

**COLORADO RIVER RECOVERY PROGRAM
FY-2004–2005 PROPOSED SCOPE OF WORK for:
(Passage O&M: Redlands and Grand Valley Project)**

Project No.: C-4b

Note: SOW based on assumption that Grand Valley Project fish passage construction will be complete by 8/1/04, at which time O&M will begin. If passage construction not completed, budget will be reduced by \$8,870 for FY 04.

Note: Annual reports only.

Lead Agency: Fish and Wildlife Service
Colorado River Fishery Project
Submitted by: Chuck McAda, Project Leader
Bob D. Burdick, Fishery Biologist (lead)
Address: 764 Horizon Drive, Building B
Grand Junction, CO 81506-3946
Phone: (970) 245-9319
FAX: (970) 245-6933
E-mail: Chuck McAda@FWS.GOV
Bob_Burdick@FWS.GOV

Date: 16 May 2003 (revised 6/23/03; 10/1/03 by Pat Nelson; 2/13/04 by Chuck McAda)

Category:

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

Expected Funding Source:

- Annual funds
- Capital funds
- Other (explain)
- O&M

I. Title of Proposal: **Annual operation and maintenance of the fish passage structures at the Redlands Diversion Dam on the Gunnison River and at the Government Highline Diversion Dam on the Upper Colorado River**

II. Relationship to RIPRAP:

Colorado River Action Plan: Gunnison River

II.B.1. Restore passage at Redlands.

II.B.1.c. Operate and maintain fish ladder.

Colorado River Action Plan: Mainstem

II.B.3. Restore fish passage at Government Highline (Roller Dam)

II.B.3.a.(3) Operate and maintain.

II.B.3.a.(4) Monitor and evaluate success.

III. Study Background/Rationale and Hypotheses:

Redlands Fish Passageway

The Redlands Dam fish passageway, constructed on the Gunnison River, a major tributary of the Colorado River, near Grand Junction, Colorado, was completed in June 1996. The first of it's kind in the Upper Colorado River Basin, it's specific purpose was to provide upstream passage for two Federally listed fishes, the Colorado pikeminnow and razorback sucker. It was also designed for selective passage. That is, it was to preclude upstream movement of nonnative fish.

Since completion, 59 sub-adult and adult Colorado pikeminnow have been found in the fish trap of the passageway. This has included 49 individual pikeminnow, eight single repeat passages, and one double repeat passage. Colorado pikeminnow have used the passageway almost exclusively in August (35) and July (13). One pikeminnow was found in the trap in early-September. Six adult razorback sucker, all domestic-reared fish that were previously stocked, have used the passageway. Five razorback sucker have ascended the fish ladder in August (2001) and one in September (2002) (Burdick 2001b; 2002).

About 54,000 fish consisting of 22 different fish species and hybrids (6 native, 13 nonnative, and three catostomid hybrids) have been collected and counted during the first seven years of operation. Native fishes consistently comprised about 93% of the total fish catch for each of the first five years. In 2001, native fish composition in the fish trap dropped from 93% to 82%. In 2002, native fish composition dropped even further to 66%.

A final report was completed in July 2001 and distributed in late-August 2001. This report evaluated the use of the fishway by all fishes, with particular reference to the native, listed fish, Colorado pikeminnow, from 1996-2000 (Burdick 2001a).

Government Highline Dam

The fish passage at Government Highline Diversion Dam on the Upper Colorado River at the lower end of Debeque Canyon is now scheduled to be operational 1 August 2004 (personnel communication, Kevin Moran, Bureau of Reclamation, Grand Junction, Colorado). It also has been designed for selective fish passage.

IV. Study Goals, Objectives, End Product:

Redlands Fish Passageway

Continue to collect data on the number of large-bodied fish, different fish species, and seasonal distribution of fish that use the Redlands passageway. Summarize the annual results of passageway fish use in the annual RIP report.

Government Highline Passageway

Commence collecting data on the number of large-bodied fish, different fish species, and seasonal distribution of fish that use this passageway. Summarize the annual results of passageway fish use in the annual RIP report.

V. Study area

Gunnison River: river mile 3.0 (Redlands Diversion Dam).

Colorado River: river mile 193.7 (Government Highline Dam).

VI. Study Methods/Approach

For FY2004, the Redlands fish passageway will be operated from about 1 April through about 30 September. The fish passageway at Government Highline will be operated from about 1 August through 30 September (based on assumption that construction will be complete by 8/1/04). Both passageways have fish traps that require workers to remove and sort fish.

The trap is designed to collect large-bodied fish. Depending upon manpower, the fish trap at the passageway at each site will be run at least every other day, Monday through Friday, and where possible every weekday. All fish will be sorted by species and counted. Vital statistics including length, weight, and PIT-tag ID's will continued to be collected for all listed species found in the trap. On the weekend, the trap will be checked for listed fishes, only. Because of Recovery Program priorities for control of nonnative fishes in the Colorado River, all smallmouth bass and largemouth bass captured will be sacrificed, preserved and provided to the Colorado Division of Wildlife for the stable isotope study. Other introduced species (e.g., green sunfish, black bullhead, white sucker) collected will be sacrificed and disposed of in a manner that will not constitute a nuisance or as otherwise directed by CDOW.

In addition to collecting and counting fish in the fish trap, FWS personnel will continue to be responsible for periodic cleaning of riverborne sediment in the fish trap and routine cleaning of surface and submerged trash, debris, and riverborne algae from the trash grates and bar screens in the forebay of the passageway. When large amounts of sediment and trash occur, BR will clean the facility (see Project #C-4c, Task 5). FWS personnel will also be responsible for opening and winterizing the passageway.

VII. Task Description and Schedule

Description

Task 1. Routine O & M of two fish ladders and two fish traps which includes monitoring the fish trap, sorting, examining, and enumerating all fish in addition to removing sediment from the trap and cleaning trash and debris from the trash racks, bar screens, fish trap, and fishway entrance.

Task 2. Compile, computerize, and summarize fish use data; prepare annual RIP report.

Schedule

Task 1. Redlands Dam: 4/2004→ 9/2004; 4/2005→9/2005
Government Highline Dam: 8/2004→ 9/2004; 4/2005→4/2005

Task 2. 10/2004→12/2004 (report on 2004 passageway results)
10/2005→12/2005 (report on 2005 passageway results)

VIII. FY-2004 Work

Deliverables/Due Dates:

Annual Report due: 12/2004

Budget

Tasks 1 & 2. Routine O & M of the fish passageway and fish trap at both Redlands Diversion Dam (6 months) & Government Highline Diversion Dam (2 months): monitor both fish traps; sort, examine, and enumerate all fish; compile, computerize, and summarize fish use data; prepare and submit annual RIP report

Labor (salaries and benefits)

Project Leader (1-GS-14@ 1,880)	4 weeks	\$ 7,520
Fishery Biologist (1-GS-11@ 1,620)	10 weeks	\$ 16,200
Biological Technicians (GS-5/6@ 600)	20 weeks	\$ 12,000
Admin. Assistant (1-GS-9@ 1,225)	2 weeks	<u>\$ 2,450</u>
	Subtotal	\$ 38,170

Equipment/Supplies	
Vehicles, GSA-lease, vehicle gasoline; gasoline and oil for a portable generator on site @ Government Highline Dam for 2 months	\$ 2,000
Dip nets, trash rakes, hoses, rubber boots; electric drill repair (i.e., new brushes); extension cords	\$ 500
Office (misc.–paper, telephones, computer software & technical support	\$ 1,500
Electric Drill, reversing style for operation of slide gates @ Government Highline (new purchase)	\$ 300
Fish Loading Net for Government Highline fish trap (new purchase + shipping)	<u>\$ 200</u>
Subtotal	\$ 4,500
Travel (meeting attendance)	<u>\$ 1,000</u>
Subtotal	\$ 1,000
Operation and Maintenance (@ Redlands)	
Annual Electrical Costs (EXCEL Energy) (night lights, electrical sump pump)	\$ 500
Electrical Outlet (120-AC) at the entrance of the fish passageway to operate the five slide gates (bids from 2 local electrical contractors)	\$ 2,290
Note: Provided by BR in FY 03	
Replacement of 3 steel grates covering the fish trap with lighter, fiberglass grating	<u>\$ 4,000</u>
Note: Provided by BR in FY 03	
Subtotal	\$ 6,790
<u>500</u>	
Total	\$ 44,170

CAVEAT: In the event that fish passage does not become operational in FY-2004 at Government Highline Dam, the budget estimated to start up and operate the fish passage facilities at Government Highline Dam for August and September 2004 was \$ 8,870. Thus, the total budget would be reduced by \$ 8,870. However, some of the equipment/supplies identified for purchase in FY-2004 for Government Highline Dam would have to be added to the FY-2005 budget (total of \$ 450).

FY-2005 Work (year 2 of multi-year study)

Deliverables/Due Dates:

Annual Report due: 12/2005

Budget

Tasks 1 & 2. Routine O & M of the fish passageway and fish traps at both Redlands Diversion Dam (6 months) & Government Highline Diversion Dam (6 months): monitor fish trap; sort, examine, and enumerate all fish; compile, computerize, and summarize fish use data; prepare and submit annual RIP report

Labor (salaries and benefits)

Project Leader (1-GS-14@ 1,974)	4 weeks	\$ 7,896
Fishery Biologist (1-GS-11@ 1,701)	12 weeks	\$ 20,412
Biological Technicians (GS-5/6@ 630)	22 weeks	\$ 13,860
Admin. Assistant (1-GS-9, @ 1,287)	4 weeks	\$ 5,148
	Subtotal	\$ 47,316

Equipment/Supplies

Vehicles, GSA-lease, vehicle gasoline (increased travel to Government Highline); gasoline and oil for portable generator on site @ Government Highline for 6 months)	\$ 3,200	
Dip nets, trash rakes, hoses, rubber boots (electric drill repair (i.e. new brushes); (5 % inflation rate applied from FY-2004)	\$ 630	
Office (misc.-paper, telephones, computer software & technical support; (5 % inflation rate applied from FY-2004)	\$ 1,575	
	Subtotal	\$ 5,405

Operation and Maintenance (@ Redlands)

Annual Electrical Costs (EXCEL Energy) (night lights, sump pump, water data logging equipment); (5 % inflation rate applied from FY-2004)	\$ 550	
	Subtotal	\$ 550

Travel (meeting attendance)	\$ 1,000	
	Subtotal	\$ 1,000

Total **\$ 54,271**

IX. Budget Summary

FY-2004:	\$ 44,170
FY-2005:	\$ 54,271
Grand Total:	\$ 98,441

X. Reviewers: N/A

XI. References

- Burdick, B. D. 2001a. Five-year evaluation of fish passage at the Redlands Diversion Dam on the Gunnison River near Grand Junction, Colorado: 1996-2000. Recovery Program Project Number CAP-4b. Final report prepared for the Recovery Implementation Program for Endangered Fishes in the Upper Colorado River Basin. U. S. Fish and Wildlife Service, Grand Junction, Colorado. 57 pp. + appendices.
- Burdick, B. D. 2001b. Evaluation of the effectiveness of the fish passage structure at the Redlands Dam. Annual report prepared for the Recovery Implementation Program for the Endangered Fishes of the Upper Colorado River Basin. Recovery Program Project Number C-4b. U. S. Fish and Wildlife Service, Colorado River Fishery Project, Grand Junction, Colorado.
- Burdick, B. D. 2002. Evaluation of the effectiveness of the fish passage structure at the Redlands Dam. Annual report prepared for the Recovery Implementation Program for the Endangered Fishes of the Upper Colorado River Basin. Recovery Program Project Number C-4b. U. S. Fish and Wildlife Service, Colorado River Fishery Project, Grand Junction, Colorado.

Prepared and compiled by: Bob D. Burdick, 20 April 2001

Appended by FKP/BDB, 14 September 2001

Revised by Chuck McAda, June 2002

Updated by Bob Burdick, 16 May 2003

Revised CWM/BDB June 12, 2003

BOB\SOW\2004sow\FISHPASSAGE0405.wpd