

I. Project Title: **Monitoring multi-life stages of the fish community in the lower Gunnison and upper Colorado Rivers, with emphasis on Colorado pikeminnow and razorback sucker populations, in response to reoperation of the Aspinall Unit and implementation of the Selenium Management Plan.**

II. Bureau of Reclamation Agreement Number(s): R15PG00083

Project/Grant Period: Start date (Mo/Day/Yr): 10/1/2014  
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Reporting period end date: 9/30/2015  
Is this the final report? Yes \_\_\_\_\_ No X

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IV. Abstract: The Programmatic Biological Opinion (PBO) for Gunnison River Basin water depletions (USFWS 2009) stipulates that endangered fishes and the sympatric fish community be monitored to determine their status before and after the Selenium Management Plan (SMP) is implemented and following reoperation of the Aspinall Unit reservoirs. The PBO specifies multi-life stage monitoring and density estimates of Colorado pikeminnow and razorback sucker in the Gunnison and Colorado rivers. The entire fish assemblage is monitored using electrofishing catch-per-effort (CPE) to track trends in species relative abundance both in the Gunnison River and the 18-mile reach of the Colorado River downstream of the Gunnison River confluence. Larval seining conducted in both rivers provides an index of reproductive success using CPE (mean number per sample) of endangered fish larvae. For young-of-the-year and small-bodied fish monitoring, seining is conducted during fall (late September-early October) using ISMP methodology (see McAda 1994) in both the Gunnison (Delta, CO to the confluence) and Colorado (Gunnison confluence to CO/UT stateline) rivers. Concurrent with fish community monitoring in the Gunnison River, tissue samples are collected to determine selenium concentrations in fish before and after implementation of the SMP. Muscle plugs are collected from bonytail, Colorado pikeminnow and razorback sucker.

- V. Study Schedule: 2011-2017  
Field Work: 2011- ongoing  
Juvenile and adult fishes report: 2015  
Larval Fishes report: 2017
- VI. Relationship to RIPRAP:  
Gunnison River Action Plan: Gunnison River Mainstem,  
V. Monitor populations and habitat and conduct research to support recovery actions.  
V.A. Conduct research to acquire life history information and enhance scientific techniques required to complete recovery actions.  
Colorado River Action Plan: Colorado River Mainstem  
V. Monitor populations and habitat and conduct research to support recovery actions.  
V.A. Conduct research to acquire life history information and enhance scientific techniques required to complete recovery actions.
- VII. Accomplishment of FY 2015 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Tasks Accomplished

- Tasks 1-2. Electrofishing community sampling (August and October)  
Tasks 3-4. Sample fish larvae (early May to August)  
Tasks 5-6. Seine sampling of backwaters (September)  
Task 9. Analyze larval samples (Larval Fish Lab)  
Task 10. Analyze data  
Task 11. Write annual report

Tasks Not Accomplished

- Task 12. Prepare final contaminants report (Barb Osmundson) – This work is not funded by the Bureau of Reclamation through the Recovery Program.

Deliverables

Annual report

Accomplishments and Initial Findings

Tasks 1-6 were completed according to planned field schedules.

Two electrofishing trips were completed on the Gunnison River from Delta, Colorado downstream to river mile (RM) 3.9 (approximately 1 mile upstream of the Redlands Dam). Dates for the Gunnison River electrofishing trips were August 17<sup>th</sup>-21<sup>st</sup> and October 5<sup>th</sup>-9<sup>th</sup>. Captures from the August sampling trip include three razorback sucker and one razorback/flannelmouth sucker hybrid. Captures from the October sampling trip include three razorback suckers. No Colorado pikeminnow were captured during the sampling trips in 2015.

Electrofishing sampling was completed on the Colorado River portion of the study area on September 24<sup>th</sup> and 25<sup>th</sup>. A total of six razorback sucker were captured during

electrofishing sampling in the Colorado River portion of the study area. No other endangered fishes were captured. Five of the six razorback sucker captured in 2015 had a PIT tag when captured. The 2011-2015 Colorado River electrofishing sampling data have been entered and comparisons with the 1994 and 1995 CPE data are presented in Figure 1.

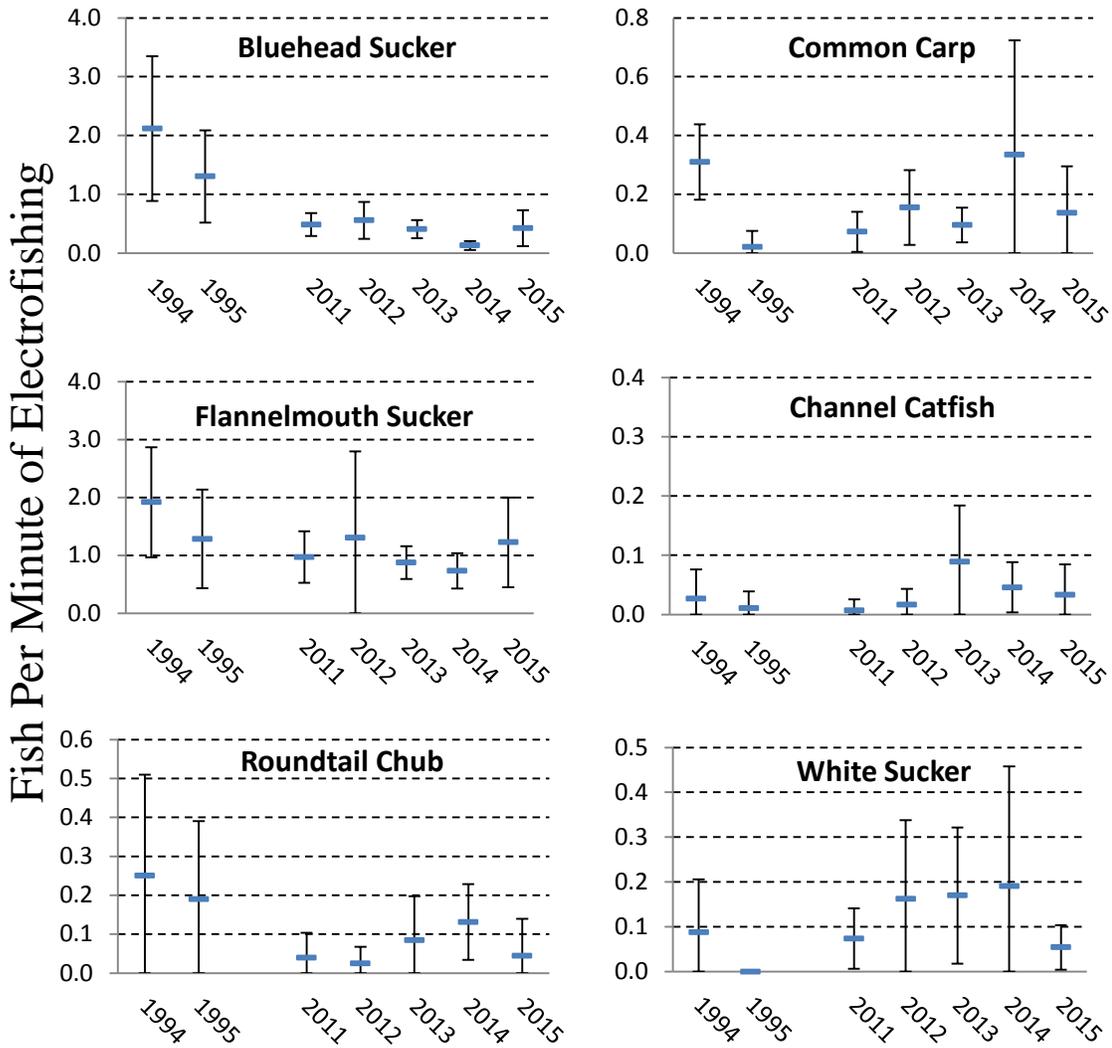


Figure 1. Electrofishing catch rates (mean number of fish caught per minute of electrofishing) of the six most commonly collected species. Errors bars represent 95% confidence intervals.

Catch rate data from electrofishing surveys of the 18-mile reach of the Colorado River downstream of the Colorado River/Gunnison River confluence are presented for the six most common collected species. Study reaches were held constant from the early sampling period (1994–1995). No differences exist in catch rates of common carp, flannemouth sucker, channel catfish, roundtail chub or white sucker between the recent sampling period (2011-2015) relative to the catch rate during the early sampling period (1994–1995). A significant decrease in the catch rate of bluehead sucker is present between data collected in 2014 relative to data collected during 1994. Mean catch rates include all size classes of each species captured by electrofishing.

Larval sampling began May 4<sup>th</sup> on the Gunnison River and May 6<sup>th</sup> on the Colorado River. Sampling continued until August 19<sup>th</sup> on the Gunnison River and August 4<sup>th</sup> on the Colorado River. Larval samples collected in 2015 will be transferred to the CSU-Larval Fish Lab in December, 2015. Seine sampling for young-of-year fishes was completed from September 9<sup>th</sup>–11<sup>th</sup> on the Gunnison River and September 14<sup>th</sup>–15<sup>th</sup> on the Colorado River. Fishes were either identified in the field or preserved to be identified by the CSU Larval Fish Lab. No endangered fishes were captured during seine sampling in either the Colorado or Gunnison Rivers in 2015.

Tissue samples from bonytail, Colorado pikeminnow, razorback sucker, and razorback sucker/flannelmouth sucker hybrids have been collected in the Gunnison River during previous years. A total of six tissue samples were collected from razorback sucker between the two sampling trips as no other endangered fish species were captured in 2015. Samples from previous years have been analyzed, but a report has not been completed. See first paragraph under the heading “shortcomings” for an explanation.

While no razorback sucker population estimate has yet been done specific to the 18-Mile Reach of the Colorado River, preliminary population estimates were generated for razorback sucker in the Colorado River as a whole (from Palisade, CO downstream to its confluence with the Green River), for adult fish > 400 mm TL. Data used to generate razorback sucker population estimates were obtained during the Colorado pikeminnow population estimate studies done in 2005 and 2008-2010. The results are as follows:

<u>Year</u>	<u>Point Estimate</u>	<u>95% Confidence Intervals</u>
2005	656	436-877
2008	2,035	1,333-2,738
2009	1,680	1,070-2,291
2010	1,637	1,179-2,095

Data collected during the 2013 to 2015 Colorado pikeminnow population estimate sampling period is sufficient to calculate a riverwide razorback sucker population estimate, but the estimates have not been completed at the time this report was written.

#### Shortcomings

The preparation of the final contaminants report by Barb Osmundson (of the USFWS’s Wetsern Colorado Ecological Services Field Office) will be funded outside of the Recovery Program. Unfortunately, the funding Ms. Osmundson had been relying on to complete this task has been cancelled. Ms. Osmundson has committed to finishing the report and sharing the findings with the Recovery Program. However, the timeline for her to finish the report is presently uncertain.

- VIII. Additional noteworthy observations: Smallmouth bass were recently discovered in Ridgeway Reservoir on the Uncompahgre River, upstream of its confluence with the Gunnison River. In 2015, no smallmouth bass were collected or observed during electrofishing sampling on the Gunnison River upstream of Redlands Dam.

