

COLORADO RIVER RECOVERY PROGRAM
FY-2010-2011 PROPOSED SCOPE OF WORK for:
(Passage & O&M: Redlands Diversion Dam)

Project No.: C-4b-RED

Lead Agency: Fish and Wildlife Service
Colorado River Fishery Project

Submitted by: Bob D. Burdick, Fishery Biologist (LEAD)
Michelle Morgan, Acting Project Leader
Address: 764 Horizon Drive, Building B
Grand Junction, CO 81506-3946
Phone: (970) 245-9319
FAX: (970) 245-6933
E-mail: Bob_Burdick@FWS.GOV
Michelle_Morgan/ARL/R9/FWS.DOI

Date: 30 April 2009

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 structure at Redlands Diversion Dam on the Gunnison 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.

III. Study Background/Rationale and Hypotheses:

Project Results to Date

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.

Through 2008, 102 sub-adult and adult Colorado pikeminnow have been found in the fish

trap of the passageway. This has included 86 individual pikeminnow, 12 single repeat passages, and two double repeat passages. Colorado pikeminnow have used the passageway almost exclusively in August (49) and July (46). Three pikeminnow have been found in the fish trap in late-June and three in September. Unfortunately, 2008 marks the first year in the thirteenth year since the fish trap has been operated that a Colorado pikeminnow has not been found in the trap. Twenty-five adult razorback sucker, all domestic-reared fish that were previously stocked, have used the passageway. Thirteen razorback sucker have ascended the fish ladder in August, 7 in July, 2 September, and 1 fish each in April, May, and June. One stocked bonytail used the fish ladder in 2003.

About 106,000 fish consisting of 24 different fish species and hybrids (6 native, 15 nonnative, and three catostomid hybrids) have been collected and counted during the first 13 years of operation (Burdick 2008). 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 and 2003, native fish composition dropped even further to 66% and 68%, respectively (Burdick 2002; Burdick 2003). Native fish composition increased to 77% in 2004 (Burdick 2004). During 2005, native fish comprised 74% of the catch (Burdick 2005); during 2006 native fish comprised 85% of the catch (Burdick 2006). In 2007 and 2008, respectively, native fish comprised 83% and 76% of the catch (Burdick 2008).

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).

IV. Study Goals, Objectives, End Product:

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.

V. Study area

Gunnison River: river mile 3.0.

VI. Study Methods/Approach

For FY2010 and FY2011, the Redlands fish passageway will be operated from about 1 April through about 15 October.

The trap is designed to collect large-bodied fish. Depending upon manpower, the fish trap at the passageway 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 IDs will continued to be collected for all

listed species found in the trap. Other introduced species (e. g., largemouth bass, smallmouth bass, green sunfish, black bullhead, white sucker, carp) collected will be sacrificed and disposed of in a manner that will not constitute a nuisance or as otherwise directed by CDOW. Channel catfish will be returned downstream of the fish ladder alive.

In addition to collecting and counting fish in the fish trap, FWS personnel will continue to be responsible for periodic cleaning of river borne sediment in the fish trap and routine cleaning of surface and submerged trash, debris, and river borne algae from the trash grates and bar screens in the forebay of the passageway. Other tasks include: regulating river flows through the fish ladder and attraction flow to remove sediment from the fishway; noxious weed control, and removing all stranded fish in the fish trap and dewatered portion of the fish ladder prior to winterizing. FWS personnel will also be responsible for opening and winterizing the passageway.

VII. Task Description and Schedule

Description

Task 1. Routine O & M of Redlands fish ladder and fish trap which includes monitoring the fish trap, sorting, examining, and enumerating all fish in addition to removing and disposing of all non native fish; removing sediment from the trap and cleaning trash and debris from the trash racks, bar screens, fish trap, and fishway entrance; regulating river flows through the fish ladder and attraction flow to remove sediment from the fishway; noxious weed control, and removing all stranded fish in the fish trap and dewatered portion of the fish ladder prior to winterizing

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

Schedule

Task 1. 4/2010 – 10/2010; 4/2011 – 10/2011

Task 2. 10/2010 – 11/2010; 10/2011 – 11/2011: (report on 2010 & 2011 passageway results)

VIII. FY-2010 Work (year 1 of multi_year study)

Deliverables/Due Dates:

Annual Report due: 11/2010

Budget (actual salary rates w/ benefits provided by CRFP Administrative Officer used for labor; equipment/supplies, and operation and maintenance expenses increased by 3% from 2009 budget)

Tasks 1 & 2. Routine O & M of the fish passageway and fish traps at Redlands

Diversion Dam (6 months): monitor fish trap; sort, examine, and enumerate all fish, remove non native fish; compile, computerize, and summarize fish use data; prepare and submit annual RIP report

Labor (salaries and benefits)			
Project Leader (1-GS-14@ 3,202)	3 weeks	\$	9,606
Fishery Biologist (1-GS-12@ 2,429)	12 weeks	\$	29,148
Biological Technicians (2-GS-4/5@ 697)	15 weeks	\$	20,910
Admin. Assistant (1-GS-9, @ 1,539)	3 weeks	\$	4,617
	Subtotal	\$	64,281

Equipment/Supplies			
FWS Vehicle maintenance, GSA-lease, FWS vehicle gasoline (\$ 515.00: assumed \$ 3.00/gal, 10 miles/gal per vehicle, 12 miles round trip, 135 days passage operation) + dip nets, rakes; herbicide for spraying weeds; misc. office supplies			
		\$	1,688
	Subtotal	\$	1,688

Operation and Maintenance (@ Redlands)			
Electric Drill Repair (drill used to run slide gates (costs to be covered by O & M agreement w/ Redlands Water & Power Co.)			
		\$	0
Annual Electrical Costs (EXCEL Energy) (night lights, sump pump, water data logging equipment).			
		\$	643
Unplanned and unpredictable expenses related to repairs/materials due to vandalism (chain-link perimeter fence repair, safety chains)(costs to be covered by O & M agreement w/Redlands Water & Power Co.)			
		\$	0
	Subtotal	\$	643

FY2010	Total	\$ 66,612
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FY-2011 Work (year 2 of multi_year study)

Deliverables/Due Dates: Annual Report due: 11/2011

Budget (actual salary rates w/ benefits provided by CRFP Administrative Officer used for labor; equipment/supplies, and operation and maintenance expenses increased by 3%)

from 2010 budget)

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

Labor (salaries and benefits)

Project Leader (1-GS-14@ 3,330)	3 weeks	\$ 9,990
Fishery Biologist (1-GS-12@ 2,525)	12 weeks	\$ 30,300
Biological Technicians (2-GS-4/5@ 726)	15 weeks	\$ 21,780
Admin. Assistant (1-GS-9, @ 1,600)	3 weeks	<u>\$ 4,800</u>
	Subtotal	\$ 66,780

Equipment/Supplies

FWS Vehicle maintenance, GSA-lease, FWS vehicle gasoline (\$ 515.00: assumed \$ 3.00/gal, 10 miles/gal per vehicle, 12 miles round trip, 135 days passage operation) + dip nets, rakes; herbicide for spraying weeds; misc. office supplies		<u>\$ 1,739</u>
	Subtotal	\$ 1,739

Operation and Maintenance (@ Redlands)

Electric Drill Repair (drill used to run slide gates (costs to be covered by O & M agreement w/ Redlands Water and Power Co.)		\$ 0
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Annual Electrical Costs (EXCEL Energy)

(night lights, sump pump, water data logging equipment)(costs to be covered by O & M agreement w/ Redlands Water and Power Co.)		\$ 662
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Unplanned and unpredictable expenses

related to repairs/materials due to vandalism (chain-link perimeter fence repair, safety chains)(costs to be covered by O & M agreement w/ Redlands Water and Power Co.)		<u>\$ 0</u>
	Subtotal	\$ 662

FY2011	Total	\$ 69,181
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IX. Budget Summary

FY-2010 \$ 66,612
FY-2011 \$ 69,181
Grand
Total: \$ **135,793**

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.

Burdick, B. D. 2003. 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. 2004. 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. 2005. 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. 2006. 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.
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- Burdick, B. D. 2008. 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-RED. U. S. Fish and Wildlife Service, Colorado River Fishery Project, Grand Junction, Colorado.

Prepared and compiled by: Bob D. Burdick, 30 April 2009
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