

**COLORADO RIVER RECOVERY PROGRAM
FY 2016 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): 09/30/2016
Reporting period end date: 09/30/2016
Is this the final report? Yes _____ No X

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 housed on the unit. Many are State Threatened, Endangered or Species of Special Concern and one, the Bonytail chub (BYT), is federally listed as Endangered and 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 Recovery Program (UCRRP) for BYT in the Upper Basin of the Colorado River drainage. The project is scheduled to end in 2017.

V. Study Schedule:

Initial Year: 2002
Final Year: 2017

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 2016 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

BYT Stocking FY2016

- To date, a total of **5,507 BYT** were successfully stocked by Mumma FY 2016.
- Another **520 BYT** will be stocked into Salt Creek (Mack Wash) on November 17, 2016 following irrigation flow shut off. These fish average 327 mm Total Length (TL) and weigh on the average 333 grams each.
- Thus, a grand total of **6,027 BYT** were successfully stocked by Mumma FY 2016.

On August 10, 2016 Mumma stocked **2,711 BYT** into the Colorado River #2. The BYT were stocked at the *Jet Boat Colorado* boat launch ramp at river mile 208.4 just downstream from the bridge leading into the town of Debeque.

- The BYT averaged 321.5741 mm TL with a maximum of 475 mm TL and a minimum of 237 mm TL.
- Recorded discharge for this stocking was ~ 2,700 cubic feet per second (cfs), measured at the Cameo gauge.
- The receiving water temperature for the Colorado River #2 BYT stocking was 20.5 degrees Celsius with a pH of 8.64.
- Hatchery rearing temperature prior to stocking was 18.7 degrees Celsius and hatchery pH prior to stocking was 7.78.

On September 07, 2016 Mumma stocked **2,796 BYT** into the Yampa River #1 at Hell's Canyon Ranch (formerly known as the historic Mantle Ranch).

- The BYT averaged 325.3478 mm TL with a maximum of 480 mm TL and a minimum of 240 mm TL.
- Recorded discharge for this stocking was ~ 220 cfs measured at Deerlodge Park.
- The receiving water temperature for the Yampa River #1 BYT stocking was 20.1 degrees Celsius with a pH of 8.3.
- Hatchery rearing temperature prior to stocking was 17.3 degrees Celsius and hatchery pH prior to stocking was 8.4.

Additional Information

- All BYT are flow trained in two 20 ft. diameter circular tanks for 1 to 3 weeks prior to stocking.
- Sixty (60) BYT were tested for VHSV in 2016 in compliance with CPW's regulatory annual fish health inspection. Results were negative for the presence of VHSV.

- On October 10, 2016 Mumma euthanized ten (10) Bonytail chub, excised livers and preserved by freezing to send to the USFWS Bozeman Fish Technology Center for assessment of nutritional status of BYT as it correlates to liver fat. The frozen livers shipped on October 19, 2016 and were received in Bozeman on October 20, 2016.
- All BYT receive anti-Platyhelminthes treatments prior to stocking.
- Mumma currently provides four (4) 0.10 surface acre lined-ponds and one (1) 0.03 surface acre lined-pond to the recovery of BYT.

Fish stocked from Mumma as of October 21, 2016.

| <u>Species</u> | <u>YC</u> | <u>Fish No.</u> | <u>Fish/lb.</u> | <u>Date Stocked</u> | <u>Water Destination</u> |
|---|-----------|-----------------|-----------------|---------------------|--------------------------|
| BYT | Mix | 2,711 | 1.64/lb. | 08/10/2016 | 19617 Colorado River #2 |
| BYT | Mix | <u>2,796</u> | 1.59/lb. | 09/07/2016 | 22880 Yampa River #1 |
| 5,507 Total BYT stocked for calendar year 2016 | | | | | |

Fish remaining on unit as of October 21, 2016.

| <u>Species</u> | <u>Year Class</u> | <u>Fish No.</u> | <u>Impoundment</u> |
|--|-------------------|-----------------|--------------------|
| BYT | 2014 | 4,029 | POND 1 |
| BYT | 2014 | 8,304 | POND 2 |
| BYT | 2014 | 3,563 | POND 3 |
| BYT | 2014 | <u>8,770</u> | POND 4 |
| 24,666 Total BYT currently at Mumma | | | |

VIII. Additional noteworthy observations:

- When BYT were harvested from the ponds for PIT tagging, approximately 200 were smaller than the target size of 250 mm TL at approximately 3.32% of total number handled. These fish were returned to a grow-out pond for additional growth.
- Sixty (60) deformed BYT were culled from the population in 2016 and used in annual fish health inspection for VHSV. Another 50 deformed BYT were returned to the pond for disease inspection in 2017. Abnormal BYT occurred at approximately 1.825% of total number handled.

IX. Recommendations:

1. 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 chub 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.
2. To achieve Mumma's objective as stated in the 2016 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 2017.

3. To acquire an additional 20,000 BYT averaging ~ 80 mm TL from the Wahweap SFH in Big Water, UT for future grow-out at Mumma in early November 2106.
4. To continue with anti-Platyhelminthes treatments of BYT prior to all spring and summer stockings and to inspect for VHSV at Mumma annually.
5. To continue with PIT tagging BYT at Mumma prior to all stockings.
6. To have fish available to stock at warmer water temperatures with the knowledge that adequate temperature units are available to allow BYT to recover from handling and hauling stress prior to the onset of coldwater, winter conditions.
7. To continue to culture larger BYT (minimum target size of 250 mm average TL) FY 2017 to promote and enhance survival of BYT in the resource.
8. 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.
9. To attempt to closely match receiving water temperature and pH with hatchery rearing water temperature 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 2016 Budget Status:

- A. Funds Provided: \$81,900
- B. Funds Expended: \$81,900
- C. Difference: \$0.00
- D. Percent of the FY 2016 work completed, and projected costs to complete: 100%
- E. Recovery Program funds spent for publication charges: \$0.00

XII. Status of Data Submission (Where applicable): Not applicable

XIII. Signed: Ted Smith October 21, 2016
Principal Investigator Date

For projects where more than one agency/entity receives funds from the Bureau of Reclamation, append one PPR from each agency/entity. Otherwise, delete.

ANNUAL PERFORMANCE PROGRESS REPORT (PPR)

BUREAU OF RECLAMATION AGREEMENT NUMBER: _____

UPPER COLORADO RIVER RECOVERY PROGRAM PROJECT NUMBER: _____

Project Title:

Principal Investigator: *[Name, mail and e-mail addresses, phone number]*

Project/Grant Period: Start date (Mo/Day/Yr):
 End date: (Mo/Day/Yr):
 Reporting period end date (Mo/Day/Yr):
 Is this the final report? Yes _____ No _____

Performance: *Briefly describe the tasks accomplished and any tasks not met. One paragraph is sufficient.*