

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: 9/30/2019  
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, 2008-2010, and 2013-2015. The most current three-year field sampling effort began in 2019 and will be completed in 2021.

A draft report that presents the results of the 2013-2015 effort and puts those 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. A draft report was submitted to coordinator Tildon Jones on 12/19/2019.

V. Study Schedule: 2019-2022

This study was previously planned to begin collecting data in 2018 and continue until 2021. Due to unforeseen circumstances, field work in the 2018 was cancelled, and field work, data input, and annual report writing began in 2019 and will continue until 2021. In 2022, a final report pertaining to data collected from 2019-2021 will be completed.

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 2019 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

A draft of the 2013-2015 report was submitted to coordinator Tildon Jones on 12/19/2019. Field work for the first year of the new three year sampling schedule was completed as planned. Four passes were completed on the lower reach and five passes were completed on the upper reach. All data has been entered and checked for accuracy.

Captures during 2019 field work included 83 bonytail, 337 Colorado pikeminnow, 13 humpback chub, 17 flannelmouth/razorback sucker hybrids, one bluehead/razorback sucker hybrid, and 1,106 razorback sucker. Six of the razorback sucker captures were fish suspected to be wild produced age-1 razorback. Length of the suspected wild age-1 razorbacks ranged from 111-176 mm, and razorback sucker are not stocked until they reach ~300 mm. One hundred forty-eight walleye were also captured and removed from the Colorado River. Captured walleye ranged from 355 mm to 679 mm total length.

Of the 313 individual Colorado pikeminnow collected in 2019, 115 (37%) were juvenile fish (<399 mm TL) (Figure 1). Seventy-one of the 115 Colorado pikeminnow captured were below the 150 mm TL requirement to receive a PIT tag. Forty-three of the 313 individual Colorado pikeminnow were between 300-399 mm and could be the result of the large cohort of YOY Colorado pikeminnow produced in 2015. Sixty-four (20%) of the 313 individual Colorado pikeminnow were sub-adults (400-449 mm TL). The remaining 134 (43%) of the Colorado pikeminnow captured in 2019 were adult size (>450 mm TL). The adult Colorado pikeminnow ranged from 455 mm TL to 898 mm TL. Only one Colorado pikeminnow was captured with a total length between 150 mm and 300 mm, which indicated that the age-2 year class strength is low.

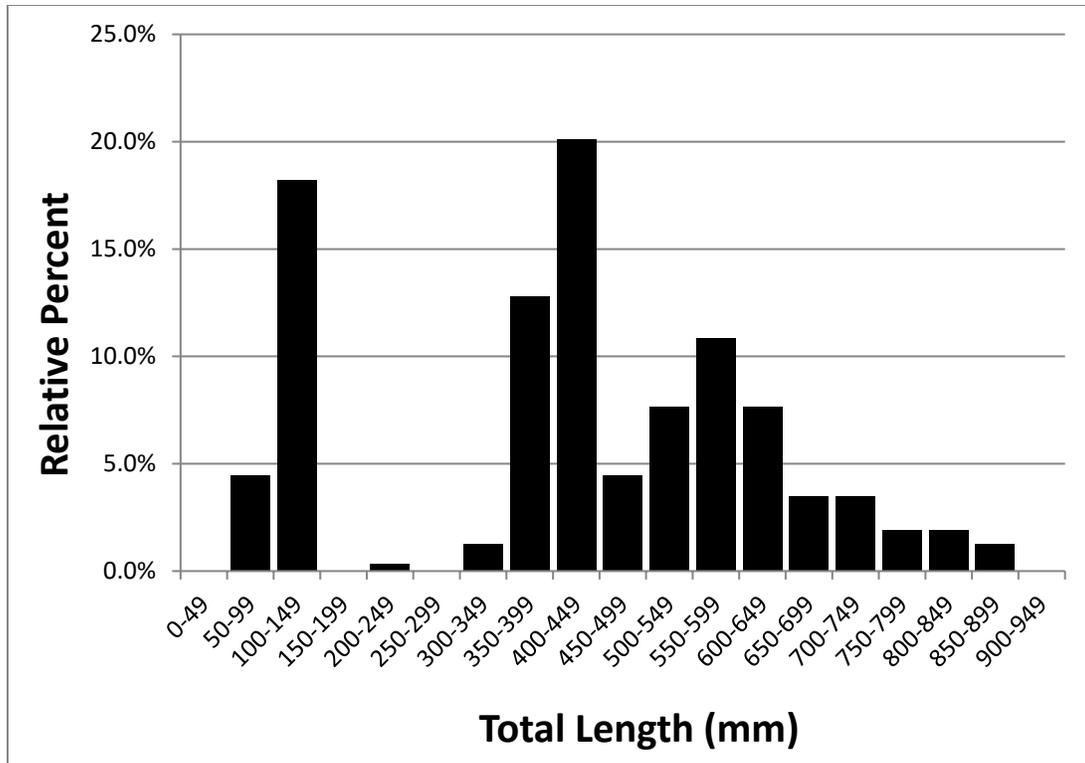


Figure 1. Length-frequency distribution of the 313 individual Colorado pikeminnow captured in 2019. For Colorado pikeminnow captured on multiple occasions in 2019, only the total length from the first capture occasion in 2019 is displayed.

Two hundred thirty nine individual Colorado pikeminnow > 250 mm TL were captured during 2019. One hundred fifty six of the 239 individuals were captured in the lower reach and 83 were captured in the upper reach. Twenty Colorado pikeminnow were captured multiple times during 2019. Five recaptures occurred in the upper reach and 15 occurred in the lower reach. The 20 total within-year recaptures included: two juvenile Colorado pikeminnow (all recaptured in the lower reach), 10 sub-adult Colorado pikeminnow recaptured in the upper reach (all recaptured in the lower reach), and eight adult Colorado pikeminnow (three recaptured in the lower reach and five recaptured in the upper reach).

VIII. Additional noteworthy observations:

In 2019, seven PIAs were utilized to assess their effectiveness for collecting data for this project. All PIAs detected Colorado pikeminnow, but numbers detected were low and ranged from 2 to 5 Colorado pikeminnow per antenna detected during the field season.

Two large year-classes of juvenile Colorado pikeminnow were encountered in 2019. One year-class was age-1 and the other was made up of likely age-4 Colorado pikeminnow (fish spawned in 2015).

Large numbers of walleye were encountered in the lower reach of the Colorado River in

2019.

IX. Recommendations:

- Continue to investigate options for utilizing portable passive interrogation arrays (PIAs) in the current 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 the final 2013-2015 report no later than 31 March 2020.
- Continue to allocate effort towards removing walleye from the lower reach of the Colorado River

X. Project Status: The 2013-2015 final report is behind schedule. Data collection for the 2019-2021 sampling is on schedule.

XI. FY 2019 Budget Status

- A. Funds Provided: \$247, 274
- B. Funds Expended: \$247, 274
- C. Difference: \$0
- D. Percent of the FY 2019 work completed, and projected costs to complete: 100%
- E. Recovery Program funds spent for publication charges: \$0

XII. Status of Data Submission: Data from the 2019 field sampling seasons has been entered, checked for accuracy, and will be submitted to the database manager by mid-January 2020.

XIII. Signed: Darek Elverud 1/3/2020  
Principle Investigator Date