

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

FY 2023 ANNUAL REPORT

PROJECT: 71

Project Title

Colorado River Decision Support System (CRDSS)

Bureau of Reclamation Agreement Number:

N/A

Project/Grant Period:

Start date: 1/1/1993

End date: Ongoing

Reporting period end date: 9/30/2023

Is this the final report? Yes _____ No X

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Abstract:

The CRDSS supports better decision making with respect to the utilization of Colorado River water resources. It provides computer databases and tools to make informed and timely decisions regarding the use and operation of Colorado's water resources in the Upper Colorado River Basin. The CRDSS operates in accordance with existing compacts and state laws governing the administration of water and water rights, and will allow planning for the optimal use and development of Colorado's water resources to occur.

In relation to the Recovery Program, CRDSS is being used to evaluate the physical and legal water availability at different locations along a stream and to determine the amount of water available for instream flow appropriations. It can also provide information to help determine the impacts of endangered fish flows on Colorado's ability to develop its full compact apportionment.

The development of CDSS was initiated in 1993. A funded maintenance program has been established to provide ongoing maintenance and data updates. Some of the funding and tasks for the study directly benefited the Recovery Program, as mentioned below.

Study Schedule:

1993-Ongoing

Relationship to RIPRAP:

- Assess legal and physical availability of water and compact considerations associated with the protection of instream flow water rights for endangered fish and their critical habitat in the Little

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Snake River, the Yampa River above and below the Little Snake River, the White River, the Colorado River (mainstem), and the Gunnison River.

- Provide hydrology support to develop and evaluate flow augmentation alternatives for the Yampa and Little Snake Rivers.
- Estimate current and projected future depletions in the Colorado River mainstem above the 15-Mile Reach and Yampa Rivers in Colorado for their respective Programmatic Biological Opinions (PBOs).

RIPRAP Activity Numbers:

Yampa and Little Snake Rivers: I.B.3, I.B.4., I.C.3., I.D.2.

White River: I.A.1., I.B.3, I.C., I.D., I.E.1.

Colorado mainstem: I.A.3., I.A.4., I.B.3

Gunnison River: I.B., I.C.

Accomplishment of FY 2023 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

- StateCU and StateMod models on the west slope of Colorado are having their period of record extended through 2020. Work began on this in FY 2021 and is ongoing.
- Irrigated lands West Slope GIS layers were improved as part of the StateCU and StateMod updates. This involved interviews with water users and water commissioners to verify lands and sources of water for each parcel.
- HydroBase was updated with diversion records in FY 2023 which will be used in upcoming depletion accounting.
- CRDSS datasets in all West Slope subbasins were utilized to verify the Bureau of Reclamation's Colorado River Simulation System (CRSS) RiverWare model projection of future depletions in Colorado.
- Colorado used the CRDSS datasets to verify results of OpenET, Bureau of Reclamation consumptive use estimates, and the UCRC depletion demand schedule for use in the Colorado River Simulation System (CRSS).
- The StateMod model of the White River Basin continued to be used to develop climate change analysis and depletion modeling for the White River Management Plan (WRMP) modeling and planning process.
- Siting investigations have been performed pursuant to the Bipartisan Infrastructure Law (BIL) funding from the US Bureau of Reclamation. Infrastructure includes stream gages, weather stations, eddy-covariance towers, and Airborne Snow Observatories (ASO) flights.
- Statewide Gridded evapotranspiration (ET) datasets using Penman-Monteith were updated for 2022.

Additional noteworthy observations:

N/A

Recommendations:

- CWCB will continue providing funding and staff for use and maintenance of the CRDSS.

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Project Status:

On track and ongoing.

FY 2023 Budget Status

Funds Provided: \$122,247.90 State of Colorado funding + in-kind services

Funds Expended: \$122,247.90

Difference: \$0

Percent of the FY 2023 work completed, and projected costs to complete: 100% and 0%

Recovery Program funds spent for publication charges: \$0

Status of Data Submission

CRDSS models and data can be viewed online at colorado.gov/cdss.

Signed:

Brian Macpherson, PE

Principal Investigator

12/7/23