

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

FY 2024-2025 SCOPE OF WORK

PROJECT: 8

**Project Title**

Operation and Maintenance of Gages

**Bureau of Reclamation Agreement Numbers:**

CO USGS Contract: R16PG00077                      End date: 9/30/25  
State of Colorado: SEO R12AP40009              End date: 9/30/23\*  
UT USGS Contract: R16PG00079                      End date: 9/30/26

**Reclamation Agreement Term**

See end dates listed above, from 9/30/23 to 9/30/26 depending on individual agreement. \*Colorado's capital spending contract – including potential cost sharing on gage operations - is expected to be renewed pending Program re-authorization.

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*Note: Recovery Program FY24-25 scopes of work are drafted in May 2023. They often are revised before final Program approval and may subsequently be revised again in response to changing Program needs. Program participants also recognize the need and allow for some flexibility in scopes of work to accommodate new information (especially in nonnative fish management projects) and changing hydrological conditions.*

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**Lead Agency:**

U.S Fish and Wildlife Service

**Principal Investigator:**

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# UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

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## Utah Gages

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## Category:

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

## Expected Funding Source:

- Annual funds  
 Capital funds  
 Other (State of Wyoming)

## **Relationship to RIPRAP:**

### Colorado River Action Plan

I.A.5 Provide and legally protect instream flows pursuant to the Colorado River PBO.

### Green River Action Plan

I.A.3 Deliver identified flows

### Yampa River Action Plan

I.B.2a.(2)(b) Elkhead Reservoir delivery flows for endangered fish

I.A.1.f Install and/or operate gages

### Duchesne River Action Plan

I.C. Legally protect and deliver identified flows.

I.D. Coordinate reservoir operations

## **Study Background/Rationale and Hypotheses:**

Over the years, the Recovery Program has identified a need to expand stream gaging in the basin to support development of flow recommendations, quantify sediment movement, and administer water secured for endangered fish. This scope of work covers the Recovery Program gaging program and identifies the contributions of cooperating agencies. Cooperators are USGS and the Colorado State Engineers Office. Gages are funded directly by the Recovery Program by funds administered by the Bureau of Reclamation.

## **Study Goals, Objectives, End Product(s):**

Provide a basis for refining the flow recommendations for the important stream reaches of the Colorado, Yampa, Price, and Duchesne Rivers.

Aid in scheduling releases from Ruedi, Wolford, Williams Fork, Granby, Elkhead and Green Mountain reservoirs and other water sources which may be acquired or managed by the Recovery Program.

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### Study Area:

Colorado, Green, Yampa, and Duchesne Rivers.

### Study Methods/Approach:

The Recovery Program will work with cooperators to operate gages of importance. The relevant gages are described below.

### Task Description, Deliverables and Schedule:

- A. Colorado River near Palisade, Colorado gage (#09106150) is the flow target measurement location for the 15-Mile Reach. It was installed in FY-90 below the large irrigation diversions in the Grand Valley of Colorado, and is located immediately downstream of the Grand Valley Irrigation Company diversion structure at the head of the 15-Mile Reach.

Added in 2017: Operate and maintain temperature equipment installed on the USGS Colorado River near the Colorado-Utah State Line gage (#09163500).

- B. Yampa River flow gages (at Deerlodge Park, above Elkhead Creek, and below Craig) were installed in FY-97 by the Recovery Program. The gage on the Yampa River above Elkhead Creek (USGS #09244490) is 50% funded by the Program, 50% funded by the State of Wyoming. The gage on the Yampa River below Craig is 25% funded by the State of Wyoming, with the remainder funded by the Colorado River Water Conservancy District and the City of Craig.

Williams Fork near Hamilton (below Craig) gage: In about 2005, the Division Engineer (Bob Plaska) was adamant that this gage for tributary inflow to the Yampa was necessary for their office to administer and protect reservoir releases made from Elkhead Creek Reservoir. This is a state-operated gage (not USGS) used to help distinguish reservoir water from natural flow in the Yampa River below Williams Fork. Tri-State is interested in this gage located downstream of their diversions, as in a dry year like 2012 or 2018 it allows the flows at the Craig gage station to be compared to senior diversions downstream of their diversion. Tri-State does not want to be called out by a downstream senior and uses this information to compute what to release from their own reservoir storage.

- C. Yampa River at Deerlodge Park temperatures:

In addition to funding a gage for flow measurement on the Yampa River at Deerlodge Park, Colorado (USGS #09260050; 50% Program funding and 50% State of Wyoming funding), the Recovery Program (25%) and the State of Wyoming (75%) also fund USGS to monitor water temperatures at that gage.

- D. Duchesne and Uinta Rivers flow gages:

Installed in FY-97 by the Central Utah Water Conservancy District. The Recovery Program will continue to cost-share operation and maintenance of the following equipment:

The Duchesne River at Myton gaging station, located 34.4 river miles downstream of

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Starvation Dam and with a flow-change arrival time of 17 to 20 hours from the dam, provides us with river conditions after the influences of the Duchesne Feeder Canal Diversion, the Gray Mountain Diversion, the Myton Townsite Diversion, and the inflows from the Lake Fork River. This is also one of the oldest functioning gaging stations in the Uintah Basin with a long history of river data. In 2023, the Central Utah Water Conservancy District offered to pick up 61% of the Myton gage O&M costs, while USGS will pick up the remaining 39%, beginning in Fiscal Year 2024 and continuing through FY25.

The Duchesne River above Uinta River near Randlett gaging station provides us with river conditions (flow and temperature) after the additional influences of the Riverdell Diversion and the Ouray School Diversion along with thunderstorm and evaporation influences. This gaging station also provides an important double-check and confirmatory reading, along with the Uinta-River-at-Randlett gaging station, for flows passing the Duchesne-River-near-Randlett gaging station. It also provides a similar double-check and confirmatory reading for the Duchesne-River-at-Myton gaging station.

The Uinta River at Randlett gaging station provides the only measurement point along the Uinta River that is used for lower Duchesne River operations. It provides natural flow and thunderstorm activity information and is used to monitor flow releases from Big Sand Wash Reservoir, via the Big Sand Wash-Roosevelt Pipeline, for instream flow purposes. Releases from this pipeline travel 19.6 river miles to this gaging station. Consistent flow travel time has not yet been determined, and this is an additional item of study requiring this gaging station.

The Duchesne-River-near-Randlett gaging station, located 58.5 river miles downstream of Starvation Dam and with a flow-change arrival time of 34 to 40 hours from the dam, is the milestone gaging station (flow and temperature) where all targets are measured. All lower Duchesne river operations, documentation, and reporting relative to the Duchesne River Biological Opinion (2005) hinge on the information from this gaging station.

Managing the Duchesne River System for target flows requires coordination among several entities: Central Utah Water Conservancy District (CUWCD), Upper Colorado River Endangered Fish Recovery Program (Program), U.S. Department of the Interior Central Utah Project Completion Act Office, U.S. Bureau of Reclamation, U.S. Geological Survey (USGS), U.S. Weather Service, U.S. Natural Resources Conservation Service, Utah Division of Wildlife Resources, Utah Division of Water Rights, Duchesne/Strawberry Water Users Association, Moon Lake Water Users Association, Duchesne County Water Conservancy District, Ute Tribe, and several other independent canal companies and water users.

Shepherding lower Duchesne River instream flows from Starvation Dam and Big Sand Wash Dam is done by local agreement and not by state law. This agreement, initially verbal, but now, to a degree, written, has culminated in a Safe Harbor Agreement/Candidate Conservation Agreement with assurances by local water users to allow the instream flows to bypass their diversions. This effort is partially supported by assurances that water users

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have adequate flow measurements by these four gaging stations. CUWCD's position is that for continued success, all four gaging stations need to be in place. Removal would result in the use of more water to attain target flows to compensate for less information available within the Uinta Basin, with the likely effect of achieving target flows less frequently.

### E. Green River flow and temperature gages:

Fund a USGS flow gage on the Green River at Ouray, Utah (#09272400, installed in 2009). Continued water temperature monitoring by the USGS above Gates of Lodore (#404417108524900) is funded by the Recovery Program (25%) and the State of Wyoming (75%).

Operate and maintain the USGS temperature equipment installed on the USGS Green River near Jensen, Utah gage (#09261000) installed in FY-98 for the Recovery Program. The Recovery Program will cover the operation of this temperature gage.

### F. Price River flow and temperature gage:

Operate and maintain the gage installed on the Price River near Woodside, UT (#09314500). The gage was requested by the Biology Committee. River stage/flow and temperature will be collected. The Recovery Program will cost-share in the operation of this gage.

Deliverables: Provisional USGS data are available at: <http://waterdata.usgs.gov/nwis/rt>. The data are finalized in March of each year. Historic data are also available on the web but usually lag a year because of quality assurance procedures and the volume of data which must be processed by USGS. Temperature for Lodore, Jensen and Deerlodge is available at: <http://waterdata.usgs.gov/nwis/dv>.

### **Budget Summary:**

FY Year	<i>Recovery Program</i>	<i>State of Wyoming</i>
2024	\$160,327	\$32,078
2025	\$162,227	\$32,719
2026	\$165,472	\$33,373
2027	\$168,781	\$34,041
2028	\$172,157	\$34,722
<b>Total</b>	<b>\$809,517</b>	<b>\$163,942</b>

Note: The tables appended here identify costs per gage, and associated Recovery Program share. The share of costs paid by State of Wyoming on certain gages is also identified. The USGS Colorado and Utah Water USGS Science Centers independently estimate their program costs for the Recovery Program largely based on local salary structure and logistical factors specific to the networks they each operate; however, their cost-estimate methodology is reasonably consistent. The percentage of operation and maintenance costs for the stream gages and temperature monitors operated by the USGS for the Recovery Program is typically distributed among the following activities: Labor for field and office:

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38%, Administrative support: 30%, Building and Utilities: 8% , Field Equipment: 11%, Data Management and Delivery: 8%, Vehicles: 3% ,Travel (lodging and per diem): 3%

The Cost Estimating Tool provided with this Scope of Work attempts to characterize a reasonable breakdown of these per-gage costs into the elements identified in the Estimating Tool; due to the approximations involved in using that Tool, the summary cost estimate for each year may differ slightly from the totals listed above.

**Reviewers:**

Recovery Program Staff.

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**FY2024 Gage Cost Estimates**

FY 2024				Assumes 2.0% cost increase from previous year									
ID	Site	Parameter	FY2024 Cost (Total)	Cost-share Responsibilities						FY2024 Cost Share			
				Recovery Program	State of WY	CWCB	CRWCD + City of Craig	USBR	USGS	Recovery Program Share	State of WY share	CWCB share	
<b>Yampa River Basin</b>													
CO WMFKMHCO	Williams Fork near Hamilton, CO	Flow	6,444	100%		0%					\$ 6,444	\$ -	\$ -
USGS #09244490	Yampa River above Elkhead Creek, CO	Flow	19,622	50%	50%						\$ 9,811	\$ 9,811	\$ -
USGS #09247600	Yampa River below Craig, CO	Flow	19,622		25%		75%				\$ -	\$ 4,905	\$ -
USGS #09260050	Yampa River at Deerlodge Park, CO	Flow	19,622	50%	50%						\$ 9,811	\$ 9,811	\$ -
USGS #09260050	Yampa River at Deerlodge Park, CO	Temperature	5,033	25%	75%						\$ 1,258	\$ 3,775	\$ -
<b>Mainstem Colorado River</b>													
USGS #09106150	Colorado River near Palisade, CO	Flow	19,622	100%							\$ 19,622	\$ -	\$ -
USGS #09163500	Colorado River at Colo-Utah State Line	Temperature	5,033	100%						0%	\$ 5,033	\$ -	\$ -
<b>Green River</b>													
404417108524900	Green River above Gates of Ladore, CO	Temperature	5,033	25%	75%						\$ 1,258	\$ 3,775	\$ -
USGS #09261000	Green River near Jensen, UT	Flow	17,479	0%						100%	\$ -	\$ -	\$ -
USGS #09261000	Green River near Jensen, UT	Temperature	5,930	100%							\$ 5,930	\$ -	\$ -
USGS #09272400	Green River at Ouray, UT	Flow	17,916	100%							\$ 17,916	\$ -	\$ -
<b>Duchesne River</b>													
USGS #09295100	Duchesne River abv Uinta R nr Randlett, UT	Flow	17,916	100%							\$ 17,916	\$ -	\$ -
USGS #09295100	Duchesne River abv Uinta R nr Randlett, UT	Temp	---	100%							-	-	-
USGS #09301500	Uinta River nr Randlett, UT	Flow	17,916	100%							\$ 17,916	\$ -	\$ -
USGS #09302000	Duchesne River near Randlett, UT	Flow	17,916	100%							\$ 17,916	\$ -	\$ -
USGS #09302000	Duchesne River near Randlett, UT	Temp	5,930	50%					50%		\$ 2,965	\$ -	\$ -
USGS #09302000	Duchesne River near Randlett, UT	Conductance		0%					100%		\$ -	\$ -	\$ -
<b>Other</b>													
USGS #09314500	Price River near Woodside, UT	Flow	23,565	100%							\$ 23,565	\$ -	\$ -
USGS #09314500	Price River near Woodside, UT	Temp	5,930	50%					50%		\$ 2,965	\$ -	\$ -
USGS #09314500	Price River near Woodside, UT	Conductance		0%							\$ -	\$ -	\$ -
<b>TOTALS</b>											<b>\$ 160,327</b>	<b>\$ 32,078</b>	<b>\$ -</b>

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FY2025 Gage Cost Estimates

FY 2025				Assumes 2.0% cost increase from previous year									
ID	Site	Parameter	FY2025 Cost (Total)	Cost-share Responsibilities					FY2025 Cost Share				
				Recovery Program	State of WY	CWCB	CRWCD + City of Craig	USBR	USGS	Recovery Program Share	State of WY share	CWCB share	
<b>Yampa River Basin</b>													
CO WMFKMHCO	Williams Fork near Hamilton, CO	Flow	6,573	100%		0%					\$ 6,573	\$ -	\$ -
USGS #09244490	Yampa River above Elkhead Creek	Flow	20,014	50%	50%						\$ 10,007	\$ 10,007	\$ -
USGS #09247600	Yampa River below Craig, CO	Flow	20,014		25%		75%				\$ -	\$ 5,004	\$ -
USGS #09260050	Yampa River at Deerlodge Park, CO	Flow	20,014	50%	50%						\$ 10,007	\$ 10,007	\$ -
USGS #09260050	Yampa River at Deerlodge Park, CO	Temperature	5,134	25%	75%						\$ 1,284	\$ 3,851	\$ -
<b>Mainstem Colorado River</b>													
USGS #09106150	Colorado River near Palisade, CO	Flow	20,014	100%							\$ 20,014	\$ -	\$ -
USGS #09163500	Colorado River at Colo-Utah State	Temperature	5,134	100%						0%	\$ 5,134	\$ -	\$ -
<b>Green River</b>													
404417108524900	Green River above Gates of Lador	Temperature	5,134	25%	75%						\$ 1,284	\$ 3,851	\$ -
USGS #09261000	Green River near Jensen, UT	Flow	17,828	0%						100%	\$ -	\$ -	\$ -
USGS #09261000	Green River near Jensen, UT	Temperature	6,049	100%							\$ 6,049	\$ -	\$ -
USGS #09272400	Green River at Ouray, UT	Flow	18,274	100%							\$ 18,274	\$ -	\$ -
<b>Duchesne River</b>													
USGS #09295100	Duchesne River abv Uinta R nr Rar	Flow	18,274	100%							\$ 18,274	\$ -	\$ -
USGS #09295100	Duchesne River abv Uinta R nr Rar	Temp	---	100%							-	-	-
USGS #09301500	Uinta River nr Randlett, UT	Flow	17,916	100%							\$ 17,916	\$ -	\$ -
USGS #09302000	Duchesne River near Randlett, UT	Flow	17,916	100%							\$ 17,916	\$ -	\$ -
USGS #09302000	Duchesne River near Randlett, UT	Temp	5,930	50%					50%		\$ 2,965	\$ -	\$ -
USGS #09302000	Duchesne River near Randlett, UT	Conductance		0%					100%		\$ -	\$ -	\$ -
<b>Other</b>													
USGS #09314500	Price River near Woodside, UT	Flow	23,565	100%							\$ 23,565	\$ -	\$ -
USGS #09314500	Price River near Woodside, UT	Temp	5,930	50%					50%		\$ 2,965	\$ -	\$ -
USGS #09314500	Price River near Woodside, UT	Conductance		0%							\$ -	\$ -	\$ -
<b>TOTALS</b>											<b>\$ 162,227</b>	<b>\$ 32,719</b>	<b>\$ -</b>



**UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM**

<b>SUMMARY OF PROPOSED COSTS</b>									
<b>Name of Servicing Agency:</b>									
<b>Project Name:</b>									
		<b>YEAR 1</b>	<b>YEAR 2</b>	<b>YEAR 3</b>	<b>YEAR 4</b>	<b>YEAR 5</b>			
<b>Enter the BEGINNING dates for each year -----&gt;</b>		10/2/2023	10/1/2024	10/1/2025	10/1/2026	10/1/2027			<b>TOTAL</b>
		Through	Through	Through	Through	Through			
<b>Enter the ENDING dates for each year -----&gt;</b>		9/30/2024	9/30/2025	9/30/2026	9/30/2027	9/29/2028			
<b>DIRECT LABOR AND FRINGE BENEFIT COSTS:</b>		<b>YEAR 3</b>	<b>YEAR 4</b>	<b>YEAR 5</b>	<b>YEAR 4</b>	<b>YEAR 5</b>			<b>TOTAL</b>
<b>Direct Labor - Hourly</b>	\$	49,794.12	50,790.00	51,805.80	52,841.91	53,898.75			259,130.58
<b>Fringe Benefits - Hourly</b>	\$	15,817.85	16,134.20	16,456.89	16,786.03	17,121.75			82,316.72
<b>Subtotal of Direct Labor &amp; Fringe Benefits:</b>	\$	65,611.96	66,924.20	68,262.69	69,627.94	71,020.50			341,447.30
<b>OTHER DIRECT COSTS:</b>		<b>YEAR 1</b>	<b>YEAR 2</b>	<b>YEAR 3</b>	<b>YEAR 4</b>	<b>YEAR 5</b>			<b>TOTAL</b>
<b>Materials and Supplies</b>	\$	-	-	-	-	-			-
<b>Travel Costs</b>	\$	3,582.50	3,651.00	3,719.50	3,801.78	3,877.81			18,632.59
<b>Equipment</b>	\$	18,710.55	19,084.76	19,466.46	18,710.55	19,084.76			95,057.10
<b>Contractors</b>	\$	-	-	-	-	-			-
<b>Subtotal of Other Direct Costs:</b>	\$	22,293.05	22,735.76	23,185.96	22,512.33	22,962.58			113,689.69
<b>INDIRECT/OVERHEAD COSTS:</b>		<b>YEAR 1</b>	<b>YEAR 2</b>	<b>YEAR 3</b>	<b>YEAR 4</b>	<b>YEAR 5</b>			<b>TOTAL</b>
<b>Subtotal of Labor and Other Direct Costs:</b>	\$	87,905.02	89,659.97	91,448.65	92,140.27	93,983.08			455,136.98
<b>Total dollars exempt from indirect/overhead base:</b>	\$	-	-	-	-	-			-
<b>&lt;Enter Description of Indirect/OH Cost #1&gt;</b>	80.88%	71,097.58	72,516.98	73,963.67	74,523.05	76,013.51			368,114.79
<b>Total dollars exempt from indirect/overhead base:</b>	\$	-	-	-	-	-			-
<b>&lt;Enter Description of Indirect/OH Cost #2&gt;</b>	0.00%	-	-	-	-	-			-
<b>Subtotal of Indirect/Overhead Costs:</b>	\$	71,097.58	72,516.98	73,963.67	74,523.05	76,013.51			368,114.79
		<b>YEAR 1</b>	<b>YEAR 2</b>	<b>YEAR 3</b>	<b>YEAR 4</b>	<b>YEAR 5</b>			<b>TOTAL</b>
<b>GRAND TOTAL:</b>	\$	159,002.60	162,176.95	165,412.31	166,663.32	169,996.59			823,251.78