

I. Project Title: **Propagation Facilities in the Grand Valley (Ouray National Fish Hatchery - Grand Valley Unit) for Captive Rearing of Endangered Fishes for the Upper Colorado River Basin.**

II. Bureau of Reclamation Agreement Number(s): R15PG00083

Project/Grant Period: Start date (Mo/Day/Yr): 10/1/2014  
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Is this the final report? Yes \_\_\_\_\_ No X

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IV. Abstract:

Ouray National Fish Hatchery - Grand Valley Unit (Ouray NFH-GVU) consists of several facilities near Grand Junction, CO. These facilities include the Horsethief Canyon Native Fish Facility (HCNFF), the 24 Road Hatchery building, and three other “lease-free” grow-out ponds.

Ouray NFH-GVU produces and rears razorback sucker (annual stocking target = 6,000 fish > 350 mm TL) for stocking into the Colorado and Gunnison rivers. In addition, Ouray NFH-GVU rears bonytail obtained as larvae from the USFWS’s Southwest Native Aquatic Resources and Recovery Center (SNARRC) in Dexter, NM (annual stocking target = 10,000 fish > 250 mm TL), for stocking into the Colorado River. All stockings of these two endangered fishes are in accordance with the approved Integrated Stocking Plan (ISP).

Wild humpback chub from the Black Rocks area of the Colorado River continue to be held at the HCNFF ponds as a refugia population.

V. Study Schedule: 1996 to end of Recovery Program

VI. Relationship to RIPRAP:

General Recovery Program Support Action Plan

IV.A. Genetic Management

IV.A.1. Augment razorback sucker

IV.A.4. Secure and manage genetic stocks in refugia

IV.C. Operate and maintain facilities

VII. Accomplishment of FY 2019 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Ouray NFH-GVU routinely participates in annual inspections to insure our facilities, as well as the fish we grow, are free from problematic diseases and Aquatic Invasive Species (AIS). On 16 April 2019, personnel from the USFWS's Bozeman Fish Health Center conducted our annual Fish Health Inspection. The results were negative for any problematic/reportable fish health diseases.

On 5 August 2019, personnel from the USFWS's Hotchkiss National Fish Hatchery conducted our annual AIS inspection. This was a walk-through, hands-on, visual inspection of both our hatchery building and ponds. Water/plankton samples were also taken during the inspection and sent to Montana Fish, Wildlife & Parks in Kalispell, MT to be tested for the presence or absence of zebra and/or quagga mussel veligers. The results of the walk-through inspection were negative for any problematic/reportable AIS. The water/plankton samples were processed by Montana Fish, Wildlife & Parks and on 7 August 2019, our facility was declared negative for the presence of mussel veligers.

Health Condition Profile (HCP) necropsies were performed for both bonytail and razorback sucker (20 fish per species) in summer 2019 by Ouray NFH-GVU staff and results were submitted online to the Utah Division of Wildlife Resource's AuSum Program. Bonytail HCPs showed a mesentery score of 3.85 out of 4 and 40% normal livers. Sampled fish were 18-months old and averaged 280 mm in length, 214g in weight, with a K-factor of 0.92. Razorback sucker HCPs showed a mesentery score of 2.40 out of 4 and 80% normal livers. Sampled fish were 18 months old and averaged 312.1 mm in length, 266.3 g in weight, with a K-factor of 0.85.

On 7 March 2019, a meeting was held between Upper Colorado River Endangered Fish Recovery Program staff (Julie Stahli and Cheyenne Owens) and hatchery staff from all state and federal hatcheries associated with the UCREFRP, to discuss observed "fatty livers" in bonytail being reared on feed that had been originally designed for razorback sucker. Based on these discussions, a bonytail diet study was designed, in conjunction with Gibson Gaylord from the USFWS's Bozeman Fish Health Center. Our portion of that bonytail diet study will be performed indoors (in 8-foot circular tanks) at the 24 Road

Hatchery building in early FY-2020. Since no baseline data on wild bonytail is available to assess whether fatty livers in bonytail are indeed an issue in their post-stocking

survival, 15 wild roundtail chub (225-370 mm TL) were collected from the Grand Valley

Water Users fish passage between 8 July and 6 August 2019. These samples were frozen and sent to Bozeman for HCP analysis and comparison to future samples to be collected during the bonytail feed study.

Ouray NFH-GVU staff annually provide a wide variety of public education and outreach opportunities, including providing tours of the 24 Road Hatchery building, partnering with Colorado Parks and Wildlife (CPW) to provide endangered razorback sucker for their Aquarium in the Classroom Program (which allows local elementary school students to raise endangered fish in their classroom, tagging and stocking them into the river at the end of the school year), attending local water festivals, providing fish for outreach at the Heritage Days, Palisade Peach Festival, Home and Garden shows, Farmer's Markets, etc. In addition, our staff annually either performs endangered fish related lectures at or provides panel members for symposiums at Colorado Mesa University.

During FY-2019, we continued to partner with Palisade High School to establish a small razorback sucker grow-out hatchery system on their campus. The hatchery components were installed at their building from late October to early November 2019. Plans are to have the system tested and running and razorback sucker available for students in January 2020, when students return from their holiday break. Our staff was also able to work with USFWS's National Conservation Training Center (NCTC) to set up an agreement that allowed Palisade High School teaching staff to attend, tuition-free, NCTC's 2-week long Coldwater Fish Culture training course during spring 2019.

Ouray NFH-GVU staff also regularly participate in outreach via local newspaper, television, and radio interviews. All of these activities are geared toward informing the general public about endangered fish recovery issues and trying to build an advocacy base for endangered fish recovery among the local population. Outreach efforts reach several thousand people each year, ranging from elementary school through college age students, families, Cub Scout troops, professional NGO (e.g., Nature Conservancy) and government agency personnel, etc.

No major maintenance or repair projects were performed at the hatchery this year. Smaller routine maintenance activities continue to be performed as necessary throughout the year, as issues arise.

### Razorback Sucker

In March 2019, approximately 7,300 age-1 razorback sucker were being held indoors at the 24 Road Hatchery building. These fish represented young from 15 different paired matings of broodstock performed in April 2018. From early April to mid-May 2019, approximately 6,100 of these age-1 razorback sucker were stocked into the grow-out ponds at HCNFF. Ponds were stocked with a mixture of fish from several different family lots. Equal numbers from each represented family lot were stocked into a total of six ponds. These fish were PIT tagged prior to being stocked into grow-out ponds to help

reduce stress later in the year when they would be harvested for stocking. The remaining age-1 razorback sucker (approximately 1,200 fish) continued to be held at the 24 Road Hatchery building until bonytail were harvested from HCNFF (in mid-July 2019) and ponds were available to stock the remaining 1,200 razorback sucker from the 24 Road Hatchery into.

In April 2019, razorback sucker broodstock held at HCNFF were spawned and the eggs were transferred to the 24 Road Hatchery building. Hatching rates for razorback sucker eggs were excellent, with approximately 88% of all eggs successfully hatching into fry. The hatchery is currently holding 12,950 135 mm TL razorback sucker.

We observed an approximately 95% return rate of juvenile razorback sucker from grow-out ponds to harvest and stocking. Any culled “excess” fish were stocked into our “lease-free” grow-out ponds for later opportunistic harvest and stocking.

Our three “lease-free” grow-out ponds (CDOT, Beswick’s, and Butch Craig ponds) will continue to be used as necessary in future years to provide redundancy and as we continue to evaluate management options to improve the survival and growth of razorback sucker for augmentation.

### Bonytail

In spring 2018 approximately 15,000 larval bonytail were received from SNARRC. These fish were stocked into grow-out ponds at HCNFF. In November 2018, these bonytail were harvested from HCNFF and brought into the 24 Road Hatchery to overwinter. These fish were PIT tagged prior to being stocked into grow-out ponds to help reduce stress later in the year when they would be harvested for stocking. In early to mid-April 2019, these bonytail were transferred to HCNFF to maximize growth until being stocked in summer 2019.

In spring 2019 approximately 12,306 larval bonytail were received from SNARRC. These fish were stocked into two ponds at HCNFF. In October/November 2019, these bonytail were harvested from HCNFF and brought into the 24 Road Hatchery to overwinter. They will be stocked back into grow-out ponds at HCNFF in spring 2020, where they will be held until being stocked at various locations in the Colorado River.

We typically observe a < 20% loss of larval bonytail to stockable age-1 fish, with the greatest losses typically occurring immediately after larval fish are received via FedEx from SNARRC and after stocking into grow-out ponds due to avian predation. Any culled “excess” fish were stocked into our “lease-free” grow-out ponds for later opportunistic harvest and stocking.

### Humpback Chub

Wild adult humpback chub that were collected from the Black Rocks area of the Colorado River continue to be held as a refugia population at the HCNFF ponds. Seventeen humpback chub were collected from 2014 and 2015 at Black Rocks. In

October 2017, another 10 humpback chub were collected from Black Rocks and brought into captivity. When this pond was drained and these fish were examined on 30 October 2018, 27 of the original 28 adult humpback chub were accounted for. Sometime during 2019, we lost one adult humpback chub. In August 2019, we brought an additional 10 small adult humpback chub in from Black Rocks to HCNFF, giving us a total of 37 wild fish.

In 2019, the adult humpback chub being held at HCNFF once again spawned voluntarily. Several hundred age-0 humpback chub could be seen schooling in this pond through about mid-summer of 2019. These young, volunteer-spawned fish were scheduled to be transferred to David Ward of the USGS's Grand Canyon Research and Monitoring Center (GCMRC) for experimental purposes, when the humpback chub pond was drained. However, when the humpback chub refugia pond was drained (on 29 October 2019) for our annual census of refugia fish, we discovered that an outbreak of "ich" (*Ichthyophthirius multifiliis*) had occurred in this pond. As a result, only 14 (38%) of the wild humpback chub remained alive. In addition, the remaining, volunteer-spawned, young fish also had ich. Therefore, these young fish were lethally disposed of. The remaining adults were treated in isolation and then replaced in the pond after it had been drained, thoroughly cleaned, and refilled with fresh water. The UCREFRP Biology Committee and Program Office were informed via phone call on 12 November 2019. Options as to what to do with the remaining wild humpback chub being held will be discussed among this group during winter 2019-2020.

### 2019 Stocking Summary

**Razorback sucker:** A total of 7,604 razorback sucker (126.73% of the target stocking number {n = 6,000}) were stocked into the Colorado, Gunnison, and White rivers in 2019. Of these, 7,511 were from the HCNFF grow-out ponds. Another 31 were from the 24 Road Hatchery building and were provided to various elementary school "aquarium in the classroom" programs or outreach efforts throughout the year. Those fish were stocked directly into rivers after by elementary school and/or outreach staff, as they could not be taken back onto our facility once they had left, due to fish health considerations. The remaining 62 came from our three "lease-free" grow-out ponds, which were harvested in conjunction with nonnative fish removal efforts occurring in those ponds. The mean TL for all razorback sucker stocked in 2019 was 330 mm. Numbers of fish stocked in each location in 2019 were as follows:

2019 stocking totals for razorback sucker: 7,604

- White River (at RM 104.0): 4
  - 4 fish given to CPW for an outreach event in June 2019
- Upper Colorado near Rifle – Rifle boat launch (at RM 240.7): 2,260
  - 3 fish from Meeker Elementary School aquarium in May 2019
  - 2,257 fish from HCNFF stocking events in September 2018
- Upper Colorado near DeBeque – CDOT Pond (RM 204.5): 54
  - 54 fish from two stocking events in July 2019
- Colorado River in the Grand Valley – 5 sites (RM 183.6 to 157.1): 2,191
  - 81 old broodstock from HCNFF in April 2019

- 2,086 fish from HCNFF stocking events in September 2019
- 24 fish from school aquariums and outreach events from Apr-Nov 2019
- Colorado River in Grand Valley – Beswick’s Pond (RM 174.9): 5
  - 5 fish from one stocking event in July 2019
- Gunnison River in Delta – Confluence Park (RM 57.1): 3,087
  - 3,087 from HCNFF stocking events in September 2019
- Gunnison River in Whitewater – Butch Craig Pond (RM 12.7): 3
  - 3 fish from two stocking events in July 2019

**Bonytail:** A total of 11,315 bonytail (113.15% of the target stocking number {n = 10,000}) were stocked into the Colorado and White rivers in 2019. Of these, 11,303 were from the HCNFF grow-out ponds. Another 12 were from the 24 Road Hatchery building and were provided to various elementary school “aquarium in the classroom” programs or outreach efforts throughout the year. Those fish were stocked directly into rivers after by elementary school and/or outreach staff, as they could not be taken back onto our facility once they had left, due to fish health considerations. The mean TL for all bonytail stocked in 2019 was 236 mm. Numbers of fish stocked in each location in 2019 were as follows:

2019 stocking totals for bonytail: 11,315

- White River (at RM 104.0): 2
  - 2 fish given to CPW for an outreach event in June 2019
- Upper Colorado near Rifle (at RM 240.7): 2,384
  - 2,380 fish from HCNFF stocking events in July 2019
  - 4 fish from HCNFF stocking events in September 2019
- Colorado River in Grand Valley (RM 183.6 to 157.1): 8,929
  - 9 outreach event fish stocked in November 2018
  - 1 outreach event fish stocked in May 2019
  - 8,917 fish from HCNFF stocking events in July 2019
  - 2 fish from HCNFF stocking events in September 2019

VIII. Additional noteworthy observations:

One Colorado pikeminnow that had been held for years as a “show fish” (a fish used for educational purposes, such as tours) at the 24 Road hatchery building was supplied to Colorado Parks and Wildlife (CPW) for an outreach event on 2 June 2019. This fish could not be taken back onto our facility once it had left, due to fish health considerations. So after that outreach event concluded, CPW stocked this fish into the White River at RM 104.0. The Colorado pikeminnow (PIT tag # 3DD003BDDDD6F) was 554 mm TL when stocked.

This fish had originally been sent (as an age-0 fish) to the HCNFF ponds to help control numbers of volunteer-spawned, age-0 humpback chub in the humpback chub refugia pond. Once it had grown large enough that it presented a predation threat to the wild humpback chub in that pond, it was removed and placed in the show fish tank at the 24 Road Hatchery. It remained in that tank for several years, until it again reached a large enough size where it was predated upon other, smaller show fish (razorback sucker and

bonytail) and had to be removed. Its parentage was the Colorado River broodstock currently being held at SNARRC.

IX. Recommendations:

- 1) Continue management and operation of Ouray NFH – GVU facilities to serve as a primary refuge facility for endangered fishes of the Upper Colorado Basin.
- 2) Continue production, grow-out, and stocking of razorback sucker and bonytail (and other native, endangered fish species as appropriate) to meet stocking goals set forth in approved stocking plans by the Upper Colorado River Endangered Fish Recovery Program (UCREFRP).

X. Project Status: Project is on track and ongoing.

XI. FY 2019 Budget Status:

- A. Funds Provided: \$574,141
  - a. \$530,281 to Ouray NFH-GVU
  - b. \$43,860 to Bureau of Reclamation (to pay gas, water, electricity, phone)
- B. Funds Expended: \$574,141
- C. Difference: \$0
- D. Percent of the FY 2019 work completed, and projected costs to complete: 100%
- E. Recovery Program funds spent for publication charges: \$0

XII. Status of Data Submission (Where applicable):

All PIT tag data were submitted to the UCREFRP database manager in October 2019 under Projects 29a and 126ab.

XIII. Signed

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Date: 11/13/2019