

**COLORADO RIVER RECOVERY PROGRAM
FY 2016 ANNUAL REPORT**

Project No.: C-14 & PIP 12C

I. Project Title: Coordinated Reservoir Operations (CROS)
Operations and I&E

II. Principal Investigator(s):

Michelle Garrison
Colorado Water Conservation Bd.
1313 Sherman St, Room 721
Denver, CO 80203

Phone: (303) 866-3441 x3213
Fax: (303) 866-4474
E-mail: michelle.garrison@state.co.us

Victor Lee
Bureau of Reclamation
Eastern Colorado Area Office
11056 W County Road 18E
Loveland CO 80537-9711

Phone: (970) 962-4384
Fax: (970) 663-3212
E-mail: vlee@usbr.gov

III. Project Summary:

This project involves voluntary operational coordination of selected reservoirs 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 yields or affecting the timing of reservoir filling. Participating reservoirs in the past have included Green Mountain and Ruedi (Reclamation), Windy Gap, Wolford Mountain (Colorado River Water Conservation District), Dillon and Williams Fork (Denver Water), and Willow Creek and Granby (Northern Colorado Water Conservancy District & Reclamation). CROS occurs in years when runoff conditions allow participating reservoirs to contribute without affecting their yield. The intent of CROS is to attempt to coordinate releases of inflow to enhance the natural peak flows on the Colorado River for 10 days to two weeks. This typically occurs during the last week of May and the first week of June. In 2010, coordinated reservoir releases were made June 2, 2010 through June 16, 2010.

IV. Study Schedule: 1995 - present

V. Relationship to RIPRAP: Colorado Mainstem Action Plan 1.A.5.I.

VI. Accomplishment of FY 2016 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings: In 2016 CWCB issued a press release <http://cwcbweblink.state.co.us/weblink/0/doc/199428/Electronic.aspx?searchid=cc4ed736-3294-486a-8455-ca47508d736b>

Snow Pack in 2106 was above average resulting in a peak at Cameo of 19,200 cfs which compares to 137% of average (14,000cfs).

Coordinated Reservoir Operations were conducted in 2016. In 2011 and 2014, wet conditions caused streamflows in certain areas of the basin to approach or exceed levels associated with minor flooding, so peak augmentation was not performed. In 2012 and 2013, reservoirs did not have surplus inflow to contribute due to extremely dry conditions.

Combined releases in 2016 of approximately 29,372 acre-feet. We continued to maintain very effective participant and public communications regarding CROS operations, developing peak enhancement operating plans, performing required coordination and maintenance activities to facilitate CROS as water supply allowed.

This year the Denver Post released an article about the increase in flows as a result of the CROS Coordination. Reclamation presented the annual operations meeting for Ruedi Reservoir the first week of August in Basalt, CO. Additional public presentations that included CROS were made by Reclamation and the Fish and Wildlife Service at the Colorado River District’s annual State of the Colorado River meetings in Frisco, Granby, and Basalt, CO.

The participating reservoirs voluntarily by-passed additional inflow above their normal operating plans as part of CROS as follows:

Coordinated Reservoir Operations (CROS) AF						Augmentation of Peak Flows					
Reservoir	1997	1998	1999	2006	2008	2009	2010	2015	2016	Average	Sum
Granby			8,515					18,002		13,259	26,517
Green Mtn	3,568	12,482	11,010	6,788	2,101	14,113	34,666	11,292	8,631	11,628	104,651
Ruedi	693	5,106	3,602	6,297	4,848	5,858	10,050	4,599	4,007	5,007	45,060
Williams Fork	946	1,672	1,543	6,625		5,044	19,982	2,733	4,893	5,430	43,438
Willow Ck			6,631			2,638		8,000		5,756	17,269
Windy Gap						2,061	Moffat	906	1,429	1,465	4,396
Wolford Mtn	10,635	4,431	8,555	9,007		13,069	9,273	4,587	8,452	8,501	68,009
Total AF	15,842	23,691	39,856	28,717	6,949	42,783	73,971	32,117	27,412	32,371	291,338
32,371 Average AF											

VII. Recommendations: The Recovery Program should continue to support the efforts of and encourage participation in Coordinated Reservoir Operations. The participating entities should work with the NWS Colorado River Basin Forecast Center to improve peak runoff forecasts. The ongoing effort should continue to refine and improve the coordination process, and address issues including identification of inundation levels downstream of participating reservoirs, improved communication & coordination, and improved 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 public education of CROS role and function in the Upper Colorado River Basin.

VIII. Project Status: The Coordinated Reservoir Operations is an ongoing activity and will continue to refine and improve the process and address issues identified to allow for greater effectiveness of the effort.

IX. FY 2016 Budget Status

	Federal	State (In Kind)
A. Funds Provided:	\$ 5,000	\$12,000
B. Funds Expended:	\$ 2,485	\$ 6,000
C. Difference:	\$ 2,515	\$ 6,000
D. Percent of the FY 2016 work completed, and projected costs to complete: 100%		
E. Recovery Program funds spent for publication charges: \$0		

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

XI. Jana Mohrman wrote 11/21/2017

Signed: Michelle Garrison
Principal Investigator

Signed: Victor Lee (approved)
Principal Investigator