

**UPPER COLORADO RIVER  
ENDANGERED FISH  
RECOVERY PROGRAM**

**FISCAL YEAR 2008 & 2009  
PROGRAM GUIDANCE**

April 5, 2007

**FY 2008 & 2009 PROGRAM GUIDANCE**  
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## INTRODUCTION

This is the guidance for development of the Recovery Program's FY 2008-2009 Work Plan. The Program Director's office developed this guidance on the basis of the Recovery Program's Recovery Action Plan (RIPRAP) and input from Program participants and it will subsequently be reviewed, modified, and approved by the Program's technical and Management committees (the Implementation Committee delegated review and approval to the Management Committee). The RIPRAP identifies all the activities currently believed necessary and feasible to recover the endangered fish in the Upper Basin. Thus, annual Program guidance is closely tied to the RIPRAP.

Like the RIPRAP, the guidance is organized by recovery element. Within each recovery element, guidance is provided for ongoing, ongoing-revised, and new projects. Projects to be completed in or discontinued or suspended after FY 2007 also are listed. Ongoing projects are those previously approved for out-year funding for which goals/objectives, methods, cost, and expected outcome have not changed significantly. Scopes of work for these projects should require only minor updates. Ongoing-revised projects are those previously approved for out-year funding for which goals, objectives, methods, cost, or expected outcome have changed significantly (as outlined in the guidance), thus their scopes of work may require more changes. New projects are those not previously approved for out-year funding and completely new scopes of work will need to be developed for these.

However, the Recovery Program has not yet determined the process for soliciting scopes of work for new starts for FY 08 and 09, and as a result is **not** accepting scopes of work for new starts at this time. Interested parties are discouraged from preparing and submitting scopes of work for new starts until a formal request for proposals (RFP) is issued by the Bureau of Reclamation (most likely early each fiscal year), or until the Program determines an alternative course of action.

This FY 2008-2009 guidance requests proposals for FY 2008-2009 activities; proposed scopes of work are requested for each of the projects listed in this guidance (with the exception of new starts, per the above note). Scopes of work should be prepared according to the format in the appendices. Please review this format carefully, especially the explanatory text printed in italics. Scopes of work which do not contain the information and budget detail requested will be returned to the principal investigator for revision. This could prevent the scope from receiving FY 2008-2009 funding consideration because of the tight work plan development schedule.

Scopes of work for ongoing and ongoing-revised biological and water acquisition projects (under recovery elements I-V) are due to the Program Director's office NO LATER THAN Friday, April 27, 2007 (this includes scopes of work for capital-funded projects). Submit ongoing-revised, and ongoing scopes of work for these projects to the appropriate Program coordinator (see list near end of this section) in Word format by electronic mail. IN ADDITION, submit a courtesy electronic or hard copy of ongoing-revised biological scopes of work to each member of the Biology Committee and water acquisition scopes of work to each member of the Water Acquisition Committee (see lists at end of this section). If you wish, you may provide this courtesy copy by posting it to the fws-coloriver listserver. (The technical committees do not

need to see ongoing scopes of work until later in the work plan review process, and these will be sent to them by the Program Director's office.)

For your information, the evaluation form used by the Recovery Program in reviewing and commenting on final draft project reports, the proper format for final draft reports that are submitted to the Biology Committee for review and approval, and the Biology Committee review process for final draft reports may all be found at <http://www.r6.fws.gov/crrip/rfdoc.htm>.

Scopes of work for information & education projects (under recovery element VI) also are due April 27 2007, and should be submitted in Word format to Debbie Felker ([debbie\\_felker@fws.gov](mailto:debbie_felker@fws.gov)).

Program management scopes of work (under recovery element VII) are due by July 2, 2007 (in Word format by electronic mail to [angela\\_kantola@fws.gov](mailto:angela_kantola@fws.gov)).

Upon receipt of the proposed scopes of work, the Program Director's office will begin working (with technical committees and principal investigators) to review and refine the scopes of work and develop a recommended technical annual work plan. This recommended work plan and refined scopes of work will be submitted by the Program Director to the technical committees for review on June 20. Technical committee comments are then due to the Program Director and the Management Committee by July 20. The recommended Program management work plan also is due from the Program Director to the Management Committee at this time. The Management Committee will meet by mid-August to discuss the recommended work plans and approve projects for the FY 2008-2009 Work Plan (The Implementation Committee is expected to delegate their review and approval to the Management Committee). The final FY 2008-2009 Work Plan and final scopes of work will be distributed in the first quarter of FY 2008 (scopes of work for new starts and some nonnative fish management scopes of work may be delayed, however). If you have any questions about this guidance or the FY 2008-2009 work plan development process, please contact Angela Kantola at 303/969-7322, ext 221, or the appropriate coordinator:

Instream flow protection - George Smith 303/236-4485, [george\\_smith@fws.gov](mailto:george_smith@fws.gov)

Habitat restoration and nonnative fish control - Pat Nelson 303/969-7322 ext. 226, [pat\\_nelson@fws.gov](mailto:pat_nelson@fws.gov)

Genetics and propagation, monitoring/research/life history - Tom Czaplá 303/969-7322 ext. 228, [tom\\_czapla@fws.gov](mailto:tom_czapla@fws.gov)

Information, education, and public involvement - Debbie Felker 303/969-7322 ext. 227, [debbie\\_felker@fws.gov](mailto:debbie_felker@fws.gov)

Program management - Angela Kantola 303/969-7322 ext. 221, [angela\\_kantola@fws.gov](mailto:angela_kantola@fws.gov)

The Program Director's Office would like to call attention the fact that available funds in the Recovery Program are indexed to inflation, which has averaged 2.73% annually over the last 5 years. Project budgets, however, have been increasing at ~5% annually. One reason for this is that salaries increases frequently outpace inflation due to grade increases, etc. However, the gap between inflation and project costs means that the number of activities the Program can fund has been slowly, but steadily decreasing. Therefore, where an inflation factor has applied been to projects in the FY 08-09 Program Guidance, we have used 3%.

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Water Acquisition Committee e-mail list:

## **I. INSTREAM FLOW IDENTIFICATION AND PROTECTION**

Instream flow activities in FY 2008 and 2009 will be directed toward: 1) ongoing flow, temperature, and channel/sediment monitoring (as identified in the Green River Study plan 2007 and the 2003 Strategic Plan for Geomorphologic Research and Monitoring); 2) augmenting flows in the Colorado, Yampa and Gunnison rivers to help meet Service flow targets; and 3) continue efforts to develop PBO'S for tributaries.

<b><u>PROJECT NUMBER</u></b>	<b><u>TITLE</u></b>	<b><u>PROJECTED FY 08/09 BUDGET</u></b>
<b><u>ONGOING PROJECTS</u></b>		
8	<b>RECOVERY PROGRAM GAGE O&amp;M</b> Supports several actions to identify, deliver, and protect instream flows on the Colorado, Green, Yampa, Duchesne, and Price Rivers.	\$75,396/\$77,658
9	<b>WATER RIGHT ACQUISITION CONSULTANT</b> Supports actions as needed to identify and protect flows on the Colorado, Green, and Yampa rivers.	Up to \$10,000/year
70	<b>COLORADO INSTREAM FLOW PROTECTION</b> CWCB activities to protect instream flows in the Colorado and Yampa river basins. These are additional funds provided by Colorado.	\$20,000 / \$20,000
71	<b>COLORADO RIVER DECISION SUPPORT SYS.</b> CWCB uses CRDSS to assess legal and physical availability of water and Compact considerations for protection of instream flows in the Colorado and Yampa river basins.	\$150,000 / \$150,000
86	<b>GEOMORPHOLOGY PEER REVIEW</b> As-needed peer review of scopes of work and draft final reports containing a geomorphologic component.	Up to \$10,000/FY
135	<b>O&amp;M FOR RUEDI RESERVOIR 10,825af</b> The Recovery Program covers the operational costs of providing 10,825 af of water from Ruedi Reservoir to benefit the endangered fishes.	\$45,500 / \$45,000
C-11	<b>GRAND VALLEY WATER MANAGEMENT</b> The Grand Valley Water Management Project provides additional water for the 15-Mile Reach of the Colorado River.	\$0 / \$0
C-32	<b>RUEDI RESERVOIR 10,825 CAPITAL COST</b> Reclamation is credited for contributing the annual capital cost of 10,825 af of water from Ruedi Reservoir to benefit the endangered fishes. This is over and above Reclamation's annual and capital funding obligations to the Recovery Program.	\$735,000 / \$735,000

**ONGOING NEEDING REVISION**

**85f FR-Sed. Mon. GREEN AND YAMPA RIVER SEDIMENT MONITORING**

\$47,400/47,500

This project is establishing automated suspended-sediment samplers in two critical reaches of the Upper Colorado River Basin (Whitewater gage on the Gunnison River and the Green River near Jensen, Utah). Daily suspended-sediment load data at these two sites provides information needed for: (1) an understanding of sediment budgets (sediment import and export balance); (2) the effects of flow regime on habitat maintenance; (3) the relationship between sediment load and flow, including base and peak flows; (4) the effects of antecedent conditions (if the right sequence of years is present) on sediment transport; and (5) the effect of peak-flow duration on sediment transport rates. The completed retrospective analysis of historic sediment data will be used along with the data collected from 2005 to 2008 to produce a final report in the 2008-2009 time frame.

**FR-Du DUCHESNE RIVER SEDIMENT MONITORING** \$28,000/TBD

One additional year of suspended sediment data will be collected for the Duchesne River. The extension for the data collection for one year will improve the record by including a wider spectrum of runoff years. A brief report summarizing the data will be prepared in FY 2009.

**19 RECOVERY PROGRAM HYDROLOGY SUPPORT** \$89,800/ \$92,700

The Service's Division of Water Resources collects temperature and hydrology data, administers contracts, and develops data used by the Water Acquisition Committee to assess instream flow protection. Other tasks include: collecting data required under 15-Mile Reach and Yampa River PBO's; working with the Bureau of Reclamation and recovery Program staff on the Aspinall re-operation EIS; and supporting the Program Director's Office on various projects as they arise. Budget includes \$10,500 for CRFP Grand Junction. Salary portion reduced by half in anticipation of George Smith's retirement 1/3/08.

**PLACEHOLDERS**

**PIP 12C COORDINATED RESERVOIR OPERATIONS** Funded only in years coordination occurs

This work addresses public involvement and voluntary coordination of reservoir operations in the upper reaches of the Colorado River to increase spring peak flows in the 15-Mile Reach of the Colorado River. Reservoir operations are only coordinated in years when hydrological conditions are adequate (i.e., when spring peak flows at the Cameo gage on the Colorado River are projected to be between 12,900-23,500 cfs. No funds should be needed in years when reservoir operations are not coordinated. Activities include, but are not limited to, informing the public through news releases, e-mail notifications, and direct mailings as necessary of any decisions to adjust reservoir operations and bypasses made to enhance flows for endangered fish purposes.

**DISCONTINUED PROJECTS:**

- 113 GUNNISON RIVER CONSULTATION PROCESS**                      Funded under projects #19 & #3
- Identify an appropriate means by which to consult on depletions from the Gunnison River basin. Quantify foreseeable future depletions and identify a volume of existing and future depletions (to be covered under 19 as the need arises).
- 114 TRIBUTARY MGMT. PLAN(S)/PBO(S)**                                      Funded under projects #19 & #3
- Identify which, if any, significant tributaries are not covered by existing/pending biological opinions and develop management plan(s) for those tributaries to quantify existing and foreseeable future depletions to be covered under programmatic biological opinion(s) and identify management actions to offset impacts of depletions.
- 114a TRIBUTARY WATER DEMAND**    TBD
- Placeholder for one or more depletion estimates for significant tributaries found to lacking adequate coverage under existing biological opinions. The FY 2002 scope of work was not implemented pending identification of affected tributaries. We anticipate that Colorado (CWCB) and/or Utah (UDWR) would be responsible for this activity.

**NEW PROJECTS (Please see note on page 1. Scopes of work are NOT being solicited for new starts at this time.)**

**TITLE: RELATIONSHIP OF BACKWATER DEVELOPMENT TO SEDIMENT AVAILABILITY AND PEAK FLOWS IN GREEN RIVER REACH 2**

**RIPRAP Item Number: Green River, ID1d, Determine relationship of backwater development to sediment availability and peak flows in Reach 2.**

**Rationale/Problem Statement:**

Numerous physical habitat and hydrological studies have been completed for reach 2 over the past 20 years. The recently completed Green River Study Plan identified a need to draw all this information together and develop a synthesis report which lays out the methodologies, conclusions and recommendations from all these studies, as well as the USGS MS-SWMS findings, USGS sediment transport data, and Western's backwater topography studies. The results of this synthesis should be used to determine the need for additional studies.

## **Project Goals and Objectives:**

The goal for this project is to gather all existing physical habitat studies in reach 2 and develop a synthesis report that addresses the following hypotheses and information needs, and identifies the need for additional studies.

The hypotheses to be evaluated and information needs to be filled include:

- Base flows in summer and autumn scaled to hydrologic condition favor formation of backwaters.
- Effect of peak flows, sediment availability, and antecedent conditions on relationship of base flow and backwater availability.
- Relationship between peak flow, sediment, and habitat development.
- Habitat conditions at beginning of base flow period.

**Expected Products:** A synthesis report that: 1) integrates all physical habitat monitoring information in reach 2; 2) evaluates the MS-SWMS model at the Jensen Bar, the feasibility of setting up the model for use at the Ouray refuge, and potential benefits of using MS-SWMS to integrate the physical and biological data in the Ouray section of Reach 2; 3) evaluates how the USGS Green River Sediment monitoring data can be used support MS-SWMS and Western's work; and 4) evaluates how Western's backwater topography studies can be used to characterize backwater habitats and how MS\_SWMS and the USGS suspended sediment data can be used to support project like Western's citation below.

## **Recommended Approach/Methods:**

Gather all existing studies and prepare a synthesis of the studies and recommendations. This information would then be used to draw conclusions on the relevance of the study, information gaps and make recommendations for any additional studies. The report prepared from this study should focus on integration and synthesis of existing information on backwater topography, sediment, and physical conditions for Reach 2. This report would be used along with sediment movement, deposition and erosion derived from project 85f sediment monitoring to identify the effect of peak flows, sediment availability, and antecedent conditions on relationship of base flow and backwater availability. This work should also look at alternatives to the MS-SWMS model. The scope of work will be reviewed by the Geomorphology Panel.

## **Schedule:**

Integration and synthesis of existing information on backwater topography, sediment, and other physical conditions should be started in FY 2008 and completed in FY 2009 after data are available from the USGS sediment study (#85f).

**Cost Range:** TBD

**Literature Cited:**

Green River Study Plan ad hoc Committee. 2007. Study plan for the implementation and evaluation of flow and temperature recommendations for endangered fishes in the Green River downstream of Flaming Gorge Dam. Upper Colorado River Endangered Fish Recovery Program, Denver, Colorado.

Hayse, J.W., K.E. LaGory, and G. Burton. 2005. Consideration of site-specific floodplain inundation thresholds in implementing peak flow magnitude and duration recommendations in the Middle Green River, UT. Report of Environmental Assessment Division, Argonne National Laboratory, to Western Area Power Administration, Salt Lake City, Utah.

LaGory, K.E., J.W. Hayse, and D. Tomasko. 2003. Priorities for geomorphology research in endangered fish habitats of the Upper Colorado River Basin. Report of Environmental Assessment Division, Argonne National Laboratory, to Upper Colorado River Endangered Fish Recovery Program, Denver, Colorado.

## **II. HABITAT RESTORATION**

The goal of Habitat Restoration is to provide and protect habitat necessary to both achieve and sustain endangered fish recovery. Currently there are three major thrusts under this element of the Recovery Program.

1. Re-open access to historically-occupied river sections by restoring fish passage at the following migration barriers:
  - a. Redlands Diversion Dam (completed 6/96)
  - b. Grand Valley Irrigation Company Diversion (completed 1/98; Obermeyer gate installed in 2006)
  - c. Price-Stubb Diversion Dam (scheduled for completion 9/08)
  - d. Grand Valley Project Diversion Dam (completed 8/04)
  - e. Tusher Wash Diversion Dam (dropped from further consideration; deemed unnecessary)
  - f. Yampa River diversion structures (dropped from further consideration; deemed unnecessary)
  
2. Install fish screens to prevent entrainment of endangered fishes into diversion canals.
  - a. Redlands Diversion Dam (completed 8/05)
  - b. Grand Valley Irrigation Company Diversion (completed 4/02; modified 3/04)
  - c. Grand Valley Project Diversion Dam (completed 8/05)
  - d. Tusher Wash Diversion Dam (scheduled for completion in 2009)
  - e. Yampa River diversion structures, if deemed necessary
  
3. Restore or enhance natural floodplain functions that support endangered fish recovery.

**PROJECT  
NUMBER**

**TITLE**

**PROJECTED  
FY 08/09 BUDGET**

### **ONGOING PROJECTS**

<b>C-4b REDLANDS and GVP FISH PASSAGE O&amp;M</b>	\$47,500 / \$90,500
Fish & Wildlife Service monitoring of the fish trap at both the Redlands and Grand Valley Project fish passage (sorting, examining and enumerating all fish; cleaning trash and debris from the trash racks, bar screens, fish trap, and fishway entrance). <b>Note:</b> Grand Valley Project fish passage O&M will be discontinued until passage has been restored at the Price-Stubb Diversion Dam, assumed to be completed by April 2009.	
<b>C-5 PRICE-STUBB FISH PASSAGE</b>	\$6,800,000/ \$60,000
Finish construction of fish passage at the Price-Stubb Diversion Dam on the Colorado River. Scheduled for completion by 9/08.	

- C-23 GVP FISH SCREEN O&M** \$40,000/\$40,000  
Operation and maintenance of screen facilities at the GVP Diversion Dam on the Colorado River.
- C-28 TUSHER WASH DIVERSION SCREEN** \$300,000/ \$3,402,000  
Construct fish screen at the Tusher Wash Diversion Dam canal on the Green River near Green River, Utah. Scheduled for completion in 2009. Operation and maintenance funds may be needed in FY 10; amount unknown at this time.
- C-29 GVIC PASSAGE AND SCREEN O&M** \$294,600 / \$65,600  
Operation and maintenance of passage and screen facilities at the GVIC Diversion Dam on the Colorado River near Palisade. Includes \$229,000 in capital funds for work in FY 08.
- 116/C-33 REDLANDS SCREEN/ PASSAGE/GAGE O&M** \$84,400 / \$84,400  
Seasonal operation and maintenance of screen, passage, and gage at the Redlands Diversion Dam on the Gunnison River (by Redlands Power).
- C-6-em EASEMENT MANAGEMENT** \$62,000 / \$62,000  
Easements acquired by the Recovery Program are managed by the Ouray National Wildlife Refuge Manager. Currently under management are 17 properties (1,347.12 acres). \$50,000 from Recovery Program; \$12,000 from FWS-Refuges.
- 146 COLORADO PIKEMINNOW ENTRAINMENT INTO YAMPA RIVER DIVERSION CANALS** \$??/\$??  
*Waiting for revised FY 07 sow.*  
Assessment and evaluation of Colorado pikeminnow entrainment into diversion canals adjacent to the Yampa River. Efforts are focused on Maybell.

**NEW PROJECTS (Please see note on page 1. Scopes of work are NOT being solicited for new starts at this time.)**

**FLOODPLAIN HABITAT vs FLOW SYNTHESIS REPORT** Cost TBD  
Integration and evaluation of available data and information on entrainment rates of drifting larval razorback suckers into floodplain nursery habitats and inundation of floodplain habitats, as a function of flow and physical habitat parameters.

**TITLE: DEVELOPMENT OF SYNTHESIS REPORT THAT SUMMARIZES AND INTEGRATES ALL PHYSICAL AND BIOLOGICAL FLOODPLAIN INUNDATION AND ENTRAINMENT STUDIES**

**RIPRAP Item Number:**

Green River Action Plan: Mainstem

I.D.1.b.(3). Synthesize physical and biological data from recent peak flow studies related to floodplain inundation and entrainment of larval razorback suckers.

II.A.4.a. Validate and refine Green River Subbasin Floodplain Management Plan.

**Rationale/Problem Statement:** A three-year study of entrainment and floodplain inundation is in its third year, and a final report is expected at the end of 2007. The results of this study should be evaluated to determine to identify what management actions are needed. Among the issues that should be addressed by the final report are the flows at which key floodplains with levee breaches become connected to the mainstem and inundated, entrainment rates at different flows, levee breach configuration that enhances larval entrainment, and the effect of river flows on associated channel geomorphology.

**Project Goals and Objectives:** The goal for this project is to develop a synthesis report that addresses the following hypotheses and information needs, and determine the need for additional studies.

The hypotheses to be evaluated and information needs to be filled include:

- Flow and stage at which floodplains with levee breaches become sufficiently inundated.
- Frequency of floodplain inundation relative to the hydrologic cycle.
- Persistence of floodplains after peak flows recede.
- Rates of sediment deposition and erosion in breaches and floodplain depressions.
- Entrainment and retention of larvae as a function of physical characteristics of floodplains.
- Temporal relationships between drifting larvae and hydrology needed to entrain larvae in floodplains.
- Area of terrace and depression floodplains at different flows.
- Benefits of lower peak flows for longer duration vs. higher peak flow for a shorter duration.

**Expected Products:** A synthesis report that summarizes and integrates all physical and biological floodplain inundation and entrainment studies, and that addresses the previously-stated goals, objectives and hypotheses.

**Recommended Approach/Methods:** Data collected on floodplain habitat connection and inundation (aerial photography, inlet surveys), sediment deposition and erosion in floodplain habitats, and entrainment studies should be integrated to determine how entrainment is affected by flow and physical characteristics of floodplain habitats (e.g., Western aerial photography, C-6 HYD physical evaluation of floodplain habitat, 85f sediment monitoring, evaluation of ecosystem restoration and management options for the Ouray NWR). The synthesis report will provide important information to determine the effectiveness of existing flow recommendations, and identify opportunities for refinement of flow management strategies to entrain larvae, provide sufficient floodplain nursery habitat, and maintain floodplain habitats over the long-term. As necessary, additional studies that address priority hypotheses and information needs should be planned for subsequent years. Scope of work will be reviewed by the Geomorphology Panel.

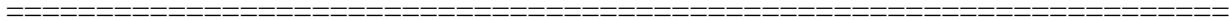
**Schedule:** A final report for bead and larvae entrainment studies (C-6 rz/entr) is due at the end of 2007 (FY 2008). A final report for the sediment monitoring study (85f) is due in FY 2008. Therefore, the synthesis report should be started in FY 2008 and completed in FY 2009. The results of this synthesis should be used to determine the need for additional studies.

**Cost Range:** TBD.

**Literature Cited:**

Green River Study Plan ad hoc Committee. 2007. Study plan for the implementation and evaluation of flow and temperature recommendations for endangered fishes in the Green River downstream of Flaming Gorge Dam. Upper Colorado River Endangered Fish Recovery Program, Denver, Colorado.

Valdez, R.A., and P. Nelson. 2004b. Colorado River Subbasin Floodplain Management Plan. Final Report of R.A. Valdez and Associates, Inc., to Upper Colorado Endangered Fish Recovery Program.



**RAZORBACK SUCKER RECRUITMENT STUDY**

Cost TBD.

Evaluation of recruitment of young razorback suckers from floodplain nursery habitats and into the mainstem, beginning in 2008.

**TITLE: EVALUATE SURVIVAL OF YOUNG AND MOVEMENT OF SUBADULT RAZORBACK SUCKERS FROM FLOODPLAINS INTO THE MAINSTEM IN RESPONSE TO FLOWS.**

**RIPRAP Item Number:**

Green River Action Plan: Mainstem

I.D.1.a. Evaluate survival of young and movement of subadult razorback suckers from floodplains into the mainstem in response to flows.

II.A.4.a. Validate and refine Green River Subbasin Floodplain Management Plan.

**Rationale/Problem Statement:** The study “C6-rz recruitment” was approved in 2001 but was not completed. This study should be revisited and potentially revised if deemed appropriate to quantify the recruitment rates of subadult razorback suckers from floodplains into the mainstem, as a function of age and size class. Where appropriate, flows should be experimentally manipulated to ensure timely completion of studies with adequate consideration of the full range of recommended flows.

**Project Goals and Objectives:** The purpose of this study should be to evaluate movement (i.e., recruitment) of razorback suckers from floodplain nursery habitats and into the mainstem. This study should evaluate persistence of floodplain habitat and habitat quality after peak flows recede, and include evaluation of survival of razorback suckers in floodplains through fall and winter. The continuation of this study should be contingent on the results.

The hypotheses to be evaluated and information needs to be filled include:

- Persistence of floodplains after peak flows recede.
- Frequency of floodplain connection needed to recruit razorback sucker to the river.
- Rates of movement into the river of subadult razorback suckers reared in floodplain nursery habitats.
- Quality of floodplain nursery habitats (including water quality, nonnative fish).
- Intra- and inter-annual persistence of water in floodplains.

**Expected Products:** A final report that quantifies recruitment rates as a function of age and size classes of razorback suckers, and that addresses the previously-stated goals, objectives and hypotheses.

**Recommended Approach/Methods:** Known numbers of age and length classes of razorback sucker should be stocked into one or more floodplain wetlands. During connection with the river, the percentage of each age and size class leaving the floodplain for the river should be monitored and quantified. During the 3-year study, water may need to be pumped into the wetlands as necessary to ensure survival of the razorback suckers.

**Schedule:** The study should begin as an evaluation of floodplain nursery habitat availability and quality during the winter of 2007-2008 (FY 2008). Depending on the availability of hatchery-reared fish and peak flows of sufficient magnitude to inundate floodplain habitats, a study of survival and movement of subadult razorback suckers into the main stem river would be initiated and continued for three successive years. Assuming fish and flows are available in the spring of 2008, the study would continue through 2011. A final report would be prepared in the following year (2012).

**Cost Range:** TBD.

**Literature Cited:**

- Green River Study Plan ad hoc Committee. 2007. Study plan for the implementation and evaluation of flow and temperature recommendations for endangered fishes in the Green River downstream of Flaming Gorge Dam. Upper Colorado River Endangered Fish Recovery Program, Denver, Colorado.
- Valdez, R.A., and P. Nelson. 2004. Green River Subbasin Floodplain Management Plan. Final Report of R.A. Valdez and Associates, Inc., to Upper Colorado Endangered Fish Recovery Program.

**PLACEHOLDERS / ON HOLD**

**C-6-hyd HYDROLOGY/GEOMORPHOLOGY** \$0 / \$0  
Includes construction oversight at the Hot-Spot complex on the Colorado River; and post-construction evaluation of nursery habitats along the Green, Colorado, and Gunnison rivers (if flows available).

**C-6-const HABITAT RESTORATION (CONSTRUCTION)** \$0 / \$0  
Restore Hot-Spot Complex on Colorado River near Grand Junction, Colorado.

**COMPLETED/DISCONTINUED PROJECTS**

**C-4c REDLANDS LADDER and GAGE O&M**  
Reclamation's fish ladder start up and shut-down activities; monthly inspections; gage ratings; service and replacement of equipment; annual reports. Subsumed by project # 116/C-33 Redlands screen, passage and gage O&M.

**C-29a GVIC/GVP FISH SALVAGE**  
Retrieve native fish from GVIC and GVP canals if screens not fully operated. If funds not needed, FWS will carry them over to the next fiscal year. Screens should now be fully operated.

### **III. REDUCE NONNATIVE FISH AND SPORTFISH IMPACTS**

Nonnative fish management activities in FY 2008–2009 will be directed primarily toward: 1) removal/control of problematic nonnative fishes from river reaches occupied by the endangered fishes; 2) evaluation of species response to nonnative fish management activities; and 3) identification of sources of problematic nonnative fishes.

<b><u>PROJECT NUMBER</u></b>	<b><u>TITLE</u></b>	<b><u>PROJECTED FY 08/09 BUDGET</u></b>
<b><u>ONGOING PROJECTS</u></b>		
<b>XX</b>	<b>GREEN RIVER WHITE SUCKER REMOVAL</b> Pilot project to quantify hybridization among native sucker species and to prevent razorback sucker hybridization with white sucker. Funded outside the Recovery Program.	\$0 / \$0
<b>C-18/19</b>	<b>RESERVOIR SOURCES OF NONNATIVE FISH</b> Isotope study to identify reservoirs which may be sources of problematic nonnative fishes within critical habitat of the upper Colorado River basin.	\$38,909 / \$19,834
<b>XX</b>	<b>NONNATIVE FISH ESCAPEMENT FROM FLAMING GORGE</b> The Recovery Program will coordinate with the Utah Division of Wildlife Resources (UDWR) and Reclamation to secure baseline information on spillway entrainment rates of nonnative fish at Flaming Gorge Dam. It is expected that UDWR will continue to collect data as part of their annual monitoring programs, and these data will be used to determine rates of entrainment from the reservoir. Sampling immediately following spill events should also be conducted as a means to assess entrainment and escapement of nonnative species. Results of the isotope study (Project C18/19) should be evaluated in reference to reservoir entrainment rates.	\$0 / \$0
<b>C-20</b>	<b>HIGHLINE LAKE NET O&amp;M</b> O&M from Colorado additional in-kind funds.	\$3,000 / \$3,000

#### **ONGOING PROJECTS NEEDING REVISION**

All of these nonnative fish control activities may require revision based on the outcome of previous years' work.

<b>98a</b>	<b>MIDDLE YAMPA PIKE &amp; BASS TRANSLOCATION</b> Removal and translocation of northern pike and smallmouth bass from the middle Yampa River by CDOW.	<b>\$112,600 / \$116,000</b>
<b>98b</b>	<b>UPPER YAMPA PIKE TRANSLOCATION</b> Removal and translocation of northern pike from the upper Yampa River between	<b>\$149,800 / \$154,300</b>

Hayden and Craig.

- 110 LOWER YAMPA BASS MANAGEMENT** \$123,200 / \$126,900  
Removal of smallmouth bass from the lower Yampa River to sufficiently reduce their abundance and minimize predatory and competitive impacts on growth, recruitment, and survival of resident humpback chub.
- 115 LODORE/WHIRLPOOL FISH COMMUNITY RESPONSE** \$84,400/\$77,500  
Removal of smallmouth bass and northern pike from the upper Green River and monitoring the response of fish communities.
- 123 GREEN RIVER BASS & PIKE MANAGEMENT** \$318,400/\$328,000  
Removal of smallmouth bass and northern pike (and white sucker) from the Green River.
- 125 MIDDLE YAMPA BASS & PIKE TRANSLOCATION** \$193,000 / \$198,800  
Removal and translocation of smallmouth bass and northern pike from the middle Yampa River by CSU.
- 126a COLORADO RIVER CENTRARCHID MGMT.** \$138,200/\$126,400  
Removal of centrarchids from the Colorado River by USFWS.
- 126b COLORADO RIVER CENTRARCHID MGMT.** \$12,000/\$12,400  
Removal of centrarchids from the Colorado River by CDOW.
- 140 YAMPA FISH RESPONSE TO NONNATIVE REMOVAL** \$46,500/\$47,800  
Study to determine response of small-bodied fishes, and native and endangered fishes to Yampa River nonnative fish management activities.
- 144 GREEN RIVER RESPONSE TO NONNATIVE REMOVAL** \$34,200/\$35,200  
Study to determine response of small-bodied fishes, and native and endangered fishes to Green River nonnative fish management activities.

**COMPLETED/DISCONTINUED PROJECTS**

- 119 ESCAPEMENT FROM STARVATION RESERVOIR**  
Evaluation of sportfish escapement from Starvation Reservoir. Final report completed in January 2007.
- 109 MIDDLE GREEN PIKE MANAGEMENT**  
Northern pike removal subsumed by project #123 smallmouth bass removal in 2007.
- 124 DUCHESNE NONNATIVE FISH MANAGEMENT**  
Removal of channel catfish, smallmouth bass, and northern pike from the Duchesne River. Efforts moved to project #123 smallmouth bass removal in 2007.

**143 YAMPA RIVER NORTHERN PIKE SOURCES**

Study to determine sources of northern pike that immigrate into critical habitat of the Yampa River. Project final report due in 2007.

#### **IV. PROPAGATION & GENETICS MANAGEMENT**

The goals of Propagation and Genetics management are: to prevent immediate extinction of any endangered Colorado River fish stocks; to conserve genetic diversity of wild endangered fish stocks through recovery efforts; to maintain genetic diversity in captive-reared endangered fish broodstock that is similar to that of the wild stock used as founders; and to produce genetically sound offspring for augmentation efforts.

<b><u>PROJECT NUMBER</u></b>	<b><u>TITLE</u></b>	<b><u>PROJECTED FY 08/09 BUDGET</u></b>
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#### **ONGOING PROJECTS**

<b>29a</b>	<b>GRAND VALLEY ENDANGERED FISH FACILITY</b> Utilities at 24-Road Hatchery (Bureau of Reclamation) Operation and maintenance of Horsethief Ponds, 24-Road Hatchery and several grow out ponds through out the Grand Valley. No pond leases due in FY08 or FY09.	\$414,000 / \$426,400 \$ 41,200 / \$ 42,400
<b>29b</b>	<b>OURAY NATIONAL FISH HATCHERY</b> Well Maintenance (Bureau of Reclamation) Operation and maintenance of Ouray National Fish Hatchery (Fish and Wildlife Service dollars)	\$475,000 / \$475,000 \$ 5,000 / \$ 5,000
<b>29c</b>	<b>WAHWEAP STATE FISH HATCHERY</b> Operation and maintenance of Wahweap Fish Hatchery to raise bonytail and maintain backup razorback sucker broodstock	\$230,900 / \$237,800
<b>29d</b>	<b>MUMMA NATIVE AQUATIC SPECIES RESTORATION FACILITY</b> Operation and maintenance of W.J. Mumma Native Aquatic Species Restoration Facility to raise and stock bonytail in Colorado waters of the Upper Colorado River Basin.	\$ 79,500 / \$ 81,900
<b>TAGs</b>	<b>PIT TAGS FOR STOCKED FISH</b> Sufficient tags were purchased in 2006 to carry through the 2007 stocking year. Approximately 50,000 tags are needed if the stocking targets are met for razorback sucker and bonytail. The Bureau of Reclamation contract with Biomark has a cost of \$3/tag, realizing a \$150K annual cost. Funds in FY07 will be used to purchase \$100K worth of tags and equipment, so the expense in FY08 will be reduced to \$50K to make up the difference. FY09 returns to the annual cost of \$150K.	\$ 50,000 / \$150,000

**ONGOING PROJECTS NEEDING REVISION**

**TITLE: SURVIVAL OF GILA SPP. REMOVED FROM THE YAMPA AND GREEN RIVERS.**

A Scope of Work has been submitted to the National Park Service for researching the survival of *Gila* spp. taken from Yampa and Green rivers within Dinosaur National Monument to 2 hatchery facilities of varying distance. However, no funding was associated with this project.

**COMPLETED/DISCONTINUED PROJECTS**

**CONTINGENCY**

Emergency funds to support facilities that may have circumstances outside their operational budgets. Not included in FY 08 due to limited funds.

V. **RESEARCH, MONITORING, & DATA MANAGEMENT**

Population estimates were designed at the beginning to give 3-years of information and then allow the population to rest. For Colorado pikeminnow, the schedule is now 3 years of sampling followed by 2 years of rest, then repeating. For humpback chub, the schedule is now 2 years of sampling followed by 2 years of rest, then repeating.

Population estimates schedule since 1998 by calendar year and projected.

Species/River	98	99	00	01	02	03	04	05	06	07	08	09	10
C. pikeminnow/ Colorado River													
C. pikeminnow/ Green River			*										
Humpback Chub/ Yampa										Research			
Humpback Chub/ Desolation/Grey									s	o	s	o	
Humpback Chub/ Black Rocks										s	o	s	o
Humpback Chub/ Westwater										s	o	s	o
Humpback Chub/ Cataract												TBD	

\* Only the Middle Green was done in 2000, the entire Green River was begun in 2001.

Research means we will attempt to bring humpback chub from the Yampa population into captivity. The “s” and “o” stand for September and October, respectively, demonstrating the overlap of the Federal Fiscal Year.

<b><u>PROJECT NUMBER</u></b>	<b><u>TITLE</u></b>	<b><u>PROJECTED FY 08/09 BUDGET</u></b>
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**ONGOING PROJECTS**

- |             |   |                       |
|-------------|---|-----------------------|
| <b>15</b>   | <b>LARVAL FISH IDENTIFICATION AND CURATION</b><br>Larval fish identification and curation of museum specimens.  | \$ 52,736 / \$ 54,318 |
| <b>16</b>   | <b>DATABASE MANAGEMENT</b><br>Maintenance of data collected by Recovery Program and associated projects.  | \$ 41,100 / \$ 42,330 |
| <b>121a</b> | <b>SURVEY FOR LARVAL RAZORBACK SUCKER IN GUNNISON AND COLORADO RIVERS (WRITE-UP)</b><br>Sampling backwaters and other larvae associated habitats in the Gunnison and Colorado rivers.   | \$ 21,450 / \$ 0      |
| <b>128</b>  | <b>GREEN RIVER COLORADO PIKEMINNOW POPULATION ESTIMATE</b><br>Three pass mark-recapture sampling for Colorado pikeminnow throughout the Green River and its major tributaries (Calendar Years: 2006—2008).                              | \$356,100 / \$56,000  |
| <b>132</b>  | <b>HUMPBACK CHUB POPULATION ESTIMATE WESTWATER CANYON</b><br>Three pass mark-recapture sampling for humpback chub through Westwater Canyon in sequence with Black Rocks (Calendar Years: 2008—2009; FY07—09: assumes \$44,300 in FY07). | \$ 50,000 / \$ 69,400 |

**149 CYPRINID COMPUTER KEY** \$ 24,602 / \$ 29,079  
Development of computerized cyprinid key to aid in the identification of larval cyprinids.  
(Assumes \$50,000 available from San Juan Program in FY07 to be carried over, or available from FY08 budget)

**ONGOING PROJECTS NEEDING REVISION**

**22f YAMPA AND MIDDLE GREEN RIVERS LARVAL ABUNDANCE** \$108,900 / \$112,100  
(est. based on FY 07, may increase)  
(Relationship to RIPRAP: Green River, I.D.1.c.(1) Conduct annual monitoring of larval razorback suckers and analyze historic monitoring data.)

From the Green River study plan (Numbers 3 and 5), revise 22f to include:

- Project 22F (annual larval monitoring) should be revised to include an evaluation of temporal patterns of larval presence in the river and the relationship of larval presence to flow and temperature conditions. Monitoring would continue indefinitely. The need for modifications of monitoring protocols and the need for continued monitoring would be evaluated periodically.
- Perform analysis of historical monitoring data (2001 and later) to determine temporal patterns of larval presence in the river and the relationship of larval presence to flow, sediment, and temperature conditions. This project should be started in FY 2008 and completed in FY 2009.
- Annual monitoring of Colorado pikeminnow is ongoing, and used to determine timing and duration of spawning by Colorado pikeminnow and presence and abundance of larvae in the system as measured by capture of larvae downstream of spawning areas in the lower Yampa River. Monitoring would continue indefinitely. The need for modifications of monitoring protocols and the need for continued monitoring would be evaluated periodically.

**127 UPPER COLORADO RIVER COLORADO PIKEMINNOW POPULATION ESTIMATE** \$165,000 / \$170,000  
Beginning of 3 year, 3-pass mark-recapture sampling in the Colorado and Gunnison rivers to estimate the Colorado pikeminnow population.

**129 HUMPBACK CHUB POPULATION ESTIMATE DESOLATION/GREY CANYONS** \$ 20,600 / \$ 0  
Do not conduct a third year of sampling to get in synch with 2-year on, 2-year off schedule. Write-up of 2006—2007 sampling. Analyses should determine if a fourth pass should be conducted when the project begins again in 2010.

**131 HUMPBACK CHUB POPULATION ESTIMATE**  
**BLACK ROCKS** \$ 42,800 / \$ 35,000  
Three pass mark-recapture sampling for humpback chub through Black Rocks (Calendar Years: 2008—2009; FY07—09: assumes \$39,900 in FY07).

**138 YOUNG-OF-YEAR COLORADO PIKEMINNOW**  
**MONITORING FINAL REPORT** \$ 30,000 / \$ 0  
*Continued monitoring* \$ 64,478 / \$ 66,412

From the Green River study plan: Annual age-0 Colorado pikeminnow monitoring is ongoing, and a final report on monitoring results is due in August 2008. This report will use past and current data to evaluate the relationship of age-0 Colorado pikeminnow size and relative numbers to backwater characteristics, flow, and temperature. Study plan also recommends continuing project #138.

**New07 SURVIVAL RATES OF STOCKED RAZORBACK SUCKER** \$ 21,018 / \$ 0  
Use of recapture information to provide a survival estimate of stocked razorback sucker throughout the basin. Revise to first perform a crude population estimate (order of magnitude), to determine if stocking plan needs to be revised.

**NEW PROJECTS (Please see note on page 1. Scopes of work are NOT being solicited for new starts at this time.)**

**FY09 New Start:**

**EFFECT OF BASEFLOW VARIABILITY ON BACKWATERS**

As mentioned under Project 138 above, a report synthesizing young-of-year monitoring with environmental variables is due August 2008. In addition, the Research Framework (Project 145) will have been completed in 2007. These two projects are a first step in integrating information to determine the effects of baseflow variability on backwaters. This new start should begin once these reports are final synthesizing the data collected under each project, therefore, this project should begin in FY09.

**TITLE: DATA INTEGRATION: YOUNG-OF-YEAR COLORADO PIKEMINNOW ABUNDANCE AND CONDITION, RESPONSE OF NATIVE FISH TO NONNATIVE PREDATOR REMOVAL, AND BACKWATER TOPOGRAPHY.**

**RIPRAP Item Number:**

**Green River, I.D.1.e.(4) Integrate biological and physical data on backwaters.**

**Rationale/Problem Statement:**

The Green River Study Plan recommends a study to evaluate the effect of base flow variability on backwater habitat maintenance and quality. This study should begin as a synthesis of physical and biological information already collected in Reaches 2 and 3, including evaluating potential links between past and recent physical measurements and Colorado pikeminnow age-0 monitoring. This ongoing work should be evaluated to refine, as necessary, studies to gain a

better understanding of how base flows and base flow variability affect backwater maintenance and quality in Reaches 2 and 3.

Western's annual studies of backwater topography in the Ouray reach are relevant to this evaluation and should be used to determine how base flow variability affects physical habitat characteristics (depth, volume, surface area). Integration of the backwater topography information with concurrent age-0 Colorado pikeminnow monitoring should be explored as a way to link biological information with backwater variability. Upon completion of existing data synthesis and integration, the need for continuation of studies or additional studies to quantify other habitat characteristics (e.g., temperature and productivity) should be determined.

Past studies have documented fish communities in backwater habitats, but there has been little integration of these data, and little attempt to determine the relationship between fish communities and flow. This recommended study should synthesize physical and biological information already collected on backwaters to better understand physical habitat relationships and fish communities. Age-0 monitoring currently collects samples of fish from backwaters. Project 144 (native response to nonnative control) supplements age-0 Colorado pikeminnow monitoring with additional information on fish communities in backwaters.

#### **Project Goals and Objectives:**

This study should integrate available information from Projects 138, 144 and Western's backwater topography and link backwater fish communities, including age-0 Colorado pikeminnow, with the physical condition of backwaters and ultimately with base flow conditions.

It should address the hypotheses identified in the Green River Study plan:

- Effect of base flow variability (within-day, within-season, within-year, between years) on backwater quality in Reach 2 (U18: The effect of base flow variability (within-day, within-season, within-year, between years) on backwater habitat quality (e.g., temperature, productivity) (U.S. Department of the Interior and Western Area Power Administration 2005).).
- The effect of base flows on nonnative fish populations in Reach 2 (U21: The effect of base flows on nonnative fish populations (Muth et al. 2000).).
- Base flows in summer and autumn scaled to hydrologic condition favor formation of backwaters in Reach 2 (A8: Base flows in summer and autumn scaled to the hydrologic condition favor the formation of backwaters and other low-velocity shoreline nursery habitats (Muth et al. 2000).).
- Maintenance of mean base flow within recommended levels of season and daily flow variability will promote favorable backwater conditions in Reach 2 (A9: Maintenance of the mean base flow within recommended levels of seasonal and within-day flow variability throughout summer, autumn, and winter will promote favorable conditions for all life stages of endangered fishes that use low-velocity habitats (Muth et al. 2000).).
- The effect of base flow variability (within-season, within-year, between years) on backwater habitat quality in Reach 3 (U24: The effect of base flow variability (within-season, within-year, between years) on backwater habitat quality (e.g., temperature, productivity) (U.S. Department of the Interior and Western Area Power Administration 2005).).
- Habitat conditions at beginning of baseflow period in Reach 2 (information need).

**Expected Products:**

A final report that integrates available information from Projects 138, 144 and Western's backwater topography and links backwater fish communities, including age-0 Colorado pikeminnow, with the physical condition of backwaters and ultimately with base flow conditions. The final report should include recommendations that will allow the Biology Committee to decide on the need for additional or continued studies to fill information needs and address uncertainties

**Recommended Approach/Methods:**

Data from projects 138, 144, and Western's backwater topography should be evaluated, integrated and analyzed to determine relationships and other information that links the biological and physical conditions of backwaters and ultimately to base flows.

**Schedule:** FY09

**Cost:** To Be Determined

**Literature Cited:**

Muth, R.T., L.W. Crist, K.E. LaGory, J.W. Hayse, K.R. Bestgen, T.P. Ryan, J.K. Lyons, R.A. Valdez. 2000. Flow and temperature recommendations for endangered fishes in the Green River downstream of Flaming Gorge Dam. Upper Colorado River Endangered Fish Recovery Program, Denver, Colorado.

U.S. Department of the Interior and Western Area Power Administration. 2005. Biological Assessment on the operation of Flaming Gorge Dam. U.S. Department of the Interior, Bureau of Reclamation, and Western Area Power Administration, Salt Lake City, Utah.

**PLACEHOLDERS****FY 09 NEW START:****TITLE: REMOTE SENSING OF RAZORBACK SUCKER NEAR A SPAWNING BAR IN THE GREEN RIVER.**

**RIPRAP Item Number: Green River: V.D. Conduct population estimate for razorback sucker.**

**Rationale/Problem Statement:**

Hatchery raised and stocked razorback sucker have been detected and monitored through telemetry, along with wild razorback sucker, at the Jensen spawning bar (Modde et al. 2005). Stocked fish have been implanted with the 134.2 kHz Passive Integrated Transponder (PIT) tag since 2004. Flat plate antenna technology is designed to work with 134.2 kHz PIT tags and should be able to remotely detect fish when they swim above the antenna.

**Project Goals and Objectives:**

The goal is to place flat antenna technology on the Jensen spawning bar to remotely detect stocked razorback sucker.

**Expected Products:** A final report identifying the numbers of stocked fish that were detected on the spawning bar.

**Recommended Approach/Methods:**

The narrowest width of the river over the spawning bar appears to be approximately 40 m (130 ft; determined from Modde et al. 2005). The flat plate antennas are 27" x 13" outer dimensions. If an array of antennae are aligned across this narrow, then 6 flat plate antennae could capture almost 10% of the width. The antennae should be deployed by 15 April 2009 and left until 15 June 2009.

**Schedule:** FY09

**Cost:** To be determined.

**Literature Cited:**

Modde, T., Z.H. Bowen, and D.C. Kitcheyan. 2005. Spatial and temporal use of spawning site in the middle Green River by wild and hatchery-reared razorback sucker. Transactions of the American Fisheries Society 134: 937—944.

**COMPLETED/DISCONTINUED PROJECTS****121b GUNNISON RIVER SURVEY FOR STOCKED FISH**

Discontinued to provide more effort on nonnative fish removal in the Upper Colo. River.

**130 HUMPBACK CHUB POPULATION ESTIMATE  
CATARACT CANYON**

The data is too sparse and population is too small to provide a mark-recapture estimate, recommend revising to a catch-per-unit effort and periodicity to be determined or recommended from report.

**133 HUMPBACK CHUB POPULATION ESTIMATE YAMPA CANYON**

Catch per unit effort (CPUE) will be used as a surrogate to mark-recapture population estimates. As part of fish composition (Project Numbers 115, 140, and 144) and nonnative fish removal (Project Numbers 110 and 123), CPUE of the Yampa Canyon humpback chub population can be attained.

**145 RESEARCH FRAMEWORK**

Should be completed in FY07.

**146 STANDARDIZED ELECTROFISHING FLEET**

Should be completed in FY07.

VI. **INFORMATION, EDUCATION, & PUBLIC INVOLVEMENT**

A strategic, multi-faceted information and education program is being implemented to: develop public involvement strategies at the beginning of any and all projects; educate target audiences (including the public and elected officials) about endangered fish and increase their understanding of and support for the recovery of these fish at local, state and national levels; provide opportunities for the public to participate in activities that support recovery; and improve communication and cooperation among members of the Recovery Program.

<b><u>PROJECT NUMBER</u></b>	<b><u>TITLE</u></b>	<b><u>PROJECTED FY 08/09 BUDGET</u></b>
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**ONGOING PROJECTS**

<b>12 INFORMATION AND EDUCATION</b>	\$45,000 / \$45,000
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The Information and Education Program scope of work is a comprehensive communications plan that addresses goals, objectives and strategies for all aspects of the Recovery Program. Project-specific plans are included as subsets to the comprehensive plan. This method of planning and evaluating I&E activities is designed to improve both internal and external communication. The I&E Committee reviews and evaluates the plans and updates and changes them as needed to address changes in Program activities.

The following projects have scopes of work that contain public involvement activities which are considered subsets of the comprehensive I&E communication plan:

<b>PIP 12B GRAND VALLEY PROJECTS</b>	\$32,000 / \$32,000
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This SOW is ongoing and addresses public involvement related to: restoring fish passage at the abandoned, privately-owned Price-Stubb Dam, and constructing a fish screen at Tusher Wash Diversion Dam on the Green River. These activities include, but are not limited to, public meetings, news releases, one-on-one meetings with affected interests, distribution of literature and provision of regular updates to local congressional staff.

<b>PIP 12I RUEDI RESERVOIR</b>	Funded outside Recovery Program
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Since 1990, Reclamation has released water from Ruedi Reservoir to benefit endangered fish species in the 15-Mile Reach of the Colorado River. Local businesses and residents of Basalt, Colorado, remain concerned about the effects these releases will have on the Fryingpan River's gold-medal fishery. The Bureau of Reclamation handles all public involvement issues related to this project including hosting public meetings, sending news releases, and e-mailing updates to interested parties.

**ONGOING PROJECTS NEEDING REVISION**

<b>PIP 12H INTERPRETIVE SIGNS AND EXHIBITS</b>	\$5,000 / \$5,000
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The Recovery Program has installed numerous interpretive signs and exhibits in key locations in the Upper Colorado River Basin to provide information about the endangered fishes and the Recovery Program. No specific additional exhibits are currently planned for

FY 08/09, but additional interpretive signs (and repair/replacement) are an anticipated ongoing expense.

**PIP 12L NONNATIVE FISH MANAGEMENT**

\$5,000 / \$5,000

The Recovery Program continues its efforts to minimize the adverse effects certain species of nonnative fish have on the endangered fishes. A comprehensive strategic communications plan is updated and implemented annually to ensure that accurate, timely messages are delivered to target audiences.

**PLACEHOLDERS**

**PIP 12C COORDINATED RESERVOIR OPERATIONS**

Funded only in years  
coordination occurs

This work addresses public involvement and voluntary coordination of reservoir operations in the upper reaches of the Colorado River to increase spring peak flows in the 15-Mile Reach of the Colorado River. Reservoir operations are only coordinated in years when hydrological conditions are adequate (i.e., when spring peak flows at the Cameo gage on the Colorado River are projected to be between 12,900-23,000 cfs). Of the \$32,000, \$20,000 comes from Recovery Program O&M funds and \$12,000 comes from additional Reclamation contributions. No funds should be needed in years when reservoir operations are not coordinated. Activities include, but are not limited to, informing the public through news releases, e-mail notifications, and direct mailings as necessary of any decisions to adjust reservoir operations and bypasses made to enhance flows for endangered fish purposes.

VII. **PROGRAM MANAGEMENT**

Program management activities for FY 2008-2009 focus on continued planning and coordination of Program activities by the Program Director and staff and by Utah, Colorado, Wyoming, and the Bureau of Reclamation.

<b><u>PROJECT NUMBER</u></b>	<b><u>TITLE</u></b>	<b><u>PROJECTED FY 08/09 BUDGET</u></b>
<b><u>ONGOING PROJECTS</u></b>		
1	UTAH PROGRAM MANAGEMENT	\$158,600 / \$163,400
2	BUREAU OF RECLAMATION PROGRAM MGMT.	\$180,300 / \$185,700
4	COLORADO PROGRAM MANAGEMENT	\$110,000 / \$110,000
5	WYOMING PROGRAM MANAGEMENT	\$15,800 / \$16,200
	CAP21 CAPITAL PROJECTS COORDINATION	\$400,000 / \$254,000
142	RECOVERY GOALS TECH. ASST.	up to \$45,500/year (section 7 funds)
<b><u>ONGOING PROJECTS NEEDING REVISION</u></b>		
3	SERVICE PROGRAM MANAGEMENT Includes instream flow coordinator (half of George Smith salary moved from 19H in anticipation of 1/3/08 retirement)	\$1,060,600 / \$1,098,600

**COLORADO RIVER RECOVERY PROGRAM  
FY 2008-2009 SCOPE OF WORK for:**

Project Number: \_\_\_\_\_

*[Show brief title of project here]*

Lead agency:

Submitted by: *[Give name of project manager, give name, address, phone, fax, e-mail of principal investigator]*

Date Last Modified: 4/12/2007 10:28:00 AM *[This field is set to update automatically.]*

Category:

- Ongoing project
- Ongoing-revised project
- Requested new project
- Unsolicited proposal

Expected Funding Source:

- Annual funds
- Capital funds
- Other *[explain]*

- I. Title of Proposal:
- II. Relationship to RIPRAP: *[Action plan(s), task number(s) and title(s) in the most recent RIPRAP which are correlated with this project. See RIPRAP at [www.r6.fws.gov/crrip/rip.htm](http://www.r6.fws.gov/crrip/rip.htm)]*
- III. Study Background/Rationale and Hypotheses: *[If applicable] [Include description of expected study results and how those results will be integrated into the overall recovery effort.]*
- IV. Study Goals, Objectives, End Product(s): *[Include measurable outcomes and their expected due dates.]*
- V. Study Area: *[Including river miles and sampling dates, if appropriate]*
- VI. Study Methods/Approach: *[Provide a clear description of sampling methods, gear types, numbers and life stages of fish to be collected, statistical analyses to be used, etc.]*
- VII. Task Description and Schedule:
- VIII. Deliverables, Due Dates, and Budget by Fiscal Year:

FY 2008

Deliverables

Budget *[Broken out by task and funding target; see budget detail example requirements, attached]*

- Labor
- Travel
- Equipment
- Other

FY 2009

Deliverables

Budget *[Broken out by task and funding target; see budget detail example requirements, attached]*

- Labor
- Travel
- Equipment
- Other
- 

FY 2010, etc (for multi-year study)

- IX. Budget Summary: *[Provide total AND break-out by funding target (e.g. station)]\**
- X. Reviewers: *[For new projects or ongoing-revised projects, list name, affiliation, phone, and address of people who have reviewed this proposal.]*
- XI. References:

\* Do NOT include overhead costs on funds transferred from Reclamation to the Service.

**Scope of Work Budget Detail Requirements**

Budgets should be broken down by task, category (at least labor, travel, supplies, and equipment) and funding target. Under "labor," please identify: the type of labor (e.g., project manager, technician, secretary, etc.), the labor rate (per day, per week, or whatever calculation your office uses), and the expected amount of effort (expressed in terms of hours or weeks). If supplies exceed 5% of the project budget, please explain those costs. All equipment expenses for any single item ≥\$1,000 should be itemized and justified.

Example:

FY 2008 Costs:

	Agency A	Agency B	Contractor	Total
<u>Task 1</u>				
Labor				
Proj. mgr (\$1833/wk; 3 wks @ agency A, \$1800/wk; 2 wks @ agency B)	\$5,500	\$3,600	\$0	\$9,100
Technicians (10 wks per agency; \$810/wk @ agency A; \$900/wk @ agency B)	\$8,100	\$9,000	\$0	\$17,100
Travel				
Per diem (20 days)	\$600	\$700	\$0	\$1,300
Vehicle (20 days)	\$1,200	\$1,500	\$0	\$2,700
*Equipment				
Boat	\$0	\$12,000	\$0	\$12,000
Trailer	\$0	\$6,000	\$0	\$6,000
Motor	\$0	\$2,000	\$0	\$2,000
Electrofishing Unit	\$0	\$4,000	\$0	\$4,000
Supplies	\$700	\$800	\$0	\$1,500
Task subtotal	\$16,100	\$39,600	\$0	\$55,700

\*Justification: Additional outfitted electrofishing boat and trailer needed for concurrent sampling in two river reaches as required by population estimate protocol. Current equipment inventory of agency B includes only one outfitted electrofishing boat and trailer.

Task 2

Labor				
Biologist (2 wks; \$1500/wk @agency B; contractor \$2000/wk)	\$0	\$3,000	\$4,000	\$7,000
Technician (3.5 wks @ \$900/wk)	\$0	\$3,150	\$0	\$3,150
Task subtotal	\$0	\$6,150	\$4,000	\$10,150
<b>FY 2008 TOTAL</b>	<b>\$16,100</b>	<b>\$45,750</b>	<b>\$4,000</b>	<b>\$65,850</b>

FY 2009 Costs:

	Agency A	Agency B	Contractor	Total
<b>Task 2</b>				
<b>Labor</b>				
Proj. leader (2 wks @ Agency B @ \$1800/wk; 3 wks contractor @\$2500/wk)	\$0	\$3,600	\$7,500	\$11,100
Biologist (5 wks at each: \$1500/wk @ agency B; \$2000/wk contractor)	\$0	\$7,500	\$10,000	\$17,500
<b>Task subtotal</b>	<b>\$0</b>	<b>\$11,100</b>	<b>\$17,500</b>	<b>\$28,600</b>
<b>Task 3</b>				
<b>Labor</b>				
Biologist (4 wks @ each: \$1500/wk @ agency A&B; \$2000/wk contractor)	\$6,000	\$6,000	\$8,000	\$20,000
Proj. leader (2 wks @ each: \$1833/wk @ agency A; \$1800/wk @ agency B)	\$3,700	\$3,600	\$5,000	\$12,300
<b>Travel</b>				
Vehicle (5 days)	\$300	\$350	\$300	\$950
Airfare (1 trip)	\$500	\$700	\$650	\$1,850
Per diem (7 days)	\$210	\$245	\$210	\$665
<b>Equipment</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Supplies</b>				
Tags		\$1,150		\$1,150
Glassware		\$250		\$250
Sample bottles		\$100		\$100
<b>Task subtotal</b>	<b>\$10,710</b>	<b>\$12,395</b>	<b>\$14,160</b>	<b>\$37,265</b>
<b>FY 2009 TOTAL</b>	<b>\$10,710</b>	<b>\$23,495</b>	<b>\$31,660</b>	<b>\$65,865</b>