

COLORADO RIVER RECOVERY PROGRAM  
FY 2012 ANNUAL PROJECT REPORT

RECOVERY PROGRAM  
PROJECT NUMBER: 19

I. Project Title: General Hydrology Support

II. Bureau of Reclamation Agreement Number(s): R10PG40084

Project/Grant Period: Start date 1990  
End date: ongoing  
Reporting period end date: 09/30/2012  
Is this the final report? Yes \_\_\_\_\_ No x

III. Principal Investigator:

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IV. Abstract:

The Service's Division of Water Resources provides basic hydrology support to Recovery Program researchers. Accomplishments during FY 2012 include: 1) collecting temperature data at sites on the Colorado, Green and Gunnison River, and assembling a temperature database for use by Recovery Program researchers; 2) providing technical hydrology support for a wide range of Recovery Program activities on a year-to-year basis; and 4) and undertakes tasks to support the Recovery Program in basic data collection and monitoring projects. coordinating other Recovery Program efforts relating to hydrology.

V. Study Schedule: Initial Year - 1990 Final Year – Ongoing

VI. Relationship to RIPRAP:

General Recovery Program Support Action Plan  
I.A.4.b. Conduct needed Geomorphology research and monitoring.

Green River Action Plan: Mainstream

I.A.3. Deliver identified flows.

Colorado River Action Plan: Mainstream

I.E. Evaluate and revise as needed flow regimes to benefit endangered fish populations.

Colorado River Action Plan: Gunnison River

I.D. Evaluate and revise as needed flow regimes to benefit endangered fish populations.

VII. Accomplishment of FY 2012 Tasks and Deliverables,

## A. Temperature Data Collection

Temperature data collection went well during FY-2012. Thermographs on four locations on the Gunnison River, five locations on the Colorado River, and seven locations on the Green River were checked semiannually periodically and calibrated with on-site temperature readings. Temperature data collection on the Colorado River by CRFP was consolidated in this Scope of Work beginning in FY- 99 and a separate budget table is included for this work. The information for these gages can be found at: <http://www.r6.fws.gov/riverdata/>

The Service's Division of Water Resources provides basic hydrology support to Recovery Program researchers and undertakes tasks to support the Recovery Program in basic data collection and monitoring projects. Temperature monitoring duties are divided between the Division of Water Resources Regional Office staff (Denver) and the Colorado River Fishery Project (CRFP), Grand Junction field station. The Grand Junction CRFP station collects water temperature data from five sites on the mainstream Colorado River, all others are collected by the Water Resources staff for the Green, Yampa and Gunnison rivers are assembled into a temperature database for use by Recovery Program researchers. In addition to downloading data, the CRFP PI for this project summarized Colorado and Gunnison River data sets for the period 1986-2012 and converted mean daily temperatures to annual thermal units for Colorado pike minnow growth. A manuscript describing these analyses was prepared over the last few years for submission to a scientific journal. In FY 2010, the article was accepted for publication in River Research and Applications. It has been published online and appeared in print in summer of 2011.

With the high flows of 2011 several of the thermographs were lost, so in the spring of 2012 backup loggers were deployed at most sites to ensure data collection when loggers are lost, stolen, or covered with sediment.

The temperature data can be accessed and downloaded from the river data web page at: <http://www.fws.gov/mountain-prairie/riverdata/>

## B. Hydrology Support for Biological Opinion Development and Monitoring

Snowpack in 2012 was quite low, very similar to the drought year of 2002, although a bit higher in the northern part of the Green River. Dry targets were met downstream of the Aspinall units under the new ROD and at Jensen downstream of Flaming Gorge. Recovery Program targets were not met in the summer at Colorado River at Palisade and Yampa River at Maybell, but flows were greater than expected and cooperation with water users was very good.

Even though flows were quite low the larval trigger study was successful in coordinating flows that coincided with the presence of razorback larvae in the green River.

Coordinated the PIT Tag GIS moved to a FWS server with ARCGIS software. Federal computer experts and the contractor encountered many difficulties and additional Federal scrutiny.

Flows were so low in the mainstream of the Colorado River which caused cancellation of the Coordinated Reservoir Releases (CROS).

A meeting was held December 13, 2011 in Grand Junction with the Grand Valley Water Users.

Purchased the additional 2000 acft for \$100K from Elk head reservoir to meet flow targets in the 2012 drought in the Yampa River. Instituted a weekly call for interested parties to involve the community regarding local releases and the Elk head fish water, following the format of the 15-mile reach weekly call.

Kicked off new effort for an in stream flow water right below confluence of Gunnison River and Colorado River generated by new flows provided by the PBO.

The Biology Committee approved our Price River flow recommendation. Work is still being done to address comments on the White River flow recommendations.

Hydrology updates were presented to these meetings; Biology Committees, Management Committees, a Grand Junction Irrigators meeting and the Annual Researchers meeting.

In 2012 promoted cost sharing for 2011 Peak flow flight Imagery because of a shortage for the post processing. COR, WAPA and the State of Colorado said they were interested but funds could not be made available. We decided to cut back by just stitching the flood photos and posting them to the internet and but not doing the georeferencing at this time.

Worked with GRUWAT modelers to get through shortcomings of the model. We are waiting for the BOR's input for the Yampa River and Flaming Gorge releases.

Several hydrology articles were written with Debbie Felker: 1.) Press release to notifying of cancellation of the coordinated reservoir operation because some reservoirs did not fill. 2.) Press release describing the droughts impact on endangered fish 3) a story for the Program Newsletter to describe the drought of 2012

Reviewed portions of 10825 contacts that are being developed, hopefully it will be complete early in 2013.

Public outreach included; manning the CRRP booth in the Utah, Wyoming and Colorado's water congress for multi-day conferences.

#### VIII. Recommendations:

The work provided is in support of other research projects or activities such as flow delivery, flow quantification, and habitat restoration, all of which have a direct impact on the recovery of the Colorado River endangered fish. We recommend the continuation of current efforts.

Work with the Green River Water Acquisition Team (GRUWAT) in formulating the Green River flow protection plan with the State of Utah to be complete by 2015.

Coordinate Grand Valley Water Users meetings

Complete flow recommendations for the White River

Coordinate a geomorphology committee with the results of USGS sediment study

IX. Project Status: Ongoing and on-track.

X. FY 2012 Budget Status:

A. Funds provided: \$155,948.65

Project funds: carry-over

B. Funds expended \$155,948.65

C. Difference: \$0.00 (most will be returned to the Recovery Program to cover FY 12 budget shortfalls; see project #3 annual report).

XI. Status of Data Submission: Not applicable.

XII. Signed: Jana Mohrman November 14, 2012 \_\_\_\_\_

Principal Investigator                      Date: