

COLORADO RIVER RECOVERY PROGRAM
FY 2019 ANNUAL PROJECT REPORT

RECOVERY PROGRAM
PROJECT NUMBER: 29d

I. Project Title: J. W. Mumma Native Aquatic Species Restoration Facility
Operation and Maintenance - Colorado

II. Bureau of Reclamation Agreement Number(s): 08-FG-40-2747

Project/Grant Period: Start date (Mo/Day/Yr): 10/01/2007
End date: (Mo/Day/Yr): 09/30/2019
Reporting period end date: 09/30/2019
Is this the final report? Yes No

III. Principal Investigator(s):

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IV. Abstract:

The J. W. Mumma Native Aquatic Species Restoration Facility (Mumma), located in Alamosa, Colorado, was constructed in the year 2000 to facilitate the conservation of rare aquatic native species through captive propagation, genetic conservation, scientific research and public education and awareness. Currently there are 12 fish species and one amphibian species reared at Mumma. Many are listed at the State level as Threatened, Endangered or Species of Special Concern. One, the Bonytail (*Gila elegans*, BYT), is federally listed as Endangered and was given full protection under the Endangered Species Act since 1980. Mumma currently produces BYT 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.

V. Study Schedule: Initial Year: 2002; Final Year: 2022.

VI. Relationship to RIPRAP:

General Recovery Program Support Action Plan

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.

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

Mumma BYT Stocking FY2019

- A grand total of 6,062 BYT averaging 272 mm TL were successfully stocked by Mumma FY 2019.

On April 9, 2019, Mumma stocked **593 BYT** into Salt Creek (Mack Wash).

- BYT averaged 254 mm TL with a maximum of 406 mm TL and a minimum of 142 mm TL.
- BYT averaged 177 grams in weight.
- The receiving water temperature for the Salt Creek BYT stocking was 12.2 degrees Celsius with a pH of 7.9.
- Hatchery transport temperature and pH prior to stocking was 13.3 degrees Celsius and 8.3 respectively.
- Due to slight differences in temperature and pH, the fish were not acclimated for temperature and pH differences on the haul-truck and appeared unstressed upon release into the resource.
- BYT were PIT tagged on April 3, 2019 prior to stocking.

On July 16, 2019, Mumma stocked **2,850 BYT** into Yampa River #1 at Deerlodge Park.

- BYT averaged 286.5 mm TL with a maximum of 465 mm TL and a minimum of 220 mm TL.
- Recorded discharge for this stocking using waterdata.usgs.gov was ~ 3,100 cubic feet per second (cfs) measured at Deerlodge Park (USGS 09260050 YAMPA RIVER AT DEERLODGE PARK, CO) at 14:45, the approximate time of stocking.
- The receiving water temperature for the Yampa River #1 BYT stocking was 22.0

degrees Celsius with a pH of 8.3.

- Hatchery transport temperature and pH prior to stocking was 20.1 degrees Celsius and 8.3 respectively.
- Due to slight differences in temperature and pH, the fish were not acclimated for temperature and pH differences on the haul-truck and appeared unstressed upon release into the resource.
- BYT were PIT tagged on July 9 & 10, 2019 prior to stocking.

On November 4, 2019, Mumma stocked **2,619 BYT** into Colorado River #2.

- BYT averaged 275.8 mm TL with a maximum of 440 mm TL and a minimum of 135 mm TL.
- Recorded discharge for this stocking using waterdata.usgs.gov was ~ 2,050 cfs measured at Cameo Gauge (USGS 09095500 COLORADO RIVER NEAR CAMEO, CO) at 14:00, the approximate time of stocking.
- The receiving water temperature for the Colorado River #2 BYT stocking was 5.3 degrees Celsius with a pH of 8.59.
- Hatchery transport temperature and pH prior to stocking was 11.2 degrees Celsius and 8.55 respectively.
- The fish were not acclimated for temperature and pH differences on the haul-truck and appeared unstressed upon release into the resource.
- BYT were stocked at the *Jet Boat Colorado* boat launch ramp at river mile 208.4 downstream from the town of Debeque, CO.
- BYT were PIT tagged on October 29 & 30, 2019 prior to stocking.

VIII. Additional noteworthy observations:

- All BYT are flow trained in two 20 ft. diameter circular tanks for 1 to 3 weeks prior to stocking.
- Sixty (60) BYT were collected on August 06, 2019 and tested for VHSV in compliance with CPW's regulatory annual fish health inspection. Results were negative for the presence of viruses.
- All BYT received two (2) consecutive daily 10-hour static anti-Platyhelminthes treatments prior to stocking.
- Mumma currently provides four (4) 0.10 surface acre lined-ponds to the recovery of BYT.
- Health Condition Profiling (HCP) was performed on 20 BYT specimens per Lot, on August 06, 2019. HCPs on 36 month old fish showed a mesentery fat score of 3.6 out of 4, 10% normal livers, and no observed deformities. Fish averaged 230 mm in length and 89 g in weight with a K-factor of 0.73.
- Health Condition Profiling (HCP) was performed on 20 other *Gila* specimens, specifically the Rio Grande chub (*Gila Pandora*, RCH) and Roundtail chub (*Gila robusta*, RTC) on September 10, 2019. **Note:** The additional HCP on other *Gila* species at Mumma was to provide a comparative analysis with the Bonytail at the request of the Upper Colorado River Endangered Fish Recovery Program.
- Mumma is currently participating in a Bonytail Alternative Diet Study feeding one group of BYT Skretting Pond LE diet, and the other group of BYT Rangen Trout

diet.

Table 1. Colorado River Recovery Program bonytail stocked from Mumma in calendar year 2019 as of November 5, 2019.

Year Class	Number of Fish	Fish/lb.	Date Stocked	Water Destination
2016	593	3.33/lb.	04/09/2019	22606 Salt Creek
2014	500	2.32/lb.	07/16/2019	22880 Yampa River #1
2016	2,350	2.32/lb.	07/16/2019	22880 Yampa River #1
2016	2,619	2.60/lb.	11/04/2019	19617 Colorado River #2
Total:	6,062			

Table 2. Colorado River Recovery Program fish remaining on unit as of November 5, 2019.

Species	Year Class	Number	Impoundment
Bonytail	2016	7,197	Pond 1
Bonytail	2016	3,612	Pond 2
Bonytail	2016	3,612	Pond 3
Bonytail	2018	21,618	Pond 4
Total:		36,039	

IX. Recommendations:

- To continue to refine culture techniques and dietary requirements of BYT at Mumma to meet Colorado Parks and Wildlife’s obligation to produce Federally Endangered Bonytail in numbers and sizes sufficient to help meet the annual stocking plan of the Upper Colorado River Recovery Program for BYT in the Upper Basin of the Colorado River Drainage.
- To achieve Mumma’s objective as stated in the 2017 Revised Integrated Stocking Plan of the Upper Colorado River Endangered Fish Recovery Program by delivering 5,400 BYT at a minimum target size of 250 mm average TL by summer 2020.
- To continue with anti-Platyhelminthes treatments of BYT prior to all spring and summer stockings and to annually inspect for VHSV at Mumma.
- To continue with PIT tagging BYT at Mumma prior to all stockings.
- Depending on annual snow pack and spring runoff, to have BYT available to stock at warmer water temperatures with the understanding adequate temperature units are available to allow BYT to recover from handling and hauling stress prior to the onset of cold water and winter conditions.
- Unless instructed differently from the UCREFRP, to continue to culture larger BYT (minimum target size of 250 mm average TL) FY 2020 to promote and enhance survival of BYT in the resource.
- To continue to provide in-tank stream flow training and conditioning of BYT at Mumma to promote and enhance survival of BYT in the resource.
- To attempt to closely match receiving water temperature and pH with hatchery rearing and transport water temperatures and pH at time of stocking to promote and enhance

survival of BYT in the resource.

X. Project Status: On track and ongoing.

XI. FY 2019 Budget Status:

A. Funds Provided: \$81,900

B. Funds Expended: \$81,900

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):

PIT tag and additional data from all three BYT stocking events listed in this report were submitted to the database manager, Julie Stahli for entry into the STReaMS database on November 6, 2019 and prior.

XIII. Signed

Principal Investigator: Theodore J. Smith

Date: November 5, 2019