

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

FY 2020 ANNUAL REPORT

PROJECT: 127

Project Title

Monitoring the Colorado Pikeminnow Population in the Mainstem Colorado River via Periodic Population Estimates

Bureau of Reclamation Agreement Number:

R20PG00024

Project/Grant Period:

Start date: 10/01/2019

End date: 09/30/2024

Reporting period end date: 09/30/2020

Is this the final report? Yes _____ No X

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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 current three-year field sampling effort began in 2019 and will be completed in 2021. Due to numerous seasonal employee onboarding delays, travel restrictions and manpower limitations associated with the COVID-19 pandemic, only the upper reach portion of the planned field work was completed in 2020.

Study Schedule: 2019-2021

This study was previously planned to begin collecting data in 2018 and continue until 2020. Due to unforeseen circumstances, field work in 2018 was cancelled. Field work, data input, and annual report writing began instead in 2019 and will continue through 2021. In 2020, we were only able to sample the upper reach of the study area due to the COVID-19 pandemic. In 2022, a final report pertaining to data collected from 2019-2021 will be completed.

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Relationship to RIPRAP:

Colorado River Action Plan:

Colorado River Mainstem

V. Monitor populations and habitat and conduct research to support recovery actions.

V.D. Estimate Colorado pikeminnow populations in the upper Colorado River.

Accomplishment of FY 2020 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

In 2020, sampling began on 19 May and was completed on 23 June. Typically, sampling would have begun during the end of March. Captures of endangered species in 2020 included 16 bonytail, 81 Colorado pikeminnow, 4 humpback chub, and 485 razorback sucker. Captures of nonnative fish species included 2 black crappie, 39 bluegill, 2 grass carp, 100 green sunfish, 55 gizzard shad, 75 largemouth bass, 2 longnose suckers, 780 smallmouth bass, 106 native sucker/white sucker hybrids, and 487 white suckers. It should be noted that as capturing Colorado pikeminnow is the primary goal of this project, species other than Colorado pikeminnow are only collected when doing so does not impair the crew's ability to capture Colorado pikeminnow. Non-endangered native species, salmonids, and ictalurids are not collected during this project, but are present throughout the study area.

Fifteen of the 16 bonytail captured contained a PIT tag at the time of capture. These 15 PIT-tagged fish had been in the wild either one (12 individual bonytail) or three (3 individual bonytail) years post-stocking. Seventy-four individual Colorado pikeminnow were captured with 7 recaptures also occurring for a total of 81 Colorado pikeminnow capture events. Captures in the upper reach in 2020 were very similar to upper reach captures in 2019 with a total of 83 Colorado pikeminnow captures and five recaptures. The total number of Colorado pikeminnow captures by pass ranged from 10 to 21 in 2020 which is also similar to previous years.

Total length of Colorado pikeminnow captured during 2020 ranged from 434 mm TL to 902 mm TL. Only one of the 74 individual Colorado pikeminnow captured was less than 450 mm TL, which is the length that differentiates between adult and sub-adult Colorado pikeminnow. A length-frequency histogram of Colorado pikeminnow captures from 2020 is presented as Figure 1. In 2020, all sampling occurred in the upper reach, so Figure 1 should not be compared to length-frequency histograms from other years in which sampling occurred in both the upper and lower reaches.

Additional noteworthy observations:

Two large year-classes of juvenile Colorado pikeminnow were encountered in 2019. One year-class was age-1 (2018 year-class) and the other was made up of likely age-4 (2015 year-class) Colorado pikeminnow. Due to the COVID-19 pandemic, we were unable to sample the lower reach (the rearing area for juvenile Colorado pikeminnow) during 2020. Thirty-two Colorado pikeminnow were captured in 2020 at the Redlands fish passage facility. Many of those 32 fish were of a size that would be consistent with the suspected 2015 year-class of Colorado pikeminnow that would have been age-4 in 2019 and age-5 in 2020. The captures at the Redlands fish passage began approximately one month after sampling for this project had been completed. The timing of large juvenile/small adult Colorado pikeminnow being captured at Redlands Dam in 2020 is consistent with the timing of this size fish captures at Redlands Dam in previous years. Thus, it appears the large (age-5 in 2020) cohort still exists in the Colorado River, but they were not collected during our 2020 sampling as we were unable to

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access and sample the lower reach, where these fish would be expected to reside. Additionally, the status of the large 2018 year-class of Colorado pikeminnow, observed as age-1 fish in 2019 (age-2 in 2020), is unknown as we were unable to sample the lower reach.

Recommendations:

Continue to investigate options for utilizing portable passive interrogation arrays (PIAs) in the next sampling period (2021) of Colorado pikeminnow population estimates to increase the number of encounters of Colorado pikeminnow, which may increase the precision of future population estimates. PIAs were utilized in 2019. The intent was to utilize PIAs again in 2020, but this did not occur due to the pandemic.

Continue to allocate effort towards removing walleye from the lower reach of the Colorado River. Due to our inability to sample the lower reach in spring 2020, no walleye were captured during this project, but data collected during the nonnative fish removal project later in the year indicate walleye are still present in the lower reach.

Project Status:

The 2013-2015 Final Project 127 Report was approved as final in October 2020. Data collection for the 2019-2021 study period is on schedule with the exception of not sampling the lower reach in 2020 due to the pandemic.

FY 2020 Budget Status

Funds Provided: \$252,237

Funds Expended: \$151,390

Difference: \$100,847

Percent of the FY 2020 work completed, and projected costs to complete: 60%, \$0

Recovery Program funds spent for publication charges: \$0

Status of Data Submission

Data from the 2020 field season has been entered, checked for accuracy, and will be uploaded to the database by mid-December.

Signed:

Darek Elverud

Principal Investigator

11/19/2020

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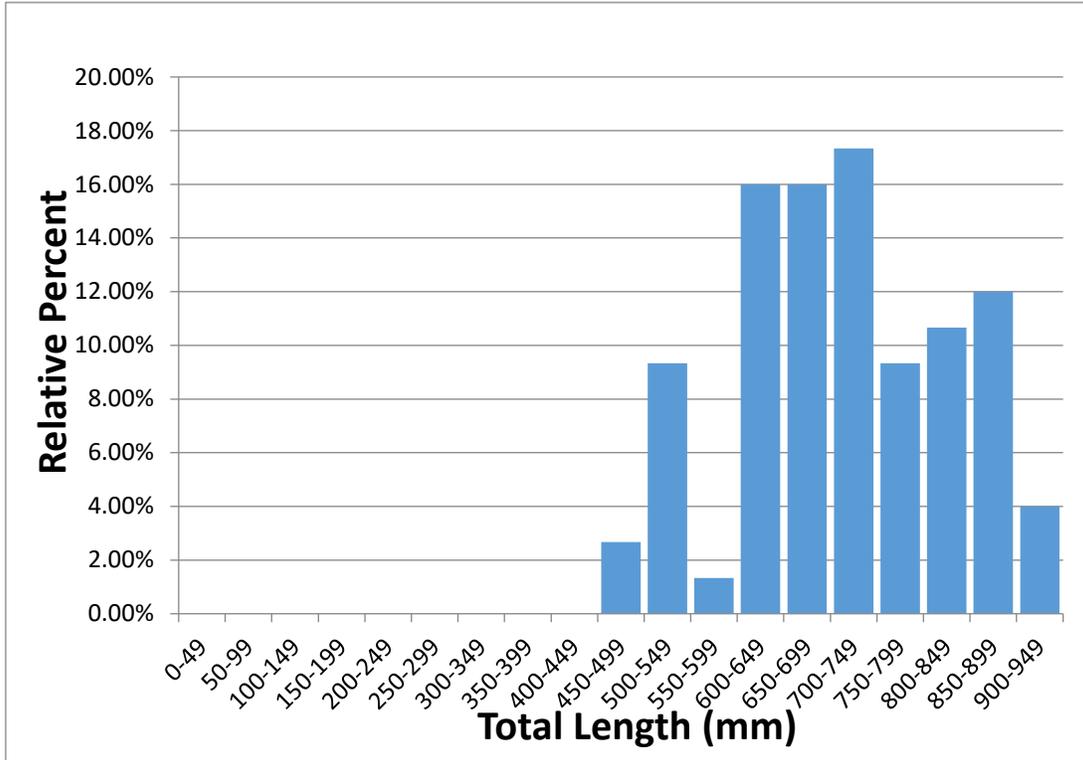


Figure 1. Length-frequency histogram of Colorado pikeminnow total lengths collected during 2020 sampling. NOTE: Due to COVID-19 pandemic, sampling occurred only in the upper reach in 2020, therefore this histogram is not comparable to those from previous reports. For Colorado pikeminnow captured multiple times during 2020, only the total length from the first capture occasion is include in the histogram.