

- 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: R11PG40022
Project /Grant period: Start date: 7/20/2011
End Date: 12/31/2015
Reporting period end date: 9/30/2012
Is this the final report? Yes _____ No X
- III. Principal Investigator(s):
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- IV. Abstract:

The Programmatic Biological Opinion (PBO) for water depletions in the Gunnison River Basin (USFWS 2009) stipulates that endangered fishes, as well as the entire fish community, be monitored to determine the status of the species before and after the Selenium Management Plan (SMP) is implemented and following reoperation of the Aspinall Unit reservoirs. The PBO calls for multi-life stage monitoring and density estimates of Colorado pikeminnow and razorback sucker in the Gunnison and Colorado rivers. The fish assemblage, including the endangered fish, are being monitored in the Gunnison River using electrofishing catch-per-effort as an index to track trends in relative abundance of each species. This is also being done in the 18-mile reach of the Colorado River downstream of the Gunnison River inflow. In 2012, abundance estimates will be developed from existing data for adult razorback sucker in the Colorado River for the years 2008, 2009, and 2010. Hand-seine larval sampling is conducted in both rivers. This sampling provides an index to reproductive success of each species using catch-per-effort (mean number/sample) of endangered fish larvae. During the first two years (2011 and 2012) only the razorback sucker spawning period (Mid-May to early-July) was sampled because of funding limitations. Beginning in 2013, the duration of sampling will be extended to encompass both the razorback sucker and Colorado pikeminnow (mid-June to mid-August) spawning periods. For young-of-the-year (YOY) and small-bodied fish monitoring, beach seine sampling during fall (late September-early October) is being conducted using ISMP methodology (see McAda 1994) in both the Gunnison

(Delta, Colorado to Redlands Diversion) and Colorado (Gunnison confluence to Westwater, Utah) 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 plug samples are collected from all adult Colorado pikeminnow and razorback suckers encountered. To date, field data and specimen collection is on track; however, the razorback sucker abundance estimation is behind schedule.

V. Study Schedule: 2011-2015.

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 2012 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Tasks

| | |
|------------|---|
| Tasks 1-2. | Electrofishing fish community (August and October) |
| Tasks 3-4. | Sample fish larvae (early to Mid-May to July) |
| Tasks 5-6. | Seine sampling of backwaters (September-October) |
| Task 7. | Analyze tissue samples for selenium |
| Task 8. | Develop abundance estimates of razorback sucker in Colo River |
| Task 11. | Write annual report |

Deliverables

Annual report

Accomplishments and Initial Findings

Tasks 1-6 were completed according to planned field schedules. Tissue samples from carp, roundtail chub, speckled dace and bonytail collected in 2011 have been submitted for laboratory analysis (Task 7). Tissue samples from Colorado pikeminnow and razorback sucker were collected in 2012 and have not yet been submitted to the lab. Samples of larvae and YOY and small-bodied fish from seine surveys have been preserved but cannot be identified until a later year when more funding is available. Species, length, and weight data collected during the August and October 2011 Gunnison River sampling have been inputted but not analyzed. The September 2011 and 2012 Colorado River electrofishing sampling data have been inputted and comparisons with 1994 and 1995 catch rates have been made (Fig. 1).

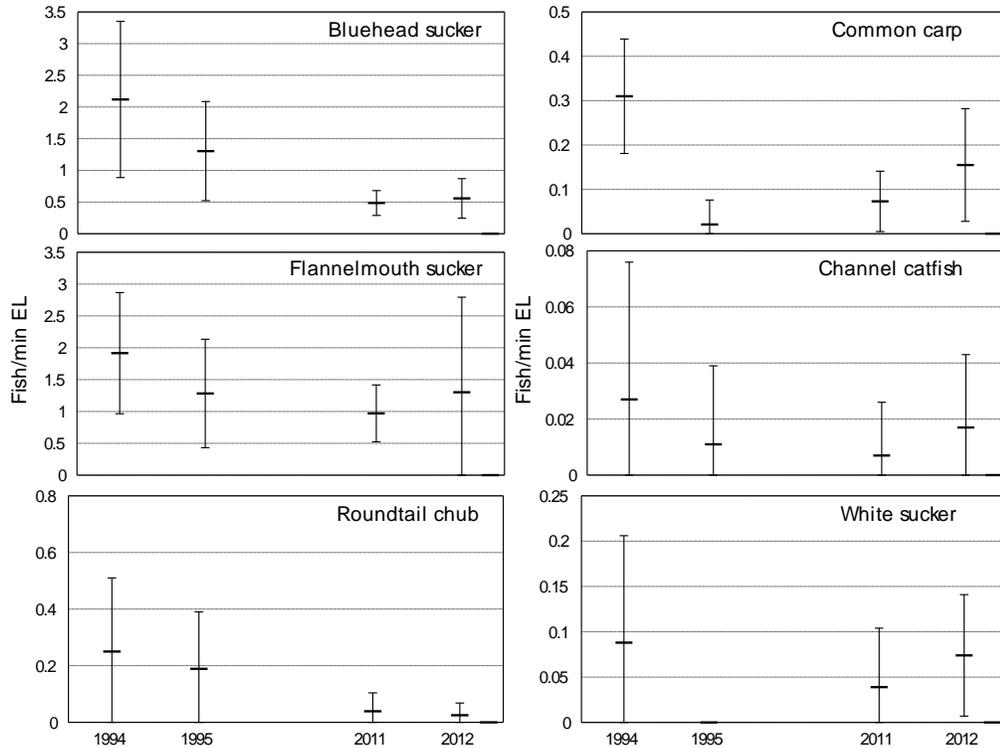


Figure 1. Electrofishing catch rates (mean number of fish caught per minute of electrofishing) of six species in the 18-mile reach of the Colorado River downstream from the Gunnison River inflow. Sampling gear, protocol, and study reaches were held constant from the earlier (1994–1995) to the recent (2011–2012) period. 95% confidence intervals are shown about the mean.

When electrofishing catch rates from 2011 and 2012 were compared with catch rates from 1994 and 1995, no consistent trends were found for flannelmouth sucker, common carp, channel catfish, or white sucker. However, catch rates for bluehead sucker and roundtail chub appeared to decline substantially from the mid-1990's to the present.

VIII. Recommendations:

- Continue analyzing new data and prepare for 2013 field season.
- For future monitoring, electrofishing catch-per-effort will be continued as the index for trends in endangered fish adult abundance as too few were captured in the Gunnison River to allow a planned mark-recapture study to be conducted.
- Consideration should be given to expanding razorback sucker larval sampling into the lower reach (Moab to Green River confluence) because of the 2011 collection of suspected razorback sucker young-of-the-year by Utah DWR.

IX. Project Status: Field effort on schedule; data analysis progressing, razorback sucker abundance estimation for Colorado River is behind schedule but will be done during winter 2012-2013.

X. FY 2011 Budget

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|------------------------|--------|
| A. Funds Provided: | 78,809 |
| B. Funds Expended: | 78,809 |
| C. Difference: | 0 |
| D. N/A (BR projects) | 0 |
| E. Publication Charges | 0 |

XI. Status of Data Submission: Capture data from electrofishing surveys will be submitted to the database manager as inputting and error-checking is completed. No data from 2011 or 2012 has yet been submitted.

XII. Signed: *Doug Osmundson*, November 08, 2012.