

**COLORADO RIVER RECOVERY PROGRAM
FY 2018 ANNUAL REPORT**

Project No.: C-14 & PIP 12C

- I. Project Title:** Coordinated Reservoir Operations (CROS) and Information and Education (I&E)
- II. Bureau of Reclamation Agreement Number(s):** Not applicable.
- III. Principal Investigator(s):**

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IV. Abstract:

This project involves voluntary operational coordination of selected reservoirs and trans-mountain diversion projects in the Colorado River Basin upstream from the confluence of the Colorado and Gunnison rivers. The goal is to enhance spring peak flows to improve endangered fish species habitat in the 15-Mile Reach of the Colorado River without diminishing reservoir or diversion yields or affecting the timing of reservoir filling.

Over the years, reservoirs and trans-mountain diversion projects that have participated in the operation have included the Colorado-Big Thompson Project, Granby Reservoir, Green Mountain Reservoir, the Fryingpan-Arkansas Project, the Homestake Project, the Moffat Tunnel Project, Ruedi Reservoir, Williams Fork Reservoir, Willow Creek Reservoir, Windy Gap Project and Wolford Mountain Reservoir. Participating water management agencies include Bureau of Reclamation, City of Aurora, Colorado River Conservation District, Colorado Spring Utilities, Denver Water Board, Northern Water Conservancy District and Northern Water Municipal Subdistrict.

CROS occurs in years when runoff conditions allow participating reservoirs to contribute without affecting their yield. The intent of CROS is to enhance the natural peak flows on the Colorado River for ten days to two weeks. This typically occurs around the last week of May and the first week of June.

Since the first coordinated releases were made in 1997, CROS operations to augment peak flows have been implemented in ten years, the most recent being 2017. No CROS operations were implemented in 2018.

V. Study Schedule: 1995 - present

VI. Relationship to RIPRAP: Colorado Mainstem Action Plan I.A.5.g.(2): Coordinated Reservoir Operations: if available, deliver additional peak flows, evaluate process & hydrology, and provide annual report.

VII. Accomplishment of FY 2018 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

No Coordinated Reservoir Operations were conducted in 2018 due to very dry hydrologic conditions, and no press releases announcing the 2018 CROS decision were issued. This was the first year since 2014 that CROS was not implemented. Participants agreed in April that 2018 operations were not feasible, as forecasted spring flows were well below the threshold for initiating CROS operations, and participants' reservoirs were likely to have little or no surplus inflow to contribute in light of the poor water-supply forecasts. Spring peak flows at the Cameo gage location in 2018 remained well below the lower threshold for CROS operations, and well below the dry-year target of 12,900 cfs for the Palisade gage location. The 2018 spring peak arrived unusually early; provisional USGS data indicate the daily mean peak of 5,780 cfs at the Palisade gage occurred on May 14.

VIII. Additional noteworthy observations:
N/A

IX. Recommendations: The Recovery Program should continue to support the efforts of and encourage participation in Coordinated Reservoir Operations. The participating entities should continue to work with the NWS Colorado River Basin Forecast Center to improve peak runoff forecasts. The ongoing effort should maintain and improve the coordination process, address any remaining issues associated with inundation concerns downstream of participating reservoirs, maintain effective communication and coordination, and maintain effective accounting and monitoring. Additionally, the Recovery Program's I&E Committee is encouraged to work with Participants and the U.S. Fish and Wildlife Service to improve the public's understanding of the role, function, and benefits CROS provides in the Upper Colorado River Basin.

X. Project Status: CROS is an ongoing activity and efforts will continue to refine and improve the process and address issues identified to allow for maximum effectiveness. The Recovery Program is nearing completion of the 'Phase 3 Coordinated Facilities Operation Study', which assesses the feasibility of additional activities to augment peak flows in the 15-Mile

Reach including ‘enhanced coordinated reservoir operations’ (enhanced CROS) and ‘coordinated facilities operations’ (CFOPS). The former would provide additional bypass flows to CROS flows when feasible, while the latter would provide up to 20,000 AF of additional water to further enhance peak flows, if it can be done without significant cost to water users or Reclamation.

XI. FY 2018 Budget Status

	<u>Federal</u>	<u>State (In Kind)</u>
A. Funds Provided:	\$ 5,000	12,000
B. Funds Expended:	\$ 0	\$ 1,000
C. Difference:	\$ 5,000	\$ 11,000
D. Percent of the FY 2018 work completed, and projected costs to complete: 100%		
E. Recovery Program funds spent for publication charges: \$0		

XII. Status of Data Submission (Where applicable): N/A

XIII. Writeup prepared by Don Anderson 12/11/2018

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(approved 12/31/2018)
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