

COLORADO RIVER RECOVERY PROGRAM
FY 2008 ANNUAL PROJECT REPORT

RECOVERY PROGRAM
PROJECT NUMBER: 128

- I. Project Title: Abundance Estimates for Colorado pikeminnow in the Green River Basin, Utah and Colorado
- II. Principal Investigator(s):
Lead Agencies: Larval Fish Laboratory, CSU

Kevin Bestgen (Lead)/ John Hawkins/ Gary White/Cameron Walford
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

Trina Hedrick
Utah Division of Wildlife Resources
152 East 100 North
Vernal, UT 84078
voice: (435) 781-5315
fax: (435) 789-8343
email: trinahedrick@utah.gov

David Irving
U. S. Fish and Wildlife Service
1380 S. 2350 W.
Vernal, UT 84078
voice: (435) 789-0354
fax: (435) 789-4805
email: dave_irving@fws.gov

Patrick Goddard and Paul Badame
Utah Division of Wildlife Resources
1165 So. Hwy 191, Ste 4
Moab, UT 84532
email: paulbadame@utah.gov
patrickgoddard@utah.gov

Lori Martin
Colorado Division of Wildlife
911 Independent Avenue
Grand Junction, CO 81505
voice: (970) 472-4384
email: lori.martin@state.co.us

Jointly Submitted by: Larval Fish Laboratory, CSU, Utah Division of Wildlife Resources, U.S. Fish and Wildlife Service, Colorado Division of Wildlife

III. Project Summary: Sampling conducted during this project is designed to obtain capture-recapture data needed to estimate abundance of Colorado pikeminnow *Ptychocheilus lucius* in the lower Yampa and lower White rivers and the Green River downstream of Whirlpool Canyon exclusive of Split Mountain Canyon. Abundance estimates of endangered Colorado pikeminnow are needed to better monitor population status and provide benchmarks against which progress toward recovery can be measured. This project is designed to have three years (2006-2008) of sampling followed by a year of data analysis and report writing. The design is essentially the same as that employed for sampling conducted from 2000-2003 in the same area (Bestgen et al. 2005). Sampling during this study began in spring 2006, and continued in spring 2008, with the Colorado Division of Wildlife and the Larval Fish Laboratory responsible for sampling the Yampa River, the U. S. Fish and Wildlife Service, Vernal, responsible for the reach of the Green River from the White River downstream to Tusher Diversion and the lower White River, and the Utah Division of Wildlife Resources responsible for the Green River reaches from lower Whirlpool Canyon to the White River confluence and from Tusher Diversion downstream to the Colorado River. The Larval Fish Laboratory will provide coordination, data checking, and data analysis assistance. Our primary goal was to capture, mark, and recapture as many Colorado pikeminnow as possible on at least three different sampling occasions in each river reach. Sampling occurred during spring runoff and mostly ended before pikeminnow spawning migration. Electrofishing was the primary sampling gear. Captured pikeminnow were scanned for the presence of a PIT tag, and unmarked fish were marked. These data will be used to obtain abundance estimates for each river reach. We also began an analysis of razorback sucker recapture data to further understanding of demographic rates such as survival for stocked fish.

IV. Study Schedule: Initial Year 2006
 Final year 2009

V. Relationship to RIPRAP (*Version: March 8, 2000*):

- V. Monitor populations and habitat and conduct research to support recovery actions (research, monitoring, and data management)
- V.B. Conduct research to acquire needed life history information
- V.B.2. Conduct appropriate studies to provide needed life history information.

VI. Accomplishment of FY 2008 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

We completed three to six sampling passes through the five Green River Basin reaches listed below to capture sub-adult and adult Colorado pikeminnow:

- a) Green River between the confluence of the White River upstream to the lower end of Whirlpool Canyon (i.e., upper Rainbow Park).

- b) White River between the confluence of the Green River upstream to Taylor Draw Dam,
- c) Yampa River between Deerlodge Park and Craig, excluding Cross Mountain Canyon,
- d) Green River from the White River confluence downstream to near Green River, Utah, and,
- e) Green River from downstream of Green River, Utah, to the confluence with the Colorado River.

The LFL and CDOW attempted up to eight sampling passes in portions of the Yampa River, in part associated with bass and northern pike removal projects, in order to obtain a more precise and accurate Colorado pikeminnow abundance estimate. Effort for some of those passes was combined (passes 3-6) because few fish were captured in any pass.

In 2007, a total of 492 Colorado pikeminnow => 450 mm TL were captured in the Green River Basin (Tables 1-5, Figs. 1-5). Sampling occurred from early-April to late-June, and 1081 hours of electrofishing, 5 hours of trammel/electrofishing, and 158 fyke net hours were used to capture adult pikeminnow. The largest number of adult pikeminnow were captured in the Lower Green reach (n = 188), followed by the White River (n = 110), middle Green (n = 100), the Desolation-Gray Canyon reach (n = 70) and Yampa River (n = 24) reaches. The 492 adult Colorado pikeminnow captured is comparable to the number that were captured in essentially the same area in 2003 (n = 483), the last year of abundance estimation sampling for Colorado pikeminnow in the period 2000-2003 (Bestgen et al. 2005), and in 2006 (n = 520). In 2000-2003, most pikeminnow adults were captured in the middle Green or White River reaches. An encouraging sign in 2006 was the number of smaller Colorado pikeminnow present in the lower Green River reach, where 369 pikeminnow 182-399 mm TL were captured, tagged, and released (Fig. 5). That number may be greater than the total number of fish in that size class present in all years of sampling the lower Green River from 2001-2003. Although the number of those smaller fish in that reach declined in 2007, increased abundance of fish in the 400-449 mm TL size-class was noted in the Desolation Gray Canyon and middle Green River reaches of the Green River, and the White River, in 2007. This may be due to movement of some of those recruits upstream since 2006.

In 2008, similar levels of effort were expended. We do not yet have data to report for 2008 because we are still sorting out errors in data and recording. We are also in the process of analyzing data collected from 2006-2008 in a final report.

We also finished an analysis of recapture information for razorback sucker with a goal of obtaining demographic estimates of parameters such as survival rates. With the assistance of the Grand Junction office of the U. S. Fish and Wildlife Service, we obtained a large database that contained over 150,000 records of tagged and razorback suckers. Ms. Koreen Zelasko, graduate student at the Larval Fish Laboratory, Colorado State University, was responsible for data quality control and analysis and the project served as her thesis research for her Masters degree. To date, data have been proofed and missing information assembled to the extent possible, data analyzed, and a thesis

prepared. We are preparing the Recovery Program final report in the correct format and it will be available before the end of 2008. Several presentations of that information have been made.

We (Gary White) also completed data analysis for Doug Osumundson in 2008. That report is available in draft form and under peer review.

VII. Recommendations: Write final report in 2009

VIII. Project Status:
Portions of project such as razorback sucker data analysis completed. Pikeminnow data analysis not yet completed.

IX. FY 2008 Budget Status

A. Funds Provided: \$381,937

B. Funds Expended: \$366,937

C. Difference: \$15,000, some data verification and analysis remains to be accomplished.

D. Percent of the FY 2008 work completed, and projected costs to complete: 90% complete, no additional funds needed to finish project.

E. Recovery Program funds spent for publication charges: None

X. Status of Data Submission (Where applicable):

PIT Tag data files will be submitted by individual agencies (USFWS, UDWR) by January 2009.

XI. Signed: Kevin R. Bestgen 11-04-200
Reporting Principal Investigator Date