

I. Project Title: **Retrieval of fish from the Grand Valley Irrigation Company and Grand Valley Water Users canals**

II. Bureau of Reclamation Agreement Number(s): R10PG40039 & R13PG40018

Project/Grant Period: Start date (Mo/Day/Yr): 6/3/2013
End date: (Mo/Day/Yr): 9/30/2017
Reporting period end date: 9/30/2013
Is this the final report? Yes _____ No X

III. Principal Investigator(s): Project Biologist (currently vacant)
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IV. Abstract:
Fish screens were constructed on the Grand Valley Irrigation Company (GVIC) canal (winter 2001-2002) and the Grand Valley Water Users (GVWU's) canal (summer 2005). When debris overloads the 3/32" screens and water can't pass through them to provide adequate flows to irrigation users or for power generation, the irrigation companies have the option of lifting the screens and diverting water through the bypass channel. This allows fish to become stranded in the canal when it is dewatered at the end of each irrigation season (usually early November). At the end of each irrigation season, fish are salvaged from these two canals via electrofishing and seining and returned to the Colorado River. A total of 17,865 native fish were salvaged and relocated after the 2012 irrigation season.

V. Study Schedule: 2002-Ongoing

VI. Relationship to RIPRAP:
Colorado River Action Plan: Colorado River
II.B.1.b. Screen GVIC diversion canal to prevent endangered fish Entrainment
II.B.3.b. Screen Government Highline diversion canal to prevent endangered fish entrainment

VII. Accomplishment of FY 2013 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings

Tasks Accomplished

- Task 1. Sample GVIC and GVWU canals; remove native fish and relocate to the Colorado River.

Deliverables

Annual report

Accomplishments and Initial Findings

Fish salvage is conducted by driving major portions of the canals looking for pools of water that contain fish after the irrigation water is turned off for the year. Irrigation water diverted from the Colorado River during the spring and summer months for irrigation and power generation are usually halted in early November. The pools are sampled with truck-mounted electrofishing units and seines. All native fish collected are identified and loaded into a hatchery truck, transported, and returned to the Colorado River. Total numbers of native fish collected and transported are recorded. Nonnative fish encountered are left in the canal. Sampling ceases usually immediately prior to Thanksgiving or once the ice becomes too thick in the remaining pools to effectively collect fish.

Grand Valley Irrigation Company Canal

This canal was sampled from the diversion dam head works on the Colorado River (in Palisade, CO) downstream to 22 Road during November 2012. Sampling was limited to areas where the roads were dry enough to avoid damaging the road surface with our heavy vehicles. Crews traveled the canal road and sampled every pool encountered that could hold fish.

A total of 5,782 fish were collected. This included the following native fishes: 2,386 flannelmouth sucker, 2,453 roundtail chub, 451 bluehead sucker, 450 speckled dace, 2 endangered razorback sucker, and 2 endangered bonytail. Nonnative fishes of note included 2 rainbow trout, 14 brown trout, 4 longnose suckers, 2 largemouth bass, 6 channel catfish, 1 grass carp, 1 white x bluehead sucker hybrid, and large numbers of white suckers (which weren't collected or enumerated). Three of the four endangered fish captured in this canal were found in what is called the 12th Street siphon. Two of these fish were razorback sucker and the third was a bonytail, all of which were PIT-tagged. The bonytail, stocked in 2011 at RMI 194.0, was from the Colorado Parks and Wildlife's (CPW's) Mumma Native Species Hatchery (Mumma) in Alamosa, CO. This was the first recapture of this fish since it was stocked. The razorbacks were both stocked by Ouray National Fish Hatchery – Grand Valley Unit (Ouray NFH-GVU) in Grand

Junction, CO. One was stocked in the fall of 2008 at RMI 185.1. The other was stocked in the fall of 2012 at RMI 240.7. This was the first recapture of both of these fish since they were stocked. Another bonytail was collected on a secondary canal between 23 Road and 24 Road. This fish already had a PIT tag when collected. However, the stocking information for this PIT-tagged fish wasn't available in the database. Based on the size of this bonytail at time of capture, we're assuming that this fish was stocked in 2012 by CPW's Mumma hatchery. As of the date of this report, our office hasn't received the 2012 PIT tag stocking lists from CPW's Mumma hatchery.

A running total of all native fishes collected in this canal from 2002-2012 is provided in Appendix; Table 1. However, effort varied considerably between years, thus direct comparisons of numbers of fish by species or total numbers of fish collected among years is not advised.

Grand Valley Water User's Canal (aka Highline Canal)

The Highline Canal was sampled from the point at which the canal enters the Grand Valley (east of Palisade) downstream to about 18 Road when the roads were dry enough to facilitate travel during fall 2012. As with the GVIC canal, sampling crews traveled the canal roads searching for pools of water that might hold fish.

A total of 12,083 fish were collected. This included the following native fishes: 1,574 flannemouth sucker, 632 bluehead sucker, 5,924 roundtail chub, 3,942 speckled dace, 1 endangered razorback sucker, and 2 endangered bonytail. Nonnative fishes of note included 7 longnose sucker, and large numbers of white suckers (which weren't collected or enumerated). The greatest numbers of fish were captured near 35 Road in Palisade, CO (10,107 fish 84%). Two endangered fish were captured at this particular location. One, a razorback, didn't have a detectable PIT tag when collected and was implanted with a new PIT tag prior to being stocked into the Colorado River. The other, a bonytail chub, couldn't successfully be scanned for a PIT tag, due to a PIT tag reader battery failure. However, based on its size (about the same size as other bonytail stocked during 2012), it's assumed that this fish was stocked in 2012. Another bonytail was captured upstream of 26½ Road, just north of H road. The stocking information for this PIT-tagged fish (240 mm TL) wasn't available in the database. Based on the size of this bonytail at time of capture, we're assuming that this fish was stocked in 2012 by CPW's Mumma hatchery. As of the date of this report, our office hasn't received the 2012 PIT tag stocking lists from CPW's Mumma hatchery.

A running total of all native fishes collected in this canal from 2002-2012 is provided in Appendix; Table 2. However, effort varied considerably between

years, thus direct comparisons of numbers of fish by species or total numbers of fish collected among years is not advised.

- VIII. Additional noteworthy observations: None
- IX. Recommendations: Continue operating fish screens in the canals to the greatest degree possible. Continue fall salvage operations to relocate native fish that are entrained in the canal system when the screens are not operational.
- X. Project Status: On-track and ongoing
- XI. FY 2013 Budget Status
- A. Funds Provided: \$30,094
 - B. Funds Expended: \$30,094
 - C. Difference: \$0
 - D. Percent of the FY 2013 work completed, and projected costs to complete: 100%
 - E. Recovery Program funds spent for publication charges: \$0
- XII. Status of Data Submission (Where applicable): Data will be submitted to the UCREFRP database by January 2013.
- XIII. Signed: Brendan Crowley 10/31/2013
Principal Investigator Date

APPENDIX: Tables 1 and 2

Table 1. Total numbers of native fish collected by species and by year from 2002-2012 in the Grand Valley Irrigation Company Canal.

**2002-2012 GVIC Canal Fish Salvage
Native Fish Species**

Location	FM	BH	FM X BH	RT	SD	MF	MS	RZ	BT	CS	TOTALS
All Totals (2012)	2386	451	0	2453	450	0	0	2	2	0	5744
All Totals (2011)	428	17	1	258	6	1	0	2^d	0	0	713
All Totals (2010)	571	4	0	478	80	0	0	0	0	0	1,061
All Totals (2009)	877	48	0	79	232	4	0	0	0	0	1,240
All Totals (2008)	892	59	0	150	0	0	0	1^b	0	0	1,102
All Totals (2007)	128	3	0	35	0	0	0	0	0	0	166
All Totals (2006)	2,252	123	0	1,322	0	0	0	1^c	0	0	3,698
All Totals (2005)	897	80	0	730	0	0	0	0	0	0	1,707
All Totals (2004)	1,783	22	0	588	26	0	0	0	0	0	2,419
All Totals (2003)	---	---		---	---	---	---	---	0	---	2,908
All Totals (2002)	---	---		---	---	---	---	---	0	---	3,371

Fish Species: FM-flannemouth sucker, BH-bluehead sucker, RT-roundtail chub, SD-speckled dace, MF=mountain whitefish, MS-mottled sculpin, RZ-razorback sucker, CS-Colorado pikeminnow, BT- bonytail chub

Table 2. Total numbers of native fish collected by species and by year from 2002-2012 in the Grand Valley Water User's Canal

2002-2012 GVWUser's Canal Fish Salvage

Native Fish Species

	FM	BH	FM X BH	RT	SD	MF	MS	RZ	CS	BT	TOTALS
All totals (2012)	1574	632	0	5,924	3942	0	0	1	0	2	12075
All Totals (2011)	808	77	1	16,813	328	3	19	3 ^c	0	0	18052
All Totals (2010)	1,517	88	0	23,299	1,043	30	0	0	0	0	25,977
All Totals (2009)	6,255	797	0	26,527	5,135	7	1	0	0	0	38,722
All Totals (2008)	738	77	0	754	23	6	0	0	0	0	1,598
All Totals (2007)	433	93	0	6,543	70	0	0	1	0	0	7,140
All Totals (2006)	---	---	---	---	---	---	---	---	---	---	---
All Totals (2005)	722	173	0	3,815	48	0	0	0	1 ^b	0	4,759
All Totals (2004)	893	118	0	5,166	140	0	1	0	24 ^c	0	6,343 ^d
All Totals (2003)	---	---	---	---	---	---	---	---	---	---	~ 3,000
All Totals (2002)	---	---	---	---	---	---	---	---	---	---	~ 1,000

Fish Species: FM=flannemouth sucker, BH=bluehead sucker, RT=roundtail chub, SD=speckled dace, MF=mountain whitefish, MS=mottled sculpin, RZ=razorback sucker, CS=Colorado pikeminnow, BT= bonytail chub