I.   Project Title: Evaluating effects of non-native predator removal on native fishes in the Yampa River, Colorado

II.   Principal Investigator(s): Larval Fish Laboratory
           Kevin Bestgen, John Hawkins, Angela Hill, and Cameron Walford
           Department of Fish,Wildlife, and Conservation Biology
           Colorado State University
           Ft. Collins, CO 80523
           voice: KRB (970) 491-1848, JAH (970) 491-2777
           fax: (970) 491-5091
           email: *kbestgen@warnercnr.colostate.edu*

III.   Project Summary: Control actions for several non-native fish predators have been implemented in several rivers of the upper Colorado River Basin but effects of those removals on restoration of native fishes is unknown. Understanding the response of the native fish community to predator removal is needed to understand if removal programs are having the desired effect. Therefore, the objective of this project is to document fish community changes in response to predaceous fish removals in a reach of the Yampa River, Colorado. A general hypothesis for this work might be whether non-native fishes negatively affect native ones or not.

IV.   Study Schedule: *2004 to 2012*

V.   Relationship to RIPRAP:
REDUCE NEGATIVE IMPACTS OF NONNATIVE FISHES AND SPORTFISH MANAGEMENT ACTIVITIES (NONNATIVE AND SPORTFISH MANAGEMENT)
Green River Action Plan: Yampa and Little Snake Rivers: Formal program guidance is yet being developed.

VI.   Accomplishment of FY 2008 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

In 2008 we sampled 187 habitat areas in the Yampa River, in control and treatment reaches of Little Yampa Canyon and in Lily Park, a large increase over the 79 samples collected in 2007. All data are not yet available because we only recently finished sampling and samples remain to be sorted. Native fishes appeared much more widespread in main channel habitat this year, compared to previous years when native fishes were found only in isolated pools with few predators. Native mottled sculpin *Cottus bairdi*, was captured for the second consecutive year after several years of absence in the study area. We plan to report result of 2008 sampling at the December 2008 predator fish workshop in Grand Junction.

We have made excellent progress on analysis of smallmouth bass otoliths collected from

the Yampa River. This is being done to better understand effects of streamflow and water temperature on timing and duration of smallmouth bass spawning and hatching dates and growth rates. This will be conducted with FY 08 and 09funds since we only received a portion of the annual budget in FY 07. This analysis is complementary to a similar effort in the Green River under project 115.

VII. Recommendations: We will present a more complete summary of data in autumn 2008 in FY 2009 at the Non-native fish workshop. We also completed a report in March 2007, which was subsequently approved by the Biology Committee in October 2007, on work completed from 2003-2006.

Bestgen, K. R., C. D. Walford, and A. A. Hill. 2007. Native fish response to removal of non-native predator fish in the Yampa River, Colorado. Final report to the Recovery Implementation Program for Endangered Fishes in the Upper Colorado River Basin. U. S. Fish and Wildlife Service, Denver, CO. Larval Fish Laboratory Contribution 150.

VIII. Project Status: On track and ongoing.

IX. FY 2008 Budget Status

   A. Funds Provided: $79,256
   B. Funds Expended:$65,120
   C. Difference: $ 14,136
   D. Percent of the FY 2008 work completed, and projected costs to complete: 85% of FY08 complete.
   E. Recovery Program funds spent for publication charges: 240

X. Status of Data Submission (Where applicable): *[Indicate what data have been submitted to the database manager.]Data submitted spring 2008*

XI. Signed: Kevin R. Bestgen   14 November 2008
                Principal Investigator   Date
   (Just put name and date here, since you will be submitting the report electronically)

APPENDIX: *[More comprehensive/final project reports (NOT to be used in place of a complete annual report.). If distributed previously, simply reference the document or report.]*