

I. Project Title: **Population Estimate of Humpback Chub in Black Rocks.**

II. Principal Investigator(s):

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III. Project Summary:

Robust population estimates are now critical to monitor recovery of the humpback chub population (USFWS 2001). Recovery goals require estimates of population size at regular intervals to measure population response to management activities under the Recovery Program. A population estimate was made for the 1998B2000 time period (McAda 2002), 2003–2004 time period (McAda 2007) and 2007–2008 time period (Francis and McAda 2011). This report summarizes the work directed at a fourth estimate of population size for humpback chub in Black Rocks during the 2011–2012 time period.

IV. Study Schedule: *FY 2011 – FY 2013*

V. Relationship to RIPRAP: Colorado River Action Plan: Mainstem; V.C. Estimate humpback chub populations; V.C.1. Black Rocks

VI. Accomplishment of FY 2011 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Sampling for this study is conducted in September and October; therefore sampling overlaps two fiscal years. Sampling in calendar year 2011 overlapped into FY 2012. Data analysis will occur in FY 2012.

Four sampling trips were conducted in September and October. The last sampling trip was made during the final week of October.

Electrofishing was used more heavily than in 2008. The entire Black Rocks reach was sampled with electrofishing during one morning and one afternoon of each trip. Trammel nets could not be set on the mornings that electrofishing was used.

Electrofishing did capture quite a few roundtail chubs, a few humpback chubs, and numerous age 1+ juvenile *Gila* spp. Trammel nets with 1-in inner mesh were used with similar results to 2008. Fewer nets (four to five) were set overall to minimize the time between net checks. Attempts were made to keep net sets to 1 to 1.25 hr long.

A total of 78 individual humpback chubs were captured during fall 2011 (Figure 1); eight of those fish were subsequently recaptured in a different sampling rotation of this study. Recapture rate improved generally over previous years. In addition to within year recaptures, a total of ten humpback chub were captured that had also been collected during previous years sampling. Two of those fish were originally tagged in Westwater Canyon by Utah Division of Wildlife Resources in 2004 and 2008. The remaining eight fish were originally tagged in Black Rocks by the U.S. Fish and Wildlife Service: two were tagged in 1998, one was tagged in 2003, three were tagged in 2007, and two were tagged in 2008. One humpback chub with a positive recapture was not found in the database.

A total of 152 individual age one juvenile *Gila* spp. were collected during fall 2011 (Figure 3). While morphological distinction is very difficult to determine in the field, I am sure that some proportion of these fish are humpback chub. This number is promising as only one was captured during the 2007-2008 sampling period.

A total of 511 individual roundtail chubs were collected from Black Rocks in fall 2011 (Figure 2). All roundtail chub were also implanted with PIT tags in 2011; 22 of those fish were recaptured in a subsequent sampling rotation. In addition to within year recaptures, a total of fifteen roundtail chub were captured that had also been collected during previous years sampling. Two of those fish were originally tagged in Westwater Canyon by Utah Division of Wildlife Resources in 2005 and 2008. The remaining thirteen fish were originally tagged in Black Rocks by the U.S. Fish and Wildlife Service: six were tagged in 2007, and seven were tagged in 2008. Three roundtail chub with positive recaptures were not found in the database.

PIT tag data and catch rate data have just been keypunched. More detailed data analysis will begin when data are checked and time allows.

- VII. Recommendations: Continue data analysis and report writing. When Horsethief ponds are operational make plans for collecting YOY and age 1+ *Gila* spp. for a refuge population.
- VIII. Project Status: Project is ongoing and on track
- IX. FY 2011 Budget Status
 - A. Funds Provided: 59,300
 - B. Funds Expended: 59,300
 - C. Difference: -0-

- D. Percent of the FY 2011 work completed, and projected costs to complete: 100%
- E. Recovery Program funds spent for publication charges: -0-

X. Status of Data Submission (Where applicable): PIT tag numbers and data associated with rare fish are currently being keypunched and will be submitted this winter.

XI. Signed: T.A. Francis 11/01/11

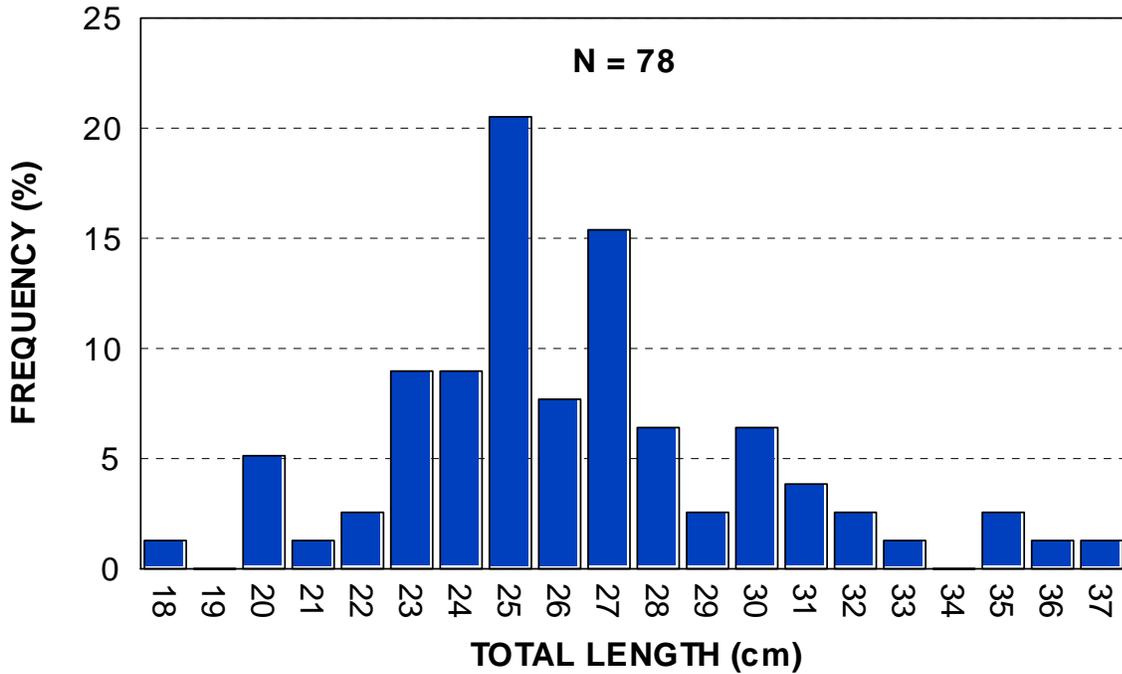


Figure 1. Length Frequency of Humpback chub captured in Black Rocks, Colorado River, autumn, 2011.

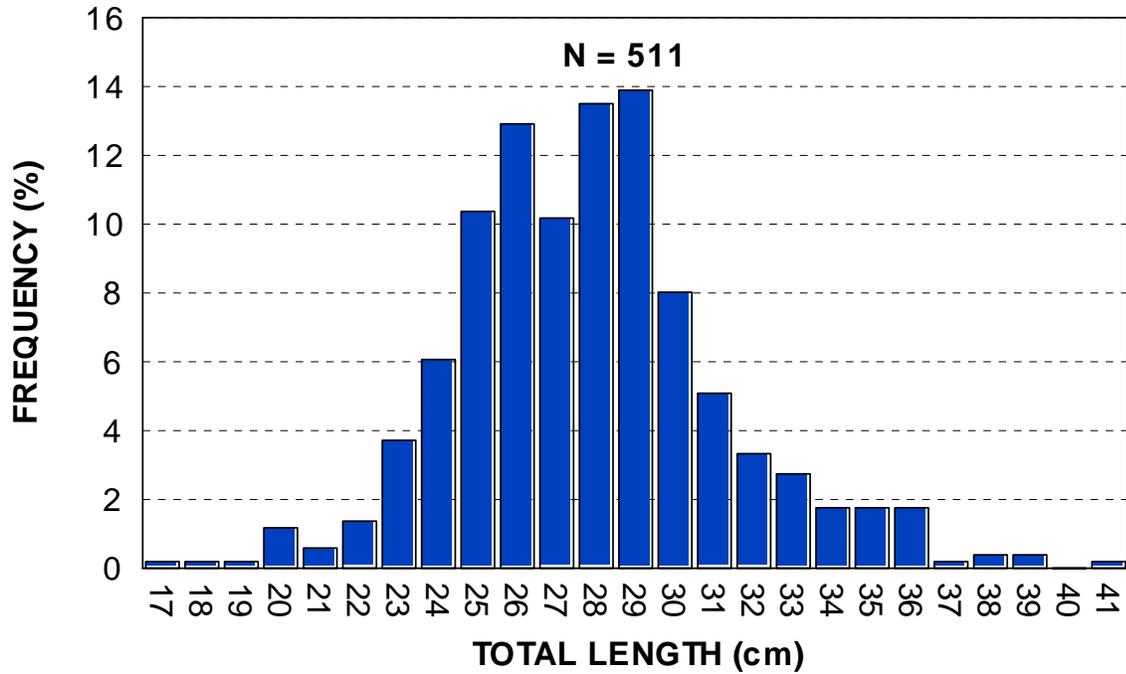


Figure 2. Length frequency of roundtail chub captured in Black Rocks, Colorado River, autumn, 2011.

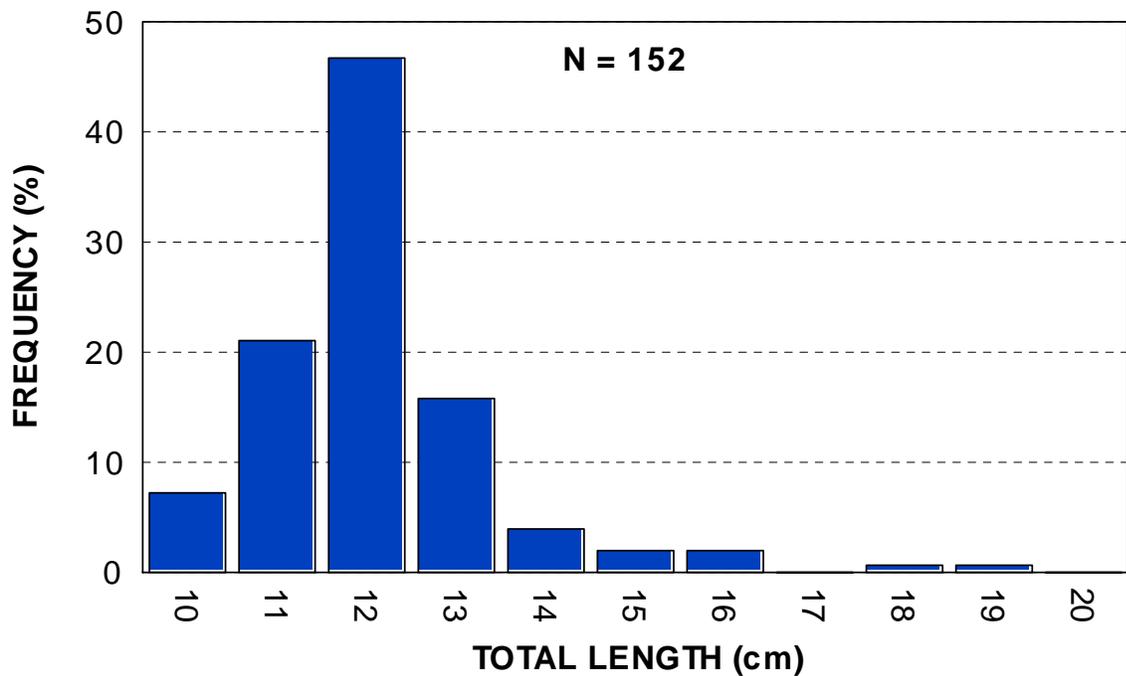


Figure 3. Length frequency of juvenile Gila spp. captured in Black Rocks, Colorado River, autumn, 2011.