

**RECOVERY PROGRAM
FY 2020-2021 SCOPE OF WORK for:
Operation and Maintenance of Ouray National Fish Hatchery - Grand Valley Unit**

Recovery Program Project Number: 29a

Reclamation Agreement number: TBD
Reclamation Agreement term: October 1, 2019 – Sept. 30, 2024

Note: Recovery Program FY2020-2024 scopes of work are drafted in May 2019. They often are revised before final Program approval and may subsequently be revised again in response to changing Program needs. Program participants also recognize the need and allow for some flexibility in scopes of work to accommodate new information (especially in nonnative fish management projects) and changing hydrological conditions.

Lead agency: U.S. Fish and Wildlife Service
Ouray National Fish Hatchery - Grand Valley Unit (Ouray NFH-GVU)
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<u>Category:</u>	<u>Expected Funding Source:</u>
<input checked="" type="checkbox"/> Ongoing project	<input checked="" type="checkbox"/> Annual funds
<input type="checkbox"/> Ongoing-revised project	<input type="checkbox"/> Capital funds
<input type="checkbox"/> Requested new project	<input type="checkbox"/> Other [<i>explain</i>]
<input type="checkbox"/> Unsolicited proposal	

I. Title of Proposal: **Operation and Maintenance of Ouray National Fish Hatchery - Grand Valley Unit**

II. Relationship to RIPRAP:

General Recovery Program Support Action Plan:

- IV. Manage genetic integrity and augment or restore populations (stocking endangered fishes).
 - IV.A. Genetics Management
 - IV.A.4.a. Razorback sucker
 - IV.A.4.a. (2) Upper Colorado River
 - IV.A.4.b. Bonytail
 - IV.A.4.c. Humpback chub
 - IV.B. Conduct annual fish propagation activities
 - IV.B.2. Implement revised integrated stocking plan (Integrated

- Stocking Plan Revision Committee 2015)
- IV.C. Operate and maintain facilities
 - IV.C.2. Ouray NFH: Grand Valley Unit

Four program documents are used to plan, implement, and coordinate genetics management and artificial propagation activities for endangered fishes at Ouray NFH-GVU. These are the Genetics Management Guidelines, Genetics Management Plan, Coordinated Hatchery Facility Plan (Facility Plan), and Integrated Stocking Plan.

III. Study Background/Rationale and Hypotheses:

This project is directly related to Section 2.4 IV. Conserve Genetic Integrity and Augment or Restore Populations (Stocking Endangered Fishes) (USFWS 2016). One of seven elements in the Recovery Program is native fish stocking. The goal of this element is to produce sufficient captive-reared endangered fishes for conducting laboratory and field research and to develop brood stocks with genetic diversity similar to the wild stock used as founders (Williamson and Wydoski 1994). The need for captive-reared endangered fish and propagation facilities is identified in Wydoski (1994).

Endangered fishes have been cultured and reared in the upper basin since 1987. Propagation began in the Grand Valley in 1991 with construction of Horsethief Refugia Ponds at Horsethief State Wildlife Area (HSWA). These six refugia ponds were constructed to develop and hold broodstock consisting of the last wild razorback suckers captured from the upper Colorado River. Production of razorback suckers began in 1996 when an intensive-rearing, water-reuse hatchery building (24-Road Hatchery) was built. The hatchery was expanded in 1998 and is currently capable of producing about 28,000 young razorback suckers averaging 200 mm long each year. During the 2000s, numerous constructed and leased grow-out ponds were used to rear razorback suckers large enough for stocking into the rivers of the upper basin. However, these ponds were not only geographically widespread, but also very disparate in terms of shape, size, depth, ease of access, security, productivity, and rates of return. From 2010-2017, all of these leases on these ponds were allowed to expire. The Recovery Program no longer maintains any leased ponds. Likewise, the six original refugia ponds constructed in 1991 at HSWA are no longer being used. A few “lease free” grow-out ponds (e.g., Beswick’s Pond and CDOT Pond on the Colorado River and Butch Craig Pond on the Gunnison River) are still utilized. The Horsethief Canyon Native Fish Facility (HCNFF) ponds, completed in summer 2012, replaced the older, less efficient, leased grow-out ponds. This facility located near Fruita, CO consists of 22 (6.2 total acres of) lined ponds has enabled Ouray NFH-GVU to better standardize production, rearing, and management of endangered fish.

To summarize, the Ouray NFH-GVU currently consists of several separate facilities, all of which are managed by hatchery staff to achieve the same goal. These include the 24-Road Hatchery building, the HCNFF ponds, and a few other “lease free” grow-out ponds. Ouray NFH-GVU is, organizationally, a subunit of the Grand Junction Fish and

Wildlife Conservation Office (Grand Junction FWCO). Ouray NFH-GVU shares the same overall budget, accounting codes, and chain of supervision as that office.

The first young razorback suckers produced at what is now known as Ouray NFH-GVU were stocked into the Gunnison River in 1995. More than 100,000 razorback suckers have been stocked into the Gunnison and Colorado rivers since then. Ouray NFH-GVU annually maintains a broodstock of 500-1,000 adult razorback sucker, which includes offspring from several distinct year-classes. Fish from younger year classes continue to be added to the captive broodstock as they mature and older more senescent fish are rotated out of the broodstock and stocked back into the river. Accurate records of lineages are maintained for all fish to ensure that the maximum amount of original genetic material is maintained in the broodstock. Spawning is controlled to ensure that equal numbers of offspring (eventually encompassing several generations) from the original, wild broodstock will be stocked into the river system over the duration of the propagation program. Razorback sucker at Ouray NFH-GVU are held and reared as both broodstock fish and production fish for stocking into the rivers of the upper Colorado River basin.

In May 2013, bonytail were brought to Ouray NFH-GVU from Colorado Parks and Wildlife's J.W. Mumma Native Aquatic Species Restoration Facility (NASRF). These fish were received by NASRF as larval fish from the U.S. Fish and Wildlife's Southwestern Native Aquatic Resources & Recovery Center (SNARRC) before being transferred to the Ouray NFH facility. The Ouray NFH-GVU now receives bonytail directly from the USFWS-SNARRC facility as larval fish each spring. Bonytail at Ouray NFH-GVU are held and reared as strictly production fish for stocking into the rivers of the upper Colorado River basin. There are no bonytail broodstock located on station at Ouray NFH-GVU.

Beginning in summer 2014, crews from the Grand Junction Fish and Wildlife Conservation Office (GJFWCO) began collecting and bringing in small numbers of wild humpback chub from the Black Rocks area of the Colorado River near the Colorado-Utah state line to HCNFF. The original plan was to bring in juvenile chub (*Gila* spp.), rear them to a size where the species could be determined, then retain any wild humpback chub at HCNFF and return any wild roundtail chub back to the Colorado River. Unfortunately, very few wild juvenile *Gila* have been collected over the last few years. So, larger juvenile and small adult humpback chub are now brought from the wild into HCNFF instead. Because of the low numbers of adult (and larger juvenile) humpback chub in the wild, the numbers of fish being brought into captivity at HCNFF has been necessarily small each year. These fish are currently being held at HCNFF as a refugia population.

IV. Study Goals, Objectives, End Product(s):

Goal: To operate a genetically sound captive propagation and production program for high priority endangered fish species for the Upper Colorado River Endangered Fish Recovery Program (UCREFRP) in accordance with the Revised Integrated Stocking Plan for Razorback Sucker and Bonytail (UCREFRP 2015).

Objective: Operate and maintain propagation facilities that are needed to hold, rear, or produce captive-reared endangered fishes for the UCREFRP in accordance with the Annual Propagation Operation Plan.

End Product: Maintenance of endangered fish in refugia to prevent extinction; development of genetically sound broodstocks for production of young fish for stocking to stabilize or enhance wild stocks; production of captive-reared endangered fish for priority laboratory and field experiments.

V. Study Area:

Upper Colorado River Basin; Ouray NFH-GVU propagation facilities are located in and around Grand Junction and Fruita, CO. Stocking locations currently include the Colorado River from Rifle, CO downstream to Loma, CO and the Gunnison River from Delta, CO downstream to Grand Junction, CO.

VI. Study Methods/Approach:

Conduct all tasks associated with the operation and maintenance of Ouray NFH-GVU facilities in accordance with the Genetics Management Plan (Williamson and Wydoski 1994; Czapla 1999), the annual propagation plan, and the latest version of the Revised Integrated Stocking Plan for Razorback Sucker and Bonytail (UCREFRP 2015).

VII. Task Description and Schedule:

All tasks are performed annually

1. Develop and maintain captive broodstock for:
 - a. Razorback sucker
2. Spawn broodstock and produce family lots for culture at either the HCNFF ponds or the 24-Road Hatchery building
 - a. Razorback sucker
3. Intensively rear razorback sucker and bonytail.
 - a. Also maintain a refugia population of humpback chub brought into captivity.
4. Stock 200 mm razorback sucker into grow-out ponds in spring.
5. Maintain water level, water quality, and productivity in HCNFF ponds and other off-site grow-out ponds (Beswick's Pond, CDOT Pond, and Butch Craig Pond).
6. Operate and maintain Ouray NFH-GVU facilities to:
 - a. Hold, produce, and rear razorback sucker as broodstock and production fish
 - b. Hold and rear bonytail as production fish
 - c. Hold and rear humpback chub brought in from the wild in refugia
7. Harvest, PIT tag, and stock target numbers of endangered fish annually:
 - a. 6,000 razorback sucker (mean = 350 mm TL) into the Gunnison and Colorado rivers (anticipated at 3,000 in each river)

- b. 10,000 bonytail (mean = 250 mm TL) with stocking locations to be determined by hatchery and state managers along with the UCREFRP office as time of stocking approaches.

VIII. Deliverables and Due Dates by Fiscal Year:

PIs should submit 6-12 photos by February 28th each year. Photos can be submitted here: <https://www.flickr.com/photos/coloradoriverrecovery/>. PIs should make a folder with their SOW number and upload images into that folder. Photographs can be taken using cell phones as the quality is acceptable. Each uploaded image will have a number assigned to it. PIs should email Melanie Fischer at melanie_fischer@fws.gov the number and a brief description of each photo. Descriptions should include the date taken, location, what is happening in the photo, and who the photographer is. Field report articles should be 300-500 words and submitted to Melanie Fischer. PIs should include one photo related to field report article in photo submissions.

FY2020

Photos (eg. bonytail diet study) submitted to I & E committee: 28 February 2020
PIT-tag Data finalized and submitted to database, HCP reports finalized and submitted to PDO, annual report finalized and submitted to PDO: November 2020

FY2021

Field report article and photos submitted to I & E committee: 28 February 2021
PIT-tag Data finalized and submitted to database, HCP reports finalized and submitted to PDO, annual report finalized and submitted to PDO: November 2021

FY2022

Photos submitted to I & E committee: 28 February 2022
PIT-tag Data finalized and submitted to database, HCP reports finalized and submitted to PDO, annual report finalized and submitted to PDO: November 2022

FY2023

Photos submitted to I & E committee: 28 February 2023
PIT-tag Data finalized and submitted to database, HCP reports finalized and submitted to PDO, annual report finalized and submitted to PDO: November 2023

FY2024

Photos submitted to I & E committee: 28 February 2024
PIT-tag Data finalized and submitted to database, HCP reports finalized and submitted to PDO, annual report finalized and submitted to PDO: November 2024

IX. Budget Summary:

Please see Interagency Agreement Cost Estimating Tool Spreadsheet Budget Summary for more detailed information. Costs paid by the Bureau of Reclamation to provide utility services to the facilities associated with Ouray NFH-GVU are no longer included in this scope of work.

FY 2020: \$540,534.72

FY 2021:	\$551,345.41
FY 2022:	\$563,189.30
FY 2023:	\$569,580.87
<u>FY 2024:</u>	<u>\$600,963.56</u>
Total:	\$2,825,613.70

X. Reviewers:

Ouray NFH-GVU and Upper Colorado River Endangered Fish Recovery Program staff.

XI. References:

Czapla, T.E. 1999. Genetics Management Plan. Upper Colorado River Endangered Fish Recovery Program, Denver, Colorado.

Upper Colorado River Endangered Fish Recovery Program - Integrated Stocking Plan Revision Committee. 2015. Revised Integrated Stocking Plan. Upper Colorado River Endangered Fish Recovery Program, Denver, Colorado.

Upper Colorado River Endangered Fish Recovery Program – Recovery Implementation Program Recovery Action Plan. 2016. Upper Colorado River Endangered Fish Recovery Program, Denver, Colorado.

Williamson, J. H., and R. S. Wydoski. 1994. Genetics management guidelines. Recovery implementation program for endangered fish species in the upper Colorado River basin. U. S. Department of the Interior, Fish and Wildlife Service, Region 6, Denver, Colorado.

Wydoski, R. S. 1994. Coordinated hatchery facility plan: need for captive-reared endangered fish and propagation facilities. Recovery implementation program for endangered fish species in the upper Colorado River basin. U. S. Department of the Interior, Fish and Wildlife Service, Region 6, Denver, Colorado.