

# UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

FY 2021 ANNUAL REPORT

PROJECT: C4b-GVP

## **Project Title**

Annual Operation and Maintenance of the Fish Passage Structure at the Government Highline Diversion Dam on the Upper Colorado River and Price-Stubb Fish Passage

## **Bureau of Reclamation Agreement Number:**

R20PG00024

## **Project/Grant Period:**

Start date: 10/01/2019

End date: 09/30/2024

Reporting period end date: 09/30/2021

Is this the final report? Yes \_\_\_\_\_ No X

## **Principal Investigator:**

Travis Francis, Deputy Project Leader

U.S. Fish and Wildlife Service

Grand Junction FWCO

445 West Gunnison Ave., Suite 140

Grand Junction, CO 81506

Phone: (970) 628-7204

FAX: (970) 628-7217

Email: travis\_francis@fws.gov

## **Abstract:**

The purpose of this project is to collect and summarize annual data on the overall number of large-bodied fish, number of different fish species, and seasonal distribution of fish use at the fish passageway at the Government Highline diversion dam (aka Grand Valley Water Users [GVWU] dam) on the upper Colorado River in De Beque Canyon. This fish passage structure has been operated during 15 of the last 17 years, since construction was completed in August 2004.

In 2021, GVWU Fish Passage was operational from 11 May through 02 July. The early shutdown was due to low summer and fall base flows, which did not supply adequate water to operate the passage. A total of 14,190 fish used the fish passage over a 52-day period in 2021. Twenty-nine endangered bonytail (*Gila elegans*) and seventeen endangered razorback sucker (*Xyrauchen texanus*) made passage.

## **Study Schedule:**

2004-Ongoing

## **Relationship to RIPRAP:**

Colorado River Action Plan

II.B. Restore native fish passage at instream barriers.

II.B2. Restore fish passage at Price-Stubb

II.B.2.a.(4) Operate and maintain

II.B.2.a.(5) Monitor and evaluate success

II.B.3. Restore fish passage at Government Highline (aka Grand Valley Water Users).

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II.B.3.a.(3). Operate and maintain

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

#### GVWU Fish Passage

In 2021, twenty-nine bonytail were collected in the GVWU fish trap (Tables 1, 2, and 3). The fish ranged in total length from 232 to 337 mm with a mean of 289 mm. Twenty-five were stocked near Rifle, Colorado in July 2020. Three bonytail were stocked in Debeque Canyon in October 2020. The remaining bonytail was stocked in near Palisade, Colorado in July 2020.

In 2021, no Colorado pikeminnow made passage at the GVWU passage. Six Colorado pikeminnow have made passage at this facility in previous years (Table 3).

Likewise, no humpback chub (*Gila cypha*) made passage at GVWU passage in 2021. Eleven humpback chub have made passage at this facility in previous years (Tables 3).

In 2021, seventeen razorback sucker were collected in the GVWU fish trap (Tables 1, 2 and 3). These fish ranged in total length from 338 to 506 mm with a mean of 431 mm. These fish were stocked at a variety of locations between the years of 2010 and 2020. One of these fish has become a frequent user of this facility, having made passage in a prior year (2017).

A total of 14,190 fish were collected in the trap of the GVWU Dam fish passage from 11 May through the 02 July 2021. The highest total ever collected in the trap was in 2014 (24,670) and the second highest total (18,390) was in 2010 (Table 4). This is the fifteenth year of operation since the structure was completed. This facility has been operated for different lengths of time during various times of year, since 2004, thus making specific year-to-year comparisons about yearly catch totals and species composition discouraged.

Native fishes (and their hybrid forms) accounted for 73.6% (n = 10,438) of the total catch in 2021 (Table 4). Nonnative fishes (and native by nonnative hybrid fish) accounted for 26.4% (n = 3,752) of the total catch in 2021. Flannelmouth sucker (*Catostomus latipinnis*) accounted for 18.5% (n = 2,620) of the total catch, and bluehead sucker (*Catostomus discobolus*) accounted for 13.0% (n = 1,844) of the total catch during 2021 (Table 1). These two native species have dominated the total catch since the ladder began operation apart from 2021. Roundtail chub (*Gila robusta*) dominated the total catch and accounted for 41.06% (n = 5,826) during 2021. The most prevalent nonnative fish found in the fish trap from 2013 to 2021 was white sucker (*Catostomus commersonii*; 16.32% of total catch, n = 2,316 in 2021). Channel catfish (*Ictalurus punctatus*), which were not found between GVWU and Price-Stubb dams prior to completion of the non-selective fish passage at Price-Stubb dam in April 2008, were once again collected in the GVWU fish passage during 2021 (n = 19; Table 1).

Five largemouth bass (*Micropterus salmoides*; total lengths ranged from 205 to 269 mm with a mean of 238 mm) and 26 smallmouth bass (*Micropterus dolomieu*; largest annual catch; total lengths ranged from 233 to 356 mm with a mean of 270 mm) were also collected and removed in 2021. No gizzard shad (*Dorosoma cepedianum*) were collected and removed in 2021 (Table 1).

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All fish found in the fish trap were counted and sorted by species. All native fish, as well as nonnative rainbow (*Oncorhynchus mykiss*), brook trout (*Salvelinus fontinalis*) and brown trout (*Salmo trutta*) were released upstream of GVWU diversion dam. All channel catfish were returned alive immediately downstream from the dam. All other nonnative fish, including native X nonnative hybrid suckers were removed.

### Price-Stubb Antenna

The Price-Stubb PIT tag antennas (5 miles downstream of GVWU) produced multiple hits on 958 unique PIT tags (FY record) during FY 2021 (Table 5); many of these tags were detected on multiple days. In 2020, because the original cell modem was getting outdated and not functioning properly, Peter MacKinnon (Biomark) replaced the old modem. In addition to the new modem, Loggernet was replaced by BioLogic web portal for remote data acquisition. We reported in 2010 (first year of operation) that the close placement of these four antennas in relation to one another (~10 inches apart) complicated determining directionality of fish movements (upstream vs. downstream). In late June of 2011, Audrey Hopkins of Biomark adjusted some of the settings at the unit. She changed the antenna sequence (AS) from 1,2,3,4,0,0,0,0,0,0,0 to 1,3,1,3,1,3,2,4,2,4,2,4 and adjusted the delay time from 100mS to 45mS. These adjustments have provided more resolution for determining directionality of fish movements from detections. Some unknown directions of fish passage still remain, however not as many as were previously encountered. In FY 2021 there were 1,255 daily detections, and 50% (n=624) of those fish passed the antenna heading upstream, 24% (n=297) in an undetermined direction, and 26% (n=334) in a downstream direction. We have reported in past years that a recurring and problematic issue has been data for many PIT-tagged fish were not being submitted to STReAMS: however, this had improved in FY 2020 with only 2% (n=19) of the individual tags detected on this antenna array were unknown fish. However, in FY 2021 the number of unknown tags has increased to 25% (n=240). The majority of these unidentified tags were not in the tag distribution database, so they likely represent “three species” tags deployed by Colorado Parks and Wildlife. Bluehead sucker (n=42, *Catostomus discobolus*), bonytail (n=91, *Gila elegans*), Colorado pikeminnow (n=2, *Ptychocheilus lucius*), flannelmouth sucker (n=319, *Catostomus latipinnis*), razorback sucker (n=209, *Xyrauchen texanus*), roundtail chub (n=54, *Gila robusta*), and flannelmouth sucker X bluehead sucker hybrids (n=1) make up the individual PIT tag detections that could be found in STReAMS (many were detected on multiple dates) during FY 2021. Table 5 gives a detailed breakdown of the fish that were detected by the antenna by month, and Table 6 gives annual individual totals by species.

### Operation and Maintenance

In 2019, GVWU employees used a track hoe to remove approximately 25 dump-truck loads of river-borne sediment in front of the attraction flow, fish ladder entrances, and fish return tube on 9-10 July. The sediment was hauled to an upland terrestrial site within the fish-way project area for disposal and/or storage. This ‘cleanout’ was very much needed, and 2019 was the first year since 2015 that the facility operated as it was designed to. Spring runoff, in 2020 and 2021, was moderate in magnitude and duration and redeposited only a small amount of sediment which allowed the facility to again operate properly. In spring 2016 through 2021, GVWU opened the roller closest to the fish passage for several weeks during high spring flows to help sluice away the sediment bar. This has helped tremendously with sediment management. It is our recommendation that this action be continued into future years, as

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the natural sluicing provided during high flows can move considerably more sediment than can physical removal via track hoe.

Weeds were sprayed and removed from the property throughout 2021.

At the Price-Stubbs non-selective fish passage facility (5 miles downstream of the GVWU Fish Passage), accumulated debris and trash were removed, using manual labor, on 25 July 2021.

### **Additional noteworthy observations:**

Similar to previous years, we deployed submersible PIT antennas (PIA) to detect fish that may enter the GVWU passage but not the fish trap. In 2021, low base flows and a delayed spring run-off postponed the opening of Government Highline Fish Ladder until early May. Continual operation throughout the year of a PIA located at the downstream terminus of the fish ladder allowed us to identify fish that could potentially use the fish ladder had the fish ladder been in operation.

With the one PIA located at the downstream terminus of the fish ladder and an additional three PIAs operating in the ladder during fish ladder operations, there were 9,665 detections of 990 individual tags in FY 2021. Of the 990 tags, 847 (85.6%) were identified to species. Two tags had prior detections, but data of tag deployment had not been uploaded into STReAMS, and one fish had traits of both humpback and roundtail chub. Another 120 tags were first detected on these PIAs that had no historical data in STReAMS. The 847 tags that we were able to identify to species totaled as follows: 465 razorback sucker, 258 bonytail, 71 flannelmouth sucker, 45 roundtail chub, and 8 bluehead sucker.

Captures of PIT tagged fish in the fish ladder's trap in FY 2021 totaled 64 fish (Table 2). These 64 fish delineated by species are as follows: 29 bonytail, 18 roundtail, and 17 razorback suckers. Of the 64 fish captured in the fish trap four bonytail, three razorback suckers and two roundtail were able to navigate the ladder without being detected by any of the PIAs. The other 55 fish (85.9%) were detected by at least one of the PIAs (Table 7). There were 449 individual fish that were detected by one or more of the PIAs placed in the ladder that were never collected in the trap (Table 7). Only three species that were captured in the trap would have been scanned for a PIT tag upon capture (bonytail, razorback sucker, and roundtail chub). Using these three species and only fish that would have had a tag present prior to entering the trap at the top of the ladder, this would be 64 out of 372 fish known to have been in some portion of the ladder, or a 17.2% complete passage rate of fish with PIT tags.

PIT tags and their associated individual species, detected by the lower PIA during the period when the fish ladder was not operating, can be found in Table 8 by month. Duplicate PIT tag detections within each month have been removed; however, individual fish can be represented in multiple months. Tag detections were greatest in November 2020 (due to bonytail stockings) and the months May through July 2021; the latter three months correlate with operation of the Government Highline fish ladder and high water (i.e., when fish passage through both of the downstream, non-selective fish passages at the Grand Valley Irrigation Company and Price-Stubbs diversion dams was still possible in 2021). Bonytail was the only species detected every month in this location regardless of ladder operations. Bluehead sucker and flannelmouth sucker are not tagged by the USFWS; however, Colorado Parks and Wildlife PIT tags these fish in an effort to monitor these state listed species alongside roundtail chub. Bluehead sucker and flannelmouth sucker are not scanned for a PIT tag after collection from the fish-trap because thousands make passage every year which is both time and resource limiting. Thus, PIA detected PIT

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tagged bluehead and flannelmouth sucker are not documented making passage through the entire fish ladder. Histories of all detected fish can be found in STReaMS.

### **Recommendations:**

#### Biological:

Continue to collect information on the number of fish, by species, in the fish trap of the GVWU fish passageway in 2022 starting about mid-April and running through mid-October. These tentative dates may need to be adjusted, based upon the ability of the adjacent Grand Valley Water Users canal, as well as the ability of downstream diversions structures to get sufficient quantities of water to fill their canals.

Continue collecting data from Price-Stubbs antenna.

#### Operation and Maintenance:

After successful trackhoe sediment removal in 2019 and little sediment accumulation in 2020 and 2021, a similar effort may not be needed in 2022. Unfortunately, the vegetated bank on river left will eventually reform (as it did in one year following the 2015 sediment removal), as the fish ladder is located on the inside bend of the river, across the river from the GVWU canal head gates, which means that this location will naturally sediment in over time, and manual sediment removal will have to be repeated at some point.

During the spring high flow periods of 2014-2021, GVWU opened the roller closest to the fish passage. The natural sluicing action that this action causes is very effective at removing large amounts of sediment from in front of the fish passage in a very short period of time. Unfortunately, the length of time that the fish passage realizes the benefits from this action can be highly variable, depending upon 1) how low summer base flows are, and 2) how many summer rainstorm events we have. Both circumstances quickly act to re-deposit the sediment bar in front of the fish ladder entrance and return tube. At a bare minimum though, we feel that having GVWU continue to sluice during spring high flow periods by raising the roller closest to the fish passage is highly beneficial.

Because of its physical location, on the inside bend of a very wide and slow section of the Colorado River, the area directly in front of the GVWU fish passage is very susceptible to sedimentation. It is our recommendation that some combination of the two actions specified above be available every spring to help control sedimentation issues. But at the very minimum, we believe the sluicing operations are vital to our ability to continue to successfully operate this structure from mid-April through mid-October each year.

### **Project Status:**

On track and ongoing

### **FY 2021 Budget Status**

Funds Provided: \$68,898

Funds Expended: \$68,898

Difference: -0-

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

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Recovery Program funds spent for publication charges: -0-

### **Status of Data Submission**

Data will be uploaded into STReAMS by the end of December, 2021.

### **Signed:**

Travis Francis

Principal Investigator

11/22/2021

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**Table 1.**

Total number of juvenile and adult fish captured in the fish trap of the passageway at the Grand Valley Water Users Diversion Dam during 2021.

<u>Common Name</u>	<u>Number of Fish</u>	<u>Percent of Total Fish</u>
<b>NATIVE FISH</b>		
bluehead sucker	1,844	13.00
bonytail	29	0.20
Colorado pikeminnow	0	0.00
Colorado cutthroat	1	0.01
flannelmouth sucker	2,620	18.46
humpback chub	0	0.00
mottled sculpin	0	0.00
mountain whitefish	91	0.64
razorback sucker	17	0.12
roundtail chub	5,826	41.06
speckled dace	5	0.04
<b>TOTAL</b>	<b>10,433</b>	<b>73.52</b>
<b>NONNATIVE FISH</b>		
black bullhead	4	0.03
brook trout	1	0.01
brown trout	196	1.38
channel catfish	19	0.13
common carp	43	0.30
green sunfish	0	0.00
gizzard shad	0	0.00
largemouth bass	5	0.04
longnose sucker	154	1.09
northern pike	0	0.00
rainbow trout	68	0.48
smallmouth bass	26	0.18
white sucker	2,316	16.32
<b>TOTAL</b>	<b>2832</b>	<b>19.96</b>
<b>HYBRID FISHES</b>		
<u>Native X Native Hybrids:</u>		
razorback X flannelmouth sucker	0	0.00
bluehead X flannelmouth sucker	5	0.04
<u>Native X Nonnative Hybrids:</u>		
bluehead X white sucker	241	1.70
bluehead X flannelmouth X white sucker	0	0.00
flannelmouth X white sucker	679	4.79
bluehead X longnose sucker	0	0.00
flannelmouth X longnose sucker	0	0.00
white X longnose sucker	0	0.00
<b>ALL TOTALS</b>	<b>14,190</b>	<b>100.00</b>

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Table 2. 2021 GVWU PIT tagged fish histories.

Month of Passage	Species	PIT Tag Histories
May-21	bonytail ( <i>Gila elegans</i> ) N=25	N=22 stocked July 2020 in Rifle at CO RMI 240.7; three detected at GVWU Ladder between the period of October through December 2020 N=3 stocked October 2020 in Debeque Canyon at CO RMI 208.5
	razorback sucker ( <i>Xyrauchen texanus</i> ) N=9	N=1 stocked October 2010 near Rullison CO RMI 227.6 N=3 stocked August through September 2016 in Rifle at CO RMI 240.7; one detected at GVWU Ladder between the period of June through September 2020 N=1 stocked September 2019 in Rifle at CO RMI 240.7 N=3 stocked September 2020 in Rifle at CO RMI 240.7 N=1 tagged at GVWU Passage on this encounter
	roundtail chub ( <i>Gila robusta</i> ) N=11	N=1 tagged October 2017 in Black Rocks CO RMI 136; Detected multiple times at Price Stubb and GVWU Ladder in 2019 and 2020 N=1 tagged November or December 2019 after collection in Grand Valley Canals and returned to the CO River; one detected multiple times in 2020 at Price Stubb and GVWU Ladder N=9 were missing tagging encounter in STReaMS
June-21	bonytail ( <i>Gila elegans</i> ) N=3	N=2 stocked July 2020 in Rifle at CO RMI 240.7 N=1 stocked July 2020 in Palisade at CO RMI 183.6
	razorback sucker ( <i>Xyrauchen texanus</i> ) N=6	N=3 stocked August through September 2016 in Rifle at CO RMI 240.7; two detected at GVWU Ladder multiple times 2019 and 2020; one detected at GVWU Ladder multiple times 2019 and 2020 and made passage at
	roundtail chub ( <i>Gila robusta</i> ) N=6	N=2 tagged November or December 2019 after collection in Grand Valley Canals and returned to the CO River; one detected multiple times in 2020 at Price Stubb and GVWU Ladder N=4 were missing tagging encounter in STReaMS
July-21	bonytail ( <i>Gila elegans</i> ) N=1	N=1 stocked July 2020 in Rifle at CO RMI 240.7
	razorback sucker ( <i>Xyrauchen texanus</i> ) N=2	N=1 stocked August through September 2016 near Rifle at CO RMI 240.7; detected at Price Stubb in 2017 N=1 stocked September 2020 near Rifle at CO RMI 240.7
	roundtail chub ( <i>Gila robusta</i> ) N=1	N=1 was missing tagging encounter in STReaMS



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**Table 3.**

Number of Colorado pikeminnow, razorback sucker, bonytail and humpback chub captured in the fish trap of the Grand Valley Water User's passageway from 2005 through 2021.

<b>Year</b>	<b>Colorado pikeminnow</b>	<b>razorback sucker</b>	<b>bonytail</b>	<b>humpback chub</b>
2005	0	1	0	1
2006	0	0	0	0
2007	Fish Passage not operated due to insufficient flows			
2008	0	1	0	0
2009	0	0	0	0
2010	0	0	0	0
2011	0	0	22	2
2012	Fish Passage not operated due to insufficient flows			
2013	0	2	0	0
2014	1	25	14	0
2015	1	52	10	0
2016	1	36	44	0
2017	2	130	12	2
2018	0	4	0	2
2019	1	29	16	4
2020	0	6	3	0
2021	0	17	29	0
<b>Totals</b>	<b>6</b>	<b>303</b>	<b>150</b>	<b>11</b>

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**Table 4.**

Comparison of the total number of fish, total native vs. nonnative fishes, and percent composition of native and nonnative fish captured in the fish trap of the Grand Valley Water User's passageway between 2005 and 2021.

Year	Total Number of Fish	Total Native Fishes	Total Nonnative Fishes	Percent Composition	
				Native Fishes	Nonnative Fishes
2004	fish passageway & fish trap not run due to insufficient flows				
2005	4,638 <sup>a</sup>	2,867	1,771	61.8	38.2
2006	11,978 <sup>b</sup>	10,747	1,231	89.7	10.3
2007	fish passageway & fish trap not run due to insufficient flows				
2008	10,788 <sup>c</sup>	9,663	1,125	89.6	10.4
2009	12,402 <sup>d</sup>	11,286	1,116	91	9
2010	18,390 <sup>e</sup>	16,358	2,032	89	11
2011	8,875 <sup>f</sup>	6,870	2,005	77.4	22.6
2012	fish passageway & fish trap not run due to insufficient flows				
2013	13,401 <sup>g</sup>	10,702	2,699	79.9	20.1
2014	24,670 <sup>h</sup>	17,253	7,417	69.9	30.1
2015	14,248 <sup>i</sup>	12,094	2,154	84.9	15.1
2016	15,889 <sup>j</sup>	13,754	2,135	86.6	13.4
2017	13,581 <sup>k</sup>	11,352	2,229	83.6	16.4
2018	10,210 <sup>l</sup>	9,058	1,152	88.7	11.3
2019	11,862 <sup>m</sup>	9,339	2,523	78.7	21.3
2020	6,920 <sup>n</sup>	5,815	1,105	84	16
2021	14,190 <sup>o</sup>	10,438	3,752	73.6	26.4
<b>Totals</b>	<b>192,042</b>	<b>157,596</b>	<b>34,446</b>	<b>82.1</b>	<b>17.9</b>

<sup>a</sup> Fish trap operated for 12 days (June and September).

<sup>b</sup> Fish trap operated for 41 days (five, 2-week periods).

<sup>c</sup> Fish trap operated continuously from 2 May to 15 October.

<sup>d</sup> Fish trap operated continuously from 20 April to 15 October.

<sup>e</sup> Fish trap operated continuously from 16 April to 15 October.

<sup>f</sup> Fish trap operated continuously from 19 April to 14 October.

<sup>g</sup> Fish trap operated for 49 days (continuously from 17 May to 5 July).

<sup>h</sup> Fish trap operated for 177 days (continuously from 22 April to 16 October).

<sup>i</sup> Fish trap operated 140 days (continuously from 1 May to 12 August, and again from 9 September to 16 October)

<sup>j</sup> Fish Trap operated 136 days (continuously from 25 April to 13 May, again from 16 May to 8 June, again from 9 June to 28 July, and again from 11 August to 14 October)

<sup>k</sup> Fish Trap operated continuously from 20 April to 20 October

<sup>l</sup> Fish Trap operated for 58 days (continuously from 1 May to 28 June)

<sup>m</sup> Fish Trap operated for 146 days (continuously from 30 April to 8 July, and again 10 July to 25 September)

<sup>n</sup> Fish Trap operated for 58 days (continuously from 19 May to 16 July)

<sup>o</sup> Fish Trap operated for 52 days (continuously from 11 May to 02 July)

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**Table 5.**  
FY2021 Price-Stubb PIT Antenna Detections

Key For Initial Encounter Location		
Upper CO River Reach	RMI 193.8-248	Above GVWU Dam to Silt
Grand Valley Reach	RMI 152.6-193.7	Loma to GVWU Dam
Ruby Horsethief Reach	RMI 124.8-152.5	Westwater Wash to Loma
Westwater Reach	RMI 111.1-124.7	Above Cisco Launch to below Westwater Wash
Lower CO River Reach	RMI 0.0-111.0	Green River Confluence to Cisco Launch

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Month/Year Detected	Spp.	N	Direction Through Ladder	Initial Encounter Year	Initial Encounter Project	Initial Encounter Location
Oct-20	BT	0	Upstream	2020	MUMMA Stock	Upper CO River Reach
		1	Unknown			
		1	Downstream			
Oct-20	BT	1	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		1	Unknown			
		1	Downstream			
Oct-20	CS	0	Upstream	??	Distributed to GJ-FWCO 2018	??
		0	Unknown			
		1	Downstream			
Oct-20	RT	0	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		0	Unknown			
		1	Downstream			
Oct-20	RZ	27	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		20	Unknown			
		73	Downstream			
Oct-20	Unknown	0	Upstream	??	Distributed to ONFH-GJ 2020	??
		0	Unknown			
		1	Downstream			
Nov-20	BH	1	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		1	Unknown			
		0	Downstream			
Nov-20	BT	1	Upstream	2020	MUMMA Stock	Upper CO River Reach
		2	Unknown			
		10	Downstream			
Nov-20	BT	4	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		1	Unknown			
		1	Downstream			
Nov-20	RZ	1	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		5	Downstream			

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Month/Year Detected	Spp.	N	Direction Through Ladder	Initial Encounter Year	Intitial Encounter Poject	Initial Encounter Location
Dec-20	BH	1	Upstream	2018	CPW Three Spp.	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Dec-20	BT	2	Upstream	2020	MUMMA Stock	Upper CO River Reach
		1	Unknown			
		3	Downstream			
Dec-20	FM	0	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		0	Unknown			
		1	Downstream			
Dec-20	RT	0	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		0	Unknown			
		1	Downstream			
Dec-20	RZ	0	Upstream	2016	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		1	Downstream			
Dec-20	RZ	1	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		1	Unknown			
		0	Downstream			
Jan-21	BT	1	Upstream	2020	MUMMA Stock	Upper CO River Reach
		0	Unknown			
		1	Downstream			
Jan-21	BT	0	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		1	Downstream			
Jan-21	RZ	0	Upstream	2016	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		1	Downstream			
Jan-21	RZ	0	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		1	Downstream			

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Month/Year Detected	Spp.	N	Direction Through Ladder	Initial Encounter Year	Intitial Encounter Poject	Initial Encounter Location
Feb-21	BT	1	Upstream	2020	MUMMA Stock	Upper CO River Reach
		0	Unknown			
		2	Downstream			
Feb-21	BT	0	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		4	Unknown			
		4	Downstream			
Feb-21	RZ	0	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		1	Unknown			
		0	Downstream			
Mar-21	BH	1	Upstream	2018	CPW Three Spp.	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Mar-21	BH	2	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Mar-21	BT	0	Upstream	2020	MUMMA Stock	Upper CO River Reach
		1	Unknown			
		5	Downstream			
Mar-21	BT	0	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		2	Unknown			
		1	Downstream			
Mar-21	FM	8	Upstream	2014	CPW Three Spp.	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Mar-21	FM	4	Upstream	2016	CPW Three Spp.	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Mar-21	FM	8	Upstream	2018	CPW Three Spp.	Grand Valley Reach
		0	Unknown			
		0	Downstream			

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

Month/Year Detected	Spp.	N	Direction Through Ladder	Initial Encounter Year	Intitial Encounter Poject	Initial Encounter Location
Mar-21	FM	1	Upstream	2018	CPW Three Spp.	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Mar-21	FM	17	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Mar-21	RT	1	Upstream	2011	Black Rocks HB Est.	Ruby Horsethief Reach
		0	Unknown			
		0	Downstream			
Mar-21	RT	1	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Mar-21	RZ	1	Upstream	2014	ONFH-GJ Stock	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Mar-21	RZ	2	Upstream	2014	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		0	Downstream			
Mar-21	RZ	1	Upstream	2016	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		0	Downstream			
Mar-21	RZ	1	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		1	Downstream			
Mar-21	Unknown	0	Upstream	??	Distributed to ONFH-GJ 2020	??
		1	Unknown			
		0	Downstream			
Mar-21	Unknown	4	Upstream	??	Not Program Distributed Tags	??
		0	Unknown			
		0	Downstream			

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

Month/Year Detected	Spp.	N	Direction Through Ladder	Initial Encounter Year	Initial Encounter Project	Initial Encounter Location
Apr-21	BH	1	Upstream	2014	CPW Three Spp.	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Apr-21	BH	9	Upstream	2018	CPW Three Spp.	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Apr-21	BH	2	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Apr-21	BT	0	Upstream	2020	MUMMA Stock	Upper CO River Reach
		2	Unknown			
		2	Downstream			
Apr-21	FM	15	Upstream	2014	CPW Three Spp.	Grand Valley Reach
		6	Unknown			
		4	Downstream			
Apr-21	FM	16	Upstream	2016	CPW Three Spp.	Grand Valley Reach
		1	Unknown			
		3	Downstream			
Apr-21	FM	1	Upstream	2017	CPW Three Spp.	Upper CO River Reach
		0	Unknown			
		0	Downstream			
Apr-21	FM	27	Upstream	2018	CPW Three Spp.	Grand Valley Reach
		4	Unknown			
		1	Downstream			
Apr-21	FM	30	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		20	Unknown			
		10	Downstream			
Apr-21	FM	1	Upstream	2019	CPW Three Spp.	Grand Valley Reach
		0	Unknown			
		0	Downstream			



UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

Month/Year Detected	Spp.	N	Direction Through Ladder	Initial Encounter Year	Intitial Encounter Poject	Initial Encounter Location
Apr-21	RT	1	Upstream	2017	Black Rocks HB Est.	Ruby Horsethief Reach
		0	Unknown			
		0	Downstream			
Apr-21	RT	2	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Apr-21	RZ	1	Upstream	2010	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		0	Downstream			
Apr-21	RZ	2	Upstream	2014	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		0	Downstream			
Apr-21	RZ	1	Upstream	2014	ONFH-GJ Stock	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Apr-21	RZ	1	Upstream	2015	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		0	Downstream			
Apr-21	RZ	2	Upstream	2016	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		0	Downstream			
Apr-21	RZ	1	Upstream	2016	ONFH-GJ Stock	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Apr-21	RZ	2	Upstream	2017	ONFH-GJ Stock	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Apr-21	Unknown	1	Upstream	??	Distributed to CPW 2013	??
		0	Unknown			
		0	Downstream			

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

Month/Year Detected	Spp.	N	Direction Through Ladder	Initial Encounter Year	Intitial Encounter Poject	Initial Encounter Location
Apr-21	Unknown	20	Upstream	??	Not Program Distributed Tags	??
		1	Unknown			
		7	Downstream			
May-21	BH	1	Upstream	2014	CPW Three Spp.	Grand Valley Reach
		3	Unknown			
		0	Downstream			
May-21	BH	0	Upstream	2016	CPW Three Spp.	Grand Valley Reach
		1	Unknown			
		0	Downstream			
May-21	BH	6	Upstream	2018	CPW Three Spp.	Grand Valley Reach
		0	Unknown			
		1	Downstream			
May-21	BH	0	Upstream	2019	CPW Three Spp.	Grand Valley Reach
		1	Unknown			
		0	Downstream			
May-21	BH	2	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		0	Unknown			
		3	Downstream			
May-21	BT	1	Upstream	2019	ONFH-GJ Stock	Grand Valley Reach
		0	Unknown			
		0	Downstream			
May-21	BT	0	Upstream	2020	MUMMA Stock	Upper CO River Reach
		1	Unknown			
		0	Downstream			
May-21	BT	3	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		1	Unknown			
		2	Downstream			
May-21	BT	2	Upstream	2020	ONFH-GJ Stock	Grand Valley Reach
		0	Unknown			
		0	Downstream			

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

Month/Year Detected	Spp.	N	Direction Through Ladder	Initial Encounter Year	Intitial Encounter Poject	Initial Encounter Location
May-21	FM	10	Upstream	2014	CPW Three Spp.	Grand Valley Reach
		8	Unknown			
		9	Downstream			
May-21	FM	9	Upstream	2016	CPW Three Spp.	Grand Valley Reach
		8	Unknown			
		9	Downstream			
May-21	FM	14	Upstream	2018	CPW Three Spp.	Grand Valley Reach
		9	Unknown			
		15	Downstream			
May-21	FM	1	Upstream	2019	CPW Three Spp.	Grand Valley Reach
		1	Unknown			
		0	Downstream			
May-21	FM	38	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		20	Unknown			
		31	Downstream			
May-21	RT	2	Upstream	2016	Black Rocks HB Est.	Ruby Horsethief Reach
		0	Unknown			
		0	Downstream			
May-21	RT	3	Upstream	2017	Black Rocks HB Est.	Ruby Horsethief Reach
		0	Unknown			
		0	Downstream			
May-21	RT	6	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		1	Unknown			
		1	Downstream			
May-21	RT	1	Upstream	2020	Black Rocks HB Est.	Ruby Horsethief Reach
		1	Unknown			
		0	Downstream			
May-21	RZ	2	Upstream	2013	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		0	Downstream			

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

Month/Year Detected	Spp.	N	Direction Through Ladder	Initial Encounter Year	Intitial Encounter Poject	Initial Encounter Location
May-21	RZ	1	Upstream	2014	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		1	Downstream			
May-21	RZ	3	Upstream	2016	ONFH-GJ Stock	Upper CO River Reach
		1	Unknown			
		2	Downstream			
May-21	RZ	2	Upstream	2017	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		0	Downstream			
May-21	RZ	2	Upstream	2017	ONFH-GJ Stock	Grand Valley Reach
		1	Unknown			
		0	Downstream			
May-21	RZ	1	Upstream	2018	ONFH-GJ Stock	Upper CO River Reach
		1	Unknown			
		0	Downstream			
May-21	RZ	0	Upstream	2019	ONFH-GJ Stock	Upper CO River Reach
		3	Unknown			
		0	Downstream			
May-21	RZ	2	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		6	Unknown			
		4	Downstream			
May-21	Unknown	1	Upstream	??	Distributed to CPW 2013	??
		0	Unknown			
		0	Downstream			
May-21	Unknown	0	Upstream	??	Distributed to ONFH-GJ 2020	??
		1	Unknown			
		0	Downstream			
May-21	Unknown	1	Upstream	??	Distributed to UDWR-M 2017	??
		0	Unknown			
		0	Downstream			

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

Month/Year Detected	Spp.	N	Direction Through Ladder	Initial Encounter Year	Intitial Encounter Poject	Initial Encounter Location
May-21	Unknown	43	Upstream	??	Not Program Distributed Tags	??
		14	Unknown			
		6	Downstream			
Jun-21	BH	1	Upstream	2014	CPW Three Spp.	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Jun-21	BH	1	Upstream	2018	CPW Three Spp.	Grand Valley Reach
		1	Unknown			
		1	Downstream			
Jun-21	BH	1	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Jun-21	BT	3	Upstream	2019	ONFH-GJ Stock	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Jun-21	BT	0	Upstream	2020	MUMMA Stock	Upper CO River Reach
		0	Unknown			
		2	Downstream			
Jun-21	BT	0	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		1	Unknown			
		0	Downstream			
Jun-21	BT	2	Upstream	2020	ONFH-GJ Stock	Grand Valley Reach
		3	Unknown			
		0	Downstream			
Jun-21	FM	0	Upstream	2016	CPW Three Spp.	Grand Valley Reach
		1	Unknown			
		1	Downstream			
Jun-21	FM	4	Upstream	2018	CPW Three Spp.	Grand Valley Reach
		1	Unknown			
		0	Downstream			

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

Month/Year Detected	Spp.	N	Direction Through Ladder	Initial Encounter Year	Initial Encounter Project	Initial Encounter Location
Jun-21	FM	0	Upstream	2019	CPW Three Spp.	Upper CO River Reach
		1	Unknown			
		0	Downstream			
Jun-21	FM	6	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		3	Unknown			
		0	Downstream			
Jun-21	FXB	1	Upstream	2018	CPW Three Spp.	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Jun-21	RT	5	Upstream	2017	Black Rocks HB Est.	Ruby Horsethief Reach
		1	Unknown			
		0	Downstream			
Jun-21	RT	2	Upstream	2017	Westwater HB Est.	Westwater Reach
		0	Unknown			
		0	Downstream			
Jun-21	RT	1	Upstream	2018	CPW Three Spp.	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Jun-21	RT	3	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		6	Unknown			
		1	Downstream			
Jun-21	RT	5	Upstream	2020	Black Rocks HB Est.	Ruby Horsethief Reach
		0	Unknown			
		0	Downstream			
Jun-21	RZ	1	Upstream	2016	ONFH-GJ Stock	Upper CO River Reach
		4	Unknown			
		0	Downstream			
Jun-21	RZ	1	Upstream	2016	ONFH-GJ Stock	Grand Valley Reach
		0	Unknown			
		0	Downstream			

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

Month/Year Detected	Spp.	N	Direction Through Ladder	Initial Encounter Year	Intitial Encounter Poject	Initial Encounter Location
Jun-21	RZ	0	Upstream	2017	ONFH-GJ Stock	Upper CO River Reach
		1	Unknown			
		0	Downstream			
Jun-21	RZ	0	Upstream	2019	ONFH-GJ Stock	Upper CO River Reach
		1	Unknown			
		0	Downstream			
Jun-21	RZ	4	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		2	Unknown			
		2	Downstream			
Jun-21	Unknown	4	Upstream	??	Distributed to UDWR-M 2017 or 2020	??
		1	Unknown			
		1	Downstream			
Jun-21	Unknown	41	Upstream	??	Not Program Distributed Tags	??
		26	Unknown			
		4	Downstream			
Jul-21	BH	0	Upstream	2016	CPW Three Spp.	Grand Valley Reach
		1	Unknown			
		1	Downstream			
Jul-21	BH	0	Upstream	2018	CPW Three Spp.	Grand Valley Reach
		2	Unknown			
		2	Downstream			
Jul-21	BH	1	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		1	Unknown			
		0	Downstream			
Jul-21	BT	0	Upstream	2019	ONFH-GJ Stock	Grand Valley Reach
		0	Unknown			
		1	Downstream			
Jul-21	BT	0	Upstream	2020	MUMMA Stock	Upper CO River Reach
		1	Unknown			
		0	Downstream			

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

Month/Year Detected	Spp.	N	Direction Through Ladder	Initial Encounter Year	Intitial Encounter Poject	Initial Encounter Location
Jul-21	BT	1	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		0	Downstream			
Jul-21	BT	0	Upstream	2020	ONFH-GJ Stock	Grand Valley Reach
		1	Unknown			
		0	Downstream			
Jul-21	CS	1	Upstream	2016	Redlands Fish Passage	Gunnison River
		0	Unknown			
		0	Downstream			
Jul-21	FM	1	Upstream	2016	CPW Three Spp.	Grand Valley Reach
		1	Unknown			
		1	Downstream			
Jul-21	FM	0	Upstream	2018	CPW Three Spp.	Grand Valley Reach
		1	Unknown			
		1	Downstream			
Jul-21	FM	1	Upstream	2019	CPW Three Spp.	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Jul-21	FM	2	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		0	Unknown			
		2	Downstream			
Jul-21	RT	0	Upstream	2016	Black Rocks HB Est.	Ruby Horsethief Reach
		0	Unknown			
		1	Downstream			
Jul-21	RT	1	Upstream	2017	Black Rocks HB Est.	Ruby Horsethief Reach
		0	Unknown			
		2	Downstream			
Jul-21	RT	2	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		3	Unknown			
		1	Downstream			



UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

Month/Year Detected	Spp.	N	Direction Through Ladder	Initial Encounter Year	Intitial Encounter Poject	Initial Encounter Location
Jul-21	RT	0	Upstream	2020	Black Rocks HB Est.	Ruby Horsethief Reach
		4	Unknown			
		1	Downstream			
Jul-21	RZ	0	Upstream	2016	ONFH-GJ Stock	Upper CO River Reach
		1	Unknown			
		0	Downstream			
Jul-21	RZ	0	Upstream	2017	ONFH-GJ Stock	Upper CO River Reach
		1	Unknown			
		1	Downstream			
Jul-21	RZ	3	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		4	Unknown			
		1	Downstream			
Jul-21	Unknown	0	Upstream	??	Distributed to ONFH-GJ 2019 or 2021	??
		2	Unknown			
		0	Downstream			
Jul-21	Unknown	2	Upstream	??	Distributed to UDWR-M 2017	??
		2	Unknown			
		0	Downstream			
Jul-21	Unknown	9	Upstream	??	Not Program Distributed Tags	??
		5	Unknown			
		15	Downstream			
Aug-21	BT	1	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		0	Downstream			
Aug-21	BT	2	Upstream	2021	MUMMA Stock	Upper CO River Reach
		2	Unknown			
		5	Downstream			
Aug-21	CS	0	Upstream	2016	Redlands Fish Passage	Gunnison River
		1	Unknown			
		0	Downstream			

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

Month/Year Detected	Spp.	N	Direction Through Ladder	Initial Encounter Year	Intitial Encounter Poject	Initial Encounter Location
Aug-21	FM	1	Upstream	2014	CPW Three Spp.	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Aug-21	FM	2	Upstream	2016	CPW Three Spp.	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Aug-21	FM	1	Upstream	2018	CPW Three Spp.	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Aug-21	FM	4	Upstream	2019	CPW Three Spp.	Upper CO River Reach
		0	Unknown			
		0	Downstream			
Aug-21	FM	2	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		0	Unknown			
		0	Downstream			
Aug-21	RT	1	Upstream	2016	Black Rocks HB Est.	Ruby Horsethief Reach
		0	Unknown			
		0	Downstream			
Aug-21	RT	0	Upstream	2017	Black Rocks HB Est.	Ruby Horsethief Reach
		0	Unknown			
		1	Downstream			
Aug-21	RT	0	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		0	Unknown			
		1	Downstream			
Aug-21	RZ	1	Upstream	2014	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		0	Downstream			
Aug-21	RZ	2	Upstream	2016	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		0	Downstream			

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

Month/Year Detected	Spp.	N	Direction Through Ladder	Initial Encounter Year	Intitial Encounter Poject	Initial Encounter Location
Aug-21	RZ	0	Upstream	2017	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		1	Downstream			
Aug-21	RZ	1	Upstream	2018	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		0	Downstream			
Aug-21	RZ	1	Upstream	2019	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		0	Downstream			
Aug-21	RZ	3	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		1	Downstream			
Aug-21	Unknown	1	Upstream	??	Distributed to ONFH-GJ 2021	??
		1	Unknown			
		0	Downstream			
Aug-21	Unknown	1	Upstream	??	Distributed to UDWR-M 2020	??
		0	Unknown			
		0	Downstream			
Aug-21	Unknown	2	Upstream	??	Not Program Distributed Tags	??
		5	Unknown			
		3	Downstream			
Sep-21	BT	0	Upstream	2021	MUMMA Stock	Upper CO River Reach
		0	Unknown			
		2	Downstream			
Sep-21	FM	0	Upstream	2018	CPW Three Spp.	Grand Valley Reach
		1	Unknown			
		0	Downstream			
Sep-21	FM	0	Upstream	2019	CPW Three Spp.	Upper CO River Reach
		1	Unknown			
		0	Downstream			

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

Month/Year Detected	Spp.	N	Direction Through Ladder	Initial Encounter Year	Intitial Encounter Poject	Initial Encounter Location
Sep-21	FM	0	Upstream	2019	CPW Canal Salvage	Grand Valley Reach
		1	Unknown			
		0	Downstream			
Sep-21	RT	0	Upstream	2017	CPW Three Spp.	Upper CO River Reach
		0	Unknown			
		1	Downstream			
Sep-21	RT	1	Upstream	2020	Black Rocks HB Est.	Ruby Horsethief Reach
		0	Unknown			
		1	Downstream			
Sep-21	RZ	0	Upstream	2011	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		1	Downstream			
Sep-21	RZ	1	Upstream	2014	ONFH-GJ Stock	Upper CO River Reach
		0	Unknown			
		0	Downstream			
Sep-21	RZ	0	Upstream	2020	ONFH-GJ Stock	Upper CO River Reach
		1	Unknown			
		0	Downstream			
Sep-21	Unknown	1	Upstream	??	Distributed to ONFH-GJ 2021	??
		19	Unknown			
		24	Downstream			
Sep-21	Unknown	0	Upstream	??	Distributed to UDWR-M 2017	??
		0	Unknown			
		1	Downstream			
Sep-21	Unknown	2	Upstream	??	Not Program Distributed Tags	??
		1	Unknown			
		2	Downstream			

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

**Table 6.**  
Price-Stubb Fiscal Year Individual PIT Antenna Detections

Species	BH	BT	CH	CS	FXB	FM	HB	RT	RZ
# of Individuals FY2010***	0	0	0	2	0	0	0	6	0
# of Individuals FY2011**	0	16	0	1	0	1	0	19	83
# of Individuals FY2012**	0	88	0	8	0	3	1	36	135
# of Individuals FY2013**	0	138	0	2	0	1	0	79	239
# of Individuals FY2014**	0	114	0	3	0	1	0	29	69
# of Individuals FY2015**	106	22	0	4	0	251	0	19	19
# of Individuals FY2016**	67	126	0	13	0	245	0	21	36
# of Individuals FY2017**	88	66	0	21	0	103	0	16	140
# of Individuals FY2018**	70	71	0	11	0	73	0	29	81
# of Individuals FY2019**	137	176	0	5	4	328	0	28	278
# of Individuals FY2020**	99	98	1	0	3	474	0	58	142
# of Individuals FY2021**	42	91	0	2	1	319	0	54	209
<b>Grand total<sup>1</sup></b>	<b>609</b>	<b>1006</b>	<b>1</b>	<b>72</b>	<b>8</b>	<b>1799</b>	<b>1</b>	<b>394</b>	<b>1431</b>
		<sup>1</sup> Many of these fish were detected at Price-Stubb in multiple years							
		* Antenna was only in operation for 1.5 months during FY 2010							
		** Some of these fish were detected in more than one month during the fiscal year							

**Table 7.**  
Number of individual fish detected by PIAs by species for FY 2021 at Government Highline Fish Passage during fish passage operations.

	bonytail	razorback sucker	roundtail chub	#N/A	bluehead sucker	flannelmouth sucker	unidentified	unknown chub
All 4 + Trap	4	0	5	0	0	0	0	0
Trap + 3	3	3	3	0	0	0	0	0
Trap + 2	1	6	2	0	0	0	0	0
Trap + 1	18	5	6	0	0	0	0	0
Trap Only	4	2	2	0	0	0	0	0
Below Trap	26	251	31	99	5	35	1	1

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

**Table 8.**

Number of individual fish detected each month in FY2021 by the lower PIA at Government Highline Fish Passage when the ladder was not in operation. Each month represents individual fish, individuals can be represented in multiple months.

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jul	Aug	Sep
bluehead sucker	0	0	0	0	0	1	3	1	1	0	0
bonytail [chub]	9	111	92	16	67	12	41	40	15	13	3
flannelmouth sucker	0	5	0	0	0	4	19	26	2	11	6
razorback sucker	3	5	0	1	3	70	143	95	107	88	86
roundtail chub	3	5	4	0	6	1	3	4	11	1	1
unidentified	0	0	0	0	0	0	1	0	1	1	0
#N/A	0	0	0	0	0	1	4	17	21	5	6
Total	15	126	96	17	76	89	214	183	158	119	102