COLORADO RIVER RECOVERY PROGRAM Project No.: 22-A-3
FY-2001 PROPOSED SCOPE OF WORK

Lead Agency: Fish and Wildlife Service
Colorado River Fishery Project

Submitted by: Frank Pfeifer, Project Leader
Chuck McAda, Fishery Biologist
764 Horizon Drive, South Annex A
Grand Junction, CO 81506
(970) 245-9319, Fax 245-6933
frank_pfeifer@fws.gov
chuck_mcada@ws.gov

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Category
_ Ongoing project
x Ongoing-revised project
_ Requested project
_ Unsolicited proposal

Expected Funding Source
xx Annual funds
__ Capital Funds
__ Other

I. Title of Proposal: **Interagency Standardized Monitoring Program — Population Estimate of Humpback Chub in Black Rocks.**

II. Relationship to RIPRAP: General Recovery Program Support. V. Monitor Populations. A.1. Conduct standardized monitoring program.

III. Study Background/Rationale and Hypotheses: The Interagency Standardized Monitoring Program began in 1986. It originally required sampling for humpback chubs in Black Rocks every 3 years, but the sampling frequency was later changed to every 2 years. Investigators used trammel nets to sample for a total of about 6 days. The result was catch-per-effort (CPE) data that could be used to monitor trends in population size based on change in CPE. However, the infrequent sampling and high variability of the data required substantial change in population size before differences could be detected. Also, any documented changes were relative (i.e. higher or lower) — the actual population size was not known. The recent desire for specific population and survival estimates requires increased sampling efforts and the use of mark-recapture population estimates. This scope of work details the protocol for making a population estimate of humpback chubs in Black Rocks.

IV. Study Goals, Objectives, End Product:

A. Goal:

Estimate the size of the humpback chub population in Black Rocks

B. Objectives:

1. Use mark-recapture to estimate the population size of humpback chub in Black Rocks.

2. Use mark-recapture to estimate the survival rates of humpback chub in Black Rocks.

3. Use increased sampling efforts with a variety of gear types to estimate the population structure of humpback chub in Black Rocks.

V. Study area: Upper Colorado River Basin — Black Rocks area (RM 135.5–136.5)

VI. Study Methods/Approach:

Conduct at least three (maximum of four) intensive 4-day (3 nights) sampling efforts in Black Rocks between August and early October in 1998, 1999, 2000. Capture as many adult-size chubs as possible using the most efficient gear for handling as many fish as possible for the effort expended. Based on preliminary field efforts the most effective gear is 1-in inner mesh trammel nets. Set six to eight trammel nets in mid- to late afternoon and run them every 1 – 1.5 hr until late evening. Reset the nets in early morning and run them every 1 – 1.5 hr until midmorning. Sample all sections of Black Rocks to ensure that all humpback chubs have a chance of being captured.

Measure to total length (± 1 mm) and weigh (± 20 g) all chubs and Colorado pikeminnow captured. PIT tag all Colorado pikeminnow and chubs greater than 160 mm total length. Identify and count all sympatric fishes collected during all sampling efforts.

Attempt a population estimate for humpback chubs within Black Rocks using models suitable for the sampling methods used. Population trends and population size structure will be determined using standard techniques. Standard catch-per-effort (CPUE) values will be calculated for all species captured and all gears utilized. Compare CPUE and population structure with data collected in Black Rocks by Kaeding et al. (1990) and during previous years of ISMP.

Sampling in fall FY 2000 will be the third year of intensive sampling in three years of field work. All work done in FY 2001 will be data analysis and report writing.

VII. Task Description and Schedule

1 – 3 will be completed in FY-2000.

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

VIII. FY-2001

Task 4 Draft Final Report — May 1, 2001; Final Report — Sep 1, 2001

IX. Budget Summary

FY-2001

Labor	$23,000
Travel	1,000
Subtotal	$24,000
Total	$24,000

X. Reviewers: Various Service and CDOW staff.

XI. References

Kaeding, L. R., B. D. Burdick, P. A. Schrader, and C. W. McAda. 1990. Temporal and spatial relations between the spawning of humpback chub and roundtail chub in the upper Colorado River. Transactions of the American Fisheries Society 119:135-144.