

COLORADO RIVER RECOVERY PROGRAM
FY 2012 ANNUAL PROJECT REPORT

RECOVERY PROGRAM
PROJECT NUMBER: 161

I. Project Title: Population Dynamics Modeling of Introduced Smallmouth Bass, Upper Colorado River Basin

II. Bureau of Reclamation Agreement Number(s): 9-FG-81-0143 R09AC40885

Project/Grant Period: Start date (Mo/Day/Yr): 4 June 2009
End date: (Mo/Day/Yr): 30 September 2014
Reporting period end date: 30 September 2013
Is this the final report? Yes _____ No X

III. Principal Investigator(s):

Kevin Bestgen / John Hawkins/ Gary White
Larval Fish Laboratory
Department of Fish, Wildlife, and Conservation Biology
Colorado State University
Ft. Collins, CO 80523
voice: KRB (970) 491-1848, JAH (970) 491-2777
fax: (970) 491-5091
email: kbestgen@colostate.edu
jhawk@lamar.colostate.edu
gwhite@colostate.edu

Dana Winkelman and Andre Breton
Cooperative Fish and Wildlife Research Unit
Department of Fish, Wildlife, and Conservation Biology
Colorado State University
Ft. Collins, CO 80523
Dana.winkelman@colostate.edu
Andre.Breton@colostate.edu

IV. Abstract: Non-native and piscivorous smallmouth bass *Micropterus dolomieu* are established and common in the lower Yampa River, the upper and middle Green River basins, and the upper Colorado River. In response to the predatory threat posed by non-native fishes such as smallmouth bass, the Upper Colorado River Recovery Implementation Program initiated efforts to control such species via mechanical removal in affected stream reaches. The aim of this study is to expand the scope of recent population dynamics models using data collected in the system, the comprehensive non-native fish removal database, and our own unpublished information. Our goal is to develop abundance estimates and population trend data for reaches of interest and a comprehensive age- or size-structured model to understand factors that affect smallmouth bass population dynamics in the Upper Colorado River Basin. Results of this study will assist with formulating comprehensive non-native fish control strategies in the Upper Colorado River Basin.

V. Study Schedule:

Initial Year 2010

Final year 2013 (advanced due to later than expected start date and two additions of funds to incorporate additional data)

VI. Relationship to RIPRAP:

Green River Action Plan: Yampa and Little Snake Rivers

III.A.1. Implement Yampa Basin aquatic wildlife management plan to develop nonnative fish control programs in reaches of the Yampa River occupied by endangered fishes. Each control activity will be evaluated for effectiveness and then continued as needed.

Green River Action Plan: Mainstem

III. Reduce negative impacts of nonnative fishes and sportfish management activities

(Nonnative and sportfish management)

III.A.2.c Evaluate the effectiveness (e.g., nonnative and native fish response) and develop and implement an integrated, viable active control program.

VII. Accomplishment of FY 2012 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings: FY-2012—The Program decision was made to fund about an additional year of effort in the project to incorporate smallmouth bass removal data collected in 2011. Inclusion of that data will provide a more up-to-date view of progress toward smallmouth bass control in the basin. This was thought potentially beneficial given relatively high flows that occurred in those years, which may have reduced bass reproductive success, along with increased bass removal effort. The 2009 and 2010 data was acquired in spring 2011 and was incorporated into the database described below and 2011 data are also available. New abundance estimates for those years and revisions of earlier ones are now available and those results will be presented at the non-native fish workshop in early December 2012; findings were also presented at the 2010 and 2011 workshop. New estimates indicate progress toward control in some reaches. Preliminary results of those estimates were also recently discussed with Recovery Program staff and the draft section of the report detailing those estimates has been prepared and is under internal review.

Another activity conducted in 2011 and 2012 was analysis of smallmouth bass recapture data that described escapement of that species from Elkhead Reservoir; this was another use of the additional funding received in 2011. Results of those estimates were recently discussed with Recovery Program staff and the Biology Committee in the form of a draft report. That report received preliminary approval and will be finalized in the next few weeks and submitted as final. Those results will be presented at the non-native fish workshop in early December 2012; findings were also presented at the 2010 and 2011 workshops.

Additional progress was also made on creating a population dynamics model that better describes changes in abundance of smallmouth bass in the Yampa River. That

report is available for review now by project principal investigators and those results will also be presented at the non-native fish workshop in early December 2012.

- VIII. Recommendations: Continue with project implementation, with a slightly revised start and end date for the schedule.
- IX. Project Status: On track and within budget.
- X. FY 2012 Budget Status
 - A. Funds Provided: \$217,017
 - B. Funds Expended: \$169,017
 - C. Difference: \$48,000
 - D. Percent of the FY 2012 work completed, and projected costs to complete: 40% complete, received funding late in fiscal year so 2012 funding not expended.
 - E. Recovery Program funds spent for publication charges: \$0
- XI. Status of Data Submission (Where applicable): NA
- XII. Signed:

Kevin Bestgen	6 November 2012
Principal Investigator	Date

(Just put name and date here, since you will be submitting the report electronically)

APPENDIX: *E.g., more comprehensive/final project reports (NOT to be used in place of a complete annual report.). If distributed previously, simply reference the document or report.*

Draft final report for smallmouth bass escapement from Elkhead Reservoir was reviewed and preliminarily approved by the Program and the Biology Committee. The final is expected within a week.