**COLORADO RIVER RECOVERY PROGRAM** Project No.: C-4b-GV
**FY–2012-2013 PROPOSED SCOPE OF WORK for:**
Passage O&M: Grand Valley Water Users

Lead Agency: Fish and Wildlife Service
Colorado River Fishery Project
Submitted by: Bob D. Burdick, Fishery Biologist (LEAD)
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Date: 9 March 2011
Revised: 14 April 2011

Category:
X Ongoing project
_ 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:

General

The fish passage at Government Highline Diversion Dam on the Upper Colorado River at the lower end of Debeque Canyon was completed by 1 August 2004. Although the passage was completed in August 2004, it was not operated in 2004. It was also designed for selective fish passage, similar to that at the Redlands fish passageway. 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.

Project Results to Date

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 IDs 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 Results

Because fish passage at Price-Stubb Dam 5.4 miles downstream 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.

The fish passage at Government Highline was operated on an experimental trial basis during 2005 and 2006 in which 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.

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.

2009 Results

No endangered fish were collected in the fish trap of the fish passageway at the Government Highline Diversion Dam during 2009 although 12,402 were counted in the trap of the Government Highline Diversion Dam fishway between 20 April and 15 October 2009. Native fishes comprised 91% of the total number of fishes collected in 2009.

2010 Results

No endangered fish were collected in the fish trap of the fish passageway at the Government Highline Diversion Dam during 2010. Eighteen thousand three hundred ninety fish were counted in the trap of the Government Highline Diversion Dam fishway between 16 April and 15 October 2010. Native fishes comprised 89% of the total number of fishes collected in 2010.

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 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

**FY 2012; FY 2013**

In past years, the fish passageway was operated from about 15 April through about 15 October. However, for FY2012 and FY2013 the Government Highline fish passageway will be operated differently from past years. The fish trap at GVWUsers fish passageway may be opened two weeks later than the routine April 15 opener and closed at least two weeks earlier in mid-October. This will be done in order to remain within FY2010 budget limits set by the Recovery Program. To accomplish this, the salaries for the GS-5 Bio Techs (2) had to be reduced by 40 hrs each (80 hrs total). This will probably result in some operational changes within the 6-month monitoring period. Moreover, with the uncertainty of future fuel costs and the round trip mileage to this passage facility from Grand Junction being over twice that of the travel distance to the Redlands passage facility, operation of the fish trap at the GVWUsers facility may also result in additional reduced visits on an annual basis. For the most part, daily monitoring of the fish trap will be continued, especially during the months (mid-June through August) when the greatest likelihood of use by Colorado pikeminnow and razorback sucker might occur. This premise is based on the 15 years of historical data documenting the seasonal use by these two fishes at the Redlands fish passageway on the Lower Gunnison River.

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. 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. 4/2012 – 10/2012; 5/2013 – 9/2013

Task 2. 10/2012 – 11/2012; 10/2013 – 11/2013 (report on 2012 & 2013 passageway results)

VIII. FY-2012 Work (year 3 of multi–year study)

Deliverables/Due Dates: Annual Report due: 11/2012

Budget (salary + benefits; actual salary rates w/ benefits provided by CRFP Administrative Officer used for labor; funding levels set by RP office)

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

1. Labor (salary and benefits)(salaries rounded to the nearest dollar)

| | | |
|---|---|---|
| Project Leader (1-GS-14@ $ 74.16/hr) | 29 hrs | $ 2,151 |
| Asst. Project Leader (1-GS-13@ $ 61.38/hr) | 68 hrs | $ 4,174 |
| Fish Biologist (1-GS-12 @ $ 49.84/hr) | 320 hrs | $ 15,949 |
| Admin. Officer (GS-9, @ $ 39.63 /hr) | 92 hrs | $ 3,646 |

| | | |
|---|---|---|
| Bio Tech (2-GS-5 @ $ 17.45/hr) | 600 hrs ea. | $ 20,940 |
| | Subtotal | $ 46,860 |

2. Travel $ 0

Subtotal $ 0

3. Equipment

| | |
|---|---|
| a) Vehicles: GSA-lease (rate= $334/month; 0.30/mile) | |
| Number of vehicles: 1 | |
| Lease: $ 334/month X 4 months[a] =$ 1,336 | $ 1,336 |
| ([a] assume 2/3 day use per day for 6 months) | |
| Mileage: 65/miles round trip/day X 110 days of annual operation=7,150 miles X 0.30/mile=$ 2,145 | $ 2,145 |
| b) Dip net bags | $ 50 |
| c) PPE (rubber boots, gloves, 1st aid supplies) | $ 250 |
| d) Rakes for trash grates (debris removal) | $ 175 |
| e) Fish Disposal @ Mesa County Landfill | $ 150 |
| f) Office supplies/paper, telephones, copy machine | $ 154 |
| Subtotal | $ 4,260 |

4. Other $ 0

Subtotal $ 0

**FY2012 All Tasks Total $ 51,120**

FY-2013 Work (year 4 of multi–year study)

Deliverables/Due Dates: Annual Report due: 11/2013

Budget (salary + benefits; actual salary rates w/ benefits provided by CRFP Administrative Officer used for labor; funding levels set by RP office))

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

1. Labor (salary and benefits)(salaries rounded to the nearest dollar)

| | | |
|---|---|---|
| Project Leader (1-GS-14@ $ 76.34/hr) | 29 hrs | $ 2,214 |
| Asst. Project Leader (1-GS-13@ $ 65.05/hr) | 68 hrs | $ 4,423 |
| Fish Biologist (1-GS-12 @ $ 51.29/hr) | 320 hrs | $ 16,413 |
| Admin. Officer (GS-9, @ $ 40.78/hr) | 92 hrs | $ 3,752 |

| | | |
|---|---|---|
| Bio Tech (2-GS-5 @ $ 17.95/hr) | 560 hrs ea. | $ 20,104 |
| | Subtotal | $ 46,906 |
| 2. Travel | | $ 0 |
| | Subtotal | $ 0 |
| 3. Equipment | | |
| a) Vehicles: GSA-lease (rate= $334/month; 0.30/mile) | | |
| Number of vehicles: 1 | | |
| Lease: $ 334/month X 4 months[a] =$ 1,336 | | $ 1,336 |
| ([a] assume 2/3 day use per day for 6 months) | | |
| Mileage: 65/miles round trip/day X 110 days of annual operation=7,150 miles X 0.30/mile=$ 2,145 | | $ 2,145 |
| b) Dip net bags | | $ 50 |
| c) PPE (rubber boots, gloves, 1st aid supplies) | | $ 220 |
| d) Rakes for trash grates (debris removal) | | $ 159 |
| e) Fish Disposal @ Mesa County Landfill | | $ 150 |
| f) Office supplies/paper, telephones, copy machine | | $ 154 |
| | Subtotal | $ 4,214 |
| 4. Other | | $ 0 |
| | Subtotal | $ 0 |
| | **FY2013 All Tasks Total** | **$ 51,120** |

IX. Budget Summary

| | |
|---|---|
| FY-2012 | $ 51,120 |
| FY-2013 | $ 51,120 |
| Total: | **$ 102,240** |

X. Reviewers: N/A

XI. References: None

Prepared and compiled by: Bob D. Burdick, 9 March 2011
Revised by: BDB, 14 April 2011
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