

- I. Project Title: Collection and Maintenance of Humpback Chub from the Middle Green River (Desolation/Gray Canyons)
 - II. Principal Investigator(s): Karl Schnoor
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 - III. Project Summary:
 - IV. Study Schedule: 1996 - Ongoing
 - V. Relationship to RIPRAP:
GENERAL RECOVERY PROGRAM SUPPORT ACTION PLAN
- IV. Manage genetic integrity and augment or restore populations.
 - IV.A. Genetics
 - IV. A. 4. Secure and manage the following species in refugia..
 - IV.A.4.c. Humpback chub
 - IV.A.4.c.(5) Desolation/Gray Canyons

III. Study Background/Rationale and Hypotheses:

Annual point population estimates for the Desolation/Gray Canyon humpback chub have been calculated for 2001–03 (Jackson and Hudson 2005) and 2006–07. Population estimates during 2001–2003 ranged between 970 and 2,612 adults and over each year the related coefficient of variation (CV) declined from 36% to 21%. With some changes in site locations and sampling methods estimates in 2006 and 2007 achieved CV values of 16–17%. Population estimates however, have declined significantly from a high of 2,612 to 410 in 2006 and 204 in 2007. Comparisons of catch rates in historical monitoring sites over the last sixteen years support observed declines in population estimates. An important factor in determination of how past estimates relate to the actual population size is the nearly 100% site fidelity observed during fall sampling. High site fidelity results in no mixing between sites within a sampling period and results in an estimate that is only related to sample sites and not the entire reach (Badame 2009, *in progress*).

Due to significant declines in the Desolation humpback chub population, the Utah Division of Wildlife has recommended that humpback chub be captured and removed alive immediately from the canyon and moved to a refuge to preserve genetic material. These *Gila* species are to be transported to Ouray National Fish Hatchery. This task will involve a single trip through the canyon to collect young-of-year *Gila*

for rearing at the Ouray National Fish Hatchery. These fish will be reared and assessed to species as adult characteristics become apparent. These chub are to be held in captivity until their final disposition has been determined by the Colorado River Recovery Program.

A total of 400 young-of-year (50–100 millimeter [mm] total length [TL]) *Gila* species and 20 adult (>200mm TL) will be collected from the river using seines and/or electrofishing equipment. No cumulative impact is expected from these proposed projects, because the overall impact of each is expected to be beneficial to the species.

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

ONFH staff and others collected approximately 200 Yampa Canyon *Gila* spp. in October of 2007, in an effort to begin building a potential captive broodstock of Yampa River humpback chub. Of the original 200 chubs 30 of them were suspected to be humpback chub, and 170 were thought to be roundtail chub. Of the original 30 humpback chub, 18 remain alive on station. The remaining 137 roundtail chub were stocked back into the Green River in Dinosaur National Monument October 27, 2010. On August 5, 2011 ten humpback chub were imported from J.W. Mumma fish hatchery. Of these, 6 remain alive for a total of 24 Yampa River chubs on station. There are no plans to collect any additional chubs from the Yampa River until an ad hoc group determines which populations of humpback chub we may need in a refuge.

A population estimate conducted by Julie Jackson in 2005, and a more recent estimate done by Paul Badame (pers. comm., UDWR, Moab), have shown a dramatic decline in the number of humpback chub in the Green River, in Desolation/Gray Canyons and that they hover near and perhaps have fallen below the minimum viable population estimated in the 2002 humpback chub recovery goals. As a result it has been decided to begin taking them into captivity to preserve as much of a diverse gene pool as possible. ONFH and the UDWR captured 25 adult humpback chubs from Desolation/Gray Canyon and brought them into captivity on October 22, 2009. Of the original 25 humpback chub, 17 remain alive on station. It is anticipated that the collection of humpback chub from Desolation/Gray Canyon will continue in the foreseeable future, and the wild fish will be transferred to the Randlett unit of the ONFH and kept as a refuge until or if a propagation program is initiated.

V. FY 2011 Budget Status

- A. Funds Provided: \$6,222
- B. Funds Expended: \$6,222
- 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

VI. Reviewers:

VII. References

Badame, P.V. 2009. Population Estimate for Humpback Chub (*Gila cypha*) in Desolation and Gray Canyons, Green River, Utah 2006-07. Upper Colorado River Endangered Fish Recovery Program. Draft Report in progress. Recovery Implementation Project #22k