

# UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

FY 2020 ANNUAL REPORT

PROJECT: C-9

## **Project Title**

O&M for Elkhead Release, and Elkhead Lease

## **Bureau of Reclamation Agreement Number:**

05-WC-40-420

## **Project/Grant Period:**

Start date: 02/17/05

End date: Ongoing

Reporting period end date: 09/30/20

Is this the final report? Yes \_\_ No XX

## **Principal Investigator:**

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## **Abstract:**

Agreements provide for the release of up to 5,000 acre-feet of stored water and up to an additional 2,000 acre-feet of supplemental lease water annually from Elkhead Reservoir for augmentation of Yampa River flows. The Recovery Program requests reservoir releases for endangered species recovery purposes. The River District and the City of Craig operate the reservoir to make those requested releases and keep all required records.

## **Study Schedule:**

Deliveries began in 2007 and will continue as requested.

## **Relationship to RIPRAP:**

Green River Action Plan: Yampa and Little Snake Rivers,

I.B.2.a.(2)(b), Deliver water for endangered fish.

## **Accomplishment of FY 2020 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:**

### Operations

Elkhead Reservoir begins filling before ice is off the reservoir. Screened outlet works releases are ramped up to avoid reservoir rise and potential damage to the ice encapsulated spillway fish net.

Ramped up releases also reduce the potential for the reservoir ice sheet to be pushed into the net by wind and spillway discharges. Additionally, the outlet tower air bubble deicing system is cranked up and the

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resulting enlarged warmer water plume is driven by the prevailing winds toward the spillway fish net, freeing it from ice earlier than reservoir ice off occurs.

Elkhead Reservoir was operated in 2020 to release the Recovery Program's 5,000 acre feet of water through September 2020. In addition, the Recovery Program leased 1500 acre-feet and the Colorado Water Trust leased 250 acre-feet of supplemental water for in-channel use. (Aggregate reservoir inflow, outflow, and change in storage elevations from these and other operations are illustrated in **Figure 1**.) Late season releases also included direct deliveries for Tri-State Generation and Transmission Association (Tri-State), and augmentation water donated by the River District and Tri-State totaling 720 acre feet, to mitigate the effects of a mainstem Yampa River Call. Weekly coordination calls hosted by the Upper Colorado Endangered Fish Recovery Program hydrologist set the release rate for the upcoming week. Releases were made in August and September following the Maybell gage flows as shown in the figures below.

Charges for delivery operations will be included in the 2020 calendar year (2020 CY) invoice to the Recovery Program. Costs summarized below occurred during the Federal Fiscal Year 2020.

Wetlands monitoring in 2018 and 2019 demonstrates the wetland mitigation has exceeded mitigation plan objectives in both acreage and quality. The River District is pursuing acceptance of the mitigation by the USACE and relief from further wetland development reporting. Discussions are progressing.

As the wetlands are passively irrigated by the reservoir surface, weed management will likely be the only ongoing operational expense related to mitigation. Some fencing may be required to exclude domestic animals from adjacent private land.

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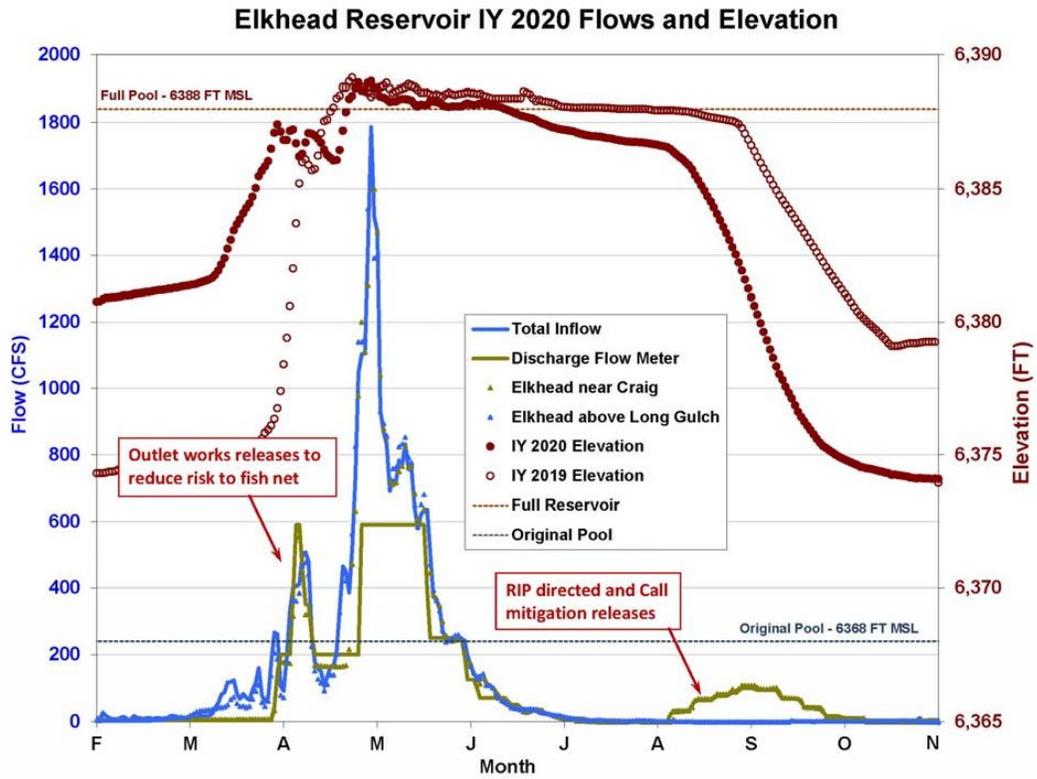


Figure 1. Inflows, releases, and storage elevations at Elkhead Reservoir in 2020.

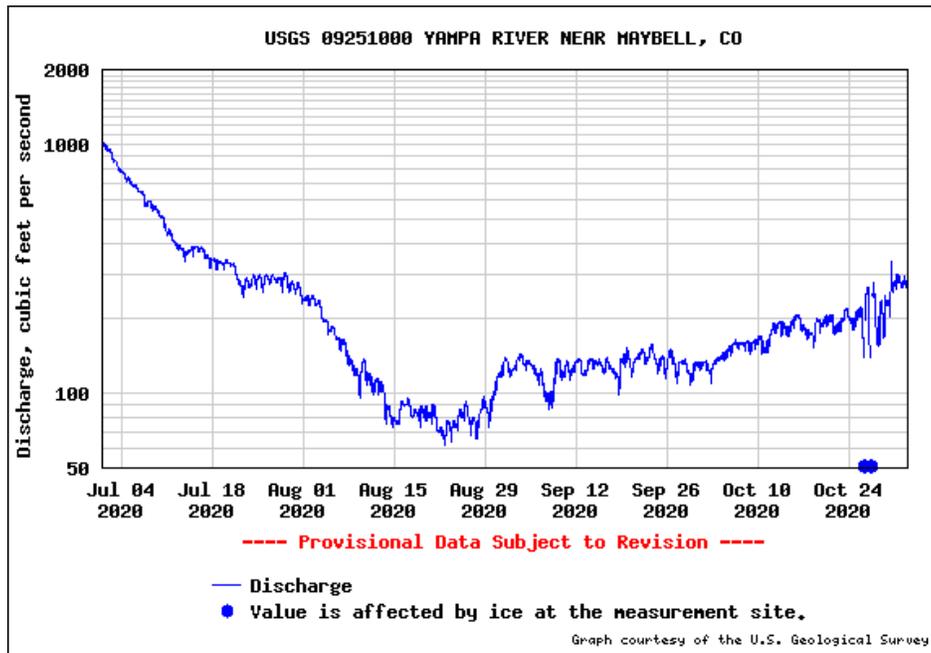


Figure 2. Discharge measurements at the USGS Yampa River near Maybell gage, July through October 2020.

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### **Additional noteworthy observations:**

Significant use of the upstream mitigation area by sandhill cranes has been observed in the last few years.

Repairs to the main outlet fixed cone valve actuator we initiated in the first month of FFY 2021 and will be completed and include in the CY 2020 billing to the Recovery Program and other water owners.

### **Recommendations:**

Impacts to reservoir lands relied upon for wetland mitigation by cattle from adjacent private lands have been noted. River District and the City of Craig are working with the adjacent landowners to remedy this impact potential.

### **Project Status:**

On track and ongoing.

### **FY 2020 Budget Status**

Funds Provided: \$57,497.06 for general operations.  
\$75,000 for lease of 1500 acre-feet at \$50 per acre foot  
Funds Expended: \$132,497.06  
Difference: 0  
Percent of the FY 2020 work completed: 100%

### **Status of Data Submission**

Not applicable.

### **Signed:**

Hunter Causey  
Principal Investigator  
12/7/2020