

I. Project title: **Operation and Maintenance of Propagation Facilities in the Grand Valley (24-Road Hatchery, Horsethief Ponds, and grow-out ponds), for Captive Rearing of Endangered Fishes for the Upper Colorado River Basin.**

II. Principal Investigator(s):

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III. Project Summary:

Captive rearing of endangered fish for the Upper Colorado River Basin began in the Grand Valley in 1992. The Horsethief Rearing Ponds were put into operation to secure propagation facilities with adequate equipment and personnel for captive propagation of endangered fish species for the Recovery Program in the upper Colorado River Basin. Additional propagation facilities were needed to expand propagation efforts, therefore in 1996 the 24-Road Hatchery was constructed inside of an existing warehouse (donated by the Bureau of Reclamation) at 1149 24 Road, Grand Junction, CO. The Hatchery was expanded in the winter of 1998–1999, and now contains two separate water re-use systems. In addition to the hatchery expansion, numerous ponds have been acquired and are used to grow razorback sucker for stocking into the Colorado, Gunnison, and San Juan Rivers.

Broodstock are held at Horsethief Ponds and spawned in spring. Larvae are taken to the 24-Road Hatchery and reared for about one year. After 1 year in the hatchery, fish are stocked into grow-out ponds where they are held for about 6 months. After additional growth in the ponds, fish are harvested and stocked into the Colorado and Gunnison rivers in accordance with approved stocking plans.

IV. Study Schedule: Ongoing

V. Relationship to RIPRAP:

General Recovery Program Support Action Plan

IV.A.4. Secure and manage the following presumptive genetic stocks in refugia

IV.A.4.a.(2) Upper Colorado River

IV.B. Conduct annual fish propagation activities

IV.C. Operate and maintain facilities

IV.C.2. Grand Valley endangered fish facility

Colorado River Action Plan: Mainstem

IV.A.2.a.(2) Implement razorback sucker State stocking plan

IV.A.2.b.(2) Implement Colorado pikeminnow State stocking plan

Colorado River Action Plan: Gunnison River

IV.A.2.b. Implement Colorado pikeminnow State stocking plan

IV.A.3.b. Implement razorback sucker State stocking plan

VI. Accomplishment of FY 2002 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

In April and May of 2002, razorback broodstock held at Horsethief Rearing Ponds were spawned and the eggs were transferred to the 24 Road Hatchery. A total of 26 paired matings were made. Of the 26 paired matings approximately 250,000 larvae were produced. Five-thousand fry that were a mix from all lots were stocked in July of 2002 into golf course ponds at Page, AZ. The integrated stocking plan for razorback sucker requires the Grand Junction Endangered fish facility to produce 14,895 razorback sucker ≥ 300 mm TL. With a harvest rate of .5 from grow-out ponds the facility is currently rearing 28,500 fish, a total of 19 family lots, in an effort to achieve the stocking goals.

In May of 2002 the Grand Junction Endangered Fish Facility received 5,000 Colorado pikeminnow fry from Dexter National Fish Hatchery. The Colorado pikeminnow will reach a minimum length of 200 mm before being stocked into the Colorado River. As of December 2002, 2,800 Colorado pikeminnow averaging 120mm total length (TL) remain in the hatchery.

A total of 51,704 2001 year class fish were stocked into grow-out ponds at ≤ 200 mm TL (Table 1). A total of 11,473 razorback sucker ≈ 300 mm TL were harvested from grow-out ponds (4,900 were from leased ponds; Table 2), pit tagged and stocked into the Colorado river in 2002. Approximately 8,000 fish were left in the ponds for future harvest because they did not reach stockable size. An additional 1,433 fish were tagged and stocked directly from the hatchery to the river. Many of the 2001 year-class were not harvested and will overwinter in grow-out ponds until efforts can be made next spring to harvest, tag and stock. One 15 acre pond that represents a mix of all lots is being used for additional grow-out of fish from harvested ponds that were less than 300 mm in length. This large pond also acts as a buffer system in case of catastrophic events.

The Grand Junction Endangered Fish Facility is currently rearing an appropriate number of razorback sucker in order to fulfill the Integrated stocking plan of restoration and augmentation.

Razorback sucker broodstock being held at Horsethief ponds include the following:

- 6 Wild adults from the Green River.
- 17 1991 year-class, F₁s from Green River broodstock
- 66 1992 year-class, F₁s from original broodstock
- 38 1994 year-class, F₁s from original broodstock
- 13 1995 year-class, F₁s from Green River broodstock
- 91 1995 year-class, F₁s from original broodstock
- 6 1996 year-class, F₁s from original broodstock
- 42 1997 year-class, F₁s and F₂s from all broodstock
- 84 1998 year-class, F₁s and F₂s from all broodstock
- 32 1998 year-class, F₁s from wild Mojave broodstock
- 97 1999 year-class, F₁s and F₂s from all broodstock

In addition to Horsethief, Bound's pond which is a 7 acre government owned lake is being used to hold future broodstock. Bound's pond consists of: ~50 1998 year-class F₁s from wild Mojave broodstock, 15 pit tagged fish from each lot of 2000 year-class fish, and 15 tagged fish from each 2001 year-class. The 2000 and 2001 year-class fish are F₁s and F₂s from all broodstock (not including Lake Mohave fish).

VII. Recommendations: Continue management and operation of facilities to serve as a primary refuge for endangered fishes of the Upper Colorado Basin.

II Project Status: Project is ongoing and on track

IX. FY Budget:

A. Funds Provided: \$320,000

B. Funds Expended: \$320,000

C. Difference: \$0

D. Percent of the FY 2002 work completed, and projected costs to complete: 100%

E. Recovery Program funds spent for publication charges: \$0

X. Status of Data Submission: PIT-tag data submitted by December 15, 2002

XI. Signed: Thad L. Bingham 12/06/02

APPENDIX:

Table1. Number and location of razorback sucker stocked directly from hatchery.

| <u>2001</u> | <u>Stocking</u> | | 2001 Lots | |
|--------------|------------------|---------------------------|-------------|--------------------|
| <u>Lot #</u> | <u># of Fish</u> | <u>Stocking Location</u> | <u>Date</u> | <u>Weight (Kg)</u> |
| 0109 | 2125 | Clymers Pond | 04/02/02 | 145.07 |
| 0131 | 1875 | Brunet's Pond | 04/03/02 | 116.42 |
| 0126 | 1140 | Peter's Pond 4 | 04/03/02 | 85.22 |
| 0121 | 2080 | Morse's Pond | 04/03/02 | 144.82 |
| 0127 | 460 | McGuire's Large Pond | 04/03/02 | 27.44 |
| 0133 | 420 | McGuire's Small Pond | 04/03/02 | 43.84 |
| 0127 | 1600 | McGuire's Large Pond | 04/09/02 | 53.14 |
| 0109 | 400 | Clymers Pond | 04/08/02 | 37.06 |
| 0118 | 850 | Peter's Pond 3 | 04/10/02 | 78.72 |
| 0108 | 1420 | Peter's Pond 1 | 04/12/02 | 117.2 |
| 0110 | 1000 | Peter's Pond 2 | 04/12/02 | 60.8 |
| 0122 | 425 | State 29 Rd. Pond | 04/15/02 | 14.48 |
| 0108 | 825 | San Juan Pond 6 Pack | 04/15/02 | 22.2 |
| 0109 | 430 | San Juan Pond 6 Pack | 04/15/02 | 10.38 |
| 0110 | 600 | San Juan Pond 6 Pack | 04/15/02 | 14.8 |
| 0113 | 800 | San Juan Pond 6 Pack | 04/15/02 | 19.4 |
| 0118 | 575 | San Juan Pond 6 Pack | 04/15/02 | 16.06 |
| 0121 | 850 | San Juan Pond 6 Pack | 04/15/02 | 30.58 |
| 0123 | 700 | San Juan Pond 6 Pack | 04/15/02 | 27.26 |
| 0126 | 830 | San Juan Pond 6 Pack | 04/15/02 | 12.66 |
| 0127 | 400 | San Juan Pond 6 Pack | 04/15/02 | 11.42 |
| 0129 | 443 | San Juan Pond 6 Pack | 04/15/02 | 8.54 |
| 0130 | 1000 | San Juan Pond 6 Pack | 04/15/02 | 16.78 |
| 0131 | 800 | San Juan Pond 6 Pack | 04/15/02 | 25.08 |
| 0133 | 525 | San Juan Pond 6 Pack | 04/15/02 | 20.56 |
| 0135 | 460 | San Juan Pond 6 Pack | 04/15/02 | 11.9 |
| 0136 | 400 | San Juan Pond 6 Pack | 04/15/02 | 24.8 |
| 0110 | 500 | San Juan Pond 6 Pack | 04/17/02 | 23.24 |
| 0133 | 535 | San Juan Pond 6 Pack | 04/17/02 | 26.78 |
| MIX | 225 | San Juan Pond 6 Pack | 04/17/02 | 16.82 |
| 0135 | 460 | San Juan Pond 6 Pack | 04/17/02 | 10.58 |
| 0118 | 575 | San Juan Pond 6 Pack | 04/17/02 | 15.64 |
| 0109 | 430 | San Juan Pond 6 Pack | 04/17/02 | 15.58 |
| 0122 | 500 | San Juan Pond 6 Pack | 04/17/02 | 7.32 |
| 0133 | 1800 | Van Wagner's Pond (south) | 04/30/02 | 131.02 |
| 0107 | 800 | Debeque Pond 7 | 05/01/02 | 88.35 |
| 0136 | 580 | Debeque Pond 4 | 05/02/02 | 68.54 |
| 0113 | 578 | Debeque Pond 8 | 05/03/02 | 54.7 |
| 0123 | 850 | Debeque Pond 6 | 05/09/02 | 66.44 |
| 0135 | 1050 | Van Wagner's Pond (north) | 05/09/02 | 113.44 |
| 0105 | 480 | Elam | 05/14/02 | 23.02 |

| | | | | |
|-------|-------|-----------------------------|----------|---------|
| 0106 | 230 | Romer's | 05/16/02 | 12.82 |
| 0119 | 300 | Hueton | 05/16/02 | 18.41 |
| 0119 | 250 | Tomlinson | 05/22/02 | 14.44 |
| 0111 | 800 | Dike Rd Pond | 06/10/02 | 56.45 |
| 0107 | 800 | Debeque Pond 7 | 06/10/02 | 115.83 |
| 0106 | 1200 | Debeque Pond 6 | 06/17/02 | 95.46 |
| 0135 | 570 | Van Wagners North | 06/18/02 | 38.02 |
| 0131 | 605 | Brunet's Pond | 06/18/02 | 30.26 |
| 0106 | 820 | Maggio's Pond | 06/18/02 | 14.44 |
| 0108 | 900 | Maggio's Pond | 06/18/02 | 20.82 |
| 0113 | 800 | Maggio's Pond | 06/18/02 | 19.12 |
| 0122 | 200 | Maggio's Pond | 06/18/02 | 4.52 |
| 0129 | 1125 | Maggio's Pond | 06/18/02 | 31.02 |
| 0130 | 1000 | Maggio's Pond | 06/18/02 | 23.96 |
| 0135 | 475 | Maggio's Pond | 06/18/02 | 15.6 |
| 0136 | 800 | Maggio's Pond | 06/18/02 | 18.58 |
| 0106 | 1050 | Maggio's Pond | 06/18/02 | 40.82 |
| 0118 | 1200 | Maggio's Pond | 06/18/02 | 25 |
| 0122 | 700 | Maggio's Pond | 06/18/02 | 11.74 |
| 0130 | 1200 | Maggio's Pond | 06/18/02 | 46.28 |
| 0126 | 1100 | Peter's Pond 4 | 06/19/02 | 58.04 |
| 0107 | 550 | Debeque Pond 7 | 06/19/02 | 33.98 |
| 0136 | 800 | CDOT Pond | 06/20/02 | 32.88 |
| 0113 | 160 | CO River @ Loma Boat Launch | 08/28/02 | 36.31 |
| 0129 | 165 | CO River @ Loma Boat Launch | 08/28/02 | 36.31 |
| 0129 | 400 | CO River @ Loma Boat Launch | 10/08/02 | 74.78 |
| 0113 | 278 | CO River @ Loma Boat Launch | 10/09/02 | 46.13 |
| 0110 | 280 | CO River @ Loma Boat Launch | 10/29/02 | 49.76 |
| 0122 | 150 | CO River @ Loma Boat Launch | 10/29/02 | 42.1 |
| Total | 51704 | | | 2921.98 |

Table 2. 2002 HARVEST OF RAZORBACK SUCKER FROM LEASED PONDS

| Pond | Acres | Date Stocked | Number Stocked | Number per Acre | Size Stocked | Date Harvested | Number Harvested | Percent Harvested | Size Harvested |
|------------------|-------|-----------------|----------------|-----------------|--------------|----------------------|------------------|-------------------|----------------|
| Beswicks (1) | 3.0 | 7/19/01 | 2,119 | 706 | 5" | 10/1-4/02 | 512 | 24.2 | 10-15" |
| Brunets (2) | 9.0 | Spring 01-02 | 17,304 | 1,923 | 1-6" | 10/9/02 | 36 | 1.5 | 12" |
| City Dike Rd (3) | 2.5 | 6/10/02 | 800 | 320 | 6" | 10/5/02 | 0 | | |
| Elams 29 Rd | 4.6 | Spring 01-02 | 1,980 | 430 | 5-7" | 5/02, 10/02 | 925 | 46.8 | 10-17" |
| Huetons | 0.5 | 5/15/02 | 250 | 500 | 5" | 9/24-30/02 | 121 | 48.4 | 8-12" |
| Maggios (4) | 15.0 | 01, 02 | 15,000 | 1,000 | <10" | | 0 | | |
| Mcquires lg (5) | 6.0 | 4/09/02 | 2,060 | 343 | 5" | 8/1802; 10/9/02 | 332 | 16.2 | 12-15" |
| Mcquires sm (6) | 3.0 | 6/6/01 | 20,000 | 6,667 | Fry | | 0 | | |
| Morses (7) | 3.4 | 4/3/02 | 2,080 | 612 | 7" | 7/12/02; 10/12/02 | 1,315 | 63.3 | 13-15" |
| Roehmers (8) | 0.5 | 5/15/02 | 230 | 460 | 6" | | 0 | | |
| State Parks (9) | 2.0 | 4/15/02 | 425 | 212 | 5" | 7/2-3/02 | 232 | 54.6 | 11-13" |
| Tomlinson | 0.5 | 5/22/02 | 250 | 500 | 5" | 10/25-30/02 | 85 | 34.0 | 8-12" |
| V. Wagner s (10) | 6.5 | 4/30/02 | 1,800 | 277 | 6" | 10/22-25/02 | 699 | 38.9 | 12"+ |
| V. Wagner n (10) | 1.3 | 5/9/02, 6/18/02 | 1,620 | 704 | 6" | 10/21-25/02 | 643 | 39.7 | 12"+ |

(1) lots of smaller fish left to overwinter. (2)This pond was overstocked in 2000, several hundred fish were caught about 8inches, left to

overwinter.

(3) Couldn't catch a fish, many other species: perch, bass, goldfish stocked by folks in the neighborhood. (4) This pond is being used as a catch all for fish harvested from other ponds, but too small for river stocking. Harvesting of this pond can begin in 2003. (5) This pond is very deep and hard to trap. We trapped about as many fish the last day as the first. Many more of this years fish will be caught next year. (6) We stocked too many fry in this pond. We may not be able to harvest 12" fish in 2003, but should get many in 2004. (7) Ran out of time when trapping this pond. Caught 400 the last day which indicates there are at least a few hundred left to overwinter. (8) Not harvested, will get the fish out in spring 2003. (9) This pond got very low in early summer, necessitating early harvest. (10) Both Van Wagners ponds had good survival, fish less than 10 inches were sorted out and left in the pond for further growth.