

COLORADO RIVER RECOVERY PROGRAM
FY 2015 ANNUAL PROJECT REPORT

RECOVERY PROGRAM
PROJECT NUMBER: C-28a

Stationary PIT detection system in the Green River Canal, Green River, UT

USU cooperative agreement number R11AC40005

Period of performance Oct 1 2014 – Sept 30 2015.

Lead Agency: U.S. Bureau of Reclamation

Submitted by: Dave Speas

U.S. Bureau of Reclamation—Upper Colorado Regional Office
125 South State St. room 6107
Salt Lake City UT 84138-1147
801-524-3863
dspeas@usbr.gov

Peter MacKinnon
Fish Detection Engineer
Fish Ecology Lab
Department of Watershed Sciences
Utah State University
435 770 6959
pdmackinnon@gmail.com

Kevin McAbee
Nonnative Fish Coordinator
Upper Colorado River Endangered Fish Recovery Program
44 Union Blvd, Suite 100
Lakewood, Colorado 80228
Kevin_mcabee@fws.gov

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I: Abstract:

The goal of this project is to evaluate entrainment of native fish (PIT-tagged non-listed and endangered individuals) in the Green River Canal (near Green River, Utah) using a passive interrogation array (PIA). The PIA includes two locations, named the flume and siphon locations, of two antennas each. In April 2015, we replaced the MUX-driven antenna loops at the flume PIA with a more advanced loop/node/master controller configuration, which we feel increased read range significantly. Preliminary results indicate that as of September 24, 2015, 254 individual fish had been detected in the Green River Canal during the 2015 irrigation season (April – October). Of these, 204 individuals were identifiable through Species Tagging, Research and Monitoring System (STReAMS; streamsystem.org) and were comprised of 154 razorback sucker, 31 bonytail, 17 Colorado pikeminnow, and 2 flannelmouth sucker. Data from September 24 through canal shut-down in early November are forthcoming.

II. Study schedule: FY13-FY16

III. Relationship to RIPRAP:

Green River Action Plan

II. Restore habitat

II.B.2 Screen Tusher Wash diversion to prevent endangered fish entrainment, if warranted

II.B.2.b Design.

IV. Accomplishment during FY 2015: Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Task 1: April-November 2015 (irrigation season): Activate and operate system; download antennae data, perform diagnostics, repair system if necessary; system shut-down.

System was activated prior to the onset of the 2015 irrigation season (April 2015). Additionally, in March 2015 we upgraded the flume PIA by installing 2 Biomark IS1001 antenna nodes with master controller and 2, 20' "stout" pass-by antennas.

Task 2: December: Annual report.

Preliminary results indicate that as of September 24, 2015, 254 individual fish had been detected in the Green River Canal. Of these, 204 individuals have been identified to date and consisted of 154 razorback sucker, 31 bonytail, 17 Colorado pikeminnow, and 2 flannelmouth sucker. For comparison, 659 and 311 mostly endangered native fish were detected in the canal in 2013 and 2014, respectively. Razorback sucker once again comprised the majority of entrained fish in 2015 (75% of total compared to 82% and 79% in 2013 and 2014, respectively), but incidence of Colorado pikeminnow was slightly higher in 2015 (17%) than in previous years (5-12%). Percentage of entrained bonytail was also higher in 2015 (15%) compared to previous years (1-6%).

Items of note from preliminary entrainment data collected in 2015 include:

- Two entrained razorback sucker had been previously captured in Lake Powell in 2014.
- While most Colorado pikeminnow had been previously captured in the Green River, 4 individuals had been captured previously in the Colorado River, and 5 had been captured or detected in the White River.
- Two Colorado pikeminnow detected in the canal in 2015 had also been detected in the canal in 2013.
- Most bonytail detected in the canal in 2015 had been stocked in the Green River near the town of Green River, UT, but 1 had been stocked in the San Rafael River, 2 in the Yampa River, and 1 in the White River.

We are assuming at this time that most unidentified fish were either recently stocked bonytail or razorback sucker, although data to verify this is not yet present in STReAMS.

V. Recommendations:

- Prior to the onset of the 2016 irrigation season, consult with canal company representative on proper placement of antenna cables and/or antenna loops and make adjustments as necessary so as to not interfere with canal dredging operations. Reactivate PIAs prior to onset of the irrigation season.
- Continue to pursue a remedy for entrainment.

VI. Project Status: Ongoing

VII. FY 2015 Budget Status

- A. Funds Provided: \$ 48,161
- B. Funds Expended as of September 30, 2013: \$48,161
- C. Difference: \$0
- D. Percent of the FY 2015 work completed, and projected costs to complete: 100%.
- E. Recovery Program funds spent for publication charges: \$0

VIII. Status of Data Submission (where applicable): Entrainment data from April through September 24, 2015 has been submitted to STReaMS.

Signed: /s/ Dave Speas
Principal Investigator

December 2, 2015