

I. Project Title: Humpback chub monitoring in Yampa Canyon

II. Principal Investigator(s):

Tim Modde, Project Leader
Bruce Haines, Fish biologist
U.S. Fish and Wildlife Service
266 W. 200 N., Suite 2
Vernal, UT 84078
(435) 789-0354
Tim_Modde@FWS.GOV
Bruce_Haines@FWS.GOV

III. Project Summary:

The Yampa River humpback chub population is one of only five existing populations. Very little is known about this population, the result of inhabiting an inaccessible canyon reach and being relatively rare over the period of recent collection (Karp and Tyus 1990; Tyus 1998). The Yampa River within Yampa Canyon has been designated critical habitat and the population is important for recovery of the species. Long-term monitoring will provide baseline data on species status and serve as a response measure for management activities, e.g. non-native fish removal or flow alterations. Furthermore, such monitoring would provide estimates of several population parameters, e.g. population size, survival rates, and recruitment rates, needed for refining life-stage models and setting management objectives (Crowl and Bouwes, 1997; Lentsch et al. 1997).

1999 was the second year of a three year study to determine procedures for monitoring trends. In 1998 we captured and PIT tagged 18 adult humpback chubs. In 1999 we captured and PIT tagged 20 humpback chubs and recaptured one tagged fish released in 1998. Preliminary population estimates suggest the population may consist of just a few hundred fish.

IV. Study Schedule: 1998-2000

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

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

1. Using electrofishing rafts, sample the Yampa River through Yampa Canyon in late June to capture adult humpback chub; PIT tag all humpback chubs >150 mmTL.

Two 5-day sampling were made down the Yampa River in 1999. A total of 23 humpback chubs were captured: 20 were PIT tagged and released, two were too small to PIT tag, and one was a recapture from last year.

Each trip consisted of a crew of 6-7 people. One trip was 28 Jun - 2 Jul. We used two electrofishing rafts and angling. The catch consisted of 12 fish by electrofishing (11.4 h) and 3 by angling (11.0 h). The second trip was 12 Jul - 15 Jul. One electrofishing raft (5.8 h) captured eight and angling (18.0 h) captured one humpback chub.

Population estimates based on one recapture varied from 200 to about 400 fish, depending on assumptions. These estimates are consistent with those Nesler proposed during development of interim recovery objectives (Nesler 1992). It seems to us that continuation of a similar effort for a few more years may produce a worthwhile population estimate of the Yampa River humpback chub population.

2. Using seines and light traps, sample the Yampa Canyon in early July for larval and juvenile humpback chubs.

In 1999 we concentrated our efforts on electrofishing adult humpbacks and did not seine for juveniles. In 1998 we sampled many juvenile by seining chubs but had difficulty identifying them in the field.

3. Each year, analyze data and consult a statistician to modify sampling design to achieve efficient procedures for long-term monitoring of population trends and recruitment rates.

This winter we will consult a statistician and begin to analyze our data for toward long-term monitoring.

VII. Recommendations:

1. During development of long-range monitoring program, consider monitoring that involves estimating population size, survival rates, and recruitment rates as well as trend information.

VIII. Project Status:

The project is ongoing and on track. The budget was reduced from \$40.0K to 21.0K in FY-99 and is scheduled to go through FY-01.

IX. FY 99 Budget Status

- A. Funds Provided: \$21.0K
- B. Funds Expended: 21.0K
- C. Difference: 0

- D. Recovery Program funds spent for publication charges: 0
- X. Status of Data Submission (Where applicable): submitted annually by 15 February.
- XI. Signed: Bruce Haines 7 Dec 99
Principal Investigator Date