

**COLORADO RIVER RECOVERY PROGRAM**  
**Performance Period FY2014-FY2017**  
**Federal Agreement Assistance Number 08-FG-40-2747**

**Project No.: 29d**

**FY2014-15 PROPOSED SCOPE OF WORK (SOW) for:**  
**Operations and Maintenance Mumma**

**Lead Agencies:** Colorado Parks and Wildlife  
**Submitted by:** Ted Smith (Lead)  
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**Revised:** November 26, 2001; May 11, 2003; June 19, 2007; June 12, 2009;  
June 1, 2011; February 12, 2013 by Smith and Crockett; May 26, 2013 by  
Crockett

Category:

Expected Funding Source:

- |   |  |
|---|--|
| <input type="checkbox"/> Ongoing project                    | <input checked="" type="checkbox"/> Annual funds |
| <input checked="" type="checkbox"/> Ongoing-revised project | <input type="checkbox"/> Capital funds           |
| <input type="checkbox"/> Requested new project              | <input type="checkbox"/> Other (explain)         |
| <input type="checkbox"/> Unsolicited proposal               |  |

**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) is offered to the Colorado River Recovery Program as an alternative resource for meeting Colorado River endangered fish production needs. The Mumma facility provides up to nine lined ponds and two large circular tanks for fish grow-out and fish tagging purposes.

In past years Mumma has been identified to annually produce 5,400 Bonytail at 200 mm total length (TL) and to receive Humpback and Roundtail chubs to investigate culture techniques and potential. In 2013 Mumma's production goal is to produce 5,400 Bonytail at an increased size of 250 mm TL. In 2013 CPW was asked to develop a scope of work for increasing production to 10,000 bonytail at 250mm, but the Program Office decided not to incur the cost increase for this additional production. It is assumed therefore that the number and size of fish requested will remain at current levels through 2017, although acknowledged that increasing demand for additional production may change this situation.

**IV. Study Goals, Objectives, End Product:**

**Goal:** To provide bonytail in numbers and sizes sufficient to meet the annual stocking plan (Nesler et al 2003). To rear and 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 (formally known as the Dexter National Fish Hatchery and Technology Center) and the Wahweap State Fish Hatchery, Utah.

To grow-out these fish in numbers, sizes, and time frames necessary to meet the annual stocking requirements for these fish species in Colorado Rivers.

To transport these fish from Mumma as necessary and assist in the stocking of these fish in designated river reaches in Colorado.

To transport, treat, and take in young-of-year *Gila* species from the Yampa River to determine survival and culture techniques.

**End Product:**

- Production of Colorado River endangered fish species required to 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 in Alamosa, Colorado.

**VI. Study Methods/Approach:**

Mumma currently has approximately 35,000 Bonytail on unit. Mumma has made available four 0.1 acre-lined ponds, five 0.03 acre-lined ponds and two 20’ diameter circular tanks for the propagation and tagging of any feasible combination, number and size of the fish species requested by the Recovery Program. Depending on the requirements for maintaining separate family lots and the flexibility of marking polycultured 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 will be grown using accepted culture techniques and expected annual mortality rates to produce a desired number and size of fish product for Program stocking purposes. These products will be transported to stocking or transfer locations as planned. Assistance will be provided in preparing the fish for release and distribution in targeted river reaches if requested and budgeted by the Recovery Program.

**VII. Task Description and Schedule:**

1. Raise bonytail to produce 5,400 to 250 mm total length fish by fall 2014.
2. Produce same numbers and sizes by fall in each year 2014-2017.

**VIII. Deliverables, Due Dates, and Budget by Fiscal Year:**

Deliverables/Due Dates: 5,400 bonytail at 250 mm average total length by fall, 2014			
Budget, 2014:			
Mumma total	% of total for BYT	Source of info (CPW use)	Cost to produce BYT
<b>Labor &amp; Benefits</b>			
\$388,047.00	7.9	DARS, Mumma staff	\$30,655.71
\$65,124.00	7.9	FDW, seasonal temps	\$5,144.80
		<b>subtotal</b>	<b>35800.51</b>
<b>Feed</b>			
		36 lbs/day * 365 * \$0.892/lb	<b>\$11,720.88</b>
<b>Utilities</b>			
\$47,120.00	39	240 gpm for BYT / 610 gpm total	<b>\$18,376.80</b>
<b>Chemicals (Discharge chlorine)</b>			
\$14,832.00	39	240 gpm for BYT / 610 gpm total	<b>\$5,784.48</b>
<b>Equipment maintenance/repair</b>			

\$12,000.00	30	% surface area pond space for BYT	\$3,600.00
<b>Building/grounds</b>			
		annual avg	\$2,500.00
<b>Stocking/vehicle use/maintenance</b>			
			\$2,950.00
<b>Travel/training/phone</b>			
			\$1,167.33
		<b>TOTAL</b>	<b>\$81,900.00</b>

Deliverables/Due Dates: 5,400 bonytail at 250 mm average total length by fall, 2015

**For 2014 - 2018, temporary salaries and feed assumed to increase by 2.5% annually**

Budget, 2015:

	% of total for BYT	Source of info (CPW use)	Cost to produce BYT
<b>Mumma total</b>			
<b>Labor &amp; Benefits</b>			
\$388,047.00	7.9	DARS, Mumma staff	\$30,655.71
\$66,752.10	7.9	FDW, seasonal temps	\$5,273.42
		<b>subtotal</b>	<b>35929.13</b>
<b>Feed</b>			
		36 lbs/day * 365 * \$0.914/lb	\$12,013.90
<b>Utilities</b>			
\$47,120.00	39	240 gpm for BYT / 610 gpm total	\$18,376.80
<b>Chemicals (Discharge chlorine)</b>			
\$14,832.00	39	240 gpm for BYT / 610 gpm total	\$5,784.48
<b>Equipment maintenance/repair</b>			
\$12,000.00	30	% surface area pond space for BYT	\$3,600.00
<b>Building/grounds</b>			
		annual avg	\$2,500.00
<b>Stocking/vehicle use/maintenance</b>			
			\$2,950.00
<b>Travel/training/phone</b>			
			\$1,167.33
		<b>TOTAL</b>	<b>\$82,321.64</b>

Deliverables/Due Dates: 5,400 bonytail at 250 mm average total length by fall, 2016

Budget, 2016:

<b>Mumma total</b>	<b>% of total for BYT</b>	<b>Source of info (CPW use)</b>	<b>Cost to produce BYT</b>
<b>Labor &amp; Benefits</b>			
\$388,047.00	7.9	DARS, Mumma staff	\$30,655.71
\$68,420.90	7.9	FDW, seasonal temps	\$5,405.25
		<b>subtotal</b>	<b>36060.96</b>
<b>Feed</b>			
		36 lbs/day * 365 * \$0.937/lb	<b>\$12,314.25</b>
<b>Utilities</b>			
\$47,120.00	39	240 gpm for BYT / 610 gpm total	<b>\$18,376.80</b>
<b>Chemicals (Discharge chlorine)</b>			
\$14,832.00	39	240 gpm for BYT / 610 gpm total	<b>\$5,784.48</b>
<b>Equipment maintenance/repair</b>			
\$12,000.00	30	% surface area pond space for BYT	<b>\$3,600.00</b>
<b>Building/grounds</b>			
		annual avg	<b>\$2,500.00</b>
<b>Stocking/vehicle use/maintenance</b>			
			<b>\$2,950.00</b>
<b>Travel/training/phone</b>			
			<b>\$1,167.33</b>
		<b>TOTAL</b>	<b>\$82,753.82</b>

Deliverables/Due Dates: 5,400 bonytail at 250 mm average total length by fall, 2017

Budget, 2017:

<b>Mumma total</b>	<b>% of total for BYT</b>	<b>Source of info (CPW use)</b>	<b>Cost to produce BYT</b>
<b>Labor &amp; Benefits</b>			
\$388,047.00	7.9	DARS, Mumma staff	\$30,655.71
\$70,131.43	7.9	FDW, seasonal temps	\$5,540.38
		<b>subtotal</b>	<b>36196.1</b>
<b>Feed</b>			
		36 lbs/day * 365 * \$0.961/lb	<b>\$12,622.11</b>
<b>Utilities</b>			

\$47,120.00	39	240 gpm for BYT / 610 gpm total	\$18,376.80
<b><u>Chemicals (Discharge chlorine)</u></b>			
\$14,832.00	39	240 gpm for BYT / 610 gpm total	\$5,784.48
<b><u>Equipment maintenance/repair</u></b>			
\$12,000.00	30	% surface area pond space for BYT	\$3,600.00
<b><u>Building/grounds</u></b>			
		annual avg	\$2,500.00
<b><u>Stocking/vehicle use/maintenance</u></b>			
			\$2,950.00
<b><u>Travel/training/phone</u></b>			
			\$1,167.33
		<b>TOTAL</b>	<b>\$83,196.81</b>
Deliverables/Due Dates: 5,400 bonytail at 250 mm average total length by fall, 2018			
Budget, 2018:			
<b>Mumma total</b>	<b>% of total for BYT</b>	<b>Source of info (CPW use)</b>	<b>Cost to produce BYT</b>
<b><u>Labor &amp; Benefits</u></b>			
\$388,047.00	7.9	DARS, Mumma staff	\$30,655.71
\$71,884.71	7.9	FDW, seasonal temps	\$5,678.89
		<b>subtotal</b>	<b>\$36,334.60</b>
<b><u>Feed</u></b>			
		36 lbs/day * 365 * \$0.985/lb	\$12,937.66
<b><u>Utilities</u></b>			
\$47,120.00	39	240 gpm for BYT / 610 gpm total	\$18,376.80
<b><u>Chemicals (Discharge chlorine)</u></b>			
\$14,832.00	39	240 gpm for BYT / 610 gpm total	\$5,784.48
<b><u>Equipment maintenance/repair</u></b>			
\$12,000.00	30	% surface area pond space for BYT	\$3,600.00
<b><u>Building/grounds</u></b>			
		annual avg	\$2,500.00
<b><u>Stocking/vehicle use/maintenance</u></b>			
			\$2,950.00
<b><u>Travel/training/phone</u></b>			

			<b>\$1,167.33</b>
		<b>TOTAL</b>	<b>\$83,650.87</b>

**IX. Budget Summary:**

FY-2014	\$81,900
FY-2015	\$82,322
FY-2016	\$82,754
FY-2017	\$83,197
FY-2018	\$83,650
 Total:	 \$ \$413,823

**XI. Reviewers:**

Colorado Parks and Wildlife and Recovery Program staff

**XII. References:**

Nesler, T.P., K. Christopherson, J.M. Hudson, C.W. McAda, F. Pfeifer, and T.E. Czapla. 2003. An integrated stocking plan for razorback sucker, bonytail and Colorado pikeminnow for the Upper Colorado River Endangered Fish Recovery Program, Addendum to State stocking plans. Upper Colorado River Endangered Fish Recovery Program, Denver, Colorado.