

**RECOVERY PROGRAM
FY 2020-2021 SCOPE OF WORK for:
Operations and Maintenance at Mumma**

Recovery Program Project Number: **29d**

Federal Agreement Assistance Number 08-FG-40-2747

Lead Agency: Colorado Parks and Wildlife
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Category:

- Ongoing project
 Ongoing-revised project
 Requested new project
 Unsolicited proposal

Expected Funding Source:

- Annual funds
 Capital funds
 Other *[explain]*

I. Title of Proposal:

Operation and Maintenance of the J. W. Mumma Native Aquatic Species Restoration Facility

II. Relationship to RIPRAP:

General:

IV. Manage genetic integrity and augment or restore populations

IV.C. Operate and maintain facilities.

IV.C.4. Mumma

Green River Action Plan: Yampa and Little Snake Rivers:

IV.A. Yampa River in Dinosaur National Monument

IV.A.1. Augment or restore populations as needed.

IV.A.1.a. Develop State stocking plan for Bonytail in the Yampa River

IV.A.1.a. (1) Implement stocking plan.

Colorado River: Main stem:

IV.A.5. Develop State stocking plan for Bonytail in the Colorado River from Palisade to Loma.

IV.A.5.b. Implement Bonytail State stocking plan.

III. Study Background/Rationale and Hypotheses:

Since 2001, the J. W. Mumma Native Aquatic Species Restoration Facility (Mumma) located in Alamosa, Colorado and operated by Colorado Parks and Wildlife (CPW) has met endangered fish production needs for the Upper Colorado River Endangered Fish Recovery Program (UCREFRP). The Mumma facility currently provides five (5) lined-ponds; two (2) large 20 ft. diameter circular tanks; and a temporary, make-shift 216 sq. ft. trailer for fish grow-out and fish tagging purposes. Mumma is currently in the process of constructing a permanent 1,440 sq. ft. Fish Staging Building at an estimated cost of \$232,000 (**See rationale below**).

Each year Mumma implants approximately 6,000 Bonytail chub with passive integrated transponders (PIT tags) to assist state and federal biologists in the collection of growth, recruitment, survival and migration data. During this time, fish also receive chemotherapeutic treatment(s) to defend against potential fish pathogens and are provided with water-conditioning and flow-training techniques to promote and enhance their survival in the resource following release. Currently Mumma handles and PIT tags fish in a temporary, makeshift 210 sq. ft. Semi-Trailer without adequate lighting, permanent plumbing, a safe electrical supply and insulation to control ambient temperature. Due to overcrowded conditions, little working space exists between tagging tables and fish-holding tanks. Workflow often bottlenecks impeding progress and resulting in the inefficient use of time and labor. The current situation also requires fish be handled multiple times throughout the process causing undue fish-stress and the potential for increased disease and mortality. The construction of a permanent 1,440 sq. ft. Fish Staging Building will help Mumma facilitate the ease, efficiency and safety of handling these fish species thereby significantly reducing the amount of fish-stress on Bonytail chub prior to release into selected Colorado waters.

In past years, Mumma has been identified to annually produce 5,400 Bonytail (BYT) at 200 mm total length (TL) and to receive Humpback and Roundtail chubs to investigate further the culture techniques and potential. In 2019, Mumma's production goal is to produce 5,400 Bonytail at a size of 250 mm TL. Therefore, it is assumed the number and size of fish requested will remain at current levels throughout 2020-21, although acknowledged increasing demand for additional production and smaller sized fish may change this situation.

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

Goals:

- To provide Bonytail in numbers and sizes sufficient to help meet the annual stocking plan of the Upper Colorado River Endangered Fish Recovery Program (UCREFRP) for BYT in the Upper Basin of the Colorado River drainage. (UCREFRP 2015).
- To receive and rear Humpback and Roundtail chubs removed from the Yampa River for approximately one year.

Objectives:

- To receive early life stage progeny of Bonytail from the Southwest Native Aquatic Resources and Recovery Center, NM and the Wahweap State Fish Hatchery, UT.
- To grow fish out in numbers, sizes, and periods necessary to help meet the annual

stocking requirements for these fish species in Colorado Rivers.

- To individually tag fish with a Passive Integrated Transponder purchased by the USFWS.
- To transport, treat, and take in young-of-year *Gila* species from the Yampa River to determine survival and culture techniques.
- To flow train fish in two (2) large 20 ft. diameter tanks prior to stocking to enhance post-stocking survival.
- To transport fish from Mumma as necessary and assist in the stocking of fish in designated river reaches in Colorado.
- To conduct Health Condition Profiling (HCP) on 20 fish per lot prior to stocking if time and resources allow.
- To conduct a feed trial on 1,000 - 1,500 fish using a low energy diet if time and resources allow.
- To conduct pre-HCP and post-HCP on fish involved in feed trial using a low energy diet if time and resources allow.

End Product:

- Production of Colorado River endangered fish species required to help meet revised stocking plan objectives for designated rivers/river reaches in Colorado.
- Maintaining (via culture) *Gila* spp. brought in from Yampa River.
- An annual report detailing numbers of fish received, propagated, transported off station and maintained on station: propagation, fish marking and disease treatment actions taken.

V. Study Area:

The J. W. Mumma Native Aquatic Species Restoration Facility (Mumma) located at 6655 County Road 106 South in Alamosa, Colorado.

VI. Study Methods/Approach:

Mumma currently has approximately 42,000 Bonytail on unit. Mumma has made available four (4) 0.10 surface acre lined-ponds, one (1) 0.03 surface acre lined-ponds, two (2) 20' diameter circular tanks and a 216 sq. ft. trailer for the propagation and PIT tagging of any feasible combination, number and size of the fish species requested by the Recovery Program.

NOTE: During the summer of 2017 CPW Mumma began construction on new “*Isolation and Fish-Staging Buildings*” to facilitate the ease and biosecurity of receiving Bonytail from other hatchery sources as well as the handling, conditioning and PIT tagging of Bonytail prior to release. Both facilities will be fully functional by fall 2019.

Depending on the requirements for maintaining separate family lots and the flexibility of marking polyculture fish from multiple lots and different species, production capability of Mumma will vary with annual Recovery Program objectives, expectations and funding. Endangered fish received at the unit as larvae, fry, or fingerling-size fish are reared using industry accepted culture techniques and anticipated normal annual mortality rates to produce the

desired number and size of fish product for Recovery Program stocking purposes. Transport of fish product to stocking or transfer locations is pre-planned. Providing assistance in preparing the fish for release and distribution in targeted river reaches is available if requested and budgeted by the Recovery Program.

VII. Task Description and Schedule:

Task 1: Grow-out, harvest, PIT tag, and stock target numbers of Bonytail chub by July through August 2019: a. 5,400 Bonytail chub (mean = 250 mm TL) into the Yampa and Colorado rivers with stocking locations to be determined by hatchery and state.

Task 2: Produce same numbers and sizes by July through August in each year, 2020-2025.

VIII. Deliverables and Due Dates by Fiscal Year:

PIs are requested to 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 of 300-500 words are requested and may be submitted to Melanie Fischer. PIs should include one photo related to field report article in photo submissions.

FY-2020

Photos (eg. bonytail diet study) submitted to I & E committee: 28 February 2020
5,400 Bonytail at 250 mm average total length by July through August 2020
PIT-tag Data finalized and submitted to database, HCP report finalized and submitted to PDO, annual report finalized and submitted to PDO: November 2020

FY-2021

Photos submitted to I & E committee: 28 February 2021
5,400 Bonytail at 250 mm average total length by July through August 2021
PIT-tag Data finalized and submitted to database, HCP report finalized and submitted to PDO, annual report finalized and submitted to PDO: November 2021

FY-2022

Photos submitted to I & E committee: 28 February 2022
5,400 Bonytail at 250 mm average total length by July through August 2022
PIT-tag Data finalized and submitted to database, HCP report finalized and submitted to PDO, annual report finalized and submitted to PDO: November 2022

FY-2023

Photos submitted to I & E committee: 28 February 2023

5,400 Bonytail at 250 mm average total length by July through August 2023
PIT-tag Data finalized and submitted to database, HCP report finalized and submitted to PDO,
annual report finalized and submitted to PDO: November 2023

FY-2024

Field report article and photos submitted to I & E committee: 28 February 2024, if time and resources allow

5,400 Bonytail at 250 mm average total length by July through August 2024
PIT-tag Data finalized and submitted to database, HCP report finalized and submitted to PDO,
annual report finalized and submitted to PDO: November 2024.

IX. Budget Summary:

Please see Non-Federal Grants Cost Estimating Tool Spreadsheet Budget Summary for more detailed information.

FY-2020	\$82,364.43
FY-2021	\$84,046.74
FY-2022	\$85,898.61
FY-2023	\$89,263.94
FY-2024	\$90,410.90
Total:	\$431,984.62

X. Reviewers:

Colorado Parks and Wildlife – Mumma Hatchery and Recovery Program staff.

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XI. References:

Upper Colorado River Endangered Fish Recovery Program, Integrated Stocking Plan Revision Committee. 2015. Revised integrated stocking plan for razorback sucker and bonytail. Upper Colorado River Endangered Fish Recovery Program, Denver, Colorado.