COLORADO RIVER RECOVERY PROGRAM Project No.: C-4b-GV
FY–2010-2011 PROPOSED SCOPE OF WORK for:
(Passage O&M: Grand Valley Project)

Lead Agency: Fish and Wildlife Service
Colorado River Fishery Project
Submitted by: Bob D. Burdick, Fishery Biologist (LEAD)
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Date: 30 April 2009

Category:
_ Ongoing project
X Ongoing-revised project
_ Requested new project
_ Unsolicited proposal

Expected Funding Source:
_ Annual funds
_ Capital funds
_ Other (explain)
X O&M

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

II. Relationship to RIPRAP:

Colorado River Action Plan: Mainstem
II.B.3. Restore fish passage at Government Highline Dam (Grand Valley Project)
II.B.3.a.(3) Operate and maintain fish ladder.
II.B.3.a.(4) Monitor and evaluate success.

III. Study Background/Rationale and Hypotheses:

The fish passage at Government Highline Diversion Dam on the Upper Colorado River at the lower end of Debeque Canyon was scheduled to be operational 1 August 2004. It also was designed for selective fish passage. Although the passage was completed in August 2004, it was not operated in 2004. In both 2005 and 2006, it was operated only on a trial basis and in 2007 it was only operated for about 5 weeks at the height and immediately following spring runoff to remove sediment from the head end of the fish passage and attraction flow intakes. In 2008, with the completion of fish passage downstream at the Price Stubb Dam in April 2008, the fish trap was operated full time from the first of May to mid-October.

IV. Study Goals, Objectives, End Product:

Operate the fish passage for the entire season from early-April through the first of October. Collect 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

Colorado River: river mile 193.7.

VI. Study Methods/Approach

2005 Results

The fishway was operated on a trial basis for 6 days each in mid-June and late-September. In June, 2,527 fish were processed in the fish trap that included one razorback sucker and one humpback chub. In September, 2,111 fish were processed that included two humpback chub.

2006 Results

During 2006 the fish passageway was operated on an experimental basis. Operations consisted of 10 days per month for a total of 5 months (late-April through late-September). Similar to the Redlands fishway, the passageway at the Grand Valley Project has a fish trap that requires 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 was run at least every other day, Monday through Friday, and where possible every weekday. All fish were be sorted by species and counted. Vital statistics including length, weight, and PIT-tag ID's were collected for all listed species found in the trap. No endangered fish were caught during 2006 in the fish trap. A total of 11,978 fish were processed in the fish trap; 90% of these were native fishes.

In addition to collecting and counting fish in the fish trap, FWS personnel were 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. FWS personnel were also responsible for opening and winterizing the passageway.

2007 Plans

Fish passage at Price-Stubb Dam 5.4 miles downstream is now planned to be completed sometime in the spring of 2008. The fish passage at Government Highline has now been operated on an experimental trial basis for 2 years, 2005 and 2006. Most of the "bugs",

mechanical problems, and unknowns associated with operating fish passage at this site were identified and corrected during this trial period. During low river flow and high irrigation demand months (i. e., July to September), we identified the necessary threshold river discharges at the Cameo USGS gauging station that we could minimally operate the fish passage (with and without attraction flows) without impacting the capability of diverting river water into the Government High Canal.

Because fish passage was not completed until April 2008, the fish passage at the upstream Grand Valley Project was not fully operational. Therefore, during 2007, the fish passage was only operated to perform sediment maintenance. No biological data were collected from the fish trap in 2007. Sediment had continued to accrue on the fish passage side of the river and an island now had formed in front of the attraction flow gate. During the height and descending limb of spring runoff on the Upper Colorado River, the fish passage was continuously operated to flush built up sediment through the fish ladder. Both the fish ladder and attraction flow were opened. Operation of the fish ladder during this time did not impact the diversion capabilities of the Grand Valley Project. This sediment flushing occurred over a 5-week period immediately following runoff. During this time, personnel visited the site daily to clean and remove trash and debris from the trash racks and bar screens to maintain water velocity and water depth in the fish ladder for optimal sediment flushing. Any and all fish remaining in the fish trap and dewatered section of the fish ladder were manually removed and returned to the river after each flushing session.

2008 Results

Only one razorback sucker (445 mm total length) was collected from the fish trap during 2008. To date, two razorback sucker and 3 humpback chub have been captured in the fish trap. One other adult razorback sucker was collected in the fish trap during 2005. The three humpback chub were collected in 2005.

Ten thousand seven hundred eighty fish were counted in the trap of the Government Highline Diversion Dam fishway between 2 May and 15 October 2008. Native fishes comprised 90% of the total number of fishes collected in 2008.

VII. Task Description and Schedule

Description

Task 1. O & M of Government Highline fish ladder 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. Other tasks include: regulating river flows through the fish ladder and attraction flow to remove sediment from the fishway; noxious weed control; 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. 5/2010 – 10/2010; 4/2011 – 4/2011

Task 2. 10/2010 – 11/2010; 10/2011 – 11/2011

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 the 2009 budget)

Tasks 1 & 2. O & M of the fish passageway at Government Highline Diversion Dam: 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. Other tasks include: regulating river flows through the fish ladder and attraction flow to remove sediment from the fishway; noxious weed control; removing all stranded fish in the fish trap and dewatered portion of the fish ladder prior to winterizing; prepare and submit annual RIP report

Labor (salaries and benefits)		
Project Leader (1-GS-14 @ 3,202)	2 weeks	$ 6,404
Fishery Biologist (1-GS-12 @ 2,429)	8 weeks	$ 19,432
Biological Technician (2-GS-4/5 @ 697)	13 weeks	$ 18,122
Admin. Assistant (1-GS-9, @ 1,539)	2 weeks	$ 3,078
	Subtotal	$ 47,036
Equipment/Supplies		
FWS Vehicle maintenance, GSA-lease, FWS vehicle gasoline ($ 2,600: assumed $ 3.00/gal, 10 miles/gal per vehicle, 64 miles round trip, 135 days passage operation) + dip nets, rakes; herbicide for spraying weeds; misc. office supplies		$ 3,924

Fish Disposal Fee @ Mesa County Landfill		$ 160
	Subtotal	$ 4,084

Operation and Maintenance (@ Government Highline)		
Annual Energy Costs: propane: $ 1,200: assumed $ 2.47/gal, 500 gal tank. propane used to operate sump pump, overhead cranes (costs to be covered by O & M agreement w/ Grand Valley Water Users)		$ 0
Maintenance/Service on Propane-powered generator		
On-site servicing of air/oil filters, spark plugs (Source: Rocky Mountain Cummins–Grand Junction–as per Beth/Donna) (costs to be covered by O & M agreement w/ Grand Valley Water Users)		$ 0
	Subtotal	$ 0
FY2010	**Total**	**$ 51,120**

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 the 2010 budget)

Tasks 1 & 2. O & M of the fish passageway at Government Highline Diversion Dam: 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. Other tasks include: regulating river flows through the fish ladder and attraction flow to remove sediment from the fishway; noxious weed control; removing all stranded fish in the fish trap and dewatered portion of the fish ladder prior to winterizing; prepare and submit annual RIP report

Labor (salaries and benefits)		
Project Leader (1-GS-14 @ 3,330)	2 weeks	$ 6,660
Fishery Biologist (1-GS-12 @ 2,525)	8 weeks	$ 20,200
Biological Technician (2-GS-4/5 @ 726)	15 weeks	$ 21,780
Admin. Assistant (1-GS-9, @ 1,600)	2 weeks	$ 3,200
	Subtotal	$ 51,840

Equipment/Supplies

FWS Vehicle maintenance, GSA-lease, FWS vehicle gasoline ($ 2,600: assumed $ 3.00/gal, 10 miles/gal per vehicle, 64 miles round trip, 135 days passage operation) + dip nets, rakes; herbicide for spraying weeds; misc. office supplies		$ 4,042
Fish Disposal Fee @ Mesa County Landfill		$ 165
	Subtotal	$ 4,207

Operation and Maintenance (@ Government Highline)

Annual Energy Costs: propane: $ 1,200: assumed $ 2.47/gal, 500 gal tank. propane used to operate sump pump, overhead cranes (costs to be covered by O & M agreement w/ Grand Valley Water Users)		$ 0

Maintenance/Service on Propane-powered generator

On-site servicing of air/oil filters, spark plugs (Source: Rocky Mountain Cummins–Grand Junction–as per Beth/Donna) (costs to be covered by O & M agreement w/ Grand Valley Water Users)		$ 0
	Subtotal	$ 0
	FY2011 Total	**$ 56,047**

IX. Budget Summary

FY-2010	$ 51,120
FY-2011	$ 56,047
Grand Total:	**$ 107,167**

X. Reviewers: N/A

XI. References: None

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