

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

FY 2021 ANNUAL REPORT

PROJECT: 29D

Project Title

J. W. Mumma Native Aquatic Species Restoration Facility
Operation and Maintenance - Colorado

Bureau of Reclamation Agreement Number:

08-FG-40-2747

Project/Grant Period:

Start date: 10/01/2007

End date: 09/30/2021

Reporting period end date: 09/30/2021

Is this the final report? Yes _____ No X

Principal Investigator:

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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 chub (*Gila elegans*, BYT), is federally listed as Endangered and is 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.

Study Schedule:

2002-Ongoing

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.

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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.

Accomplishment of FY 2021 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Mumma BYT Stocking FY2021

- A total of **5,851 BYT** averaging 294.1 mm TL were successfully stocked by Mumma in 2021.

On March 23, 2021, Mumma stocked **587 BYT** into Salt Creek.

- BYT averaged 289 mm TL with a maximum of 446 mm TL and a minimum of 178 mm TL. Mumma tagged the smaller fish as well, since this is an experimental population.
- BYT averaged 2.26 fish per lb.
- The average weight was 179 g.
- Recorded discharge for this stocking using waterdata.usgs.gov reported; there are no data available on the Waterdata system for the time period specified, although data may be available in the files of the local USGS office operating the station. Use gauge (USGS 09163492 SALT CREEK NEAR MOUTH NEAR MACK, CO.) at 12:45, the approximate time of stocking.
- The receiving water temperature for the Salt Creek BYT stocking was 6.1 degrees Celsius with a pH 8.1.
- Hatchery transport temperature and pH prior to stocking was 8.3 degrees Celsius and 8.9 respectively.
- Due to slight differences in temperature and pH, BYT were not acclimated for temperature and pH on the haul-truck and appeared unstressed upon release into the resource.
- BYT were PIT tagged on March 17, 2021, prior to stocking.

On July 28, 2021, Mumma stocked **2,503 BYT** into Colorado River #2.

- BYT averaged 305.3 mm TL with a maximum of 448 mm TL and a minimum of 211 mm TL.
- BYT averaged 1.92 fish per lb.
- Recorded discharge for this stocking using waterdata.usgs.gov reported; ~1,900 cfs measured at Cameo Gauge (USGS 09095500 COLORADO RIVER NEAR CAMEO, CO) at 13:15, the approximate time of stocking.
- The receiving water temperature for the Colorado River #2 BYT stocking was 23.0 degrees Celsius with a pH 8.4.
- Hatchery transport temperature and pH prior to stocking was 21.1 degrees Celsius and 8.3 respectively.
- Due to slight differences in temperature and pH, BYT were not acclimated for temperature and pH on the haul-truck and appeared unstressed upon release into the resource.

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- 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 July 20 & 21, 2021, prior to stocking.

On October 11, 2021, Mumma stocked **2,761 BYT** into Colorado River #1 at Fruita State Park.

- BYT averaged 288.0 mm TL with a maximum of 410 mm TL and a minimum of 230 mm TL.
- BYT averaged 2.29 fish per lb.
- Recorded discharge for this stocking using *waterdata.usgs.gov* reported; ~ 3,100 cubic feet per second (cfs) measured at Colorado-Utah State Line Gauge (USGS 09163500 Colorado River near Colorado – Utah State Line) at 13:39, the approximate time of stocking.
- The receiving water temperature for the Yampa River #1 BYT stocking was 12.1 degrees Celsius with a pH 8.4.
- Hatchery transport temperature and pH prior to stocking was 11.0 degrees Celsius and 8.4 respectively.
- BYT were stocked at the *Fruita State Park Campground* boat launch ramp located in Fruita, Colorado.
- Due to slight differences in temperature and pH, BYT were not acclimated for temperature and pH on the haul-truck and appeared unstressed upon release into the resource.
- BYT were PIT tagged on October 5 & 6, 2020 prior to stocking.

Additional noteworthy observations:

- Due to drought conditions and extremely low streamflow on the Yampa River #1, BYT destined for summer stocking at this location were held until the fall in hopes the flows would increase. This was not the case. Thus, on October 11, 2021 Mumma stocked 2,761 Bonytail chub into the Colorado River #1 near the town of Fruita. Typically these Bonytail are destined for the Yampa River at Deerlodge Park but due to critically low streamflows on the Yampa in 2021 the fish were released into the Colorado River instead.
- All BYT are flow trained in two 12 ft. diameter circular tanks for 1 to 3 weeks prior to stocking.
- Sixty (60) BYT were collected on August 02, 2021 and tested for VHSV in compliance with Colorado Parks and Wildlife's (CPW) regulatory annual fish health inspection (FHI). Results showed no viruses detected.
- All BYT received two (2) consecutive daily 8-10 hour static-bath anti-Platyhelminthes *Praziquantel* treatments prior to stocking.
- Mumma currently provides four (4) 0.10 surface acre lined-ponds to the recovery of BYT.

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- **Fish stocked** from Mumma as of October 11, 2021.

<u>Species</u>	<u>YC</u>	<u>Fish No.</u>	<u>Fish/lb.</u>	<u>Date Stocked</u>	<u>Water-Destination</u>
BYT	2016	587	2.26/lb.	03/23/2021	22606-Salt Creek
BYT	2016	2,503	1.92/lb.	07/28/2021	19617-Colorado River #2
BYT	2016	2,761	2.29/lb.	10/11/2021	19605-Colorado River #1
5,851 Total BYT stocked for calendar year 2021					

- **Fish remaining** on unit as of October 29, 2021

<u>Species</u>	<u>Year Class</u>	<u>Fish No.</u>	<u>Impoundment</u>
BYT	2021	0	POND 1
BYT	2018	3,621	POND 2
BYT	2018	10,782	POND 3
BYT	2018	10,836	POND 4
		25,239	Total BYT currently at Mumma

Health Condition Profiling (HCP) FY21

On August 02, 2021, Mumma performed HCP on 20 BYT specimens per Lot NSF16BYT111WAH. HCPs on 62-month-old BYT showed a mean average of 227.2 mm in length; a mean average of 90.6 g in weight; a mean average of 0.7562 Ktl * 105; a mean average of 2.7323 Ctl * 104; a mean average of 55.158 Hematocrit; a mean average of 1.000 Leucocrit; a mean average of 5.411 Plasma Protein; a mean average of 0.05 Deformity Index; a mean average of 0.05 in Skin Lesion; and a mean average 0.215 in Fin Deformities.

Recommendations:

- To continue to refine culture techniques and dietary requirements of BYT at Mumma to meet CPW’s obligation to produce Federally Endangered Bonytail in numbers and sizes sufficient to help meet the annual stocking plan of the UCREFRP 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 2022.
- To continue annual fish health inspections of BYT for the presence of VHSV at Mumma.
- To continue with anti-Platyhelminthes *Praziquantel* treatments of BYT prior to all stockings.
- To continue with PIT tagging BYT at Mumma prior to all stockings.
- Dependent on drought conditions, 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 colder water and winter conditions.
- Unless instructed differently from the UCREFRP, to continue to culture and stock larger BYT (minimum target size of 250 mm average TL) FY 2022 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

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- prior to stocking 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.

Project Status:

The project remains on track and ongoing.

FY 2021 Budget Status

Funds Provided: \$84,047

Funds Expended: \$84,047

Difference: \$0.00

Percent of the FY 2021 work completed, and projected costs to complete: 100%

Recovery Program funds spent for publication charges: \$0.00

Status of Data Submission

PIT tag and additional data from all three BYT stocking events listed in this report was submitted to the UCREFRP Database Coordinator, Christopher Michaud and Deputy Director Julie Stahli for entry into the STReaMS database on October 18, 2021. (Where applicable): Data will be uploaded into STReaMS by the end of October 2021.

Signed:

Theodore J. Smith

Principal Investigator

Date: October 29, 2021