UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

FISCAL YEAR 2001 PROGRAM GUIDANCE

MARCH 8, 2000

FY 2001 PROGRAM GUIDANCE
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INTRODUCTION

This is the guidance for development of the Recovery Program's FY 2001 Work Plan. The Program Director's office and the technical, Management, and Implementation committees developed this guidance on the basis of the Recovery Program's Recovery Action Plan (RIPRAP) and input from Program participants. 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. 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 be developed for these.

This FY 2001 guidance requests proposals for FY 2001 activities; proposed scopes of work are requested for each of the projects listed in this guidance. Scopes of work should be prepared according to the format in Appendix A. Please review this format carefully, especially the explanatory text printed in italics. Scopes of work which do not contain the information requested will be returned to the principal investigator for revision. This could prevent the scope from receiving FY 2001 funding consideration because of the tight work plan development schedule. The format is available electronically by request to angela_kantola@fws.gov.

To allow time for outside peer review, scopes of work for new projects were due to Program coordinators in WordPerfect format by electronic mail or on disk by March 20, 2000 (unless otherwise noted due to a late addition). New projects are:

Determination of winter use and seasonal instream flow needs of Colorado pikeminnow in the Price River.
Monitoring sediment movement & temperature in the Colorado & Green rivers
Gunnison River temperature model
Elkhead Reservoir screening (unless this is done in 2000)
Monitoring stocked fish
Colorado pikeminnow lower Green River population estimate
Humpback chub Desolation/Grey canyons population estimate
Longnose sucker larvae and computer-interactive key
Interpretive signs and exhibits (early submission of scope of work not required)

For your information, the evaluation form that will be used by the Recovery Program in evaluating new scopes of work may be found at http://www.r6.fws.gov/crrip/soweval2.htm. The evaluation form used by the Recovery Program in reviewing and commenting on final draft project reports may be found at http://www.r6.fws.gov/crrip/rprv.htm; the proper format for final draft reports that are submitted to the Biology Committee for review and approval is at

http://www.r6.fws.gov/crrip/rptfmt.htm; and the Biology Committee review process for final draft reports is at http://www.r6.fws.gov/crrip/finbcrpt.htm.

Scopes of work for ongoing and ongoing-revised biological and water acquisition projects (under recovery elements I-V) are due NO LATER THAN April 21, 2000 (this includes scopes of work for capital-funded projects). Submit new, ongoing-revised, and ongoing scopes of work for these projects to the appropriate Program coordinator (see list at end of this page) in WordPerfect format by electronic mail or on disk. IN ADDITION, submit a courtesy electronic or hard copy of new and 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. You may provide this courtesy copy by posting it to the fws-coloriver listserver, if you wish. (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.)

Scopes of work for information & education projects (under recovery element VI) also are due April 21, 2000, and should be submitted in WordPerfect format to Debbie Felker (debbie_felker@fws.gov).

Program management scopes of work (under recovery element VII) are due by June 30, 2000 (in WordPerfect format by electronic mail to angela_kantola@fws.gov or on disk).

Upon receipt of the proposed scopes of work, the Program Director's office will begin working (with technical advisory panels 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 19. Technical committee comments are then due to the Program Director and the Management Committee by July 21. 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 in early August to discuss the recommended work plans and approve projects for the Draft FY 2001 Work Plan. The Draft Work Plan will be submitted to the Implementation Committee for review by August 18. The Implementation Committee will meet September 6 and the final FY 2001 Work Plan and final scopes of work will be distributed in the first quarter of FY 2001.

If you have any questions about this guidance or the FY 2001 work plan development process, please contact Angela Kantola at 303/236-2985, ext 221, or the appropriate coordinator:

Instream flow protection and nonnative fish control - Bob Muth 303/236-2985 ext. 268 robert_muth@fws.gov
Habitat restoration - Pat Nelson 303/236-2985 ext. 226, pat_nelson@fws.gov
Genetics and propagation, monitoring/research/life history - Tom Czapla 303/236-2985 ext. 228, tom_czapla@fws.gov
Information, education, and public involvement - Debbie Felker 303/236-2985 ext. 227, debbie_felker@fws.gov.
Program management - Angela Kantola 303/236-2985 ext. 221, angela_kantola@fws.gov

I. INSTREAM FLOW IDENTIFICATION AND PROTECTION

Instream flow activities in FY 2001 will be directed towards: 1) coordinated reservoir operations to enhance flows; and 2) providing and legally protecting flows in important river reaches.

PROJ. NO.	TITLE	PROJECTED FY 01 BUDGET

(The RIPRAP number and item are shown on the second line)

ONGOING PROJECTS

8 **RECOVERY PROGRAM GAGE O&M** $37,500
Supports several different actions under the Colorado, Green, and Yampa plans to identify and protect instream flows.

9 **WATER RIGHT ACQUISITION CONSULTANT** $10,000
Supports several different actions under the Colorado, Green, and Yampa plans to identify and protect instream flows.

CAP-4C **REDLANDS GAGE O&M** $10,000
IIB1f Deliver flows below Redlands.

19H **WATER ACQUISITION HYDROLOGY SUPPORT** $53,000
Supports several different actions under the Colorado, Green, and Yampa plans to identify and protect instream flows.

67 **STEAMBOAT LAKE WATER LEASE** $32,000
>*IB2a(1)(a) Lease up to 3,300 to augment late summer flows.

70 **COLORADO INSTREAM FLOW PROTECTION** TBD
Supports several different actions under the Colorado and Yampa plans to protect instream flows.

71 **COLORADO RIVER DECISION SUPPORT SYS.** TBD
Supports several different actions under the Colorado and Yampa plans to protect instream flows.

71A **REFINEMENT OF CRDSS MODEL** TBD
Supports several different actions under the Colorado and Yampa plans to protect instream flows.

CAP-11 **GRAND VALLEY WATER MANAGEMENT** $593,800
>*I.A.5.l.(3) Design and construct features of the Grand Valley Water Management Project.

CAP-14 COORDINATED RESERVOIR OPERATION $43,800

>*I.A.5.i.(2) Implement, evaluate process & hydrology, and provide annual report.

>*I.A.5.i.(2) Implement, evaluate process & hydrology, and provide annual report.

94/CAP24 DUCHESNE COORD. RESV. OPERATIONS TBD

>*I.D.2. Develop agreements if feasible to coordinate reservoir operations and protect flows to the Green River.

CAP-25 COORDINATED FACILITIES STUDY $118,000

I.A.5.m.(1) Evaluate options for providing and protecting additional peak flows to the 15-Mile Reach.

19B BIOLOGY HYDROLOGY SUPPORT $53,000

Supports several different actions under the Colorado, Green, and Yampa plans to identify and protect instream flows.

Supports several different actions under the Colorado, Green, and Yampa plans to identify and protect instream flows.

84 DUCHESNE RIVER BIOLOGICAL STUDIES $65,000

I.A.2. Conduct follow-up study to evaluate and refine flow recommendations.

86 GEOMORPHOLOGY PEER REVIEW $20,000

Supports several different actions under the Colorado, Green, and Yampa plans to identify and protect instream flows.

104 FLUCTUATING FLOW EFFECTS ON YOUNG OVERWINTERING CPM $97,800

V.B.2. Conduct appropriate studies to provide needed life history information.

ONGOING PROJECTS NEEDING REVISION

CAP9 YAMPA RIVER MANAGEMENT PLAN AND PBO TBD

>*I.A.2.a.(2) Implement Yampa River management plan.

No scope of work is anticipated for the Yampa Management Plan or programmatic biological opinion (PBO) in FY 2001. A scope of work is anticipated for:

Sediment monitoring: revise to include sediment monitoring gage on the Little Snake River which was dropped by CRWCD. $36,000

Other scopes of work may be called for in the Yampa Management Plan or as a result of the PBO, but those have yet to be determined.

85 COLORADO RIVER CHANNEL MONITORING $28,900

I.A.5.i.(2) Implement coordinated reservoir operations, evaluate process & hydrology, and provide annual report.

This project evaluates geomorphic effects of coordinated reservoir releases. In 2001, this scope of work should be revise to include monitoring baseline cobble embeddedness in the Grand Valley (previously shown under project #17, basinwide channel monitoring).

NEW PROJECTS

TITLE: MONITORING SEDIMENT MOVEMENT AND TEMPERATURE IN SUBSTRATES OF THE COLORADO AND GREEN RIVER

RIPRAP Item Number:
Colorado River Action Plan, Coordinated Reservoirs Project, I.A.5.i.(2)
Green river Action Plan, Flaming Gorge reoperation, >*I.A.3.a.

General Project Title: Monitoring Sediment Deposition and Erosion and Water Temperature in Substrates of the Colorado and Green Rivers.

Rationale/Problem Statement: The Recovery Program has implemented a flow enhancement project on the Colorado River known as Coordinated Reservoir Operations. The objective of the Coordinated Reservoir Operations project is to coordinate voluntary passage of water through upstream water storage reservoirs to enhance peak flows in the 15-Mile Reach near Grand Junction to maintain active, complex channel characteristics and clean sediments from cobble substrate. This water also will pass through the 18-mile reach, and combined with future releases from the Aspinall Unit, may also have significant benefits to the habitat in the 18-mile reach and beyond. Currently it is difficult to evaluate the benefits of this program in terms of biological response of adult endangered fish populations because it takes several years for enhanced production of young to show up in adult populations. Physical monitoring programs are complicated by effects of local storms on sedimentation and the staff resources required to conduct repeated surveys in a timely fashion to evaluate effects of enhanced peak flows. What is needed is a methodology that continuously monitors sedimentation and erosion response to flow enhancement at variety of complex habitat types (riffles, runs, side channels, and river margin sediment deposits). Continuous sediment deposition and erosion methodologies were successfully tested on the Green River during the 1999 flow year.

A newly-developed liquid-filled load-cell scour sensor is being used to monitor deposition and erosion on a sand and cobble bar on the Green River in northeastern Utah. The load-cell sensor weighs the sediment, water, and air above it, and an accompanying pore-pressure sensor weighs the water and air above it. The difference between the two weights is the weight of the sediment overlying the sensor pair. Combined sensitivity and repeatability are +/-0.01 foot of sediment thickness or less. A temperature sensor in the pressure-sensor housing can provide useful information about a spawning-bed and sensor environment and/or enables calibration of the pressure sensors to +/-0.02 percent of full-scale output.

Project Goals and Objectives:

1. Determine if flow augmentation provided by Coordinated Reservoir Operation provides beneficial sediment movement and/or cleaning of endangered fish habitat.

2. Determine relationship between managed flow events and timing and magnitude of sediment movement through critical river habitat.

Recommended Approach/Methods:

Sensor pairs are buried in river substrate in an array across areas to be monitored and connected to a datalogger to provide interval data (recording interval can be set from minutes to hours). The sensors will be placed in a variety of complex habitat types in important locations in the 15 and 18 mile reaches. In addition, the pressure sensors located at the Jensen razorback bar and Echo park on the Green and Yampa rivers will be examined for damage and upgraded or replaced as needed. The sensors on the Green River have proved useful in documenting (1) deposition and erosion on the primary razorback sucker spawning bar, (2) the migration of sand dunes as little as 0.2 feet in height in the channel, (3) passage of a cobble in the bed load over a sensor (4) ice-dam related water surface buildup and ponding over the bar and subsequent erosion of the ice dam, and (5) lack of bed-load transport in part of the channel.

Schedule: FY 2001 through 2005 (Interim report required after 2002).

Estimated Cost Range:

FY 2001 Equipment and Installation

Capital Costs		
Sensors	20@ $2,000 ea.	$40,000
Data Loggers	4@ $1,250 ea.	5,000
Multiplexers	4@ $ 550 ea.	2,200
Relay Modules	4@ $ 200 ea.	800
Batteries	8@ $ 40 ea.	320
Supplies		2,000
Total Capital Costs		$50,320
Non Capital Cost		
Salary		$8,000
Travel		6,000
Grand Total		$64,320

FY2002 Operation, Maintenance and Reporting

Sensor Maintenance, Data Reduction and Reporting	$ 21,000
Travel	3,000
Supplies	3,000
Total	$ 27,000

TITLE: GUNNISON RIVER TEMPERATURE MODEL DEVELOPMENT AND SCENARIO TESTING

RIPRAP Item Number:
Gunnison River Action Plan. II Restore Habitat

General Project Title: Gunnison River Temperature Model

Rationale/Problem Statement: Recent biological studies conducted in support of the development of a Biological Opinion for the Aspinall unit have identified temperature as a limiting factor in upstream reaches of the mainstem Gunnison River. Currently, mean annual thermal units (ATU) at Delta total 32, somewhat less than the Yampa River at Craig, Colorado (36 ATU). Very little use of the Gunnison River by Colorado pikeminnow currently occurs upstream of River mile 35 (Osmundson 1999). Yet, prior to the construction of the Aspinall Unit, Colorado pikeminnow were commonly reported near Delta (Quarterone 1993). Simulations that Osmundson conducted in 1999 indicated that a rise of only 1 C during June, September and October and 2 C during July and August at Delta would increase the mean ATU there to 46, sufficient for Colorado pikeminnow to establish year-round ranges. The question to be answered by a temperature model is how warm does the water leaving Crystal Reservoir have to be to allow for a 1-2 degree increase at Delta. The biological consequences include restoring 25 miles of historical habitat to Colorado pikeminnow. Adult habitat and thus carrying capacity appears to be limited for the upper Colorado River population of Colorado pikeminnow. An extra 25 miles of habitat may make the difference between this population achieving or not achieving a viable population level. Physical habitat and forage availability around the Delta area otherwise makes this perhaps the best area in the Gunnison River for this species, all that is needed are more suitable water temperatures.

Before recommending the construction of modified outlet structures, some sort of modeling effort should be conducted to see if warmer water released from the dam would indeed still be warming by the time it reaches Delta. Based on work preformed for the Flaming Gorge Synthesis Report, a simple temperature model could be constructed for the Aspinall Unit Reservoirs. The purpose of the modeling effort for the mainstem Gunnison River would be to determine if modified outlet structures at the Aspinall Unit dams would be effective in raising temperatures in the Gunnison River at Delta and downstream. In addition, the feasibility of releasing warmer water from the Aspinall Unit should be determined.

Schedule: FY 2001 through 2002

Estimated Cost Range:

FY 2001 Costs	
Salary	$26,000
Travel	$4,000
Total	$30,000

Salary	$15,000
Travel	$3,000
Total	$18,000

TITLE: DETERMINATION OF WINTER USE AND SEASONAL INSTREAM-FLOW NEEDS OF COLORADO PIKEMINNOW IN THE LOWER PRICE RIVER FOR DEVELOPMENT OF YEAR-ROUND FLOW RECOMMENDATIONS

RIPRAP Item Number: I.C.2. Green River Action Plan, Determine winter use and seasonal flow needs for Colorado pikeminnow in the Price River.

General Project Title: Determination of winter use and seasonal instream-flow needs of Colorado pikeminnow in the lower Price River for development of year-round flow recommendations

Rationale/Problem Statement: Cavalli (1999) reported that 21 juvenile or adult Colorado pikeminnow had been captured in the Price River from 1995 through 1998, and 7 other individuals had been observed but not caught during this time. Previous to that report, fish surveys conducted since the late 1970's had indicated that no endangered fishes occurred in the Price River. In Cavalli's investigation of the fish community in the lower Price River during 1996–1997, monthly sampling from April through October in the lower 48.75 river miles collected 18 Colorado pikeminnow ranging in size from 159 to 594 mm total length (TL); an additional specimen (513 mm TL) was captured by Cavalli at river mile 88.5 on 17 July 1997, and UDWR collected a 555-mm TL specimen at river mile 83.5 on 3 June 1998. These results suggest that the lower Price River now potentially provides up to an additional 90 miles of occupied habitat for juvenile or adult Colorado pikeminnow at least during spring through autumn, and that the Price River may be hydrologically and biologically beneficial to the Green River and the overall persistence and recovery of Colorado pikeminnow populations. Winter use of the lower Price River by Colorado pikeminnow and flows needed to maintain important habitats during this season are unknown.

Although Cavalli (1999) collected habitat data periodically at five stations throughout the lower 48.3 miles of the Price River, data appear to be insufficient to document seasonal flow-habitat relationships important to Colorado pikeminnow. Determination of winter use and seasonal instream-flow needs of juvenile or adult Colorado pikeminnow in the Price River is needed to develop year-round flow recommendations for ultimate protection of flows required by this endangered species.

Project Goals and Objectives:

Determine if Colorado pikeminnow occupy the lower Price River during winter.

Determine seasonal instream-flow needs of juvenile or adult Colorado pikeminnow in the lower Price River and document seasonal flow-habitat relationships.

Develop year-round flow recommendations for Colorado pikeminnow in the Price River.

Expected Products:

1. Documented evidence that Colorado pikeminnow use the lower Price River during winter.

2. Documented seasonal instream-flow needs and flow-habitat relationships for juvenile or adult Colorado pikeminnow in the lower Price River.

3. Year-round flow recommendations for Colorado pikeminnow in the Price River.

Recommended Approach/Methods:

Re-establish the Price River discharge gage on the lower river near Woodside, Utah, for collection of empirical hydrology data needed to establish flow-fish habitat relationships.

Conduct winter fish surveys for Colorado pikeminnow in the lower Price River, particularly the lower 50 miles, and possibly include radio-telemetry tracking.

Conduct a thorough review of data collected by Cavalli (1999) to determine if more information on spring through autumn flow-habitat relationships applicable for use in an instream-flow methodology can be gleaned from the data set.

Collect additional data as needed on seasonal flow-habitat relationships important to juvenile or adult Colorado pikeminnow for use in an instream-flow methodology to determine flows required for creation and maintenance of fish habitats. Any instream-flow methodology chosen should integrate species criteria, by target life stage (i.e., juvenile or adult Colorado pikeminnow), with habitat availability as a function of flow.

Schedule: FY 2001 through 2002

Estimated Cost Range: $30,000 - $40,000

Literature Cited: Cavalli, P. A. 1999. Fish community investigations in the lower Price River, 1996–1997. Final Report of Utah Division of Wildlife Resources on Project 78 to Upper Colorado River Endangered Fish Recovery Program, Denver, Colorado

DISCONTINUED PROJECTS:

CAP-27 RUEDI RESERVOIR LEASE

Although the lease continues to protect the water, there is no cost and no need for a scope of work after FY 2000.

17 BASINWIDE CHANNEL MONITORING

Incorporate in Colorado River channel monitoring (#85) and basinwide habitat monitoring (new).

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. Hartland Diversion Dam
   c. Grand Valley Irrigation Company Diversion (completed 1/98)
   d. Price-Stubb Diversion Dam
   e. Grand Valley Project Diversion Dam
   f. Tusher Wash Diversion Dam, if warranted
   g. Yampa River diversion structures, if warranted

2. Install fish screens to prevent entrainment of endangered fishes into diversion canals

3. Restore or enhance natural floodplain functions that support endangered fish recovery.

PROJ. NO.	TITLE	PROJECTED FY 01 BUDGET

(The RIPRAP number and item are shown on the second line)

ONGOING PROJECTS

CAP4b **REDLANDS FISH PASSAGE** $33,000
II.B.1.d. Monitor and evaluate Redlands' success.

Final evaluation report due 1/01 ($9,000 annual); fish ladder O&M ($24,000 O&M).

CAP5 **PRICE-STUBB FISH PASSAGE** $5,000
II.B.2.a. Evaluate and implement viable options for fish passage at Price-Stubb.

CAP23 **GRAND VALLEY PROJECT FISH PASSAGE** $2,785,000
II.B.3.a. Evaluate and implement viable options for fish passage at the Grand Valley Project.

CAP28 **TUSHER WASH DIVERSION SCREEN** $2,110,000
>*II.B.5.b. Design & construct screen for Tusher Wash diversion to prevent endangered fish entrainment.

CAP29 **GVIC SCREEN** $2,300,000
II.B.3.a.(2) Design & construct screen for GVIC to prevent endangered fish entrainment.

ONGOING PROJECTS NEEDING REVISION

75 FLOODPLAIN PROTECTION $0

II.C. Develop an issue paper on the desirability and practicability of restoring and protecting certain portions of the floodplain for endangered fishes.

Phase II of the Floodplain Protection Issue Paper is expected to be completed by May 2000. It is not known at this time what the recommendations will be, or which course of action will be recommended by the Recovery Program. Whatever the recommendations may be, it is likely that most of the work will be conducted by the Program Director's Office. Therefore, no funds have been earmarked for FY 01.

CAP6 FLOODPLAIN RESTORATION PROGRAM

II.A. Restore and manage flooded bottomland habitat.

Following are the Program activities:

-Screen sites for contaminants ($90,000+$10,000=$100,000) capital
- a. Pre-acquisition and/or pre-restoration assessments
- b. Post-restoration assessments

-Conduct floodability assessments ($150,000) capital
- a. Pre-acquisition and/or pre-restoration assessments
- b. Development of design options for restoration
- c. Construction oversight
- d. Post-restoration monitoring and evaluation

-Conduct environmental compliance (NEPA, Section 7, 404, etc.)

-Old Charlie Wash, Leota L-7/7a, Johnson (O&M)

Annual draining and fish harvest	$62,000
Purchase of ASV positract vehicle	$32,000
Annual O&M (excavation of drainage canal)	$17,000

-Land acquisition activities ($500,000) capital

-Easement management (O&M) $40,000

-Levee removal ($100,000) capital

-Evaluation of levee removal ($40,000) capital

-Evaluation of razorbacks stocked into depressions ($40,400) annual

-Gravel pit evaluation ($11,000) annual

-Public involvement plan (N/A)

-Weed management ($10,000) annual or O&M

The Floodplain Habitat Restoration Program SOW will be revised based on input received during the SOW review process. All proposed additions and modifications to the Floodplain Habitat Restoration Program SOW will be subject to review and approval by the Recovery Program. Additions/modifications that are approved will also be contingent upon availability of funding. Some of these recommendations may be costly to implement, and could only be done in the event that 1) unobligated funds become available, and 2) the Recovery Program considers them to be higher priority than other contingency projects.

III. NONNATIVE FISH CONTROL

ONGOING PROJECTS

PROJ. NO.	TITLE	PROJECTED FY 01 BUDGET
(The RIPRAP number and item are shown on the second line)		
87	**SMALL NONNATIVE CYPRINID REMOVAL**	
>*III.A.4.	Remove small nonnative cyprinids from backwaters and other low velocity habitats.	
87A	**CYPRINID REMOVAL - UTAH**	$12,600
87B	**CYPRINID REMOVAL - COLORADO**	$54,000
89	**COLO.R. CENTRARCHID REMOVAL**	$54,000
>*III.A.4.	Remove nonnative centrarchids from backwaters and other low velocity habitats.	
98	**YAMPA RIVER NONNATIVE FISH CONTROL**	$100,000
>*III.A.1.b.	Remove and translocate northern pike and other sportfishes from Yampa River.	
CAP18/19	**COLORADO RIVER POND RECLAMATION**	$292,000
>*III.A.2.	Reclaim ponds in critical habitat.	
CAP-20	**HIGHLINE LAKE SCREENING O&M**	TBD
III.B.1.a.	Operate and maintain Highline Reservoir net.	
	NONNATIVE STOCKING REGS. EVAL.	$0
III.B.4.a.(1)	Evaluate effectiveness of Colorado's stocking regulation.	

NEW PROJECTS

TITLE: ELKHEAD RESERVOIR SCREENING (Unless this is done in 2000).

RIPRAP Item Number: Green River Action Plan: Yampa and Little Snake Rivers, III.A.1.a.(1) Evaluate control options and implement measures to control nonnative fish escapement from existing Elkhead Reservoir.

General Project Title: Elkhead Reservoir Fish Barrier Feasibility Study and Design

Rationale/Problem Statement: The presence of nonnative fish, particularly northern pike, has been identified as a significant problem for endangered fishes in the Yampa River due to the nonnatives competing with adult life stages and preying on juvenile life stages of native species. Screening the Elkhead Reservoir outflow is recommended to reduce or eliminate continuous introduction of nonnative fishes into the Yampa River from

this source. Elkhead Reservoir also was identified by the Colorado Division of Wildlife as a potential site to translocate northern pike removed from the Yampa mainstem. However, nonnative fish stocking regulations adopted by the states of Colorado, Utah and Wyoming preclude stocking nonnatives into facilities from which escapement back to the river is probable. Escapement from Elkhead is possible through both the unregulated spillway and the regulated outlet. However, escapement through the outlet is likely to occur only if the reservoir is drawn down. The current spillway may be enlarged or otherwise modified in the future to meet dam safety standards.

In FY 1999, a net-type fish barrier was constructed in the spillway approach of Highline Lake near Fruita, Colorado, to reduce escapement of nonnative fishes from this facility. This polyester net, with a nominal ¼-inch mesh size, was installed at Highline as an experiment to evaluate the effectiveness of constructing and operating such fish barriers at similar facilities in the Upper Colorado Basin. In FY 2000, the Highline Lake barrier will be evaluated for: 1) its ability to prevent escapement of target nonnative species to be contained in the reservoir; 2) ease of maintenance and routine cleaning; 3) ease of removal and re-installation for protection from ice damage; 4) potential to leave in place during ice cover on lake; and 5) longevity and annual operational costs. If the Highline barrier proves to be effective and economical to operate, a similar barrier could be installed and evaluated at Elkhead Reservoir. Although these two facilities share similar problems of nonnative fish escapement, one significant difference between them is the size and yield of their watersheds. Highline Lake is situated on a small, ephemeral stream. Because it receives most of its water from the Colorado River through a canal, inflows can be regulated. Elkhead impounds runoff from a 200-square-mile watershed and receives unregulated spring peak inflows much higher than those experienced at Highline Lake. Therefore, it may be reasonable to consider alternative fish barriers that may be more effective at higher volumes of discharge.

Project Goals & Objectives: Design, install and evaluate the effectiveness of a fish barrier to reduce or eliminate escapement of nonnative fishes from a reservoir on a significant tributary to the Yampa River.

Expected Product(s): Preliminary design for a fish barrier in FY 2001. Final report in FY 2003 on the effectiveness of this type of barrier to reduce or eliminate nonnative fish escapement.

Recommended Approach/Methods: Design a barrier to reduce or eliminate nonnative fish escapement from Elkhead Reservoir, incorporating any lessons learned from the Highline Lake evaluation and adapted to the more rigorous flow conditions likely to occur at Elkhead. Fabricate and install the barrier. If the proposed fish barrier would be incorporated into the spillway of the dam, it may be installed when the spillway is modified, if such a modification is determined to be necessary for dam safety.

The City of Craig, Colorado, owns and operates Elkhead Reservoir. The State of Colorado, Division of Parks and Outdoor Recreation, manages much of the land surrounding the reservoir. Following installation, the State of Colorado would be responsible for operating and maintaining the fish barrier on an experimental basis.

Evaluation of the effectiveness and acceptability of the Elkhead net should determine: 1) its ability to prevent escapement of target nonnative species to be contained in the reservoir; 2) ease of maintenance and routine cleaning; 3) ease of removal and re-installation if necessary for protection from ice damage; 4) potential to leave in place during ice cover on lake; and 5) longevity and annual operational costs.

Schedule: Investigate the feasibility of and design a fish barrier in FY 2001; install the fish barrier in FY 2002; evaluate the fish barrier in FY 2003; provide final report by December 2003.

Cost Range: Feasibility study and preliminary design work in FY 2001 - $30,000-50,000. Fabrication and installation of fish barrier in FY 2002 - costs contingent on design. O&M and evaluation in FY 2003 - costs contingent on design.

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 borrdstock that is similar to that of the wild stock used as founders; and to produce genetically sound offspring for augmentation efforts.

ONGOING PROJECTS

PROJ. NO.	TITLE	PROJECTED FY 01 BUDGET
(The RIPRAP number and item are shown on the second line)		
25	**BONYTAIL INTRODUCTION**	$57,000
>IV.A.1.c., IV.A.3.c.	Implement augmentation plans (Colorado and Green rivers).	
105	**PIKEMINNOW TRANSLOCATION**	$39,000
>IV.A.1.b.	Implement experimental augmentation plan.	

ONGOING PROJECTS NEEDING REVISION

29	**O&M OF PROPAGATION FACILITIES**	
IV.C.	Operate and maintain facilities.	
29a	Grand Valley Endangered Fish Facility	$300,000
29b	Wahweap State Fish Hatchery	$160,400
29c	Ouray Endangered Fish Facility	$380,000
	($80,000 from Program, $300,000 from FWS)	
29d	Collection of broodstock	$10,000
CAP-7	**EXPANSION OF PROPAGATION FACILITIES**	
IV.E.	Plan, design, and construct needed facilities.	
	Green River Subbasin Growout Ponds	$200,000
	Grand Valley Growout Ponds	$200,000
	Tagging equipment for broodstock and augmentation fish:	
	Coded wire tagging equipment	$35,000
	PIT tagging equipment	$35,000
	(Final budget to be determined based on facilities needs document [draft available in May 2000].)	

V. RESEARCH, MONITORING, & DATA MANAGEMENT

The goals of Research, Monitoring and Data Management are to provide the necessary information in life histories of endangered fishes to aid in the implementation of other Program activities, to determine the status and trends of the natural stocks, and to actively maintain the data in a useable format for researchers. The objective is to use this information in deciding the course of other Program management actions to recover the endangered fish.

PROJ. NO.	TITLE	PROJECTED FY 01 BUDGET
(The RIPRAP number and item are shown on the second line)		

ONGOING PROJECTS

15 LARVAL FISHES IDENTIFICATION $46,000

V.A.2. Conduct interagency data management program to compile, manage, and maintain all research and monitoring data collected by the Recovery Program.

V.E. Provide for long-term care, cataloging, and accessibility of preserved specimens.

16 DATABASE MANAGEMENT $35,900

V.A.2. Conduct interagency data management program to compile, manage, and maintain all research and monitoring data collected by the Recovery Program.

22 INTERAGENCY STANDARDIZED MONITORING PROGRAM

V.A.2. Conduct interagency data management program to compile, manage, and maintain all research and monitoring data collected by the Recovery Program.

22A2	Colorado pikeminnow pop. monitoring (FWS)	$31,000
22A3	Black Rocks humpback pop. estimate. (FWS)	$28,000
22A4	Yampa humpback pop. estimate (FWS)	$26,000
22I	Middle Green River Colorado pikeminnow estimate	$150,000

50 RAZORBACK SUCKER STOCKING $51,000

>IV.A.1.b. Implement experimental augmentation plan.

ONGOING PROJECTS NEEDING REVISION

22 INTERAGENCY STANDARDIZED MONITORING PROGRAM

V.A.2. Conduct interagency data management program to compile, manage, and maintain all research and monitoring data collected by the Recovery Program.

22C Utah ISMP (UDWR) TBD

Shoreline electrofishing is being discontinued and ISMP is shifting focus to population estimates.

22F	Colorado pikeminnow larval abundance Modify to reflect no Gunnison River samples to be taken.	$100,000

NEW PROJECTS:

TITLE: MONITORING FOR STOCKED FISH

RIPRAP Item Number:

General Recovery Program Support Action Plan

IV.F. Conduct monitoring to evaluate effectiveness and continuation of endangered fish stocking.

IV.F.2. Determine how this monitoring will be conducted and how (or if) it will be consolidated with ISMP.

Rationale/Problem Statement: The Program has accepted two stocking plans from the states. The hatchery facilities are gearing up to meet those demands within the stocking plans. Once production becomes full scale the Program will be stocking thousands of fish into various portions of the Green, Yampa and Colorado, Gunnison rivers. A monitoring program needs to be designed to determine the success of these stockings over the long term. Previous monitoring of experimentally stocked fish has concentrated during intervals immediately after the stocking events. This design needs to be developed for the long term and has the potential to be a portion of the ISMP. In addition, the design needs to be carried out in phases as not all portions of the stocking plans will be met at once.

Project Goals and Objectives: Design a monitoring program to determine the success/failure of stocking efforts over the long term. Identify key indices for monitoring stocked fish.

Expected Products: A monitoring program that identifies locales, species and time of year to occur.

Recommended Approach/Methods: It should be designed in such a way as to phase in various portions of the rivers and species being stocked.

Schedule: The monitoring design should be completed in 2001, and implementation would be in the following year.

Cost Range: $5-15 K

TITLE: LOWER GREEN RIVER POPULATION ESTIMATE OF COLORADO PIKEMINNOW

RIPRAP Item Number:

General Recovery Program Support Action Plan

V.A.2., Conduct interagency data management program to compile, manage, and maintain all research and monitoring data collected by the Recovery Program.

Rationale/Problem Statement: An estimate of the Colorado pikeminnow population in the lower Green River is required to aid in the determination of recovery. Although some estimates were made in 1998, the lack of data and the level of confidence were insufficient to provide any accuracy. This is the last of the 3 populations of Colorado pikeminnow in the upper basin which do not have a precise estimate.

Project Goals and Objectives: Estimate the lower Green River Colorado pikeminnow population with confidence intervals of less than 20%.

Expected Products: A precise population estimate of the lower Green River Colorado pikeminnow population with less than 20% confidence intervals.

Recommended Approach/Methods: Osmundson (1996) "scare and snare" approach appears to give a reasonably precise and confident population estimate. It has been used in the Colorado River and is expected to be employed in the middle Green River.

Schedule: FY01-FY03

Cost Range: $40-60K

Literature Cited: Osmundson, D.B. and K.P. Burnham. 1996. Status and trends of Colorado squawfish in the upper Colorado River. Final Report of U.S. Fish and Wildlife Service, Grand Junction, Colorado, to Upper Colorado River Endangered Fish Recovery Program, Denver, Colorado.

TITLE: HUMPBACK CHUB POPULATION ESTIMATE FOR DESOLATION/GREY CANYONS

RIPRAP Item Number:

General Recovery Program Support Action Plan
V.A.2., Conduct interagency data management program to compile, manage, and maintain all research and monitoring data collected by the Recovery Program.

Rationale/Problem Statement: The Desolation-Grey humpback chub population was estimated as part of the Flaming Gorge studies. A new estimate is required to determine the status and trend in this population. This is the fourth of the five populations in the Upper Colorado River Basin which require intermittent population estimates. An interval of 3 years will have passed a new estimate is now required.

Project Goals and Objectives: Estimate the Desolation/Grey canyons humpback chub population with confidence intervals of less than 20%.

Expected Products: A precise population estimate of the Desolation/Grey canyons humpback chub population with less than 20% confidence intervals.

Recommended Approach/Methods: Utilizing the approaches which were previously used on estimating this population during the Flaming Gorge studies.

Schedule: FY01-FY03

Cost Range: $50-60 K

TITLE: LONGNOSE SUCKER LARVAE AND COMPUTER-INTERACTIVE KEY

RIPRAP Item Number:

General Recovery Program Support Action Plan
V.C. Develop and enhance scientific techniques required to complete recovery actions.
V.E. Provide for long-term care, cataloging, and accessibility of preserved speciments.

General Project Title: Description of Longnose Sucker Larvae and Early Juveniles with Computer-Interactive Key to Catostomids

Rationale/Problem Statement: The influx of longnose sucker and numerous suspected sucker hybrids in the lower Gunnison River beginning in 1993 has complicated and compromised our ability to identify many sucker larvae from that reach and potentially the Colorado River below the confluence with the Gunnison River based on existing criteria. Also, since 1990, we have learned of various character range extensions for some species and errors in the original key that invalidate or compromise certain portions of that key and necessitate update and correction. At the same time we have an opportunity to put the key in a new form that will make it easier to use and will facilitate more efficient and accurate identification of sucker larvae throughout the Upper Colorado River Basin. As CRRP proceeds with stocking programs and habitat improvements for the razorback sucker, it is imperative that we continually improve and adequately document criteria for identification of collected specimens.

Project Goals and Objectives:

Goal: The goal of this project is more accurate and efficient identification of catostomid larvae and early juveniles by Recovery Program biologists, not only for the Gunnison River but throughout the UCRB.

Objectives: The specific objectives are to provide: (1) needed descriptive and diagnostic information for longnose sucker larvae and early juveniles, (2) updated descriptive and diagnostic data for other UCRB catostomids, and (3) an easily correctable, updateable, and

expandable computer-interactive key for quickly and very flexibly accessing that information and determining the identity of UCRB catostomid larvae and early juveniles based on morphological criteria.

Recommended Approach/Methods:

Description of longnose sucker larvae and early juveniles:

Rear and preserve a new series of longnose sucker early life stages from pure Gunnison River drainage brood stock (optional if the opportunity is available; otherwise use existing developmental series of east slope parentage). Conduct detailed study of morphological ontogeny of longnose sucker larvae and early juveniles comparable to that previously done for other Upper Colorado River Basin suckers (Snyder and Muth 1990), including meristics, morphometrics, size relative to state of development, pigmentation, and, for metalarvae and juveniles, skeletal features; compare with other UCRB catostomids and previously published descriptions of longnose sucker. Prepare standard set of eight three-view drawings representative of selected early-life stages of development. Prepare descriptive species account identical in format to that for other suckers in Snyder and Muth (1990).

Preparation of the computer-interactive key to Upper Colorado River Basin sucker larvae and early juveniles:

Obtain and setup the latest versions of DELTA and INTKEY programs (Dallwitz 1993; Dallwitz et al. 1995). Prepare descriptive data assembled for species accounts of Upper Colorado River Basin suckers in Snyder and Muth (1990) for use by INTKEY and produce a draft or interim version of the computer-interactive key that can be distributed on disks or over the Internet for trial use to interested researchers and for critical review by the author of the DELTA and INTKEY programs and (or) other experienced developers of PC-based computer-interactive keys. Prepare descriptive data assembled for longnose sucker for use by INTKEY, integrate this and any updated data for other species with the interim key, and make the completed key available to interested researchers as a prepublication version on disks or over the Internet.

Prepare introduction and instructions for use of the computer-interactive key.

Prepare and submit a project final report in accord with CRRP reporting policy for biological reports. Present a paper on longnose sucker development and identification and a demonstration of the computer-interactive key at the year 2002 annual meeting of Upper Colorado River Basin researchers.

Schedule: Conduct study in FY01

Cost Range: $40,000

VI. INFORMATION, EDUCATION, & PUBLIC INVOLVEMENT

ONGOING PROJECTS NEEDING REVISION

PROJ. NO.	TITLE	PROJECTED FY 01 BUDGET
(The RIPRAP number and item are shown on the second line)		
12	**INFORMATION AND EDUCATION**	$45,000
VI.C.	Plan and implement information and education and public involvement activities for all significant Recovery Program actions (e.g presentations, public meetings, public involvement training, etc.).	
VI.E.	Produce, distribute, and evaluate information and education products (such as newsletter, brochures, etc); manage media relations, including contacting reporters, producing news releases, fact sheets, etc.	

The Information and Education Program scope of work is a comprehensive communications plan that addresses goals, objectives and tactics for all aspects of the Recovery Program. The plan includes calendars that detail I&E activities in geographic locations served by the Program. Project-specific plans are included as subsets to the comprehensive plan. This new method of planning and evaluating I&E activities is designed to improve both internal and external communication with the program. The I&E Committee will review and evaluate plans and calendars quarterly, updating and changing 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:

(CAP-9)	YAMPA RIVER PBO	$1,000
>*I.A.2.a.(2)	Implement Yampa River management plan.	
VI.C.	Plan and implement information and education and public involvement activities for all significant Recovery Program actions (e.g presentations, public meetings, public involvement training, etc.).	

The Yampa River Management Plan is slated for completion in FY 2000. Upon completion, work will commence to prepare a programmatic biological opinion (PBO). At that time, an informational meeting for key community leaders and those affected by the PBO will be held to provide up-to-date Recovery Program information. Expected outcomes include gaining feedback and addressing the concerns of these key constituents.

(CAP-11...)	GRAND VALLEY PROJECTS	$30,000
VI.C.	Plan and implement information and education and public involvement activities for all significant Recovery Program actions (e.g presentations, public meetings, public involvement training, etc.).	

This SOW is ongoing and addresses public involvement related to: Making efficiency improvements to the Government Highline Canal as part of the Grand Valley Water

Management project; constructing a fish screen at the privately-owned Grand Valley Irrigation Company's diversion canal; restoring fish passage at the abandoned, privately-owned Price-Stubb Dam, the Grand Valley Project and the privately-owned Hartland Dam; and the Gunnison River biological opinion and NEPA compliance. 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.

(CAP-14)	COORDINATED RESERVOIR OPERATIONS
>*I.A.5.i.(2)	Implement, evaluate process & hydrology, and provide annual report.
VI.C.	Plan and implement information and education and public involvement activities for all significant Recovery Program actions (e.g presentations, public meetings, public involvement training, etc.).

This SOW is ongoing and addresses public involvement related to coordinated operation of reservoirs in the upper reaches of the Colorado River to increase spring peak flows in the 15-Mile Reach of the Colorado River. Activities include, but are not limited to, informing the public through news releases and direct mailings as necessary of any decisions to adjust reservoir operations and bypasses made to enhance flows for endangered fish purposes.

(CAP-25)	COORDINATED FACILITIES STUDY
I.A.5.m.(1)	Evaluate options for providing and protecting additional peak flows to the 15-Mile Reach.
VI.C.	Plan and implement information and education and public involvement activities for all significant Recovery Program actions (e.g presentations, public meetings, public involvement training, etc.).

This SOW is ongoing and addresses public involvement related to the technical and legal complexities involved in the Colorado Water Conservation Board's efforts to identify and secure 20,000 acre-feet of water in critical habitat in the Colorado mainstem from coordinated operations of facilities in Colorado to provide increased spring peak flows to benefit the endangered fishes. Activities include public meetings, news releases and distribution of written informational materials.

(CAP-27)	RUEDI RESERVOIR WATER ALLOCATION
>*I.A.5.a.	Pursuant to Ruedi Biological Opinion, deliver 5,000af annually & an additional 5,000af 4 out of 5 years (ongoing and protect by short-term agreement).
>* I.A.5.b.(1)	Provide water annually pursuant to long-term lease.
VI.C.	Plan and implement information and education and public involvement activities for all significant Recovery Program actions (e.g presentations, public meetings, public involvement training, etc.).

This SOW is ongoing and addresses public involvement related to the release of stored water from Ruedi Reservoir to enhance flows for the 15-Mile Reach of the Colorado River. Activities include, but are not limited to, informing interested communities and

individuals through news releases, public meetings and forums and informational mailings to affected interests.

(CAP-6)	FLOODPLAIN RESTORATION
II.A.	Restore and manage flooded bottomland habitat.
VI.C.	Plan and implement information and education and public involvement activities for all significant Recovery Program actions (e.g presentations, public meetings, public involvement training, etc.).

This SOW is ongoing and addresses public involvement related to habitat restoration along the Colorado mainstem and its tributaries. Activities include, but are not limited to, one-on-one meetings with affected landowners, involving potentially affected interests in decision-making processes, informing the public through news releases, distribution of literature and public meetings as appropriate.

(CAP-18/19)	POND RECLAMATION
>*III.A.2.	Reclaim ponds in critical habitat.
VI.C.	Plan and implement information and education and public involvement activities for all significant Recovery Program actions (e.g presentations, public meetings, public involvement training, etc.).

This SOW is ongoing and addresses public involvement related to the removal and control of nonnative fishes in Colorado and Gunnison River floodplain source ponds. Activities include, but are not limited to, maintaining a "Listening Log," preparing newsletter and magazine articles and working with the news media to ensure the public is informed about reclamation efforts.

NEW PROJECTS:

TITLE: INTERPRETIVE SIGNS AND EXHIBITS

RIPRAP Item Number:

General Recovery Program Support Action Plan
VI.F. Participate in development and circulation of educational exhibits about the Recovery Program and the endangered fish.

Many opportunities have been identified to develop and install interpretive signage and exhibits in existing visitor centers, museums and refuges in locations where the endangered fish are being recovered. Due to the high cost of these projects, it is recommended that this be viewed as a four-year project with funding established at $50,000 per year. The I&E Committee will assume responsibility to prioritize the projects. It is also recommended that every effort be made to secure partners to assist with funding. These partners could be private businesses, other government agencies such as the National Park Service and the U.S. Fish and Wildlife Service's Refuges Program, and grants such as through the U.S. Fish and Wildlife Service, the National Wildlife Foundation and other foundations yet to be identified.

Specifically, sites identified as to review for signage include:

Vernal, Utah

a. Ouray National Fish Hatchery
b. Ouray National Wildlife Refuge Visitor Center & Auto Tour
c. Field House Museum
d. Welcome Center
e. Dinosaur National Monument
f. Jones Hole National Fish Hatchery
g. Flaming Gorge Dam Visitor Center

Grand Junction, Colorado

a. Colorado River Trail
b. Outdoor mall downtown
c. Audubon Visitor Center

Page, Arizona

a. Glen Canyon National Recreation Area Visitor Center (possibly coordinate with San Juan River Endangered Fish Recovery Program and NPS)

Schedule: FY01-FY04

Cost Range: $30,000 per year (and perhaps up to $50,000 per year for the following 3 years.)

VII. PROGRAM MANAGEMENT

Program management activities for FY 2001 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.

PROJ. NO.	TITLE	PROJECTED FY 01 BUDGET
ONGOING PROJECTS		
VII	Provide Program Planning and Support	
1	**UTAH PROGRAM MANAGEMENT**	$80,000
VII	Provide Program Planning and Support	
2	**B. RECLAMATION PROGRAM MGMT.**	$150,000
VII	Provide Program Planning and Support	
3	**SERVICE PROGRAM MANAGEMENT**	$795,000
VII	Provide Program Planning and Support	
4	**COLORADO PROGRAM MANAGEMENT**	$110,000
VII	Provide Program Planning and Support	
5	**WYOMING PROGRAM MANAGEMENT**	$13,600
VII	Provide Program Planning and Support	
CAP21	**CAPITAL PROJECTS COORDINATION**	$400,000
VII	Provide Program Planning and Support	

FY-2001 PROPOSED SCOPE OF WORK for: **Project #: ___**
(Show brief title of project here)

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

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]*

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: *[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. FY-2001 Work
- Deliverables/Due Dates
- Budget *[broken out by task and funding target]*
  - Labor
  - Travel
  - Equipment
  - Other
  - Total

FY-2002 Work (for multi-year study)
- Deliverables/Due Dates
- Budget estimate

FY-2003 etc. (for multi-year study)

IX. Budget Summary *[Provide total AND break-out by funding target (e.g. station)]*[*]
FY-2001
FY-2002
FY-2003

Total:

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 (12.36%) **EXCEPT FOR CAPITAL PROJECTS**. IF YOU ARE UNSURE WHETHER YOUR PROJECT WILL BE FUNDED WITH CAPITAL OR ANNUAL FUNDS, PLEASE SHOW THE POTENTIAL OVERHEAD COST AS A LINE ITEM. If you have questions about this, please call Angela Kantola at 303/236-2985, ext. 221.