

COLORADO RIVER RECOVERY PROGRAM
FY 2017 ANNUAL PROJECT REPORT

RECOVERY PROGRAM
PROJECT NUMBER: C-9

I. Project Title: O&M for Elkhead Release and Elkhead Lease

II. Bureau of Reclamation Agreement Number(s): 05-WC-40-420

Project/Grant Period: Start date: 02/17/05
End date: Ongoing
Reporting period end date: 09/30/17
Is this the final report? Yes _____ No XX

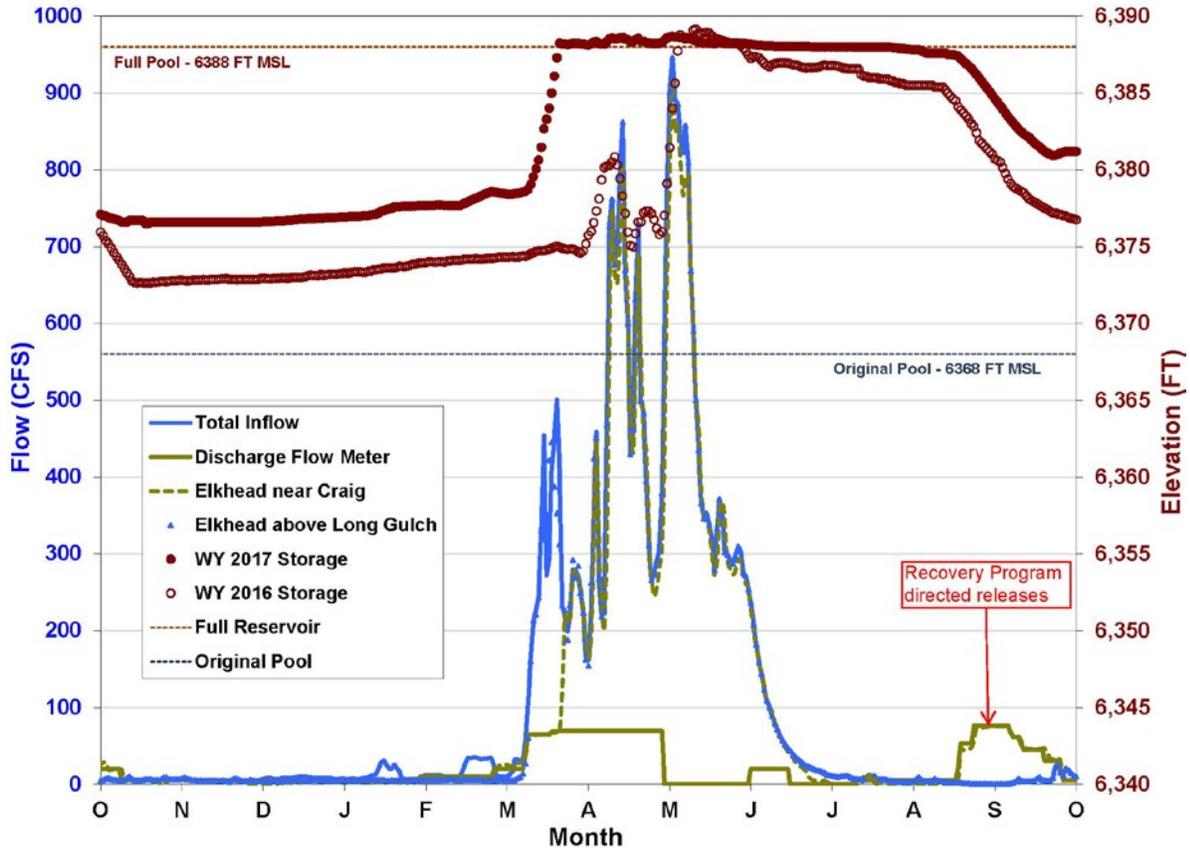
III. Principal Investigator(s): Ray Tenney
Colorado River Water Conservation District
P.O. Box 1120
Glenwood Springs, CO 81602
Telephone: (970)945-8522
Cell: (970)379-1492
Fax: (970)945-8799
Email: rtenney@crwcd.org

IV. Abstract:

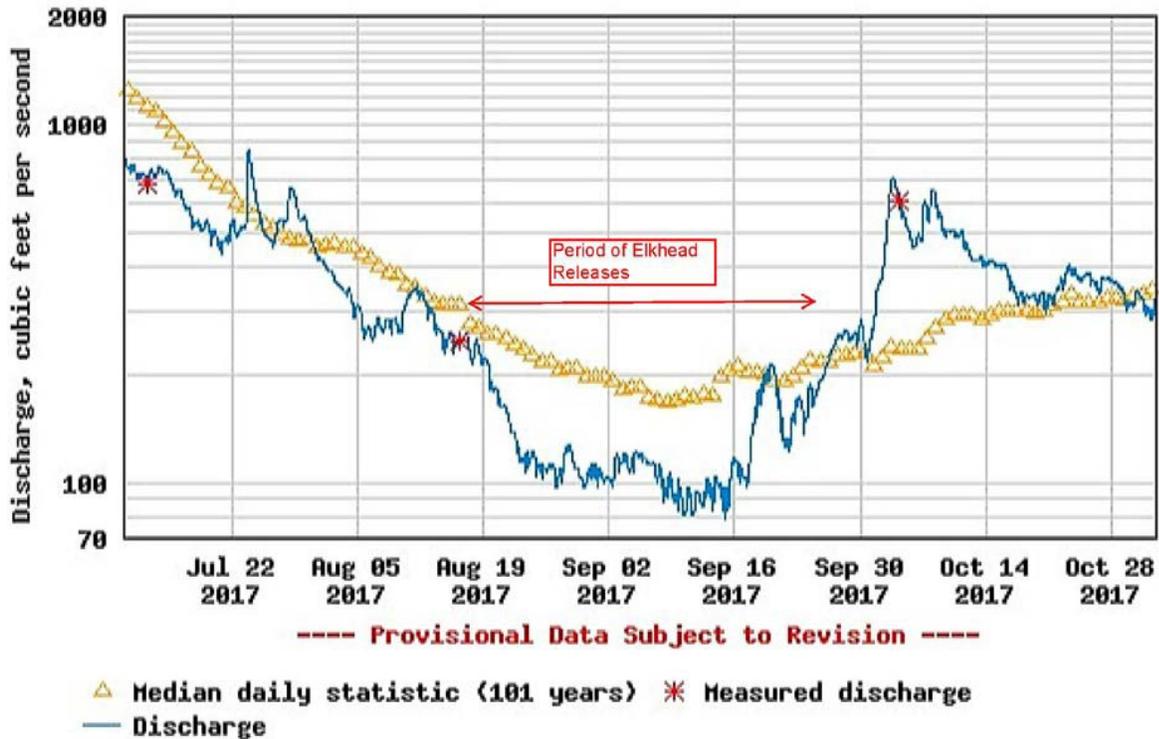
Operations

Elkhead Reservoir was operated in 2017 to release the Recovery Program's 5,000 acre feet of water as requested. Weekly coordination calls hosted by the USFWS Regional Hydrologist set the release rate for the upcoming week. Releases were generally made from mid-August through late September following the Maybell gage flows. In the early fall river conditions improved and releases were truncated. In 2017 4173 acre-feet of the Recovery Program's 5,000 acre-foot pool was released and 827 acre-feet left in the reservoir.

Elkhead Reservoir WY 2017 Flows and Elevation



USGS 09251000 YAMPA RIVER NEAR HAYBELL, CO



Spillway Barrier Net

Spillway fish barrier net and debris boom installed in September 2016 remained in place over winter and when inspected in July of 2017 by Pacific Netting Products was found to be in good condition.

Spillway barrier net project funding was in the amount of \$500,000 was provided by the Colorado Water Conservation Board and \$534,650.74 is shown as provided in in FFY 2016 by the USBR under Cooperative Agreement 05-WC-40-420. In FFY 2017 spillway barrier net expenditures totaled \$310,372.40 bringing the total spillway barrier net and debris boom project cost to \$1,345,023.15. One warranty inspection by PNP at a cost of \$18,200 remains in the scope of PNP's contract for 2018 spillway barrier net expenditures under the capital expenditures. The Recovery Program may wish to forego the PNP inspection in favor of using the local diving company CPW works with.

Funding commitment was by the Recovery Program through the annual operation USBR Cooperative Agreement 05-WC-40-420, which is a calendar year basis and billable in March 2018.

Outlet Tower Stem Guide Anchor Bolt Replacement

In addition to the spillway barrier net expenditures in FFY 2017 the project experienced repair costs related to the replacement of the anchor bolts for the gate and movable outlet tower fish screen stem guides. The original construction was done with expansion anchors 2-1/2" into the concrete rather than the 10" embedded anchor bolts provided by the gate manufacturer to the original construction contractor. Failure of these substandard bolts caused operational problems in 2016. Efforts to replace all the bolts have been successful in FFY 2017 on all stem guides inside the outlet tower where work was performed "in the dry." Work on the 8 stem guides for the movable fish screen on the outside of the outlet tower under Elkhead Reservoir have been challenged by some replacement bolt failures. Parts have been ordered and a remedial effort is being scheduled. Expenditures in FFY 2017 for stem guide anchor bolt replacement total \$265,491.96 not including any River District labor related to this effort.

Elkhead Reservoir Outlet Tower
Movable Fish Screen Stem and Guides
During Original Construction



2018 Non-Routine Work - Malburg Pond Embankment Erosion Protection

The Malburg Pond is a small stock pond of less than 10 acre-feet adjacent to the reservoir. The original pond was inundated by the 2006 reservoir enlargement and as part of the acquisition of private land ROW for the reservoir enlargement and mitigation for the inundation of the Malburg Pond the project built a replacement pond, with the Elkhead Reservoir project owners taking responsibility for the pond embankment.



Malburg Pond Embankment Crest at Elkhead Reservoir Full Pool 2017



While the original design for the Malburg Pond embankment included riprap top to bottom on the east and west sides of the embankment the west side does not appear to need erosion protection. The original riprap erosion protection was deleted during construction as there was a shortage of “on site” derived riprap and the engineers didn’t believe with the location and exposure of the Malburg Pond embankment erosion would occur. Another similar embankment built in a more exposed area on the shore of Elkhead Reservoir has performed well with only 5 vertical feet (15 feet slope projection on a 3:1 slope) of riprap protection which is the plan for remediation of the Malburg Pond in 2018.

- V. Study Schedule: Deliveries began in 2007 and will continue as requested.
- VI. Relationship to RIPRAP: Green River Action Plan: Yampa and Little Snake Rivers, I.B.2.a.(2)(b), Deliver water for endangered fish.
- VII. Accomplishment of FY 2017 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Reservoir operations were routine.

Discussions continue with the USACE on the adequacy of the wetland mitigation. Impacts from cattle grazing on portions of the wetland mitigation area on City of Craig lands contributing to a 2016 decline in documented wetland acreage from 2015 were partially addressed. The results of the 2017 wetlands mitigation area performance survey have not yet been received.

Stem Guide Anchor Bolt replacement completed inside the outlet tower. Problems persist with the anchor bolt replacement on the tower movable fish screen on the outside of the tower.

VIII. Additional noteworthy observations: None to report

IX. Recommendations: None

X. Project Status: On track and on-going

XI. FY 2017 Budget Status

A. Funds Provided¹: \$436,092.61

B. Funds Expended: \$ 436,092.61

C. Difference: \$0

D. Percent of the FY 2017 work completed, and projected costs to complete: 100%

E. Recovery Program funds spent for publication charges: none

XII. Status of Data Submission: N/A

XIII. Signed: Ray Tenney 12/01/17
Principal Investigator(s) Date

APPENDIX: Cost Accounting Spreadsheet for FFY 2017 – attached to email

¹Includes \$265,491.96 of spillway fish barrier charges and \$53,576.29 of stem guide related charges