

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

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III. Project Summary:

A fish screen was constructed on the Grand Valley Irrigation Company (GVIC) irrigation canal in winter 2001–2002. However, for the first few years following construction, the screen was not operated for a full season. The GVIC fish screen is now fully operational. A fish screen was completed in the summer of 2005 for the Grand Valley Water Users (GVWUs) Canal. It was not fully operational until the spring of 2010. However, during events when debris overloads the screens and water cannot pass through them, the irrigation companies have the option of either lifting the screens or using the bypass channel. When this occurs, fish can pass downstream of the fish screen and underground pipe that returns them to the river. Hence, fish can swim down canal and ultimately become stranded in the canal when it is dewatered during the fall.

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 is halted usually in early November. The pools are sampled with electrofishing or seines. All native fish collected are identified and loaded into a hatchery truck and released in the Colorado River. Total numbers of fish collected and transported are recorded. Nonnative fish encountered are usually left in the canal. Sampling ceases usually immediately prior to Thanksgiving or until ice becomes too thick in the remaining pools to sample.

IV. Study Schedule:

- A. initial year: 2002
- B. final year: Ongoing

V. Relationship to RIPRAP:

A. 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.

VI. Accomplishment of FY 2010 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

A. FY-2010 Tasks and Deliverables:

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

Task completed.

B. Findings (2010 Highlights)

Grand Valley Irrigation Company

Parts of the canal were sampled from the diversion dam in the Colorado River to 22 Road in the fall (early- to mid- November of 2009). Sampling was limited to areas where the roads were dry enough to avoid damaging the road surface by our heavy vehicles. Crews traveled the canal road and sampled every pool encountered that could hold fish. A total of 1,240 fish were collected. They comprised 877 sub-adult and adult flannemouth suckers, 232 speckled dace, 79 roundtail chubs, 48 bluehead suckers, and 4 mountain whitefish. No endangered fish were collected in the GVIC canal in the fall of 2009. As in previous years, most of the fish were collected in the upper portion of the canal between 32 Road and the headworks (Appendix B; Table 1). A running total of all native fishes collected in this canal from 2002–2009 is provided in Appendix; Table 1. However, effort varied considerably among these eight years and, therefore, direct comparison of individual fish species collected and the total number collected among years is not advisable.

Grand Valley Water User's (Highline Canal)

The Highline Canal was sampled from the point at which the canal enters the Grand Valley east of Palisade to about 18 Road when the roads were dry enough to travel. As with the GVIC canal, sampling crews traveled the canal roads searching for pools of water that might hold fish. Pools were sampled using either electrofishing or seines. A combined total of 38,722 fish comprising 26,527 roundtail chub, 6,255 flannemouth

sucker, 5,135 speckled dace, 797 bluehead sucker, 7 mountain whitefish, and one mottled sculpin were collected. Most of the roundtail chub, bluehead sucker, and flannelmouth suckers were juveniles. The greatest number of fish (37,247; 96 %) were collected in a 0.4 mile reach of the canal between 35.3 and 35.7 Roads west of Palisade. No endangered fish were collected from the Highline Canal in 2009.

The GVWU's fish screen was operated for almost the entire year except for only a few days when the bypass was used because the screens became plugged with debris and water was not being delivered down canal at a rate to meet irrigation demands. This is the first year that the fish screen at this site has operated almost the entire season since construction completion in the summer of 2005. So, fish numbers collected in the canal during the fall 2010 fish salvage should be reduced over previous years, particularly 2009.

A running total of all native fishes collected in this canal from 2002–2009 is provided in Appendix B; Table 2. However, effort varied considerably among these eight years and, therefore, direct comparison of individual fish species collected and the total number collected among years is not advisable.

VII. Recommendations:

A. Continue operating the fish screens.

VIII. Project Status:

A. "On track and ongoing".

IX. FY 2010 Budget Status

A. Funds Provided: \$ 30,142  
B. Funds Expended: \$ 30,142  
C. Difference: \$ -0-  
D. Percent of the FY 2010 work completed, and projected costs to complete: 100%.  
Recovery Program funds spent for publication charges: \$ -0-

X. Status of Data Submission (Where applicable):

XI. Signed: Bob D. Burdick                      11/10/2010  
Principal Investigator                      Date

APPENDIX:

A. More comprehensive/final project reports. If distributed previously, simply reference the document or report.

B. Appendix: 2 tables attached.

Prepared and compiled by Bob D. Burdick, 11/10/2010  
2010GVIC\_GVWUFishSalvage\_rpt.doc

Table 1. Total numbers of native fish collected by species and by year from 2002-2009 in the Grand Valley Irrigation Company Canal.

| <b>2002-2009 GVIC Canal Fish Salvage</b> |   |           |           |           |           |           |                |           |               |
|--|---|-----------|-----------|-----------|-----------|-----------|----------------|-----------|---------------|
|  | <b>Native Fish Species <sup>a</sup></b> |           |           |           |           |           |                |           |               |
| <b>Location</b>                          | <b>FM</b>                               | <b>BH</b> | <b>RT</b> | <b>SD</b> | <b>MF</b> | <b>MS</b> | <b>RZ</b>      | <b>CS</b> | <b>TOTALS</b> |
| 32 Rd-Head works                         | 316                                     | 35        | 44        | 230       | 3         | 0         | 0              | 0         |               |
| 12 <sup>th</sup> Street-30.5 Rd          | 129                                     | 1         | 28        | 0         | 0         | 0         | 0              | 0         |               |
| Lakeside-22 Rd                           | 217                                     | 1         | 2         | 2         | 0         | 0         | 0              | 0         |               |
| 12 <sup>th</sup> Street Siphon           | 107                                     | 6         | 5         | 0         | 1         | 0         | 0              | 0         |               |
| All Totals (2009)                        | 877                                     | 48        | 79        | 232       | 4         | 0         | 0              | 0         | 1,240         |
| All Totals (2008)                        | 892                                     | 59        | 150       | 0         | 0         | 0         | 1 <sup>b</sup> | 0         | 1,102         |
| All Totals (2007)                        | 128                                     | 3         | 35        | 0         | 0         | 0         | 0              | 0         | 166           |
| All Totals (2006)                        | 2,252                                   | 123       | 1,322     | 0         | 0         | 0         | 1 <sup>c</sup> | 0         | 3,698         |
| All Totals (2005)                        | 897                                     | 80        | 730       | 0         | 0         | 0         | 0              | 0         | 1,707         |
| All Totals (2004)                        | 1,783                                   | 22        | 588       | 26        | 0         | 0         | 0              | 0         | 2,419         |
| All Totals (2003)                        | ---                                     | ---       | ---       | ---       | ---       | ---       | ---            | ---       | 2,908         |
| All Totals (2002)                        | ---                                     | ---       | ---       | ---       | ---       | ---       | ---            | ---       | 3,371         |

<sup>a</sup> Fish Species: FM-flannelmouth sucker, BH-bluehead sucker, RT-roundtail chub, SD-speckled dace, MF=mountain whitefish, MS-mottled sculpin, RZ-razorback sucker, CS-Colorado pikeminnow

<sup>b</sup> Stocked in the Gunnison River at Delta, CO, in 2002; recaptured once in the Colorado River in the Grand Valley in 2004.

<sup>c</sup> Stocked in the Colorado River downstream of the GVIC diversion dam in September 2006. It moved upstream over the dam and into the canal during the intervening period.

Table 2. Total numbers of native fish collected by species and by year from 2002-2009 in the Grand Valley Water User's Canal.

| <b>2002-2009 GVWUser's Canal Fish Salvage</b> |   |     |        |       |     |     |     |                 |                           |
|---|---|-----|--------|-------|-----|-----|-----|-----------------|---------------------------|
|   | <b>Native Fish Species <sup>a</sup></b> |     |        |       |     |     |     |                 |                           |
| <b>Location</b>                               | FM                                      | BH  | RT     | SD    | MF  | MS  | RZ  | CS              | <b>TOTALS</b>             |
| 18-19 Rd                                      | 0                                       | 0   | 0      | 0     | 0   | 0   | 0   | 0               |                           |
| 20-26 Rd                                      | 0                                       | 0   | 1      | 0     | 0   | 0   | 0   | 0               |                           |
| 26-27 Rd                                      | 313                                     | 32  | 428    | 30    | 30  | 0   | 0   | 0               |                           |
| 27 Rd-I-70                                    | 4                                       | 2   | 14     | 0     | 0   | 0   | 0   | 0               |                           |
| I-70 East-32 Rd                               | 0                                       | 0   | 0      | 0     | 0   | 0   | 0   | 0               |                           |
| 32 Rd-35.3 Rd                                 | 174                                     | 27  | 381    | 68    | 0   | 1   | 0   | 0               |                           |
| 35.3-35.7 Rd                                  | 5,764                                   | 736 | 25,703 | 5,037 | 7   | 0   | 0   | 0               |                           |
| All Totals (2009)                             | 6,255                                   | 797 | 26,527 | 5,135 | 7   | 1   | 0   | 0               | <b>38,722</b>             |
| All Totals (2008)                             | 738                                     | 77  | 754    | 23    | 6   | 0   | 0   | 0               | <b>1,598</b>              |
| All Totals (2007)                             | 433                                     | 93  | 6,543  | 70    | 0   | 0   | 1   | 0               | <b>7,140</b>              |
| All Totals (2006)                             |   |     |        |       |     |     |     |                 |                           |
| All Totals (2005)                             | 722                                     | 173 | 3,815  | 48    | 0   | 0   | 0   | 1 <sup>b</sup>  | <b>4,759</b>              |
| All Totals (2004)                             | 893                                     | 118 | 5,166  | 140   | 0   | 1   | 0   | 24 <sup>c</sup> | <b>6,343 <sup>d</sup></b> |
| All Totals (2003)                             | ---                                     | --- | ---    | ---   | --- | --- | --- | ---             | <b>~ 3,000</b>            |
| All Totals (2002)                             | ---                                     | --- | ---    | ---   | --- | --- | --- | ---             | <b>~ 1,000</b>            |

<sup>a</sup> 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.

<sup>b</sup> Stocked near Rifle, CO, in 2004.

<sup>c</sup> Includes one wild Colorado pikeminnow stocked upstream at the Rulison Bridge, 5/10/2001.

<sup>d</sup> Includes 1 flannemouth sucker X bluehead sucker hybrid.