

**COLORADO RIVER RECOVERY PROGRAM
FY 2006 ANNUAL PROJECT REPORT**

**RECOVERY PROGRAM
PROJECT NUMBER: 121-a**

- I. Project Title: **Verification of stocked razorback sucker reproduction in the Gunnison and upper Colorado rivers via annual collections of larvae.**

- II. Principal Investigator(s):
Douglas Osmundson, Fishery Biologist (lead)
Chuck McAda, Project Leader
U.S. Fish and Wildlife Service
764 Horizon Drive, Building B
Grand Junction, Colorado 81506
(970) 245-9319; Fax 245-6933
Chuck_McAda@FWS.gov
Doug_Osmundson@FWS.gov

- III. Project Summary:

Wild razorback suckers were last captured in the Gunnison River in the late 1970s (Holden et al. 1981) and in the upper Colorado River in the late 1990s (from the Walter Walker Wildlife Area in 1998). Wild razorback sucker are virtually extirpated in these two river systems. Restoration stocking of razorback sucker began in April 1994 in the Gunnison River and continued annually through 2004 (Burdick 2003). About 24,885 juvenile, sub-adult, and adult razorback sucker were stocked between 1994 and 2006. Restoration stocking began in the upper Colorado River in 1999 and is ongoing. Through 2006, about 65,552 juvenile, sub-adult, and adult razorback sucker have been stocked in the Colorado River.

To produce a self-sustaining population in a particular river system, some stocked individuals need to 1) survive, 2) remain in the vicinity of release, or if displaced downstream, return upstream to spawn, 3) successfully spawn in either the Gunnison or upper Colorado rivers, and 4) progeny need to survive to adulthood and be retained in or return to the Gunnison and upper Colorado river so as to maintain an adult population there. Razorback sucker stocked in the Gunnison River near Delta, Colorado, have been recaptured upstream from the Redlands Diversion Dam subsequent to their release. Twenty of these, recaptured between 1997–2001, had been at large for more than six months post-stocking (Burdick 2003). Six of these fish were at large at least 18 months (17.9–50.2 months) following release. Five of these six were at least 300 mm when stocked. All six fish were >390 mm long when recaptured, and therefore presumably sexually mature. How many stocked razorback suckers survive and remain in the Gunnison River is unknown, but those that have will spawn if suitable spawning conditions are present. The capture of razorback sucker larvae provides verification that stocked fish have successfully spawned.

This project was initiated as a means to document the occurrence of razorback sucker

larvae in the Gunnison River and thereby verify that successful reproduction occurs. In the first year, 2002, larvae were indeed found. Hence, the initial objective of the study, to determine whether razorback suckers can and will reproduce in the Gunnison River, has been achieved. However, this important discovery now leads to new questions and objectives. To restore the Gunnison River as razorback sucker habitat and promote a self-sustaining population there, managers need more information regarding patterns of reproduction, and more importantly, to determine what is needed to promote larval survival and later recruitment to the adult population. Are more larvae produced during years with specific flow conditions? What is the distribution of larvae? Documenting patterns of larval distribution may help identify spawning sites and perhaps areas that could be managed as nursery habitat. The methodology is to search for larvae in backwater and shoreline habitats during and immediately after the suspected spawning period for a period of about six weeks during May and early June. The study area includes the Gunnison River upstream of the Redlands Diversion Dam near Grand Junction to Confluence Park in Delta, Colorado (rm 3.0-57.0). In 2004, the study area was expanded to include the 57 miles of the upper Colorado River from the Grand Valley Irrigation Company Diversion (rm 185.1) in Palisade, Colorado, downstream to the Westwater Ranger Station, Utah (rm 127.6). A combination of daytime shoreline seining and over-night light-trapping have been used to capture larvae. The Larval Fish Laboratory at Colorado State University performs larvae identification. Year 2004 was initially intended to be the last of a three-year field effort, but sampling was continued through 2006. In 2002, eight razorback sucker larvae were captured, seven with dip-net sampling and one with light-trap sampling, all between May 21 and June 6. In 2003, seven razorback sucker larvae were collected, all from seine samples between May 21 and June 10. In 2004, light trapping was dropped as a capture technique. Two razorback larvae were captured from the Gunnison River with dip nets on June 16. Two were also collected from the Colorado River: one on May 20 and one on May 27. In 2005, six larvae were captured between June 24 and July 7: two from the Gunnison River and four from the Colorado. All four Colorado River specimens were collected between Loma and Westwater. No lab work has yet been done on the samples collected in 2006. The following is a list of capture locations from the Gunnison and Colorado rivers during the 2002-2005 sampling.

Date	River	RMI	No. caught	Method
2002				
May 21	Gunn	6.9-9.1	1	Dip-Net
May 30	Gunn	4.8	3	Dip-Net
May 30	Gunn	5.9-8.4	2	Dip-Net
Jun 6	Gunn	4.8	1	Dip-Net
Jun 6	Gunn	50.2	1	Light-trap
2003				
May 21	Gunn	15.1	1	Dip-Net
Jun 4	Gunn	37.0	1	Dip-Net
Jun 5	Gunn	17.5	1	Dip-Net
Jun 9	Gunn	54.1	1	Dip-Net
Jun 9	Gunn	52.7	1	Dip-Net
Jun 9	Gunn	47.8	1	Dip-Net
Jun 10	Gunn	30.4	1	Dip-Net
2004				
Jun 16	Gunn	33.6	1	Dip-Net
Jun 16	Gunn	33.4	1	Dip-Net
May 20	Colo	162.7	1	Dip-Net
May 27	Colo	154.0	1	Dip-Net
2005				
Jun 24	Gunn	43.2	1	Dip-Net
Jul 7	Gunn	9.6	1	Dip-Net
Jun 27	Colo	144.0	1	Dip-Net
Jun 27	Colo	129.7	1	Dip-Net
Jun 27	Colo	139.9	1	Dip-Net
Jun 27	Colo	144.0	1	Dip-Net

IV. Study Schedule: 2001-2008

V. Relationship to RIPRAP: Colorado River Action Plan: Gunnison River IV.A.1.b(2)
Monitor and evaluate stocking results; make recommendations regarding further augmentation.

VI. Accomplishment of FY 06 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Tasks

1) Collect samples of larvae. This task was completed on schedule. Because almost all razorback sucker larvae collected in the Gunnison River in 2002 and 2003 were from areas that would not have been accessible for light-trapping, sampling in 2004-2006 relied entirely on dip-net sampling. This provides coverage of the whole study reach allowing distributional information to be collected in addition to just presence/absence results. Sampling was done by a two-person crew boating down the river and sampling habitats with a fine mesh net set between two hand brailes. In 2006 a total of 314 seining efforts were conducted in the Gunnison River between May 15 and July 5. A total of 270 seining efforts were conducted in the Colorado River between May 18 and July 10. A total of 434 sample bottles containing larvae were collected from the two rivers.

2). Analyze samples in the lab. Samples have been shipped to the Larval Fish Laboratory.

VII. Recommendations: Continue monitoring in 2007 as part of a new Gunnison River effort designed to identify razorback sucker spawning sites.

VIII. Project Status: Project is ongoing and on-track. 2006 field work for this project was completed on schedule. Larval samples have been shipped to the Larval Fish Lab for analysis. Sampling will continue in 2007 but the Colorado River sampling portion will be dropped. A summary report will be prepared in 2008.

IX. FY 2006 Budget. \$74,900 total (\$20,000 goes to Larval Fish Lab)

A. Funds Provided to FWS:	54,900
B. Funds Expended:	<u>54,900</u>
C. Difference:	0
D. Publication costs	0

X. Status of Data Submission: Data will be submitted to the database manager upon completion of the study in 2006.

XI. Signed: Douglas Osmundson, Fishery Biologist, Lead investigator
10/05/06