

I. Project Title: INTERAGENCY STANDARDIZED MONITORING PROGRAM — Population Estimate of Humpback Chub in Black Rocks.

II. Principal Investigator(s):

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III. Project Summary:

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. The original ISMP was composed of three parts: 1) spring electrofishing for subadult and adult Colorado pikeminnow in parts of the Green, Colorado, White and Yampa rivers (about 20 -30% of occupied habitat within each of the rivers); 2) autumn backwater seining for YOY Colorado pikeminnow in the Colorado and Green rivers; and 3) sampling for adult humpback chubs with trammel nets in Black Rocks and Westwater Canyon. These sampling programs relied on changes in catch per effort (CPE) to monitor changes in population size and structure. A summary report describing the results of the first seven years (1986–1992) of ISMP was produced and finalized by the Recovery Program in 1994. Annual reports have been produced every year since 1994.

ISMP was expanded in 1998 to include razorback sucker in the Green River subbasin (operated independently for several years) and mark-recapture population estimates of the major Colorado pikeminnow and humpback chub populations. Estimating population size is intended to supplement the CPE data.

This report summarizes work done to estimate the population size of humpback chub in Black Rocks, Colorado.

IV. Study Schedule: 1998 – 2000.

V. Relationship to RIPRAP: General Recovery Program Support Action Plan, V.A.1. Conduct Standardized Monitoring Program.

VI. Accomplishment of FY 99 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Tasks

1. Conduct at least three, but no more than four, sampling trips at Black Rocks in late summer and/or late fall.

Field Methods -- Black Rocks was sampled for four 4-day periods that were separated by 1 week intervals: 8/31 - 9/3, 9/14 - 9/17, 9/27 - 9/30, and 10/12 - 10/15. Sampling was done with 1-in-mesh trammel nets set from early morning through early evening. Sampling began early and ended late to include the morning and evening crepuscular periods. Sampling was continuous until about 2200 hr, when they were pulled for the night. Nets were set along eddy lines and rock faces where experience has shown that humpback chubs could readily be captured. Sampling sites were limited by high water velocities in the main channel and by violent eddies along portions of the shoreline.

Six to eight trammel nets were set at one time and each net was checked at regular intervals of 1 - 1.5 hr to reduce stress on the captured chubs. Nets were left in one place for a morning or evening sampling period, but were usually moved at least once during the day. Nets that became tangled or that did not catch many chubs were moved more frequently. The entire 1-mi length of Black Rocks was sampled during each 4-day sample period to ensure that all chubs within Black Rocks had an equal chance of being collected. However, nets were concentrated in one 0.25 - 0.5-mi-long section for a morning or evening sampling period.

Sampling in 1998 also included seining and electrofishing. However, those two sampling techniques were not used in 1999, because crew limitations required that trammel netting had to be discontinued in order to use the other techniques. Trammel netting was the most efficient way to capture humpback chubs, so efforts concentrated on trammel netting.

Net location, time sampled and total fish caught were recorded each time a net was checked. All chubs were held and transported back to a central location for processing. All other fish were identified, counted and released at the sample site. After all nets were checked, the chubs were identified as humpback chub or roundtail chub, measured for total and standard length (mm), weighed (g), and checked for the presence of a PIT tag. All fish that did not have a PIT tag were given one before release. We did not attempt to sex the chubs. All chubs were released at the central location to avoid the possibility of immediate recapture in the trammel net still set at their original capture site. We could not keep track of specific capture sites for each chub.

Results. -- A total of 298 humpback chubs and 340 roundtail chubs were captured during the 3 weeks of sampling. Other species collected included (in descending order of abundance) channel catfish (101), flannelmouth sucker (95), bluehead sucker (54), white sucker (10), black bullhead (8), Colorado pikeminnow (2), largemouth bass (2), smallmouth bass (1), and black crappie.

Thirty of the 298 individual humpback chubs captured in 1999 were recaptured at least once; one was recaptured twice. Thirty four of the 298 humpbacks handled in 1999 were also captured in 1998. In addition, 22 of the 298 humpback chubs captured in 1999 were recaptured from earlier sampling efforts in both Black Rocks and Westwater Canyons. Eight humpbacks were recaptured that had originally been tagged by UDWR in Westwater Canyon and 14 humpbacks were recaptured that had originally been tagged by CDOW in Black Rocks. Although the data from these 22 fish are useful for growth and movement information, the recaptures do not help with the population estimate.

A population estimate for adult humpback chub in Black Rocks using the 1999 data has not yet been done. However, the increased number of humpbacks captured in 1999 (298 vs 184 in 1998) and a higher recapture rate (30 vs 16 in 1998) should allow for a tightening of the estimate made in 1998 — mean of 1,528 with 95% confidence intervals of 888 - 2,750.

2. Prepare annual report briefly summarizing results.

This document.

3. Suggest modifications to sampling protocol based upon initial results.

All sampling should be done with trammel nets. Trammel nets are the most efficient means to capture humpback chubs. Using other gears requires that trammel netting be terminated, which is not the most efficient use of the limited field crew (3).

4. Complete final report describing size and structure of the adult humpback chub population in Black Rocks.

To be completed in FY 2000 and FY 2001.

VII. Recommendations: Continue as scheduled. Use only trammel nets to capture humpback chubs to maximize data collection with limited manpower.

VIII. Project Status: Ongoing and on track. Field work will continue in FY-2000; Final Report in FY-2001.

IX. FY 99 Budget Status

A. Funds Provided:	20,000
B. Funds Expended:	20,000
C. Difference:	0
D. Publication Charges	0

X. Status of Data Submission: 1998 data have been submitted. The data collected during 1999 will be submitted in early 2000.

XI. Signed: C.W. McAda, December 2, 1999