

I. Project Title: **Monitoring the Colorado Pikeminnow Population in the Mainstem Colorado River via periodic Population Estimates**

II. Bureau of Reclamation Agreement Number: R15PG00083

Project/Grant Period: Start date: 10/1/2014

End date: 09/30/2019

Reporting period end date: 9/30/2018

Is this the final report? Yes _____ No X

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IV. Abstract:

The Interagency Standardized Monitoring Program (ISMP) was developed in 1986 to monitor population trends of Colorado pikeminnow and humpback chub in the Colorado River basin using catch per effort (CPE) indices. ISMP was expanded in 1998 to include mark-recapture population estimates of the major Colorado pikeminnow and humpback chub populations. For Colorado pikeminnow in the upper Colorado River, population estimates were conducted annually during 1991-1994, 1998-2000, 2003-2005, and 2008-2010. The most recent three-year field sampling effort began in 2013 and was completed in 2015.

A draft report that presents the results of this three-year effort and puts these findings into context with those from previous efforts was scheduled to be ready for peer review on 30 August 2016, with a draft final report scheduled to be ready for approval consideration by 31 October 2016. These due dates were not met. Data analysis and writing of the report are currently in progress.

V. Study Schedule: 2018

A two-year hiatus from Colorado pikeminnow population estimate sampling was scheduled for and occurred in 2016 and 2017. However, because of regional level difficulties with advertising for and hiring seasonal employees (i.e., issues within the USFWS's Region 6 Human Resources office in Denver, CO) in the winter/spring of 2018, the Grand Junction FWCO was unable to hire staff in time to perform Colorado

pikeminnow population estimate work in the spring of 2018. Therefore the hiatus from

performing Colorado pikeminnow population estimate sampling was extended through 2018.

Ironically, our inability to perform this study in spring 2018 may actually have been fortuitous, in that extremely low river flows (due to very low snowpack levels the prior winter) would almost certainly have precluded our ability to properly sample many reaches of the Colorado and lower Gunnison rivers for Colorado pikeminnow. Certainly performing three full passes of population estimate sampling of the lower Colorado River would have been almost impossible to accomplish. The new three-year sampling window for Colorado pikeminnow population estimate is planned for 2019-2021.

VI. Relationship to RIPRAP:

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 2018 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

FY 2018 was originally scheduled as the first year of a new three-year sampling cycle. As stated previously, this did not occur in 2018. Work on the draft population estimate report for 2013-2015 is in progress. All data have been entered and checked for accuracy. Data analysis has begun, but the draft report is not yet ready to be submitted to reviewers. The matrix for the multiple year population estimates, including data collected in 2015, was completed. While the draft report has not been completed, abundance estimates from data collected from 2013-2015 and prior years were completed by Dr. Gary White and are presented in Figure 1.

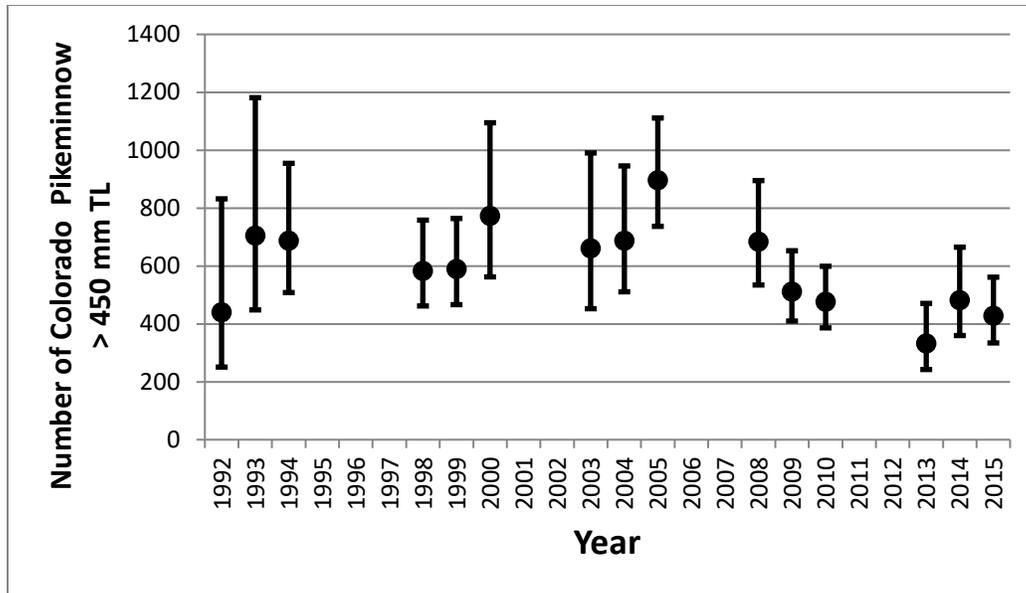


Figure 1. Point estimates and 95% confidence intervals for adult Colorado pikeminnow in the Colorado River, 1992-2015. Population estimates should be considered preliminary at this time.

The 95% confidence intervals for the 2015 adult abundance estimate do not overlap confidence intervals for the years 2000 and 2005, indicating a decrease in the number of adult Colorado pikeminnow. Confidence intervals from the 2015 estimate overlap with all other years. Population estimates presented in Figure 1 should be considered preliminary at this time.

VIII. Additional noteworthy observations:

With the large number of juvenile and subadult Colorado pikeminnow captured and subsequently recaptured from 2013 to 2015, growth rates of juvenile and subadult Colorado pikeminnow growth rates were examined with the mark/recapture data. Growth rates of juvenile and subadult Colorado pikeminnow were considerably higher than rates identified by previous studies. Further details regarding this finding will be presented in the final 2013-2015 population estimate report.

IX. Recommendations:

- Investigate options for utilizing portable passive interrogation arrays (PIAs) in the next sampling period (2019-2021) of Colorado pikeminnow population estimates to increase the number of encounters of Colorado pikeminnow, which may increase the precision of future population estimates.
- Complete draft report, for distribution to the program coordinator, no later than 15 March 2019.

X. Project Status: The draft report is behind schedule. Data analysis and writing of the FY 2018 Ann. Rpt. Project # 127 - 3

report are ongoing.

XI. FY 2018 Budget Status

- A. Funds Provided: \$242,519
- B. Funds Expended: \$0
- C. Difference: \$242,519
- D. Percent of the FY 2018 work completed, and projected costs to complete: 0% (see note below)
 - *** Following consultation with the UCREFRP Program Office, our office will carry over our unused FY 2018 funds from this study and use them to perform the 2019 Colorado pikeminnow population estimate study. This means that our office will receive \$0.00 funding for this study in FY 2019.
- E. Recovery Program funds spent for publication charges: \$0

XII. Status of Data Submission: Data from the 2013-2015 sampling seasons has been entered, checked for accuracy, and submitted to the database manager.

XIII. Signed: Dale Ryden 11/02/2018
Project Leader Date