

RECLAMATION

MANAGING WATER IN THE WEST

Record of Decision
for the
Aspinall Unit Operations
Final Environmental Impact
Statement

April 2012

U.S. Department of the Interior
Bureau of Reclamation
Upper Colorado Region
Salt Lake City, Utah

Record of Decision Aspinall Unit Operations

SUMMARY OF ACTION

The U.S. Bureau of Reclamation, Upper Colorado Region, has published a final environmental impact statement (EIS) for the Aspinall Unit Operations, Colorado River Storage Project, Colorado. Reclamation is responsible for managing and operating the Aspinall Unit and is the lead agency for the purposes of compliance with the National Environmental Policy Act of 1969, as amended (NEPA) for the development and implementation of the proposed action. The cooperating agencies for this EIS are the National Park Service, U.S. Fish and Wildlife Service, Western Area Power Administration, Colorado Department of Natural Resources, Colorado River Water Conservation District, Platte River Power Authority, and Southwestern Water Conservation District.

The Aspinall Unit consists of Blue Mesa, Morrow Point and Crystal dams, reservoirs, and powerplants on the Gunnison River in western Colorado and was authorized by the Colorado River Storage Project Act of 1956 to meet multiple water resource needs.

The proposed action modifies reservoir operations that will result in higher and more natural downstream spring flows and moderate base flows. This avoids jeopardizing the continued existence of fish listed under the Endangered Species Act (ESA) and does not result in the destruction or adverse modification of critical habitat in the Gunnison and Colorado rivers. The action will assist in the recovery of endangered fish. The modified operation is based on Flow Recommendations¹ prepared by the Upper Colorado River Endangered Fish Recovery Program (Recovery Program).

The EIS and this Record of Decision have been prepared in accordance with NEPA, the Council on Environmental Quality's NEPA regulations (40 CFR 1500-1508), and Department of Interior regulations (43 CFR 46). The decision made here is based on the final EIS filed with the Environmental Protection Agency (FES 12-01) on February 27, 2012 and noticed by the Environmental Protection Agency and Reclamation in the *Federal Register* on February 27 and March 9, 2012.

PURPOSE AND NEED

The purpose of the action is to operate the Aspinall Unit to avoid jeopardy to endangered species while maintaining and continuing to meet the congressionally

¹ McAda, C.W. 2003. Flow Recommendations to Benefit Endangered Fishes in the Colorado and Gunnison Rivers. Upper Colorado River Recovery Program Project No. 54.

authorized purposes. The intent of the proposed action is also to assist in recovery of the species. Operations of the Aspinall Unit will be modified to provide sufficient releases of water at times, quantities, and duration necessary to avoid jeopardy to endangered fish species and adverse modification of their designated critical habitat in the lower Gunnison River.

ALTERNATIVES CONSIDERED

The EIS analyzed a No Action Alternative and four action alternatives to address the purpose and need:

- The No Action Alternative represents a projection of current operating practices to the most reasonable future conditions that would occur without meeting Flow Recommendations.
- Alternative A, Risk of Spill, manages water in excess of Aspinall Unit needs (such as in excess of filling Blue Mesa Reservoir or in excess of producing hydropower) and uses this water to provide increased spring peaks. Base flows, minimum flows, and ramping rates are included.
- Alternative B, Fish Peak with Duration Alternative, attempts to meet specific targets for downstream spring peak and duration flows. The downstream targets are based on the Flow Recommendations for endangered fish. Targeted spring flows are measured in the lower Gunnison River at the U.S. Geological Survey Gunnison River near Grand Junction Gage (also known as the Whitewater Gage). The spring peak flows vary from 900 cubic feet per second (cfs) in dry years to over 14,000 cfs in wet years. Base flows, minimum flows, and ramping rates are included.
- Alternative C is similar to Alternative B; however, it includes increased duration of high flows and consequently lower flows at other times. Magnitude of peaks is similar to Alternative B but durations are increased. Base flows, minimum flows, and ramping rates are included.
- Alternative D is similar to Alternative B but is characterized by abrupt transitions in the spring peak flow targets between the different year types as opposed to the gradual transitions established in Alternative B.

Environmentally Preferable Alternative

The environmentally preferable alternative is Alternative B, Fish Peak and Duration Alternative, because, in comparison to the No Action Alternative, it is predicted to avoid jeopardizing the continued existence of endangered fish and avoiding destruction and adverse modification of critical habitat. It also assists in their recovery while still meeting Aspinall Unit authorized purposes. In addition, Alternative B protects irrigated agriculture, recreation, existing and future water

development, hydropower, and sport fisheries, all of which the public has cited as important concerns. Alternative C would have a larger adverse impact on water storage, hydropower, fish and wildlife, and recreation; although it would be better for endangered fish duration flows. Alternative B better addresses the wide range of inflow forecasts as compared to Alternative D. Alternative A does not provide endangered fish benefits comparable to other alternatives.

AUTHORITY FOR ACTION

The Department of the Interior's basis and authority for this decision and for implementing the modified operations at the Aspinall Unit are found in Section 1 of the Colorado River Storage Project Act (CRSPA). This section states:

“In order to initiate the comprehensive development of the water resources of the Upper Colorado River Basin, for the purposes, among others, of regulating the flow of the Colorado River, storing water for beneficial consumptive use, making it possible for states of the Upper Basin to utilize, consistently with the provisions of the Colorado River Compact, the apportionments made to and among them in the Colorado River Compact and the Upper Colorado River Basin Compact, respectively, providing for the reclamation of arid and semi-arid land, for the control of floods, and for the generation of hydroelectric power, as an incident of the foregoing purposes, the Secretary of the Interior is hereby authorized (1) to construct, operate, and maintain the following initial units of the Colorado River storage project, consisting of dams, reservoirs, powerplants, transmission facilities and appurtenant works (including the Aspinall Unit)...”

The CRSPA was enacted in 1956 to facilitate the development of water and power resources consistent with the 1922 and 1948 compacts. The Colorado River Compact of 1922 established an Upper Basin and a Lower Basin within the Colorado River system and apportioned the exclusive beneficial consumptive use of Colorado River water in perpetuity to the Upper and Lower Basins. The Upper Colorado River Basin Compact of 1948 apportioned the Upper Basin's share of the Colorado River system among the states of Colorado, Utah, Arizona, Wyoming and New Mexico.

The purpose of the Recovery Program is to facilitate the continued development of the States' Compact apportionments while complying with the ESA. The goal of the Recovery Program, therefore, is to conserve Upper Colorado River Basin populations of endangered fish species consistent with the recovery goals of the species published by the Fish and Wildlife Service, while proceeding with the continued operation and development of water resources/projects of the Colorado River Basin. All Recovery Program participants recognized that recovery to the point of de-listing would both facilitate and ensure the continued development of water resources and agreed with the principles and goals of the Recovery Program

through their participation in and support of program activities. In addition to its recovery objectives, the Recovery Program includes an agreement on principles for conducting ESA Section 7 consultations, wherein Recovery Program actions and sufficient progress toward recovery constitute a Reasonable and Prudent Alternative for existing and future water resource management and development activities that are likely to jeopardize the continued existence of endangered fish species or cause the destruction of or adverse modification of critical habitat of those species.

The Flow Recommendations for the Gunnison and Colorado rivers, in concert with other program actions, are intended to avoid jeopardy and assist in recovery. By implementing actions that assist in meeting the Flow Recommendations, Reclamation is taking the steps necessary to avoid jeopardizing the continued existence of the endangered fish by the operation of the Aspinall Unit and to voluntarily and cooperatively take steps to facilitate recovery of the fish. In turn these actions support the continued and further utilization of the Federal facilities to aid in the development of the states' Compact apportionments. Thus, consistent with the authorized purposes of CRSPA, implementation of operations under the preferred alternative supports the States in the utilization of their Compact apportionment while assisting in the recovery of endangered species. 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 CRSPA are met. Reclamation expects in this instance, these purposes will be met.

This action is limited to the proposition that both avoiding jeopardy and making progress toward recovery of listed fish facilitate the ability of the Upper Basin States to continue utilizing and further developing their Colorado River apportionments.

We conclude the implementation of an operations regime consistent with the EIS alternatives is deemed to be within the authorization contained in Section 1 of the CRSP Act.

DECISION AND RATIONALE FOR THE DECISION

The decision is to select Alternative B, "Fish Peak with Duration Alternative," the preferred alternative in the EIS and the environmentally preferable alternative. For the reasons discussed below, Alternative B best meets the purpose and need and does not result in unacceptable adverse effects.

Description of Alternative B

Alternative B is based on operating the Aspinall Unit to meet specific downstream spring peak flow, duration flow, and base flow targets. The magnitude of the desired spring peak target at the Whitewater gage is determined by the forecast of April through July inflow to Blue Mesa Reservoir. Reclamation will use the

forecast prediction to determine the year type and peak flow target at the Whitewater gage as shown in Figure 1.

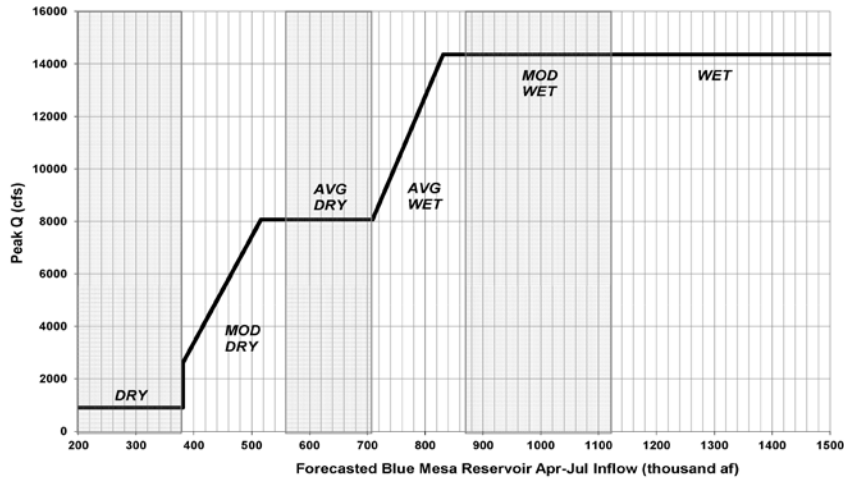


Figure 1. Determination of peak flow target at Whitewater gage based on forecasted April through July inflow to Blue Mesa Reservoir. Showing hydrological year types, with “mod” meaning moderate and “avg” meaning average.

The number of duration days at half-bankfull flows and at the peak flow are also dependent on the forecast of inflows to Blue Mesa Reservoir. Table 1 shows the duration of days at peak flow and half bank capacity flows for ranges of forecasted inflow to Blue Mesa Reservoir.

Table 1. Spring peak and duration targets for range of forecasted inflows under the selected alternative

Blue Mesa Forecasted April-July Inflow Acre feet	Desired Peak at Whitewater cfs	Duration of Half-Bank (8,070 cfs) Days	Duration at Peak Flow (up to 14,350 cfs) Days
< 381,000	900	0	0
381,000 to 516,000	2,600 to 8,070	0	0
516,001 to 709,000	8,070	10	0
709,001 to 831,000	8,070 to 14,350	20	2
831,001 to 1,123,000	14,350	40	10
>1,123,000	14,350	60	15

Reclamation will not bypass the powerplant at Crystal Dam from April 1st through May 10th, except when necessary to reduce flooding risk during wet years, with the effect of storing water that may have been bypassed unnecessarily

if the runoff was over-forecasted or if powerplants were not available for operations. This will make more water available for a spring peak and for duration flows. During “wet” years, Reclamation may make both powerplant and bypass releases during this time period. In addition to making water available for peak releases, this operation also may improve the chance of filling Blue Mesa Reservoir without a significant flood potential increase at Delta. During drier type years, bypasses may occur during this period if hydrologic conditions dictate that peak releases occur prior to May 10th in order to match peak flows of the North Fork of the Gunnison River (North Fork).

Peak releases will be made in an attempt to match the peak flow of the North Fork to maximize the potential of meeting a desired peak at the Whitewater gage. Flood control operations will remain unchanged pursuant to the Corps of Engineers Water Control Manual which requires that efforts be made to keep flows below 15,000 cfs in the Gunnison River above the confluence with the Uncompahgre River. Peak releases will typically be made between May 10th and June 1st. However, this time frame could be shifted to match North Fork peaks if appropriate for endangered species and other resource concerns.

The magnitude of the desired peak at Whitewater is based on the “Year Type” category, as defined in the final EIS. Releases will be made from the Aspinall Unit using the necessary combination of available powerplants, bypasses, and spillways. In making such releases, priority will be given to first using the powerplants, second the bypasses, and lastly the spillways. Reclamation’s ability to meet a desired peak could be limited by the physical constraints and limitations on the availability of the Aspinall Unit outlet features in some years. For example, Blue Mesa Reservoir’s water surface elevation may not be high enough to use its spillway when the peak flow is desired. After a peak flow release is made and if hydrologic conditions allow, high releases will continue in an attempt to maintain duration flows at half-bankfull or bankfull levels. The duration of flows is dependent on the ranges of forecasted inflows as explained in Table 1.

Following the April through July operations, releases will be set utilizing the most recent forecast of August through December inflow and downstream water demands, with the goal of having Blue Mesa Reservoir at or below an elevation of 7,490 feet (580,000 acre-feet live storage) by December 31st to minimize the potential for upstream icing. The minimum downstream flow through the Black Canyon of the Gunnison National Park and Gunnison Gorge National Conservation Area is 300 cfs, except in severe drought when the flow may decrease. The flow may be higher based on considerations such as the forecasted water supply, trout fishery considerations, and downstream senior water rights. Maximum releases from Crystal Dam, outside of the peak flow period, will be limited to the 2,150 cfs powerplant capacity in most years. Generally these flow patterns will meet downstream base flow needs for endangered fish; if not, releases will be adjusted accordingly.

Base flows (Table 2) planned for the lower Gunnison River are also measured at the Whitewater gage and account for operations of the Redlands Fish Ladder which provides fish passage on the Gunnison River near its confluence with the Colorado River. Base flows will normally provide 300 cfs of migration flows downstream from the Redlands Diversion Dam because this diversion is limited by a Federal Energy Regulatory Commission hydropower license to 750 cfs whenever 300 cfs cannot be bypassed. In dry years, except in June and July, and in moderately dry years, except June, July, and August, the target of 1,050 cfs at Whitewater will be reduced to 750 cfs thereby eliminating the bypass of 300 cfs. When the base flow target at Whitewater is reduced to 750 cfs, additional releases will be made to provide 100 cfs to the Redlands Fish Ladder as needed in April through September and 40 cfs for the Redlands Canal Fish Screen from March through November, using storage water if necessary. Reclamation will work with the State of Colorado to protect flows in accordance with state water law. Base flows will normally provide adequate migration flows downstream from the Redlands Diversion Dam.

Table 2. Base flow targets at Whitewater Gage by year type and month (cfs)*

Year Type	Jan. and Feb.	Mar.	Apr. and May	Jun. and July	Aug.	Sep.	Oct. and Nov.	Dec.
Wet	1050	1050	1050	1500	1500	1050	1050	1050
Mod Wet	1050	1050	1050	1500	1500	1050	1050	1050
Avg Wet	1050	1050	1050	1500	1050	1050	1050	1050
Avg Dry	1050	1050	1050	1500	1050	1050	1050	1050
Mod Dry*	750	750-790	750-890	1050	1050	750-890	750-790	750
Dry*	750	750-790	750-890	1050	750-890	750-890	750-790	750

*During March through November in Moderately Dry and Dry type years, additional releases will be made as necessary to provide flows above the 750 cfs anticipated to be diverted by the Redlands Diversion Dam, for the fish ladder and fish screen as shown.

Reclamation formally consulted the U.S. Fish and Wildlife Service on the selected alternative under Section 7 of the ESA. The Service issued a Programmatic Biological Opinion (PBO) (ES/GJ-6-CO-09-F-0001) in December 2009, concluding that Aspinall Unit operations under the selected alternative would not jeopardize endangered species or adversely modify designated critical habitat. The opinion also provides ESA compliance for other Federal projects and private water depletions in the Gunnison Basin as well as limited new depletions.

Based on the PBO for this EIS, the selected alternative also includes development and implementation of a selenium management program for the Gunnison Basin. Ongoing water uses in the basin have increased selenium levels in the river and adversely affected endangered fish. A cooperative approach with Federal, state, and local entities is being used to address the problem.

Rationale for Decision

Selection of Alternative B as the preferred alternative was made after carefully weighing economic, social, and technical considerations, as well as the potentially significant environmental effects analyzed in the EIS, and after reviewing comments and concerns of agencies, tribes, public and private organizations and individuals.

Significant issues addressed in the EIS and important in selection of the alternative include:

- Assisting in meeting Flow Recommendations for endangered fish.
- Continuing to meet Aspinall Unit authorized purposes, including assisting states in utilizing Compact-apportioned water; flood control; and hydropower production.
- Issuance of the programmatic biological opinion that addresses ESA compliance for Aspinall Unit operations and provides ESA compliance for all federal, state, and private water depletions in the Gunnison Basin.
- Completing ESA compliance for the Dallas Creek and Dolores Projects, which had biological opinions dependent on modifying Aspinall Unit operations.
- Maintaining flood control benefits for downstream communities.
- Addressing potential adverse effects on recreation and sport fisheries.
- Honoring water and power contracts related to the Unit.
- Meeting power system requirements of the North American Electrical Reliability Council and the Western Electricity Coordinating Council.
- Addressing the relationship with recently quantified downstream senior federal reserved water right for the Gunnison River through the Black Canyon of the Gunnison National Park.
- Reclamation consulted with the Colorado State Historic Preservation Officer and concluded that new reservoir operations would not significantly affect historic properties. In addition, as suggested, monitoring of historic properties will continue at Aspinall Unit Reservoirs.

The Black Canyon of the Gunnison National Park Water Right (Black Canyon Water Right) is a downstream water right senior to the Aspinall Unit, and Reclamation will meet the water right when it is exercised. As such, along with other senior water rights, it is a condition that is common to all alternatives. When the Secretary exercises the Black Canyon Water Right, Reclamation shall undertake operational actions consistent with the Black Canyon Decree and in accordance with applicable laws. If the Secretary places a water right call in the exercise of the Black Canyon Water Right, Reclamation shall also comply with valid administrative orders from the Colorado State Engineer or the Division Engineer related to the administration of the decree for the Aspinall Unit and the Black Canyon Decree, both of which are made applicable to Reclamation by Section 8 of the Reclamation Act of 1902. In the event of discrepancies in the

description of the water right in the final EIS or this Record of Decision and the terms and conditions of the water right decree, the decree language shall govern.

The Secretary's exercise of the Black Canyon Water Right will be coordinated with the implementation of the selected alternative. To the extent practicable, this right shall be exercised so that the timing of the peak flow for the Black Canyon Water Right is coordinated with releases made pursuant to this Record of Decision to achieve a single peak flow at Whitewater, subject to Paragraph 32.2.2 of the Decree.

The decision provides the best means to minimize or avoid environmental harm and meet the purpose and need of the project. Nonetheless, certain adverse environmental effects of this alternative cannot be completely avoided as described in the EIS. These are expected to include:

- Minor hydropower impacts
- Minor recreation and sport fisheries impacts
- Minor reduction in water stored in Blue Mesa Reservoir for beneficial uses

There should be no effect on climate, air quality, environmental justice, or Indian Trust Assets.

Other important considerations in reaching the decision included Reclamation's mission of managing, developing, and protecting water and related resources in an environmentally and economically sound manner in the interest of the American public. The action, including implementation of the associated PBO, assists in recovery of endangered species and protects existing and future water uses in the basin.

Precisely how endangered fish populations and critical habitat respond to the flow modifications proposed under the Aspinall Unit reoperations is unclear. For that reason, the selected alternative also includes an adaptive management process, supported by Recovery Program monitoring, to address new information about the subject endangered fish, their habitat, reservoir operations, and river flows. The selected alternative includes an adaptive process for potential refinement of operations if supported by relevant new information. Significant changes beyond the scope of the final EIS may require additional NEPA.

SUMMARY OF COMMENTS ON THE FINAL EIS

Reclamation received 3 comment letters on the final EIS. The issues contained in those comment letters are summarized below.

The Colorado River Energy Distributors Association (CREDA) expressed concerns with changes to authorization and purpose and need language in the final

EIS. CREDA also expressed concerns that hydropower economic impacts may be greater in some years than discussed in the EIS. In addition there are concerns that additional information is needed on the Secretary's discretionary authority concerning the Black Canyon Water Right and on meeting Black Canyon and endangered fish needs with a single peak.

Western Area Power Administration commented about Reclamation's characterization of the impact on endangered fish of the alternatives. Western noted that the period of analysis and the weighting of the hydrology model outputs are key to understanding the frequencies and duration of water delivered to the Whitewater gage, and Western proposed a different weighting of model results and/or a different selection of the period of analysis used.

The State of Colorado was concerned with the description of the Black Canyon Water Right. The State asked that discussions should be consistent with State water law and that the Decree will speak for itself. Colorado also responded that consistency between the Record of Decision and the EIS is needed for the purpose and need and authority discussions. Also, the use of storage water for the selected alternative needs to be clarified.

No new issues were raised that would require further analysis in a supplemental EIS. This Record of Decision has been edited for clarity in response to comments received on the draft Record of Decision.

ENVIRONMENTAL COMMITMENTS

The following mitigation, monitoring, and enforcement commitments which are detailed in the EIS, will be implemented as integral parts of the decision as a means of avoiding or minimizing adverse effects.

- The Aspinall Unit will continue to be operated to meet authorized purposes, and existing water and power contracts will be honored. Consistent with authorized purposes, the Aspinall Unit will be operated in accordance with water laws and water rights as decreed under the State of Colorado and the Law of the River. Provisions are included to address severe drought conditions and emergency situations.
- Blue Mesa and Morrow Point powerplants will continue to provide peaking power operations, and Crystal Dam and Reservoir will continue to reregulate upstream releases to minimize fluctuations in the downstream flows.
- The Aspinall Unit will continue to follow Corps of Engineers flood control criteria coordinating with the City and County of Delta. Blue Mesa Reservoir will be drawn down to 7,490 feet by the end of December to reduce chances of upstream ice jams and associated flooding.
- Provide ramping rates on releases from Crystal Reservoir to protect resources as described in the final EIS.

- Work with the Recovery Program to meet the requirements of the PBO to provide ESA compliance for Gunnison Basin water uses, including implementing operations under the selected alternative, development and implementation of a selenium management program, and monitoring of endangered fish populations.
- Provide for special operations to address severe droughts and to facilitate periodic maintenance and rehabilitation activities. Provide for public and interested party input through open Aspinall Unit operation meetings held in January, April, and August each year.

IMPLEMENTATION

The decision shall be implemented beginning with 2012 reservoir operations, but will occur no sooner than 30 days after publication of the Notice of Availability of the final EIS in the *Federal Register*.

Approved:



Larry Walkoviak
Regional Director
U.S. Bureau of Reclamation
Upper Colorado Region
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5/03/2012

Date