees for the Aspinall Unit and by section 8 of the Reclamation Act of 1902. The analysis contained in Chapter III, section 3.3.1, of

As discussed below, this EIS depicts those year types, based on provides examples of historical record, when year types and describes examples of operational actions that Reclamation may undertake to coordinate the ESA fish flows for meeting ESA needs downstream will also satisfy the decreed water right and identifies when Reclamation will have to take the Black Canyon NP Water Right in a given water year.

For further non-discretionary actions to satisfy the decree. The narrative supporting this analysis provides an example of the types of non-discretionary actions that may be taken in such circumstances, as long as such actions are consistent with the terms and conditions in the decree. The discussion of these non-discretionary actions how the Black Canyon NP Water Right fits within the alternatives and is meant to provide examples of the types of actions that may be necessary to satisfy the decree and is consistent with the historic range of Aspinall Unit operations. Thus, the finalization of the decree on December 21, 2008, did not significantly change the impacts analysis. See section analyzed see sections 2.3.1.1 and 3.3.1.2C for further information.

**1.2.7 Programmatic Biological Opinion**

The Service has prepared a programmatic biological opinion (PBO) under the ESA (Volume II, Appendix B). The proposed action in the PBO differs from the proposed action in this EIS in that the PBO covers effects on endangered species of all water uses and depletions in the Gunnison Basin in addition to the Aspinall Unit operation changes addressed in this EIS. The proposed action in the PBO includes:

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• Modification of the Aspinall Unit operations to address flow needs for endangered fish in the Gunnison and Colorado rivers by meeting or attempting to meet targets on the Gunnison River and in concert benefit Colorado River mainstem habitat as outlined in the Flow Recommendations.

• The continuation of operations of all existing Reclamation projects in the Gunnison River Basin (Smith Fork, Paonia, Fruitgrowers, Bostwick Park, and Uncompahgre).

• The continued operation of the Dolores Project in the Dolores River Basin, included based on a prior biological opinion's reasonable and prudent alternative, and reinitiation of consultation on it to address new listed species and depletions.

• The continued operation of the Dallas Creek Project, included based on a prior biological opinion's reasonable and prudent alternative and reinitiation of consultation on it to address new listed species and depletions.

• The continued operations and depletions of other Federal projects (e.g. BLM, the Service, NPS, and Forest Service) and all non-Federal projects and water uses in the Gunnison Basin.

• The future depletion for beneficial use within the Gunnison River Basin of 3,500 af of unspecified depletions in the Gunnison Basin as well as and 30,800 af of Aspinall Unit water rights subordinated to water users upstream users of the Aspinall Unit.

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The PBO provides ESA coverage for existing and specified future water uses and depletions in the Gunnison River Basin, as well as, completes ESA reconsultation on the Dallas Creek and Dolores Projects.

Two main operational elements of the PBO are:

• The reoperation of the Aspinall Unit addressed in this FEIS, and

• The preparation and implementation of a selenium management program (SMP).

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The SMP calls for developing a plan that will reduce selenium levels in the Gunnison and Colorado rivers. An estimated 90 percent of selenium loading to the Gunnison River results from operation of Federal and private irrigation projects in the basin (Reclamation 2006b). Seepage from irrigation ditches and deep percolation of irrigation water into the Mancos shale derived soils mobilize naturally occurring selenium in the shale which is then carried in groundwater to basin waterways. Irrigation in the Uncompahgre Valley is the most significant source with the majority of the irrigation in this valley provided by the Uncompahgre Project. Sixty percent or more of the selenium loading in the Gunnison Basin originates from an area encompassing the Uncompahgre River basin and the service area of the Uncompahgre Project (Reclamation 2006b). Other Federal Projects such as the Bostwick Park, Smith Fork, Paonia, Fruitgrowers, and Dallas Creek provide irrigation water that adds to seepage and deep percolation and selenium loading to waterways. Private irrigation systems in the Uncompahgre Valley and other portions of the lower Gunnison basin drainage are also significant sources also mobilize naturally occurring selenium. Other selenium loading sources include seepage from unlined ponds, urban lawn and park watering, and natural runoff from soils with high selenium content.

The Aspinall Unit itself does not furnish irrigation water and is not a source of selenium loading, although its operation can impact dilution volumes and thus, selenium concentrations in the lower Gunnison River.

The Service describes the selenium issue in the PBO as follows:

*"The ongoing operation of irrigation projects and other water uses in the basin will continue to contribute selenium to the Gunnison and Colorado Rivers at levels that adversely affect the endangered fishes and their designated critical habitat and are inhibiting the survival and recovery of the*

endangered fishes. Reclamation will develop and implement a Selenium Management Program (SMP), in cooperation with the State of Colorado and Gunnison River basin water users to reduce adverse effects of selenium on endangered fish species in the Gunnison and Colorado rivers (see Effects of the Proposed Action section). The SMP will incorporate and accelerate ongoing selenium reduction efforts in the Uncompahgre Valley and other areas of the Gunnison Basin and will add several new elements. The overall long-term goal of the program is to assist in species recovery per the Recovery Goals. The SMP will use the best available scientific information for all elements of the program. Elements of the SMP will include:

- Accelerated implementation of salinity/selenium control projects for irrigated agriculture
- Reduction of other non-point source selenium loading
- Technology development
- Water quality monitoring
- Monitoring of endangered fish populations
- Coordination with lower Gunnison River Basin watershed management plan
- Regulatory support
- Public information and education
- Adaptive management
- Institutional support”

Reclamation is in the process of working with cooperators to develop the SMP; with finalization of the plan scheduled for December 2011. Once elements of the plan are identified, a determination can be made on the need for future NEPA compliance and compliance with other related regulations and laws.

The PBO concluded that the "...effects of the proposed action (including the proposed operation of the Aspinall Unit, the new and historic water depletions and the mandatory conservation measures), and the cumulative effects, it is the Service's biological opinion that the proposed action as described in this biological opinion, is not likely to jeopardize the continued existence of endangered fish and is not likely to destroy or adversely modify designated critical habitat."

The SMP is also described in the PBO in Volume II. Dependent on the actions in the program, additional NEPA compliance may be required for its implementation.

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**1.3 Issues of Concern**

Issues raised in the public meetings held in 2004 and in written comments and internal scoping are discussed in Chapter 5 and Volume II, Appendix F. Briefly, the major concerns centered on possible effects to the following: water rights, water quality, recreation, fish and wildlife, endangered species, vegetation and wetlands, flood control, length or duration of peaks. When the reserved right is included in the No Action or Alternative A, spring peak targets would be similar to those that would occur under the other alternatives.

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**2.3.1 No Action Alternative**

The No Action Alternative represents a projection of current operating practices to the most reasonable future conditions that would occur without any action alternatives being implemented. The No Action Alternative should not automatically be considered the same as the existing or past conditions, since reasonably foreseeable future actions may take place whether or not any of the project action alternatives are chosen and because the environment is not static and environmental consequences would still occur. Under the No Action Alternative, elements of the Recovery Program would

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continue—for example, stocking of endangered fish, non native fish control, operation of the Redlands Fish Ladder and Screen, management of backwaters, and monitoring. However, altering operations of the Aspinall Unit to specifically assist in meeting the 2003 Flow Recommendations for endangered fish in the Gunnison and Colorado rivers would not occur.

**2.3.1.1 Black Canyon NP Water Right**

On December 31, 2008, the Colorado Water Court issued a decree confirming and quantifying the federal reserved water right for the Gunnison River through the Black Canyon NP (Black Canyon NP Water Right). The decree quantifies the March 2, 1933 priority date Black Canyon NP Water Right as a direct flow water right with a year-round minimum base flow and with variable one-day peak and runoff season “shoulder” flows for each year; the magnitude of which are dependent upon the May 1 forecast of the April 1 through July 31st unregulated inflow into Blue Mesa Reservoir. The negotiations for the Black Canyon NP Water Right were mentioned in the DEIS. Now that the right is decreed, additional detail has been included in the narrative of the FEIS (and Volume II, Appendix A) and a copy of the decree, including a full statement of the terms and conditions, is included in Volume II, Appendix G.

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As a senior water right downstream of the Aspinall Unit, the Black Canyon NP Water Right is a senior downstream water right to the Aspinall Unit. As such, along with other senior water rights, it is a condition that is common to all alternatives. In accordance with state exercise of the water law and the decree, when the Secretary exercises the right, Reclamation must take will undertake the operational actions necessary to meet the terms and conditions of the decree. The actions taken by the Secretary places a water right call in the exercise of the Black Canyon NP Water Right. Reclamation to meet the decree are non-discretionary under state water law, also will comply with administrative orders from the Colorado State and Division Engineers’ Offices regarding any administration on the Gunnison River including administration of the decree for the Aspinall Unit and the Black Canyon Decree, both of which is are made applicable to Reclamation in this circumstance pursuant to the decrees for the Aspinall Unit and by section 8 of the Reclamation Act of 1902. The

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According to the Black Canyon Decree, the Secretary’s exercise of the Black Canyon NP Water Right “shall be with due regard for, and shall be coordinated with, requirements of the Endangered Species Act.” (Decree, Paragraph 32.4.3). “In order to implement the [negotiated resolution of the decree] and efficiently allow the streamflow patterns contemplated [therein], the use of the Aspinall Unit, including its storage and release capacity, may be needed in some years. Such operation of the Aspinall Unit in conjunction with the exercise of the [decreed Black Canyon NP Water Right], is within the scope of the Aspinall Unit’s federally authorized purposes and its Colorado Water Court decrees.” (Decree, Paragraph 25). The Decree also provides that ... “[n]othing in th[e] decree modifies the Aspinall Unit water rights or the federally authorized purposes of the Unit in any way.” (Decree, Paragraph 26).

Regarding the peak flow component of the water right, the Decree expressly notes as a Finding of Fact that:

“the United States recognizes that exercising the right to peak flows described in this claim will require careful consideration of numerous factors, including the structural capacity of upstream dams and potential downstream flooding, among other river management issues. Therefore, the Secretary of the Interior will confer with the State of Colorado, The National Park Service, the Bureau of Reclamation, the Western Area Power Administration, the Fish and Wildlife Service and other affected interests in order to ensure that operational decisions to exercise this right are in accord

with the best available information and with full consideration of the river management issues noted.”

(Decree, Paragraph 13). The Decree further provides that “[t]he Secretary shall exercise the Peak Flow... including any operation of the Aspinall Unit necessary to exercise the Peak Flow... with due regard for to the efficient use of water.” (Decree, Paragraph 31.5.2.8). The Decree instructs that “[t]o the extent practicable, [t]he Black Canyon NP Water Right shall be exercised so that timing of the Peak Flow is coordinated with releases made [for the endangered fish flows] to achieve a single peak flow, subject to [flood control considerations]” with the understanding that “it may be necessary in some years to de-synchronize the [NP Water Right] Peak Flow from the peak runoff of the North Fork of the Gunnison River to reduce the potential for downstream flooding.” (Decree, Paragraph 32.4.4).

In view of this context, the analysis contained in Chapter III of this EIS depicts these year types based on historical record, when flows for meeting ESA needs downstream will also satisfy the decreed water right and identifies when Reclamation will have to take further non-discretionary actions to satisfy the decree. The narrative supporting this analysis provides an example of the types of non-discretionary actions that may be taken in such circumstances, as long as such discusses examples of historical year types and a range of operational actions that Reclamation may undertake to coordinate the recommended endangered fish flows and the Black Canyon NP Water Right. Discussion of these operational actions is for illustrative purposes only and does not pre-determine the administrative requirements or specific actions that Reclamation may undertake when the Secretary exercises the Black Canyon NP Water Right. The discussion of these non-discretionary actions is meant to provide examples of the types of actions that may be necessary to satisfy the decree and is consistent with the historic range of Aspinall Unit operations. Thus, the finalization of the decree on December 31, 2008, did not significantly increase or change the impacts analyzed and described in the DEIS. Operations for the Black Canyon NP Water Right will be consistent with the Aspinall Unit Operation’s PBO.

See section 3.3.1.2C for further information.

**2.3.1.2 Other No Action Alternative Elements**

The No Action Alternative would include the following elements in addition to elements common to all alternatives discussed later: Aspinall Unit in place, regulating the river using current operating practices as a guide, and operating for authorized Aspinall Unit purposes under a full range of annual inflow conditions. These current operational practices include:

• Filling Blue Mesa Reservoir at the end of runoff season would be a goal. Full reservoir is 7519.4 feet; however, operations are designed to reach around 7517 feet (or less, dependent on forecast) which provides a safety factor for controlling the reservoir in case of sudden high inflow events due to thunderstorms or high rate of snowmelt.

• The reserved water right for the Black Canyon NP as discussed above.

• The type of spring peak that could be provided for endangered fish would be determined annually by

<sup>1</sup> Note: Reference to specific provisions of the Black Canyon Decree is NOT meant to interpret, imply or otherwise emphasize meaning from the Decree. Rather, its sole purpose is to provide a general context for the discussion and analysis of the Black Canyon Water Right in conjunction with the recommended fish flows as contemplated in this FIS.

**Comment [kmk2]:** Stakeholders have not yet reached consensus on proposal for subsequent sentence: “The examples of operational actions are consistent with the historical range of Aspinall Unit operations; thus, inclusion of the Black Canyon NP Water Right within the NEPA alternatives does not significantly change the impacts analyzed in this FEIS as compared to the Draft EIS.”

STATE IN PROCESS OF REVIEW FOR ACCURACY

HYDROPOWER INTERESTS IN PROCESS OF REVIEWING THE IMPACTS IN THIS REGARD

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Reclamation with input received from the Aspinall Unit operations meetings. The peak would be planned to occur during the spring-early summer period. From January through April the goal would be to operate the Aspinall Unit to release all forecasted excess water through powerplants and to reduce future bypasses of powerplants while still giving priority to filling Blue Mesa Reservoir (flood control may occasionally require early bypasses). It is recognized that if the May 1 forecast proves to be higher than the actual inflow, there is some risk of not filling Blue Mesa Reservoir. Adjustments would also be made in the spring peak plan if the May 15 forecasted inflow changes significantly upward or downward.

Existing spring flood control operations would be continued by using discretion and being proactive to keep 14,000 cfs, or normally considerably less in the Gunnison River, above the Uncompahgre River confluence at Delta. The flood control manual requires that efforts be made to keep flows below 15,000 cfs.

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The Aspinall Unit would be operated in accordance with Colorado State Water Law including but not limited to bypassing inflow for downstream senior water rights as necessary.

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agencies and interested organizations as appropriate and as determined by regulation or policy in as timely manner as practical for advice on measures to minimize the effects; and formal consultation, if needed, will be conducted in accordance with Section 7 emergency consultation procedures, if the emergency requires ESA consultation.

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**2.3.6.4 Coordination of Operations**

Reclamation will continue to conduct Aspinall Unit operations meetings three times per year. The purpose of operation meetings-- held in January, April, and August-- is to share information between Reclamation and Aspinall Unit stakeholders regarding issues in the Gunnison River Basin related to the operation of the Aspinall Unit. The meetings are used to coordinate activities among agencies, water users, and other interested parties concerning the Gunnison River. These meetings allow interested parties meaningful input to operations planning. Reclamation considers the information exchange at these meetings in preparing operation plans for the Aspinall Unit. The projected operation of the Aspinall Unit is used by Reclamation in the development of the overall 24-month Study, a comprehensive planning model for the operation of Reclamation projects in the Upper and Lower Colorado River Basins, and includes operating plans for Glen Canyon, Flaming Gorge, and Navajo Units, as well as the Aspinall Unit. Operation of the Aspinall Unit considers projected hydrologic factors, authorized Aspinall Unit purposes, existing water rights, target elevations for reservoirs, implementing the preferred alternative for endangered fish, and other factors.

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As discussed previously, Reclamation will monitor inflow forecasts for operation planning beginning in January. Throughout this process, Reclamation will keep the NPS, US Fish and Wildlife Service, State of Colorado, Western Area Power Administration and others apprised of current operations; specifically on the ability of projected operations to allow coordination of the endangered fish flows and the Black Canyon NP Water Right to be met. Coordination will occur throughout the January to May period and formal notification will be made to NPS on April 1 concerning anticipated status of the potential of meeting the water right Water Right.

Reclamation will communicate with appropriate federal, state, local, non-governmental and non-profit agencies/organizations prior to scheduled operation meetings, or as needed, to gather information useful in developing proposed operation plans to be presented at the meetings.

**2.3.6.5 Climate Change**

In determining what future effects are reasonably certain to occur, Reclamation must determine the difference between future effects that are speculative, and effects that are likely to occur under the No Action Alternative as compared to the proposed actions. The hydrologic and water quality models

included variability designed to reflect conditions likely to occur in the future based on the period of record. However, future climatic conditions could be warmer, wetter, cooler, or drier than the modeled conditions.

There is some general consensus among the scientific community that the West will experience warmer temperatures, longer growing seasons, earlier runoff of snowmelt, and more precipitation occurring as rain rather than snow. Specific predictions for the

**Flows at Whitewater**—Figure 3.3-14 shows the annual peak flow distribution under each alternative at Whitewater. All alternatives result in higher peak flows than the No Action. Of particular note, in the 6,000 to 8,000 cfs range, Alternative B results in a higher occurrence than all other alternatives.

**Colorado River Flows**—Changes in flows in the Gunnison River would then affect the Colorado River flows between the Gunnison River confluence and Lake Powell. These changes are discussed under Special Status Species in Section 3.3.7.2A.

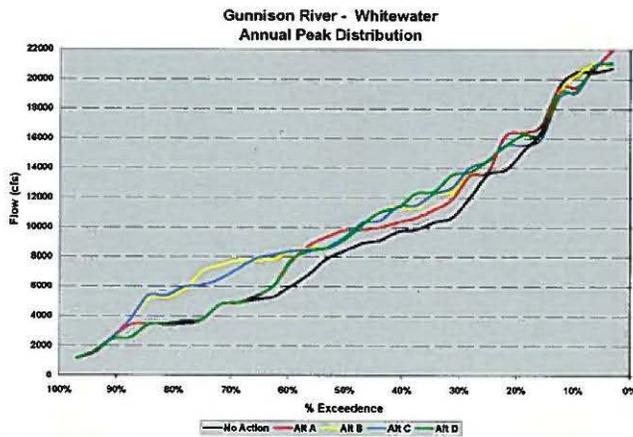


Figure 3.3- 14—Annual Peak Distribution at Whitewater

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**3.3.1.2C, Water Rights**

Each alternative under consideration will operate under the applicable water rights, contracts, law, interstate compacts, court decrees, and various rules, regulations, policies, and directives in place. ~~No specific Aspinall Unit storage releases are modeled for downstream senior water rights in any alternative.~~

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Each action alternative ~~sets~~ assumes a minimum downstream release for instream base flow in the Black Canyon NP of generally 300 cfs, but can be higher based on the previous year's operations which consider factors such as the fall brown trout spawn or downstream senior water rights.

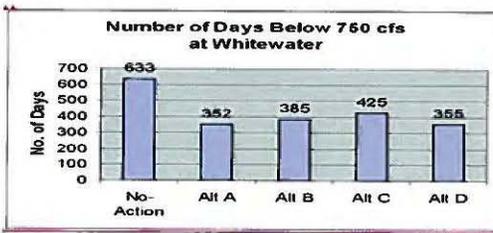
Base flow releases attempt to meet fish flow targets from the Flow Recommendations as measured at Whitewater and are provided under each of the action alternatives and can vary under different hydrologic conditions. In most years, a base flow of 1,050 cfs will be maintained at the Whitewater gage; however, these targets will be reduced in dry or moderately dry years.

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Table 2.3 2 in Chapter 2 previously summarized base flow targets. Additional releases will be made, when sufficient water is available, and to the extent consistent with authorized purposes of the Aspinall Unit, to provide 100 cfs to the Redlands Fish Ladder as needed in April through September and 40 cfs for the Redlands Fish Screen from March through November, using storage water if necessary.

Comment [kmk3]: Stakeholders have not reached consensus on this edit.

The Redland's water rights senior to the Aspinall Unit total 750 cfs. Occurrences of flows below 750 cfs over the 31-year study period in the action alternative models, as shown in Figure 3.3.15, can be attributed to the lag between the time the model recognizes flows are dropping below 750 cfs at Whitewater and the time releases are adjusted and reach Whitewater. Actual operation should provide more foresight of flows dropping thus reducing the days below 750 cfs even further. By operating to the base flow targets, the days which the Redlands Diversion would potentially be calling are actually reduced over the period of record in each of the action alternatives as compared to the No Action. Therefore significant negative impacts on water rights are not expected under the action alternatives.



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Figure 3.3- 15—Number of Days Below 750 cfs at Whitewater over the 31-Year Study period.

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~~As projected in the DEISAs mentioned above, the Black Canyon NP Water Right is a senior downstream water right to the Aspinall Unit. As such, along with other senior water rights, it, and is a condition that is common to all alternatives. In accordance with state water law and the decree, when~~

the Secretary exercises the right, Reclamation must take necessary actions to meet the terms and conditions of the decree. The actions taken by Reclamation to meet the decree are non-discretionary under state water law, which is made applicable to Reclamation in this circumstance pursuant to the decrees for the Aspinall Unit and section 8 of the Reclamation Act of 1902. Table 3.3.8 below depicts those year types, based on historical record, when flows for meeting ESA needs downstream will also satisfy the decreed water right and identifies when

Reclamation will have to take further non-discretionary actions to satisfy the decree. The further discussion, for purposes of illustration, provides an example of the types of non-discretionary actions that may be taken in such circumstances, as long as such actions are consistent with the terms and conditions in the decree. The discussion of these non-discretionary actions is meant to provide examples of the types of actions that may be necessary to satisfy the decree and is consistent with the historic range of Aspinall operations. Thus, the finalization of the decree on December 31, 2008, did not significantly change the impacts analysis. Operations for the Black Canyon NP Water Right will be consistent with the Aspinall Unit Operation's PBO.

The one day peak flow under the Black Canyon NP Water Right is based on the May 1 forecasted inflow into Blue Mesa Reservoir for the April through July period and is determined by formulae in the decree. These peak flows are summarized below.

**Spring Peak for Range of Forecasted Inflows**

Blue Mesa Reservoir Forecasted April-July Inflow (af)	One-day peak flow in Black Canyon (cfs)
372,000 or less	1,019 or less
372,000-500,000	1,019-2,068
500,000-715,000	2,968-6,246
715,000-925,000	6,246-6,512
925,000-1,001,000	6,512-7,609
1,001,000-1,050,000	7,609-11,034
1,050,000-1,100,000	11,034-11,568
1,100,000-1,200,000	11,568-12,636
1,200,000-1,350,000	12,636-14,238
1,350,000-1,500,000	14,238-15,840

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In addition to the one day peak, the Black Canyon NP Water Right includes a minimum year-round direct flow right of 300 cfs and May 1 to July 25 shoulder flows flow right of 300-1,000 cfs, which is based on forecasted inflow.

Comment [kmk4]: See Cmt. #1

However, alternatives in this FEIS have not been specifically modeled to include the right. The, but the right, as decreed, will be included in operational planning undertaken each year by Reclamation, as are other senior water rights on the river. As discussed in the DEIS, recommended flow regimes for endangered fish and the Black Canyon NP Water Right are generally compatible in that they both are based on hydrologic conditions and both provide for spring peak flows in the Gunnison River. With the Black Canyon NP Water Right assumed to be exercised and included in each of the alternatives, the incremental impacts of the action alternatives for the endangered fish flows are generally lessened, in comparison to the impacts portrayed in the DEIS. Endangered fish flows are targeted further downstream in critical habitat and also call for a longer duration of the peaks while the Black Canyon NP Water Right calls for a one day peak. Thus, impacts from operating to meet endangered fish peak flows are not significantly altered by meeting/accomplishing the one day Black

Canyon NP Water Right peak flow.

Subject to the decree, including the framework set forth in Section 2.3.1.1, *supra*, Table 3.3-8, below, depicts those year types, based on analysis of the historical record, when flows for meeting ESA needs downstream will also satisfy the Black Canyon NP Water Right. Table 3.3-8 compares the model-derived peaks which occur in the Black Canyon under the preferred alternative with the Black Canyon NP Water Right peak flows. It further identifies those year types when further operational actions would be needed to accomplish both the recommended endangered fish flows and the Secretary's exercise of the Black Canyon NP Water Right. The accompanying discussion provides examples, for purposes of illustration only, of the types of operational actions that Reclamation may take in such circumstances.

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Modeled Year	Reserved BC Right Peak Flow per decree (cfs)	Preferred Alternative - Modeled BC Peak flows (cfs)	Impact on Decreed Peak (See Notation A and B below)
1975	7595	6839	A
1976	4188	4387	MetXXXX
1977	829	806	Met
1978	6484	6051	A
1979	11034	6684	B
1980	11568	6253	B
1981	886	753	Met
1982	6433	6451	Met
1983	5864	10707	Met
1984	13437	10458	B
1985	6513	9063	Met
1986	7595	6782	A
1987	5635	6346	Met
1988	4273	2921	A
1989	2176	3114	Met
1990	1673	903	A
1991	4492	4720	Met
1992	3528	3330	A
1993	8922	7587	B
1994	3883	4167	Met
1995	6866	11871	Met
1996	6484	8475	Met
1997	7595	7808	Met
1998	5864	3843	A
1999	4492	5093	Met
2000	3730	6204	Met
2001	3426	5537	Met
2002	778	858	Met
2003	2740	2863	Met
2004	2359	2863	Met
2005	6312	1535	A

Comment [kmk6]: STAKEHOLDERS HAVE NOT YET REACHED CONSENSUS ON PROPOSAL FOR SUBSEQUENT SENTENCE AS FOLLOWS: "Each of these examples is within the historical range of Aspinall Unit operations. Furthermore, each of the operational actions described also is consistent with the Gunnison Basin PBO. Thus, their implementation does not significantly change the impacts analyzed in this FEIS."

STATE REVIEWING FOR ACCURACY

HYDROPOWER INTERESTS IN PROCESS OF REVIEWING THE IMPACTS IN THIS REGARD.

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Table 3.3-8—Black Canyon NP Water Right peak flow impact analysis

Notation A: In years identified with notation A, under actual operations, both the peak flow for model demonstrates that the Black Canyon NP Water Right and the peak flow target for the endangered fish as described in the preferred alternative will be met. As described in more detail later, releases from:

Comment [kmk6]: Stakeholders agree "Met", should be revised to "N/A" = No additional operational action.

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the historical range of Aspinall Unit facilities operations will be adjusted to meet ensure that the one-day peak flow for the Black Canyon NP Water Right identified in the decree will be accomplished, although in some years operational adjustments are necessary. Adjustments will may involve operational changes that include including, but are not limited to, increased powerplant releases, timing releases with higher tributary inflows to the Aspinall Unit, or increased bypasses at Crystal or Morrow Point dams. All operational adjustments would be encompassed within operations already contemplated under alternatives being considered. Accordingly, as discussed more fully below, in 27 of the 31 years modeled in the study period, Aspinall Unit operations will ensure that both the one-day peak flow identified for the Black Canyon NP Water Right and the peak flow target for the endangered fish as described in the decree will be met, although in some years operational adjustments preferred alternative are necessary, accomplished. The model is based on historical hydrology. Future conditions may not replicate the modeled historical hydrology.

**Notation B:** In the four out of the 31 years of the study period with notation B, the model was able to achieve the peak flow targets for the endangered fish but did not meet the Black Canyon NP Water Right peak flow. In general, the model limited releases from the Aspinall Unit to avoid flooding at Delta due to high North Fork tributary flows. These high tributary flows provided most of the water that helped meet the endangered fish peak flow target and therefore higher releases from the Aspinall Unit into the Black Canyon were not required to meet the endangered fish peak flow target.

In these year types of years, when the Secretary exercises the Black Canyon NP Water Right peak flow can be met as decreed through operations of consistent with the terms and conditions of the decree and other applicable laws, operational adjustments at the Aspinall Unit will be required to accomplish the peak flows. Generally, when April-July inflows exceed 1,000,000 af, an operations plan to meet accomplish the Black Canyon NP Water Right peak can be developed. However, due to the increased risk of flooding in high water years, operational decisions may require the flexibility to make adjustments on a daily basis. To reduce the risk of flooding at Delta, Reclamation may look for opportunities to shift the operation to meet accomplish the Black Canyon NP Water Right peak flow (and/or the endangered fish peak flow target) to later in the spring/summer after high tributary flows have receded.

If the Black Canyon NP Water Right peak flow requires the usage Examples of the spillways at Blue Mesa Reservoir, the peak release operation may be retimed to a period when water levels in Blue Mesa Reservoir potential adjustments are high enough to allow use of the spillways.

In those 12 years where the Black Canyon NP Water Right peak flows were not met as modeled, the paragraph listed below provide further detail, by year, as to the operational changes which would have been needed in order to achieve the Black Canyon NP Water Right peak flows, however it is important to note these modifications would take place with examples are based on "perfect knowledge" of past conditions using the results of the Riverware Hydrology model, and are being discussed solely to serve as examples of how operations could be modified in the future under similar conditions to meet the peak flow accomplish the Black Canyon Water Right peak flows. Future conditions may not replicate the modeled historical hydrology. Actual operational conditions will require adjustments to be made in real time under constantly changing conditions. Modeling of the study period has shown that during actual operations in high water years, there may be significant risks of flooding Delta and the Black Canyon decree requires Reclamation to give highest priority to flood control.

List of Sample Operational Adjustments:

- Bypassing water at Aspinall Unit facilities
- Use of the spillways at Aspinall Unit facilities
- Re-timing of Aspinall Unit storage operations to accomplish the peak flow with anticipated re-capture of any storage released within that water year.
- Timing of peak releases with higher side/tributary inflows above Crystal Dam to reduce the need to use spillways at Aspinall Unit facilities
- Timing the peak releases with peak runoff of the North Fork Gunnison in order to achieve one peak flow for both the Whitewater target flows and the Black Canyon
- In some cases it may be necessary to time peak releases from the Aspinall Unit to either before or after the peak runoff of the North Fork Gunnison River in order to meet the Whitewater target flows but avoid flooding in Delta

Yearly operation plans to meet the Black Canyon NP Water Right, endangered fish flow recommendations, and Unit purposes will be developed and coordinated through the established Aspinall Unit stakeholders' process. Wetter years will require an increased level of planning, analysis, and intense coordination and communication among all stakeholders.

1975

Under assumptions of the modeling process, the only option for meeting the Black Canyon Right peak flow is to use the spillway at Morrow Point to release an additional 800 cfs. In the modeled peak operation, Blue Mesa Reservoir releases are at the maximum capacity of the powerplant and bypass. Side inflows to the Aspinall Unit are not high enough at other times of runoff to justify returning the peak release. This modified operation would not cause flooding at Delta under the modeled scenario.

1978

One option for meeting the Black Canyon Right peak flow is to utilize the spillway at Morrow Point to release an additional 500 cfs within the established drawdown limitations. During the modeled peak operation, Blue Mesa Reservoir releases are at the maximum capacity of the powerplant and bypass. Another option for meeting the peak flow is to time the peak release operation with higher side inflows to Crystal Reservoir. Side inflows are 600 cfs higher in the middle of June compared to the time of the modeled peak operation. If this additional inflow could be utilized, it would remove the necessity of using the spillway at Morrow Point Dam. This modified operation would not cause flooding at Delta under the modeled scenario.

1979

As modeled under the preferred alternative, the peak release operation for the endangered fish was timed to meet the high flows of the North Fork and set to occur on May 28th. Releases were reduced once the peak target of 14,350 cfs for endangered fish was reached at Whitewater. Releases were increased again to try and return to the 14,350 cfs duration flow target (10 days) at Whitewater. Releases are then reduced with the goal of maintaining the 8,070 cfs duration flows for 40 days.

The first issue in meeting the 11,034 cfs Black Canyon NP Water Right peak flow in this year is to avoid flooding at Delta. This requires moving the peak release operation to either before or after the runoff of the North Fork. Since the spillways at Blue Mesa Reservoir will be needed to some degree to completely meet the peak flow, the peak release operation is moved to after the North Fork runoff when the reservoir will be at a higher elevation.

With Blue Mesa Reservoir contents relatively low this year, the best option is to rely on the Morrow

Point spillway to reach the Black Canyon NP Water Right peak flow. The magnitude of the release from Morrow Point to meet the water right requires the use of Morrow Point Reservoir storage. This is because Blue Mesa Reservoir releases and side inflows are less than required for Morrow Point Reservoir releases. However, the ramping rate guidelines for Crystal releases can result in a violation of the drawdown rate criteria at Morrow Point Reservoir, because Blue Mesa Reservoir releases do not keep up with Morrow Point Reservoir release requirements. The maximum release from Morrow Point Reservoir that will not violate the drawdown rate criteria for the reservoir or the ramping rate guidelines is 10,156 cfs, assuming Morrow Point Reservoir is at an elevation of 7,158.5 ft before the start of the spill operation and Blue Mesa Reservoir is at full powerplant and bypass release with no spilling.

In order to avoid flooding at Delta and to make maximum benefit of the side inflows into the Aspinall Unit, the peak release is moved from May 28th to June 16th. Under this scenario the peak flow in the Black Canyon can be met, providing Blue Mesa Reservoir has reached an elevation high enough to provide some water through the spillways. This additional water beyond the maximum powerplant and bypass release is needed to keep Morrow Point Reservoir from drawing down too quickly. Flows at Delta are just under 15,000 cfs at this time. This operation would be extremely difficult to carry out under real-time conditions due to the "perfect foresight" required to accomplish the peak and avoid flooding at Delta.

Thus, the 1979 operation, as modeled using Riverware, resulted in a peak flow at Whitewater at the end of May, however this peak release did not meet the Black Canyon NP Water Right. Thus, a modified operation was developed that makes a peak release on June 16th which meets the Black Canyon NP Water Right.

**1980**

Under the preferred alternative the modeled peak release for endangered fish was timed to coincide with high flows on the North Fork and set for May 24th. Releases were reduced once flows at Delta exceeded 15,000 cfs. North Fork flows receded by 2,000 cfs over two days allowing for the Aspinall Unit to go to full powerplant and bypass releases for duration flows in the lower Gunnison River.

The primary constraint to meeting the Black Canyon NP Water Right peak flow in this year is flooding at Delta. This requires moving the peak release operation to either before or after the runoff of the North Fork. It is estimated that if the peak was set for earlier in the year, it would have to occur sometime before the last week in April due to higher flows on the North Fork. Spillway releases at Blue Mesa Reservoir would not be possible this early in the year due to the water level elevation of the reservoir.

Water level elevation in Blue Mesa Reservoir is high enough by June 5th for the spillways to make a release that would meet the peak flow but flooding at Delta remains a problem for the next two weeks. The earliest peak date that does not cause flows at Delta to exceed 15,000 cfs is June 20th. Water levels in Blue Mesa Reservoir are high enough at this time that spillway releases can assist in meeting the full extent of the peak portion of the Black Canyon NP Water Right. Moving the spring peak operation from May 24th to June 20th coincides with the time when water levels in Blue Mesa Reservoir are high enough that spillway releases can assist in meeting the full extent of the peak portion of the Black Canyon NP Water Right.

**1984**

In this year there is basically no opportunity to make an attempt at an operation to meet the Black Canyon NP Water Right peak flow. High runoff begins during the 2nd week of May and continues until the middle of June. Flooding issues at Delta remain a concern throughout May and June. Early in the runoff, releases from Blue Mesa Reservoir are reduced to zero and flows at Delta still exceed 15,000 cfs.

Blue Mesa Reservoir begins spilling on June 16th and continues through the first week of July.

The primary constraint to meeting the Black Canyon NP Water Right peak flow in this year is flooding at Delta. This requires moving the peak release operation to either before or after the runoff of the North Fork. Since Blue Mesa Reservoir was drawn down to handle the runoff volume, the spillways would not be available to assist in meeting the water right peak prior to the start of runoff. Therefore the Black Canyon peak could be moved to a time after the runoff when the water elevation in Blue Mesa Reservoir is high enough to permit the spillways to assist in meeting the Black Canyon Right peak flow.

The earliest peak date that does not cause flooding at Delta is July 21st. The spillways at Blue Mesa Reservoir can contribute enough water to prevent excessive drawdown at Morrow Point Reservoir during the peak release operation. The flow at Delta on July 21st is 14,888 cfs. During real time operations it would be impossible to forecast flows on the North Fork and other tributaries to this level of accuracy, meaning a safer operation may require moving the peak to even later in the year to ensure there would be no further flooding at Delta. The peak target for endangered fish flows was previously met during the peak of the runoff by side inflows alone, with no additional release from Blue Mesa Reservoir. Since the Black Canyon NP Water Right was not met at this time, and an operation later in the year to meet the water right would create a second high water event along the length of the river downstream of the Aspinall Unit.

1986

The only option for meeting the Black Canyon NP Water Right peak flow is to use the spillway at Morrow Point to release an additional 800 cfs. During the modeled peak operation, Blue Mesa Reservoir releases are at the maximum capacity of the powerplant and bypass. Due to low water levels in Blue Mesa Reservoir, the spillways at Blue Mesa would not be able to contribute additional water until the middle of June. Side inflows to the Aspinall Unit are not high enough at other times of runoff to bother with retiming the peak release. This modified operation would not cause flooding at Delta under the modeled scenario.

1988

The Black Canyon NP Water Right peak flow could be met by increasing the bypass release at Crystal Dam by 400 cfs. Since this additional release would put Crystal Dam at the maximum capacity of the bypass release, it is possible that some water (up to 100 cfs) would need to be released over the spillway at Crystal to ensure the Black Canyon peak flow was met. Morrow Point Dam would need to increase powerplant releases to fill the reservoir at Crystal to initiate the spill. This would also require increasing the bypasses at Blue Mesa Dam by 400 cfs (or greater to fill Crystal Reservoir). Side inflows are too low this year to justify retiming the peak release operation.

1990

The Black Canyon NP Water Right peak flow could be met this year by bypassing up to 800 cfs at Crystal Dam, depending on the timing of the peak operation. Variations in the diversion rate of the Gunnison Tunnel would determine how much water needed to be bypassed at Crystal Dam.

1992

The Black Canyon NP Water Right peak flow could be met this year by spilling at Crystal Reservoir. Since Crystal Dam is at full powerplant and bypass release at the time of the modeled peak operation, the reservoir would need to spill 300 cfs to meet the Black Canyon peak flow. Releases would need to be increased at the powerplant at Morrow Point Dam to fill Crystal Reservoir to initiate the spill. It is possible that Blue Mesa Dam would need to release at full powerplant capacity and maybe even bypass up to 200 cfs during this modified peak release operation. Side inflows are too low this year to justify.

returning the peak release operation.—

—  
1993—

Under the preferred alternative as modeled, the operation to meet endangered fish peak flow targets at Whitewater would have centered a peak release on May 17th. Due to the magnitude of tributary flows, no additional water from the Aspinall Unit was needed to meet the peak targets at Whitewater. The peak flow in the Black Canyon actually occurred near the middle of June when Aspinall Unit releases increased to manage high water levels in Blue Mesa Reservoir.—

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Again the primary constraint to achieving the peak flow of the Black Canyon NP Water Right in this year is the flooding issue at Delta. The earliest date the peak can occur without flooding Delta is June 4th. Water level elevations at Blue Mesa Reservoir are also high enough to permit releases from the spillway that can assist in meeting the Black Canyon Right peak flow and prevent Morrow Point Reservoir from violating the drawdown rate criteria during the peak operation.—

—  
1998—

The Black Canyon NP Water Right peak flow could be met this year by increasing the spill at Crystal Reservoir by 2,100 cfs. In order to do this, Morrow Point powerplant releases would have to increase to full powerplant capacity and 1,100 cfs would need to be bypassed at Morrow Point Dam. Likewise Blue Mesa Powerplant bypasses would have to be increased by 2,100 cfs to minimize drawdown of Morrow Point Reservoir. Side inflows are not significantly higher at other times during the runoff to make returning the peak release operation worthwhile.—

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2005—

Meeting the Black Canyon NP Water Right peak flow would require full powerplant and bypass releases from Crystal Dam as well as spilling the reservoir. Total release from Crystal Reservoir would have to exceed 7,100 cfs. In order to reach this release rate, Morrow Point Dam would have to release at full powerplant and bypass capacity. Depending on the side inflows to Crystal Reservoir it is possible that the spillways at Morrow Point Dam would be needed to achieve this total release rate at Crystal Dam. Likewise Blue Mesa Dam would also need to release at full powerplant and bypass capacity. Since the water level in Blue Mesa Reservoir is low enough that spillway releases are not possible, there would be some level of drawdown at Morrow Point Reservoir. If the peak release operation was moved to the middle of June, water levels in Blue Mesa Reservoir would be high enough to utilize the spillways. This modified operation would not cause flooding at Delta under the modeled scenario, even if the peak release operation coincided with the high tributary flows of the North Fork.—

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**3.3.1.2D Water Quality—**

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**Upper Gunnison and Aspinall Unit Water Quality Impacts—** In general, water quality in Upper Gunnison basin will not be affected by any of the proposed alternatives.—

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**3.3.7.2 Impacts—**

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**3.3.7.2A General—**

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The Service has prepared a PBO on the proposed action and this report should be referred to for more information on impacts to the endangered fish (see Appendix B in Volume II). The opinions conclusion stated:—

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*After reviewing the current status of the Colorado pikeminnow, humpback chub, bonytail, and*

razorback sucker, the environmental baseline for the action area, the effects of the proposed action (including the proposed operation of the Aspinall Unit, the new and historic water depletions and the mandatory conservation measures), and the cumulative effects, it is the Service's biological opinion that the proposed action as described in this biological opinion is not likely to jeopardize the continued existence of endangered fish and is not likely to destroy or adversely modify designated critical habitat.

The implementation of the proposed action is expected to result in overall beneficial effects to the species and critical habitat in the Gunnison and Colorado Rivers downstream from the Aspinall Unit and induce a positive species response due to a more natural hydrologic regime and an improvement in water quality through the Selenium Management Program. The basis for the determination of no jeopardy and no adverse modification of critical habitat is summarized below. If the conservation measures are not implemented within the proposed timeframes, the effects to critical habitat will likely result in adverse modification to critical habitat that appreciably diminishes the value of critical habitat for both survival and recovery.

The action alternatives would have varying degrees of beneficial effects on the four listed fish and their critical habitat within the action area when compared to No Action. Benefits result from the increased frequency, magnitude, and duration of spring peak flows and protection of base flows. The flow changes would assist in improving and maintaining habitat conditions for spawning and recruitment and for maintenance of adult pikeminnow and razorback suckers. For Colorado pikeminnow (and probably other endangered fish), Osmondson and Burnham (1998) reported that the success of recovery efforts will largely depend on providing environmental conditions that increase reproductive success and survival of early life stages. In general, the implementation of a flow regime that more closely resembles a natural flow regime of the river would provide benefits to the endangered fish and their habitat.

Figure 3.3-32 and Table 3.3-22 summarize a comparison of peak flows and Table 3.3-24 presents a comparison of the frequency of selected flows in critical habitat. As discussed, flows adequate to move sediment through the Gunnison River system are essential to maintaining and improving critical habitat for the listed fishes. Reaching flows that are half bankfull or bankfull is considered key in the sediment movement. Goals of 8,070 and 14,350 cfs were established in the Flow Recommendations. At a flow of 8,070 cfs one-half (27) of the river cross-sections identified by Pitlick et al. (1999) reach half-

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