

I. Project Title: **Assessment of Stocked Razorback Sucker Reproduction in the Lower Green and Lower Colorado Rivers**

II. Bureau of Reclamation Agreement Number: R14AP00007

Project/Grant Period: Start Date: 05/01/2014
End date: 09/30/2018
Reporting period end date: 09/30/2015
Is this a final report? Yes No

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IV. Abstract: Determining the location, timing, extent, and success of razorback sucker spawning is essential for evaluating the effectiveness of the stocking program, identifying recruitment, and guiding future management. This study was designed to determine the presence/absence, distribution, and spawn timing of young-of-year (YOY) razorback sucker in the Green River downstream from the town of Green River and in the Colorado River downstream of Moab. The study was prompted by increasing razorback sucker encounters, the presence of multiple age classes, and congregations of ripe razorback suckers (2001-2003 and 2006-2008; Bestgen et al 2012, UDWR unpublished data) during Colorado pikeminnow surveys. Larval razorback sucker have been successfully collected since the beginning of the project by either light trapping and/or seining.

V. Study Schedule: Initial year 2009, final year ongoing.

VI. Relationship to RIPRAP:

GENERAL RECOVERY PROGRAM SUPPORT ACTION PLAN

- V. Monitor populations and habitat and conduct research to support recovery actions (research, monitoring, and data management).
- V.A. Measure and document population and habitat parameters to determine status and biological response to recovery actions.
- V.B.2. Conduct appropriate studies to provide needed life history information.

GREEN RIVER ACTION PLAN: MAINSTEM

- V. Monitor populations and habitat and conduct research to support recovery actions (research, monitoring, and data management).
- V.A. Conduct research to acquire life history information and enhance scientific techniques required to complete recovery actions..
- V.D. Complete monitoring plan in FY 11 (based, in part, on recommendations from evaluation of stocked razorback report).

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

Task 1: Lower Green River light trap sample collection: Light trap samples were collected at sites between river miles 199.6 (Saleratus Canyon) and 31 (lower Anderson Bottom) during three sampling events from 4/20-6/5/2015. A total of 81 light trap samples were collected and of those, 62 samples were sent to the CSU larval fish lab for identification. A total of 29 m² was seined in five seine hauls and five samples were sent to the CSU larval fish lab for identification. During the study, main channel temperatures ranged from 15.0°C to 19.5°C with a median temperature of 18.5°C. Habitat temperatures ranged from 18.0°C to 25.0°C with a median temperature of 21°C.

A total of 93 light trap samples were taken in 2014 and 82 were sent to CSU larval fish lab for identification. The 2014 sample results have been received from the CSU larval fish lab; analysis and resubmission of the 2014 report will occur during the winter of 2015-2016.

Task 2: Lower Green River sample for YOY and age 1+ razorback sucker: Seine samples were collected between river miles 119.5 and 0.8 during three sampling trips (7/21-7/24/2015, 8/20-8/23/2015, 9/22-9/24/2015, 9/27/2015). A total of 5,937 m² was seined in 138 seine hauls, five samples were sent to the CSU larval fish lab for identification. During the study, main channel temperatures ranged from 18.0°C to 26.0°C with a median temperature of 22.0°C. Habitat temperatures ranged from 15.0°C to 31.0°C with a median temperature of 23.0°C.

A total of 43 seine samples were taken during 2014 and 7 were sent to the CSU larval fish lab for identification. The 2014 sample results have been received from the CSU larval fish lab; analysis and resubmission of the 2014 report will occur during the winter of 2015–2016.

Task 3: Colorado River light trap and larval seine sample collection: Light trap samples were collected at sites between river miles 91.8 and 21.2 during three sampling events from 4/27-6/14/2015. A total of 77 light trap samples were collected and of those, 65 samples were sent to the CSU larval fish lab for identification. A total of 219 m² was seined in 42 seine hauls, and 24 samples were sent to the CSU larval fish lab for identification. During the study, main channel temperatures ranged from 13°C to 17.5°C with a median temperature of 19°C. Habitat temperatures ranged from 14.0°C to 30.0°C with a median temperature of 19°C.

A total of 84 light trap samples were taken in 2014 and 59 were sent to CSU larval fish lab for identification. The 2014 sample results have been received from the CSU larval fish lab but have not been analyzed.

Task 4: Colorado River sample for YOY and age 1+ razorback sucker: Seine samples were collected between river miles 110.4 and 16.5 during six sampling events (7/13-15/15, 8/5-8/7/15, 8/17-8/18/15, 9/14-9/17/2015). A total of 4,973 m² was seined in 103 seine hauls, 23 samples were sent to CSU larval fish lab for identification. During the study, main channel temperatures ranged from 18.5°C to 23.5°C with a median temperature of 22.0°C. Habitat temperatures ranged from 16.0°C to 30.0°C with a median temperature of 23.0°C.

A total of 67 seine samples were taken during 2014 and 11 were sent to the CSU larval fish lab for identification. The results from the 2014 samples have been received from the CSU larval fish lab; analysis and resubmission of the 2014 report will occur during the winter of 2015/2016.

Task 5: Preliminary sample identification, data entry, analysis and reporting: All data has been entered. Collected samples have been submitted to the CSU larval fish laboratory for identification. This annual report will be updated and resubmitted upon completion of the larval fish identification.

- VIII. Additional noteworthy observations: As light trap samples are pending identification by CSU Larval Fish Lab, additional observations are limited to seine sampling. Other native fishes captured in the Green River included flannelmouth sucker (n=52) with a median total length of 26 mm (16-55 mm), Colorado pikeminnow (n=644) with a median total length of 37 mm (18-79 mm), seven *Gila sp.* with a median total length of 56 mm (38-84 mm), and speckled dace (n=15) with a median total length of 27 mm (22-33 mm). Nonnative fishes captured on the Green River included red shiner, sand shiner, fathead minnow, green sunfish (n=65), smallmouth bass (n=4), gizzard shad (n=328), black crappie (n=1), black bullhead (n=38), western mosquitofish (n=1), and yellow perch (n=1). Other native fishes captured in the Colorado River included flannelmouth sucker (n=189) with a median total length of 33 mm (17-111 mm), bluehead sucker (n=1) with a total length of 56 mm, Colorado pikeminnow (n=1331) with a median total length of 27 mm (16-51 mm), and *Gila sp.* (n=18) with a median total length of 31 mm (17-60 mm). Nonnative fishes captured on the Colorado River included red shiner, sand shiner, fathead minnow, channel catfish, common carp, black bullhead (n=632), black crappie (n=1), plains killifish (n=10), green sunfish (n=2), largemouth bass (n=70), gizzard shad (n=291) and western mosquitofish (n=291).

IX. Recommendations:

- Continue sampling via light trapping for larval razorback sucker in both the Colorado and Green Rivers (May-June) to determine if successful reproduction is occurring by monitoring presence/absence.
- Consider experimenting with alternative sampling methods in an effort to capture YOY and juvenile razorback sucker which may move out of backwater/slackwater habitat by mid to late summer. Additional sampling methods may include backpack electrofishing and block netting along cobble bars, modified seine hauls along shorelines in faster moving waters, and/or trap netting.
- Pending sample identification results provided by CSU.

X. Project Status: On track and ongoing.

XI. FY 2015 Budget Status

A.	Funds Provided:	\$57,116.00
B.	Funds Expended:	\$57,116.00
C.	Difference:	\$ 0.00
D.	Percent FY 2015 work completed:	100%
E.	Recovery Program funds spent for publication charges:	\$ 0.00

XII. Status of Data Submission: All data will be submitted upon completion of larval identification by CSU.

XIII. Signed: Julie Howard & Jonathan Dutrow November 13, 2015
Principal Investigator Date

XIV. Literature cited:

Bestgen, K.R., Zelasko, K.A., White, G.C. 2012. Monitoring reproduction, recruitment, and population status of razorback sucker in the upper Colorado River basin. Final report of Larval Fish Laboratory at Colorado State University to Upper Colorado River Endangered Fish Recovery Program. Denver, CO.