The Southwestern Water Conservation District
The West Building, 841 E Second Avenue
Durango, CO 81301

NOTICE IS HEREBY GIVEN
A Regular Board Meeting of the
Southwestern Water Conservation District
will be held on

Tuesday, October 1, 2019
841 E 2nd Avenue
Durango, Colorado
8:00am-4:00pm

Revised, Posted & Noticed September 30, 2019

Tentative Agenda

Except the time indicated for when the meeting is scheduled to begin, the times noted for each agenda item are estimates and subject to change. The Board may address and act on agenda items in any order to accommodate the needs of the Board and the audience. Agenda items can also be added during the meeting at the consensus of the Board.

Agenda items may be placed on the Consent Agenda when the recommended action is non-controversial. The Consent Agenda may be voted on without reading or discussing individual items. Any Board member may request clarification about items on the Consent Agenda. The Board may remove items from the Consent Agenda at their discretion for further discussion.

A call-in option will be available for the meeting, and if possible, please contact Laura Spann at (970) 247-1302 in advance of the meeting to verify and record your participation. Phone option: Call (605) 475-5618, Passcode 797282#

Monday, September 30, 2019
Three or more board members may participate in a group dinner upon arrival to Durango to welcome the new executive director, Frank Kugel. (DoubleTree Hotel, 501 Camino del Rio, 6:00pm).

Tuesday, October 1, 2019
1.0 Call to Order – Roll Call, Verification of Quorum and Pledge of Allegiance (8:00 a.m.)
2.0 Review and Approve Agenda (8:03 a.m.)
3.0 Executive Session (8:05 a.m.)
- 3.1 Colorado River Interstate and Intra-state matters, including drought contingency planning and demand management
- 3.2 Case No. 2019CW3045, Division 4, Rehoboth Land Partners, LLC
- 3.3 Proposed instream flow appropriations on Disappointment Creek
- 3.4 Recognition and administration of pre-existing uses occurring under C.R.S. § 37-92-102(3)(b)
- 3.5 Fair Labor Standards Act, record keeping and employee benefits
- 3.6 Potential Modifications to the SWCD Programs Coordinator Position, including job duties and benefits
- 3.7 Termination of the SWCD-ALPWCD Cost Sharing Agreement
- 3.8 Local Government Budget Law of Colorado and, in particular, the budget message

General Session (10:00 a.m.)
4.0 Report from Executive Session

5.0 Approve and/or Remove Consent Agenda Items

6.0 Consent Agenda (10:05 a.m.)

6.1 Approval of Minutes (August 6, September 10)

6.2 Approval of Treasurer's Report (August 2019)

6.3 2020 SWCD Board Meeting Schedule

7.0 Questions and Comments from Audience (10:10 a.m.)

8.0 Old Business (10:15 a.m.)

8.1 Colorado River matters

8.1.1 Interstate and intra-state matters, including drought contingency planning (DCP) effort and exploration of demand management – Beth Van Vurst, Frank Kugel

8.1.2 Update from CWCB and Attorney General's Office regarding DCP and Demand Management – Lain Leoniak, Brent Newman

8.1.3 West Slope Risk Assessment Phase III – Carrie Padgett, Frank Kugel

8.1.4 Water Bank Working Group – Carrie Padgett, Don Schwindt, Frank Kugel

9.0 Reports (11:05 a.m.)

9.1 Partner Updates

CPW	*CWCB*	*DWR*	*SJCA*	*TU*	*USBLM*
USBR	*USFS*	*USGS*	*CRWUA*	*CWC*	*WRA*
WIP	*Kogovsek*	*CWR&PDA*	*Roundtable*	*IBCC*	*WEco*
CC					

9.2 Board Member Updates

9.3 Hydrologic Conditions Update

9.4 Office Update

Lunch (12:00 p.m.)

10.0 Old Business (continued) (12:45 p.m.)

10.1 CWCB Proposed Instream Flow Appropriations

10.1.1 Disappointment Creek

10.1.2 2020 Proposed Appropriations in Divisions 4 and 7

10.2 Potential changes to C.R.S. §37-83-105 authorizing temporary loans of water for instream flow purposes

10.3 Interim Water Resources Review Committee – Update from September Meetings

10.4 SWCD Mission and Strategic Planning – Timeline

10.5 Review of Proposed Budget FY2020

10.5.1 i-Pads for Electronic Board Packets

10.5.2 USGS Proposal for New Gage

10.6 Proposed Personnel Policies

11.0 New Business (1:15 p.m.)

11.1 Report from Fort Lewis College Water Center – Gigi Richard

11.2 Animas River Stakeholders Group, Transition to Bonita Peak CAG – Peter Butler

11.3 Formation of Board Committees: Colorado River Issues, Instream Flow Program, State Affairs, Federal Affairs, Budget & Investments, Outreach, Litigation, Personnel

11.4 SWCD Appointments

11.4.1 Water Congress State Affairs Committee

11.4.2 Water Congress Federal Affairs Committee

11.4.3 SWCD Appointment to the SW Basin Roundtable

11.4.4 CRWUA, NWRA Representation

11.5 Termination of Interim Period Independent Contractor Agreements (Whitehead H20, Harris Water Engineering)
11.6 Proposition DD – Beth Van Vurst
11.7 Proposed Revision to 2020 SWCD Grant Program Guidelines
11.8 Early termination of the SWCD-ALPWCD Cost Share Agreement
11.9 Potential modifications to the SWCD Programs Coordinator Position, including job duties and benefits

12.0 Engineering Report (2:30 p.m.)
12.1 Upper Colorado & San Juan River Basin Recovery Implementation Programs
12.2 Paradox Salinity Unit - Draft Environmental Impact Statement

13.0 General Counsel Legal Report (2:50 p.m.)
13.1 Case No. 14CW3011, San Luis Valley Water Conservancy District
13.2 BLM's Substitute Water Supply Plan Application for the Treasure Pass Diversion Ditch
13.3 Waters of the United States (WOTUS)
13.4 Regulation #93 – Colorado's Section 303(d) List of Impaired Waters, and Monitoring and Evaluation List
13.5 July and August Water Court Resume Review (Divisions 3, 4, 7), including ratification of Statement of Opposition in the Application of Rehoboth Land Partners, LLC, Case No. 19CW3045, Water Division 4.

14.0 Executive Session (continuation of 3.0) (3:00 p.m.)

15.0 Adjournment (4:00 p.m.)

Upcoming Meetings

Friday, November 1, 2019	8:30 a.m.	Annual Water Seminar
Thursday, December 5, 2019	9:00 a.m.	Regular Board Meeting/Budget Hearing

Southwestern Water Conservation District
Budget Comparison Summary
January through August 2019

	Jan - Aug 19	Budget	$ Over Bud...	% of Budget
Income				
4 · SWCD INCOME				
4.1 · Property Tax	1,505,675	1,555,900	(50,225)	97%
4.2 · Specific Ownership Tax	83,518	100,000	(16,482)	84%
4.3 · Interest, PILT & Other Taxes	30,156	35,500	(5,344)	85%
4.4 · Other Income				
4.4.1 · Interest Earned	26,805	23,000	3,805	117%
4.4.2 · Loan Interest	408	408	(0)	100%
4.4.3 · Miscellaneous Income	9,127	9,000	127	101%
4.4.4 · Water Seminar Registration	0	6,000	(6,000)	0%
4.4.5 · ALP/WIP Cost Sharing	8,768	16,000	(7,232)	55%
4.4.6 · ALP Cost Sharing - Wages	24,400	54,856	(30,456)	44%
4.4.7 · SJRBRIP Water User Committee	50,873	50,873	0	100%
4.4.8 · Stream Gaging Reimbursement	25,706	25,706	0	100%
4.4.9 · Water Info Program	35,841	37,000	(1,159)	97%
Total 4.4 · Other Income	181,927	222,843	(40,916)	82%
Total 4 · SWCD INCOME	1,801,277	1,914,243	(112,966)	94%
Total Income	1,801,277	1,914,243	(112,966)	94%
Gross Profit	1,801,277	1,914,243	(112,966)	94%
Expense				
5 · SWCD EXPENSES				
5.01 · Water Management & Development				
5.1.1 · Financial Assistance Program	74,740	400,000	(325,260)	19%
5.1.2 · Previously Committed Aid	109,087	100,377	8,710	109%
5.1.3 · Project Reserve Fund	0	350,000	(350,000)	0%
5.1.4 · SJRBRIP Water User Committee	61,555	101,746	(40,191)	60%
5.1.5 · SWCD Project Water Rights	0	50,000	(50,000)	0%
5.1.6 · Weather Modification	21,760	90,000	(68,240)	24%
Total 5.01 · Water Management & Develop...	267,141	1,092,123	(824,982)	24%
5.02 · Data Collection				
5.2.1 · Center for Snow & Avalanche	5,000	5,000	0	100%
5.2.2 · Stream Gaging - Federal	40,904	88,215	(47,311)	46%
5.2.3 · Stream Gaging - Colorado	0	2,600	(2,600)	0%
5.2.4 · Water Quality Studies	7,000	13,000	(6,000)	54%
5.2.5 · SW Colorado Permanent Radar	0	10,000	(10,000)	0%
Total 5.02 · Data Collection	52,904	118,815	(65,911)	45%
5.03 · Ongoing Organizational Support				
5.3.1 · Event Sponsorships	1,250	5,000	(3,750)	25%
5.3.2 · Dues & Memberships	19,240	22,500	(3,261)	86%
5.3.3 · Animas River Stakeholders Group	5,000	5,000	0	100%
5.3.4 · Colorado River Studies	17,000	17,500	(500)	97%
5.3.5 · Demo CSU Farm/Water Efficiency	0	10,000	(10,000)	0%
Total 5.03 · Ongoing Organizational Support	42,490	60,000	(17,511)	71%

Southwestern Water Conservation District
Budget Comparison Summary
January through August 2019

	Jan - Aug 19	Budget	$ Over Bud...	% of Budget
5.04 · Water Education				
5.4.1 · Water Info Program	37,130	65,595	(28,465)	57%
5.4.2 · Water Seminar	0	18,000	(18,000)	0%
5.4.3 · Water Education Colorado	10,000	10,000	0	100%
5.4.4 · Children's Water Festival	8,116	8,000	116	101%
5.4.5 · Watershed Education Program	6,000	6,000	0	100%
5.4.7 · Water Leaders Scholarship	3,250	5,000	(1,750)	65%
Total 5.04 · Water Education	64,496	112,595	(48,099)	57%
5.05 · Technical Support				
5.5.01 · Attorney Fees - General Counsel	133,734	126,000	7,734	106%
5.5.02 · Attorney Exps - General Counsel	6,129	10,000	(3,871)	61%
5.5.03 · Litigation - General Counsel	12,154	70,000	(57,846)	17%
5.5.04 · Attorney Fees - Special Counsel	6,298	35,000	(28,703)	18%
5.5.05 · Attorney Exps - Special Counsel	35	5,000	(4,965)	1%
5.5.06 · Lobbying Fees	50,000	50,000	0	100%
5.5.07 · Lobbying Expenses	1,150	5,500	(4,350)	21%
5.5.08 · Engineering - General	27,279	45,000	(17,721)	61%
5.5.09 · Engineering - Special Projects	40,358	25,000	15,358	161%
5.5.10 · Technical Other Expenses	0	40,000	(40,000)	0%
Total 5.05 · Technical Support	277,136	411,500	(134,364)	67%
5.06 · District Staff				
5.6.1 · Wages - Executive Director	47,263	129,342	(82,079)	37%
5.6.2 · Wages - Programs Coordinator	32,617	48,925	(16,308)	67%
5.6.3 · Wages - Payroll Taxes	6,326	15,930	(9,604)	40%
5.6.4 · Wages - Retirement Benefit	3,128	8,913	(5,785)	35%
5.6.5 · Wages - Health & Life Insurance	19,141	44,696	(25,555)	43%
5.6.6 · Wages - ED Bonus	0	0	0	0%
5.6.7 · Wages - Coordinator Bonus	0	0	0	0%
Total 5.06 · District Staff	108,474	247,806	(139,332)	44%
5.07 · Meetings & Travel				
5.7.1 · Director Fees	12,325	21,000	(8,675)	59%
5.7.2 · Director Travel	12,865	31,000	(18,135)	41%
5.7.3 · Registration Fees	2,570	8,500	(5,930)	30%
5.7.4 · Meeting Expenses	9,189	7,000	2,189	131%
5.7.5 · Staff Travel	10,444	35,000	(24,556)	30%
Total 5.07 · Meetings & Travel	47,393	102,500	(55,107)	46%

Southwestern Water Conservation District
Budget Comparison Summary
January through August 2019

	Jan - Aug 19	Budget	$ Over Bud...	% of Budget
5.08 · Administration				
5.8.01 · Audit	8,200	8,200	0	100%
5.8.02 · Accounting	28	500	(473)	6%
5.8.03 · Capital Outlay	2,146	4,000	(1,854)	54%
5.8.04 · Casual Labor	0	200	(200)	0%
5.8.05 · Equipment Leasing	1,200	1,800	(600)	67%
5.8.06 · Insurance - General Liability	6,384	6,000	384	106%
5.8.07 · Legal Notices	1	600	(599)	0%
5.8.08 · Miscellaneous	290	500	(210)	58%
5.8.09 · Office Expenses	5,119	7,500	(2,381)	68%
5.8.10 · Postage	824	1,000	(176)	82%
5.8.11 · Rent	21,722	30,192	(8,470)	72%
5.8.12 · Telephone	1,422	2,000	(578)	71%
Total 5.08 · Administration	47,337	62,492	(15,156)	76%
5.09 · County Treasurer Fees	44,020	50,742	(6,722)	87%
5.10 · TABOR Reserve	0	67,757	(67,757)	0%
5.11 · Contigency Reserve	0	500,000	(500,000)	0%
Total 5 · SWCD EXPENSES	951,390	2,826,330	(1,874,940)	34%
Total Expense	951,390	2,826,330	(1,874,940)	34%
Net Income	**849,887**	**(912,087)**	**1,761,974**	**(93)%**

Southwestern Water Conservation District
Bank Account Summary
As of August 31, 2019

	Aug 31, 19
ASSETS	
Current Assets	
Checking/Savings	
101 · Checking General SWCD	1,495,701.76
102 · Checking Water Info Program	120,601.32
103 · CD1 - TBK - SWCD	838,388.32
104 · CD2 - TBK - SWCD	205,230.95
105 · COLOTrust Project Reserve Fund	803,109.13
106 · COLOTrust Reserves	13,169.71
107 · Checking SJRBRIP Committee	60,694.14
Total Checking/Savings	3,536,895.33
Other Current Assets	
131 · Bauer Lake Loan	11,011.25
Total Other Current Assets	11,011.25
Total Current Assets	3,547,906.58
TOTAL ASSETS	**3,547,906.58**
LIABILITIES & EQUITY	0.00

Southwestern Water Conservation District
Check Detail
July through August 2019

Num	Date	Name	Memo	Account	Original Amount
2791	**07/01/2019**	**Elaine Chick Consulting**	**June 2019**	**102 · Checking Water Info Progr...**	**-5,659.20**
			June 2019	54111 · WIP Contract Coordination	5,659.20
TOTAL					5,659.20
MC	**07/01/2019**	**Dominos**	**ALP Special Bd Mtg 7-1-19**	**101 · Checking General SWCD**	**-119.37**
			ALP Special Bd Mtg 7-1-19	124 · Due From ALP/Other	119.37
TOTAL					119.37
1202	**07/08/2019**	**Water Consult**	**March 30-June 28, 2019**	**107 · Checking SJRBRIP Commit...**	**-12,082.17**
			March 30-June 28, 2019	5.1.4 · SJRBRIP Water User Com...	12,082.17
TOTAL					12,082.17
1203	**07/08/2019**	**SW Water Conservation District**	**SJRBRIP Checks Restocking**	**107 · Checking SJRBRIP Commit...**	**-67.19**
			SJRBRIP Checks Restocking	5.1.4 · SJRBRIP Water User Com...	67.19
TOTAL					67.19
MC	**07/09/2019**	**ImageNet**	**July 2019**	**101 · Checking General SWCD**	**-150.00**
			July 2019	5.8.05 · Equipment Leasing	150.00
TOTAL					150.00
MC	**07/09/2019**	**Office Depot**	**File boxes for ED office**	**101 · Checking General SWCD**	**-35.76**
			File boxes for ED office	5.8.09 · Office Expenses	35.76
TOTAL					35.76
MC	**07/09/2019**	**Colorado Water Congress**	**Don & Jenny Conference Registration**	**101 · Checking General SWCD**	**-1,030.00**
			Don & Jenny Conference Registration	5.7.3 · Registration Fees	1,030.00
TOTAL					1,030.00
MC	**07/10/2019**	**Steamboat Grand**	**Water Congress Conference (Jenny/Don)**	**101 · Checking General SWCD**	**-357.60**
			Water Congress Conference (Jenny/Don)	5.7.2 · Director Travel	357.60
TOTAL					357.60
MC	**07/11/2019**	**DARCA**	**2019 Membership**	**101 · Checking General SWCD**	**-250.00**
			2019 Membership	5.3.2 · Dues & Memberships	250.00
TOTAL					250.00
ACH	**07/15/2019**	**Laura E Spann**	**7/1-15/19**	**101 · Checking General SWCD**	**-1,446.96**
			7/1-15/19	5.6.2 · Wages - Programs Coordin...	2,038.54
			7/1-15/19	5.6.5 · Wages - Health & Life Insur...	-181.68
			7/1-15/19	221 · 457 Withholding	-50.96
			7/1-15/19	215 · FICA/Medicare/Fed W/H	-142.00
			7/1-15/19	5.6.3 · Wages - Payroll Taxes	126.39
			7/1-15/19	215 · FICA/Medicare/Fed W/H	-126.39
			7/1-15/19	215 · FICA/Medicare/Fed W/H	-126.39
			7/1-15/19	5.6.3 · Wages - Payroll Taxes	29.55
			7/1-15/19	215 · FICA/Medicare/Fed W/H	-29.55
			7/1-15/19	215 · FICA/Medicare/Fed W/H	-29.55
			7/1-15/19	216 · State W/H Tax Payable	-61.00
TOTAL					1,446.96

Southwestern Water Conservation District
Check Detail
July through August 2019

Num	Date	Name	Memo	Account	Original Amount
ACH	**07/15/2019**	**United States Treasury**	**7/1-15/19**	**101 · Checking General SWCD**	**-453.88**
			7/1-15/19	215 · FICA/Medicare/Fed W/H	142.00
			7/1-15/19	215 · FICA/Medicare/Fed W/H	126.39
			7/1-15/19	215 · FICA/Medicare/Fed W/H	126.39
			7/1-15/19	215 · FICA/Medicare/Fed W/H	29.55
			7/1-15/19	215 · FICA/Medicare/Fed W/H	29.55
TOTAL					453.88
ACH	**07/15/2019**	**Lincoln Financial Group**	**7/1-15/19**	**101 · Checking General SWCD**	**-101.92**
			7/1-15/19	221 · 457 Withholding	50.96
			7/1-15/19	5.6.4 · Wages - Retirement Benefit	50.96
TOTAL					101.92
13659	**07/17/2019**	**US Geological Survey**	**Bill # 90739854**	**101 · Checking General SWCD**	**-19,660.00**
			2Q2019	5.2.2 · Stream Gaging - Federal	19,660.00
TOTAL					19,660.00
13660	**07/17/2019**	**Whitehead H20**	**June 2019**	**101 · Checking General SWCD**	**-5,963.18**
			June 2019	5.5.09 · Engineering - Special Proj...	5,963.18
TOTAL					5,963.18
13661	**07/17/2019**	**Russell Hinger**	**Mtgs 5/29-7/15/19**	**101 · Checking General SWCD**	**-262.00**
			Mtgs 5/29-7/15/19	5.7.1 · Director Fees	175.00
			Mtgs 5/29-7/15/19	5.7.2 · Director Travel	87.00
TOTAL					262.00
13662	**07/17/2019**	**Don Schwindt**	**Mtgs 6/16-7/2/19**	**101 · Checking General SWCD**	**-1,341.29**
			Mtgs 6/16-7/2/19	5.7.2 · Director Travel	1,341.29
TOTAL					1,341.29
13663	**07/17/2019**	**David Guilliams**	**Mtgs 6/4-6/17/19**	**101 · Checking General SWCD**	**-374.00**
			Mtgs 6/4-6/17/19	5.7.1 · Director Fees	200.00
			Mtgs 6/4-6/17/19	5.7.2 · Director Travel	174.00
TOTAL					374.00
MC	**07/22/2019**	**Charter**	**July 2019**	**101 · Checking General SWCD**	**-139.89**
			July 2019	5.8.12 · Telephone	139.89
TOTAL					139.89
13664	**07/25/2019**	**Water Information Program**	**2019 Match**	**101 · Checking General SWCD**	**-35,650.00**
			2019 Matching Contribution	4.4.9.2 · WIP SWCD Matching Co...	35,650.00
TOTAL					35,650.00
13665	**07/25/2019**	**Colorado River WCD**	**May-June 2019 Phase III**	**101 · Checking General SWCD**	**-18,204.78**
			May-June 2019 Phase III	5.1.2 · Previously Committed Aid	18,204.78
TOTAL					18,204.78

Southwestern Water Conservation District
Check Detail
July through August 2019

Num	Date	Name	Memo	Account	Original Amount
13666	**07/25/2019**	**Fairfield and Woods, P.C.**	**June 2019**	**101 · Checking General SWCD**	**-23,055.94**
			June 2019	5.5.01 · Attorney Fees - General C...	15,070.00
			June 2019	5.5.02 · Attorney Exps - General C...	2,563.94
			June 2019	5.5.03 · Litigation - General Counsel	2,992.00
			June 2019	5.5.01 · Attorney Fees - General C...	2,430.00
TOTAL					23,055.94
13667	**07/25/2019**	**Harris Water Engineering, Inc**	**June 2019**	**101 · Checking General SWCD**	**-7,635.00**
			June 2019	5.5.08 · Engineering - General	7,635.00
TOTAL					7,635.00
13668	**07/25/2019**	**Colorado Employer Benefit Trust**	**August 2019**	**101 · Checking General SWCD**	**-1,819.89**
			August 2019	5.6.5 · Wages - Health & Life Insur...	1,819.89
TOTAL					1,819.89
13669	**07/25/2019**	**The West Building**	**August 2019**	**101 · Checking General SWCD**	**-2,406.93**
			August 2019	5.8.11 · Rent	2,406.93
TOTAL					2,406.93
MC	**07/29/2019**	**City Market**	**Restock office**	**101 · Checking General SWCD**	**-35.94**
			Restock office	5.8.09 · Office Expenses	35.94
TOTAL					35.94
MC	**07/29/2019**	**Colorado Water Congress**	**Summer Conference Registration - Elaine**	**102 · Checking Water Info Progr...**	**-515.00**
			Summer Conference Registration - Elaine	54114 · WIP Conferences/Events/...	515.00
TOTAL					515.00
ACH	**07/31/2019**	**Colorado Department of Revenue**	**2Q2019**	**101 · Checking General SWCD**	**-1,018.00**
			2Q2019	216 · State W/H Tax Payable	1,018.00
TOTAL					1,018.00
ACH	**07/31/2019**	**Colorado State Treasurer**	**2Q2019**	**101 · Checking General SWCD**	**-81.48**
			2Q2019	217 · State Unemployment Tax	81.48
TOTAL					81.48
ACH	**07/31/2019**	**Laura E Spann**	**7/16-31/19**	**101 · Checking General SWCD**	**-1,446.95**
			7/16-31/19	5.6.2 · Wages - Programs Coordin...	2,038.54
			7/16-31/19	5.6.5 · Wages - Health & Life Insur...	-181.68
			7/16-31/19	221 · 457 Withholding	-50.96
			7/16-31/19	215 · FICA/Medicare/Fed W/H	-142.00
			7/16-31/19	5.6.3 · Wages - Payroll Taxes	126.39
			7/16-31/19	215 · FICA/Medicare/Fed W/H	-126.39
			7/16-31/19	215 · FICA/Medicare/Fed W/H	-126.39
			7/16-31/19	5.6.3 · Wages - Payroll Taxes	29.56
			7/16-31/19	215 · FICA/Medicare/Fed W/H	-29.56
			7/16-31/19	215 · FICA/Medicare/Fed W/H	-29.56
			7/16-31/19	216 · State W/H Tax Payable	-61.00
TOTAL					1,446.95

Southwestern Water Conservation District
Check Detail
July through August 2019

Num	Date	Name	Memo	Account	Original Amount
ACH	**07/31/2019**	**Lincoln Financial Group**	**7/16-31/19**	**101 · Checking General SWCD**	**-101.92**
			7/16-31/19	221 · 457 Withholding	50.96
			7/16-31/19	5.6.4 · Wages - Retirement Benefit	50.96
TOTAL					101.92
ACH	**07/31/2019**	**United States Treasury**	**7/16-31/19**	**101 · Checking General SWCD**	**-453.90**
			7/16-31/19	215 · FICA/Medicare/Fed W/H	142.00
			7/16-31/19	215 · FICA/Medicare/Fed W/H	126.39
			7/16-31/19	215 · FICA/Medicare/Fed W/H	126.39
			7/16-31/19	215 · FICA/Medicare/Fed W/H	29.56
			7/16-31/19	215 · FICA/Medicare/Fed W/H	29.56
TOTAL					453.90
MC	**07/31/2019**	**US Postal Service**	**Bd Packets 8-6-19**	**101 · Checking General SWCD**	**-141.25**
			Bd Packets 8-6-19	5.8.10 · Postage	141.25
TOTAL					141.25
MC	**07/31/2019**	**Pagosa Springs Sun**	**1-Day Subscription**	**101 · Checking General SWCD**	**-1.00**
			1-Day Subscription	5.8.07 · Legal Notices	1.00
TOTAL					1.00
MC	**07/31/2019**	**Office Depot**	**Chair mat (carpet protector)**	**101 · Checking General SWCD**	**-109.99**
			Chair mat (carpet protector)	5.8.09 · Office Expenses	109.99
TOTAL					109.99
13670	**07/31/2019**	**Desert Sun Coffee Roasters**	**Coffee restock**	**101 · Checking General SWCD**	**-49.14**
			Coffee restock	5.8.09 · Office Expenses	49.14
TOTAL					49.14
13671	**07/31/2019**	**Robert Wolff**	**Mtgs 4/16-7/18/19**	**101 · Checking General SWCD**	**-1,343.09**
			Mtgs 4/16-7/18/19	5.7.1 · Director Fees	1,125.00
			Mtgs 4/16-7/18/19	5.7.2 · Director Travel	218.09
TOTAL					1,343.09
2792	**07/31/2019**	**Elaine Chick Consulting**	**July 2019**	**102 · Checking Water Info Progr...**	**-3,903.80**
			July 2019	54111 · WIP Contract Coordination	3,903.80
TOTAL					3,903.80
13672	**08/01/2019**	**Robert Wolff**	**Mtgs 4/16-7/18/19**	**101 · Checking General SWCD**	**-1,043.09**
			Mtgs 4/16-7/18/19	5.7.1 · Director Fees	825.00
			Mtgs 4/16-7/18/19	5.7.2 · Director Travel	218.09
TOTAL					1,043.09
2793	**08/02/2019**	**Elaine Chick Consulting**	**Mileage F2F, BRT, SC Mtg Snacks**	**102 · Checking Water Info Progr...**	**-162.86**
			WIP SC Mtg Snacks 5/22/19	54127 · WIP Meeting Expenses	13.22
			BRT Mtg Cortez 7-10-19	54115 · WIP Mileage & Travel	55.68
			F2F Mileage June 2019	54118 · WIP Sponsorships	93.96
TOTAL					162.86

Southwestern Water Conservation District
Check Detail
July through August 2019

Num	Date	Name	Memo	Account	Original Amount
MC	08/05/2019	ImageNet	August 2019	101 · Checking General SWCD	-150.00
			August 2019	5.8.05 · Equipment Leasing	150.00
TOTAL					150.00
MC	08/05/2019	RiversEdge Grill	Bd Mtg 8/5 Travel Meal	101 · Checking General SWCD	-99.51
			Bd Mtg 8/5 Travel Meal	5.7.4 · Meeting Expenses	99.51
TOTAL					99.51
MC	08/05/2019	City Market	Bd Mtg 8/6 & Tour 8/7 Supplies	101 · Checking General SWCD	-68.33
			Bd Mtg 8/6 & Tour 8/7 Supplies	5.7.4 · Meeting Expenses	68.33
TOTAL					68.33
MC	08/06/2019	Loops Coffee	Bd Mtg 8/6 Breakfast	101 · Checking General SWCD	-193.00
			Bd Mtg 8/6 Breakfast	5.7.4 · Meeting Expenses	193.00
TOTAL					193.00
MC	08/06/2019	Montezuma's	Bd Mtg 8/6 Lunch	101 · Checking General SWCD	-273.60
			Bd Mtg 8/6 Lunch	5.7.4 · Meeting Expenses	273.60
TOTAL					273.60
MC	08/06/2019	Speedway	Bd Mtg 8/6 Ice	101 · Checking General SWCD	-4.34
			Bd Mtg 8/6 Ice	5.7.4 · Meeting Expenses	4.34
TOTAL					4.34
MC	08/06/2019	Walmart	Bd Mtg 8/6 Tablecloths	101 · Checking General SWCD	-5.30
			Bd Mtg 8/6 Tablecloths	5.7.4 · Meeting Expenses	5.30
TOTAL					5.30
MC	08/07/2019	ponderosa Restaurant	Bd Tour 8/7 Breakfast	101 · Checking General SWCD	-104.29
			Bd Tour 8/7 Breakfast	5.7.4 · Meeting Expenses	104.29
TOTAL					104.29
MC	08/07/2019	Speedway	Bd Tour 8/7 Ice	101 · Checking General SWCD	-6.51
			Bd Tour 8/7 Ice	5.7.4 · Meeting Expenses	6.51
TOTAL					6.51
MC	08/07/2019	Once Upon a Sandwich	Bd Tour Lunches 8/7	101 · Checking General SWCD	-249.00
			Bd Tour Lunches 8/7	5.7.4 · Meeting Expenses	249.00
TOTAL					249.00
MC	08/07/2019	Ute Farm & Ranch	Bus & Driver, Basin Tour 8/7	101 · Checking General SWCD	-393.00
			Bus & Driver, Basin Tour 8/7	5.7.4 · Meeting Expenses	393.00
TOTAL					393.00

Southwestern Water Conservation District
Check Detail
July through August 2019

Num	Date	Name	Memo	Account	Original Amount
MC	**08/08/2019**	**Dolores Mountain Inn**	**Lodging for 9 (Dolores Bd Mtg & Tour)**	**101 · Checking General SWCD**	**-1,368.00**
			Lodging for 9 (Dolores Bd Mtg & Tour)	5.7.4 · Meeting Expenses	1,368.00
TOTAL					1,368.00
MC	**08/12/2019**	**Lenovo**	**ED new computer**	**101 · Checking General SWCD**	**-1,545.51**
			ED new computer	5.8.03 · Capital Outlay	1,545.51
TOTAL					1,545.51
ACH	**08/15/2019**	**Laura E Spann**	**8/1-15/19**	**101 · Checking General SWCD**	**-1,446.95**
			8/1-15/19	5.6.2 · Wages - Programs Coordin...	2,038.54
			8/1-15/19	5.6.5 · Wages - Health & Life Insur...	-181.68
			8/1-15/19	221 · 457 Withholding	-50.96
			8/1-15/19	215 · FICA/Medicare/Fed W/H	-142.00
			8/1-15/19	5.6.3 · Wages - Payroll Taxes	126.39
			8/1-15/19	215 · FICA/Medicare/Fed W/H	-126.39
			8/1-15/19	215 · FICA/Medicare/Fed W/H	-126.39
			8/1-15/19	5.6.3 · Wages - Payroll Taxes	29.56
			8/1-15/19	215 · FICA/Medicare/Fed W/H	-29.56
			8/1-15/19	215 · FICA/Medicare/Fed W/H	-29.56
			8/1-15/19	216 · State W/H Tax Payable	-61.00
TOTAL					1,446.95
ACH	**08/15/2019**	**United States Treasury**	**8/1-15/19**	**101 · Checking General SWCD**	**-453.90**
			8/1-15/19	215 · FICA/Medicare/Fed W/H	142.00
			8/1-15/19	215 · FICA/Medicare/Fed W/H	126.39
			8/1-15/19	215 · FICA/Medicare/Fed W/H	126.39
			8/1-15/19	215 · FICA/Medicare/Fed W/H	29.56
			8/1-15/19	215 · FICA/Medicare/Fed W/H	29.56
TOTAL					453.90
ACH	**08/15/2019**	**Lincoln Financial Group**	**8/1-15/19**	**101 · Checking General SWCD**	**-101.92**
			8/1-15/19	221 · 457 Withholding	50.96
			8/1-15/19	5.6.4 · Wages - Retirement Benefit	50.96
TOTAL					101.92
MC	**08/15/2019**	**Pagosa Baking Co**	**Education DMWG Mtg Salida**	**101 · Checking General SWCD**	**-8.34**
			Education DMWG Mtg Salida	5.7.2 · Director Travel	8.34
TOTAL					8.34
13673	**08/15/2019**	**Colorado Employer Benefit Trust**	**September 2019**	**101 · Checking General SWCD**	**-1,819.89**
			September 2019	5.6.5 · Wages - Health & Life Insur...	1,819.89
TOTAL					1,819.89
13674	**08/15/2019**	**Whitehead H20**	**July 2019**	**101 · Checking General SWCD**	**-1,830.00**
			July 2019	5.5.09 · Engineering - Special Proj...	1,830.00
TOTAL					1,830.00
13675	**08/15/2019**	**Monte Naslund**	**Mtgs 6/17-8/7/19**	**101 · Checking General SWCD**	**-466.00**
			Mtgs 6/17-8/7/19	5.7.1 · Director Fees	350.00
			Mtgs 6/17-8/7/19	5.7.2 · Director Travel	116.00
TOTAL					466.00

Southwestern Water Conservation District
Check Detail
July through August 2019

Num	Date	Name	Memo	Account	Original Amount
13676	**08/15/2019**	**Russell Hinger**	**Mtg 8/6-7/19**	**101 · Checking General SWCD**	**-346.16**
			Mtg 8/6-7/19	5.7.1 · Director Fees	200.00
			Mtg 8/6-7/19 mileage	5.7.2 · Director Travel	146.16
TOTAL					346.16
13677	**08/15/2019**	**Don Schwindt**	**Mtgs 7/3-8/7/19**	**101 · Checking General SWCD**	**-375.28**
			Mtgs 7/3-8/7/19	5.7.1 · Director Fees	250.00
			Mtgs 7/3-8/7/19	5.7.2 · Director Travel	125.28
TOTAL					375.28
13678	**08/15/2019**	**David Guilliams**	**Mtgs 8/6-7/19**	**101 · Checking General SWCD**	**-338.04**
			Mtgs 8/6-7/19	5.7.1 · Director Fees	200.00
			Mtgs 8/6-7/19	5.7.2 · Director Travel	138.04
TOTAL					338.04
13679	**08/15/2019**	**Robert Wolff**	**Mtgs 8/5-10/19**	**101 · Checking General SWCD**	**-600.50**
			Mtgs 8/5-10/19	5.7.1 · Director Fees	400.00
			Mtgs 8/5-10/19	5.7.2 · Director Travel	200.50
TOTAL					600.50
13680	**08/15/2019**	**Laura Spann-V**	**Mileage/meal 8/6-7, Mileage 8/15**	**101 · Checking General SWCD**	**-499.18**
			Mileage/meal 8/6-7, Mileage 8/15	5.7.5 · Staff Travel	302.18
			Mtg/Tour Dolores River Brewery 8/6/19	5.7.4 · Meeting Expenses	197.00
TOTAL					499.18
MC	**08/16/2019**	**Pagosa Springs Sun**	**Kugel article**	**101 · Checking General SWCD**	**-1.00**
			Kugel article	5.8.09 · Office Expenses	1.00
TOTAL					1.00
MC	**08/19/2019**	**US Postal Service**	**ALP Board Packets 8-27-19**	**101 · Checking General SWCD**	**-28.70**
			ALP Board Packets 8-27-19	5.8.10 · Postage	28.70
TOTAL					28.70
MC	**08/20/2019**	**Basin Printing**	**Frank's nameplates**	**101 · Checking General SWCD**	**-36.00**
			Frank's nameplates	5.8.09 · Office Expenses	36.00
TOTAL					36.00
MC	**08/20/2019**	**The PC Clinic**	**Computer setup, data transfer**	**101 · Checking General SWCD**	**-388.37**
			Computer setup, data transfer	124 · Due From ALP/Other	388.37
TOTAL					388.37
MC	**08/21/2019**	**Charter**	**August 2019**	**101 · Checking General SWCD**	**-139.89**
			August 2019	5.8.12 · Telephone	139.89
TOTAL					139.89
MC	**08/23/2019**	**Budget Rental**	**Bruce rental in error**	**101 · Checking General SWCD**	**-18.88**
			Bruce rental in error	124 · Due From ALP/Other	18.88
TOTAL					18.88

Southwestern Water Conservation District
Check Detail
July through August 2019

Num	Date	Name	Memo	Account	Original Amount
MC	**08/26/2019**	**The PC Clinic**	**Laura laptop Windows 10 upgrade, maintena...**	**101 · Checking General SWCD**	**-143.29**
			Laura laptop Windows 10 upgrade, maintenance	5.8.09 · Office Expenses	143.29
TOTAL					143.29
MC	**08/28/2019**	**City Market**	**ALP Bd Mtg Cookies 8-27-19**	**101 · Checking General SWCD**	**-8.84**
			ALP Bd Mtg Cookies 8-27-19	124 · Due From ALP/Other	8.84
TOTAL					8.84
MC	**08/28/2019**	**MLB**	**Thank You to Steve Harris**	**101 · Checking General SWCD**	**-135.49**
			Thank You to Steve Harris	5.8.08 · Miscellaneous	135.49
TOTAL					135.49
MC	**08/28/2019**	**HP Online**	**Printer for ALPWCD**	**101 · Checking General SWCD**	**-95.75**
			Printer for ALPWCD	124 · Due From ALP/Other	95.75
TOTAL					95.75
1204	**08/30/2019**	**HabiTech, Inc**	**June 29-August 26, 2019**	**107 · Checking SJRBRIP Commit...**	**-7,015.00**
			June 29-August 26, 2019	5.1.4 · SJRBRIP Water User Com...	7,015.00
TOTAL					7,015.00
2796	**08/30/2019**	**Elaine Chick Consulting**	**CWC Summer Conference Steamboat**	**102 · Checking Water Info Progr...**	**-1,290.34**
			CWC Summer Conference Steamboat	54114 · WIP Conferences/Events/...	1,290.34
TOTAL					1,290.34
13681	**08/30/2019**	**Kogovsek & Associates, Inc.**	**4Q19 Retainer, July 2019**	**101 · Checking General SWCD**	**-12,779.86**
			4Q19 July 2019	5.5.06 · Lobbying Fees 5.5.07 · Lobbying Expenses	12,500.00 279.86
TOTAL					12,779.86
13682	**08/30/2019**	**The West Building**	**September 2019**	**101 · Checking General SWCD**	**-2,428.82**
			September 2019	5.8.11 · Rent	2,428.82
TOTAL					2,428.82
13683	**08/30/2019**	**ALPWCD**	**4-drawer fireproof cabinet**	**101 · Checking General SWCD**	**-600.00**
			4-drawer fireproof cabinet	5.8.03 · Capital Outlay	600.00
TOTAL					600.00
13684	**08/30/2019**	**Mountain Studies Institute**	**San Juan Mining Conf & Innovation Expo**	**101 · Checking General SWCD**	**-750.00**
			San Juan Mining Conf & Innovation Expo	5.3.1 · Event Sponsorships	750.00
TOTAL					750.00
13685	**08/30/2019**	**Haynie & Company**	**FY2018 Audit Final Invoice**	**101 · Checking General SWCD**	**-4,100.00**
			FY2018 Audit Final Invoice	5.8.01 · Audit	4,100.00
TOTAL					4,100.00

Southwestern Water Conservation District
Check Detail
July through August 2019

Num	Date	Name	Memo	Account	Original Amount
13686	**08/30/2019**	**Harris Water Engineering, Inc**	**July 2019**	**101 · Checking General SWCD**	**-5,525.00**
			July 2019	5.5.08 · Engineering - General	5,525.00
TOTAL					5,525.00
13687	**08/30/2019**	**Fairfield and Woods, P.C.**	**July 2019**	**101 · Checking General SWCD**	**-14,387.18**
			July 2019	5.5.01 · Attorney Fees - General C...	8,822.00
			July 2019	5.5.02 · Attorney Exps - General C...	2,376.00
			July 2019	5.5.03 · Litigation - General Counsel	1,914.18
			July 2019	5.5.01 · Attorney Fees - General C...	1,275.00
TOTAL					14,387.18
13688	**08/30/2019**	**Don Schwindt**	**Mtgs 8/11-24/19**	**101 · Checking General SWCD**	**-1,254.93**
			Mtgs 8/11-24/19	5.7.2 · Director Travel	1,254.93
TOTAL					1,254.93
13689	**08/30/2019**	**Robert Wolff**	**Mtgs 8/11-22/19**	**101 · Checking General SWCD**	**-400.00**
			Mtgs 8/11-22/19	5.7.1 · Director Fees	400.00
TOTAL					400.00
MC	**08/30/2019**	**Basin Printing**	**Frank, Laura Business Cards**	**101 · Checking General SWCD**	**-166.99**
			Frank, Laura Business Cards	5.8.09 · Office Expenses	166.99
TOTAL					166.99
ACH	**08/31/2019**	**Laura E Spann**	**8/16-31/19**	**101 · Checking General SWCD**	**-1,446.95**
			8/16-31/19	5.6.2 · Wages - Programs Coordin...	2,038.54
			8/16-31/19	5.6.5 · Wages - Health & Life Insur...	-181.68
			8/16-31/19	221 · 457 Withholding	-50.96
			8/16-31/19	215 · FICA/Medicare/Fed W/H	-142.00
			8/16-31/19	5.6.3 · Wages - Payroll Taxes	126.39
			8/16-31/19	215 · FICA/Medicare/Fed W/H	-126.39
			8/16-31/19	215 · FICA/Medicare/Fed W/H	-126.39
			8/16-31/19	5.6.3 · Wages - Payroll Taxes	29.56
			8/16-31/19	215 · FICA/Medicare/Fed W/H	-29.56
			8/16-31/19	215 · FICA/Medicare/Fed W/H	-29.56
			8/16-31/19	216 · State W/H Tax Payable	-61.00
TOTAL					1,446.95
ACH	**08/31/2019**	**United States Treasury**	**8/16-31/19**	**101 · Checking General SWCD**	**-453.90**
			8/16-31/19	215 · FICA/Medicare/Fed W/H	142.00
			8/16-31/19	215 · FICA/Medicare/Fed W/H	126.39
			8/16-31/19	215 · FICA/Medicare/Fed W/H	126.39
			8/16-31/19	215 · FICA/Medicare/Fed W/H	29.56
			8/16-31/19	215 · FICA/Medicare/Fed W/H	29.56
TOTAL					453.90
ACH	**08/31/2019**	**Lincoln Financial Group**	**8/16-31/19**	**101 · Checking General SWCD**	**-101.92**
			8/16-31/19	221 · 457 Withholding	50.96
			8/16-31/19	5.6.4 · Wages - Retirement Benefit	50.96
TOTAL					101.92

WATER DESK

Water equity a concern for Western Slope water users

By **Heather Sackett** August 27, 2019

BRENT GARDNER-SMITH/ASPEN JOURNALISM

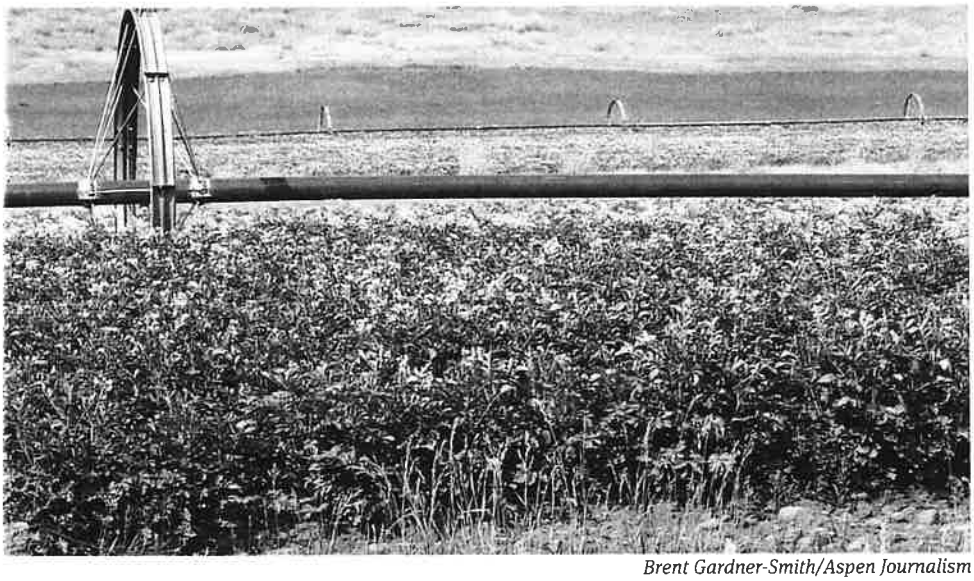
An irrigated hayfield on McLain Flats, near Aspen.

STEAMBOAT SPRINGS – Colorado's agricultural-water users have concerns about how exactly the state would fairly implement a voluntary water-use reduction plan known as demand management.

That was the takeaway from some of the first meetings organized by the Colorado Water Conservation Board as part of its investigation into how a demand-management program might work (https://dnrweblink.state.co.us/CWCB/0/edoc/208472/28.pdf?searchid=7d60bc74-6162-42e7-8a38-0c92964a45f0) in the state. Water managers discussed the issue of equity at the first meeting of the agricultural-impacts workgroup in Delta in early August and again at Colorado Water Congress in Steamboat Springs on Thursday.

If Western Slope agricultural-water users don't see cuts being taken by water users in municipalities, on the east slope and in the lower Colorado River basin, they won't want to participate in a demand-management program, said Ken Curtis, chief of engineering and construction for the Dolores Water Conservancy District.

"If (Western Slope users) don't see that question of fairness, they don't even want to open the conversation," he said at the meeting in Delta.



Brent Gardner-Smith/Aspen Journalism

Pitkin County is using this irrigation system to grow potatoes for vodka on county open space land. The state is exploring how a voluntary, temporary and compensated water-use reduction plan, known as demand management, could incentivize irrigators to leave more water in the river.

Social and cultural perceptions

This sentiment is not surprising to Colorado State University doctoral candidate Kelsea Macilroy, who spent last spring interviewing about 40 irrigators and water managers on the Western Slope. At CWC on Thursday, she unveiled her Nature Conservancy-funded research on the social and cultural perceptions of demand management.

There are three key conclusions of the report: Awareness and understanding of demand management vary greatly, defining what demand management is and how it will work is not straightforward, and conversations about demand management are connected to other tensions that create a general sense of vulnerability and fear.

"People don't see this as a discussion about feasibility," she told Thursday's audience. "It feels like something that's going to happen."

The CWCB has formed nine workgroups, each tasked with helping to identify and solve one of the following issues: agricultural impacts, law and policy, water-rights administration, environmental considerations, economic considerations and local government, funding; education and outreach, monitoring and verification, and tribal interests. The workgroups began meeting this summer.

At the heart of a demand-management plan is a reduction in water use by agriculture on a voluntary, temporary and compensated basis, all in an effort to send up to 500,000 acre-feet of water downstream to Lake Powell to meet Colorado River Compact obligations. Under pilot programs, the state could pay ranchers and farmers to leave more water in the river.

But the description "voluntary, temporary and compensated" also is the crux of the problem for many water users.

"Compensation is one of the stickiest and hardest to define," Macilroy said. "It's not just a number; it's an idea and a value. Is it even truly possible to compensate for reductions in water use? Water is more than just a commodity."

Water and agriculture on the Western Slope are tied to Colorado's rural identity, culture and landscapes. Demand management provokes an emotional response for some who fear that without irrigated, green fields, a community's way of life is threatened.

Some said they feared that demand management is a back door to "buy and dry." Several people invoked the tough lesson of Crowley County, a formerly agricultural hub on Colorado's southeastern plains. Many of the county's agricultural-water users sold off their water rights to Front Range municipalities. As irrigated farmland dried up, so did the county's economic base.

"I've been worried about this because these communities are smaller and ag-dominated," Cindy Lair, program manager for the State Conservation Board of the Colorado Department of Agriculture, said at the Delta meeting. "They don't have the resiliency for decreased water. They don't have the buffering capacity."

Macilroy's results also revealed a complicated relationship between "voluntary" and "parity." Water managers want to ensure that a demand-management program would spread the burden across different user groups and basins in the name of fairness. But that conflicts with the requirement that participation in any program be voluntary.

"A voluntary program appeals to people," Macilroy said. "It also has some major weaknesses. Because it is voluntary, it serves as a direct challenge to implementing parity. You can't have voluntary and parity at the same time."

Brent Newman, head of CWCB's section on Colorado River issues, said the research findings were not surprising. Helping people understand demand management is a key part of the program, he said.

"I think that's a question all the workgroups have identified as one of the key threshold questions: How do you have a voluntary program but also disincentivize negative proportionate impacts to basins?" he said. "We are just starting to wrap our heads around that."

Editor's note: Aspen Journalism is collaborating with The Aspen Times and other Swift Communications newspapers on coverage of water and rivers. The Times published (https://www.aspentimes.com/news/water-equity-a-concern-for-western-slope-water-users/) this article on Aug. 27, 2019 and the Glenwood Springs Post Independent published (https://www.postindependent.com/news/local/water-equity-a-concern-for-western-slope-water-users/) it on Sept. 3, 2019.

MEMORANDUM

DATE: September 24, 2019
TO: SWCD Board of Directors
FROM: SWCD Staff
RE: Revised Budget Message, Formalizing of District Budget Process

As part of the budget review this year, we would like to propose two items for the board's consideration at the October meeting.

First, we recommend that the board provide the revised budget message included in your packet as part of the 2020 budget filing. This document is intended to further explain the board's direction on District spending for the coming year, both for the public and staff.

Second, we recommend adoption of the following budget schedule and procedure, based upon the requirements of the Local Government Budget Law and procedures recommended by the Colorado Department of Local Affairs (DOLA).

1. **August board meeting:** Board appoints a budget officer (typically the executive director) and reviews goals and activities. Budget Officer presents draft of goals and activities for the coming year to the board for discussion, prioritizing, and preliminary approval.
2. **September budget workshop:** Between the August board meeting and the September budget workshop, Budget Officer works with the Secretary-Treasurer to develop a draft budget based on goals for the coming year. Initial draft budget presented to the board by Budget Officer (statutory deadline is October 15). Budget Officer advises board of Assessors' estimates of assessed values. Board discusses draft budget and directs staff to make any agreed-upon changes.
3. **October board meeting:** Review of revised budget, including September changes, and draft budget message. *Final opportunity for board suggestions and input, subject only to public hearing responses and finalized estimates from cost share partnerships, which are dependent on outside budgets. Proposed revisions must be based upon the budget officer's draft, as reviewed at the September meeting.* From this revised budget, the Notice of Budget is prepared and published and public hearing on the budget noticed for the December Board meeting.
4. **December board meeting:** Board conducts public hearing on the proposed budget approved at the October board meeting. Following the public hearing, the board may revise the proposed budget *but only in response to public comment.* Board adopts the budget based on final assessed valuations and sets the mill levy based upon receipt of final assessed valuations from the nine counties by the statutory deadline (December 10). Budget Officer certifies the mill levy to the County Commissioners by the statutory deadline (December 15).
5. **Prior to January 31:** Budget Officer files the budget, budget message, related resolutions, and mill levy certifications with DOLA prior to deadline (January 31). SWCD's adopted budget is then publicly available on the DOLA Local Government Information System.

We recommend that you formally adopt this procedure by motion, to be effective for the 2020 budget and all future years until specifically modified by board action.

Clean revisions

THE SOUTHWESTERN WATER CONSERVATION DISTRICT
Developing and Conserving the Waters of the
SAN JUAN AND DOLORES RIVERS AND THEIR TRIBUTARIES
IN SOUTHWESTERN COLORADO

GRANT PROGRAM GUIDELINES

A. BACKGROUND

The Southwestern Water Conservation District ("SWCD" or the "District") is a political subdivision of the State that was established by the Colorado General Assembly in 1941 to protect, conserve, use and develop the water resources of the San Juan and Dolores River Basins as well as to safeguard all waters to which the state of Colorado is equitably entitled.[1] SWCD periodically offers financial assistance in the form of grants to "qualified entities," as that term is defined below in Section C.1, that are carrying out projects consistent with the District's statutory purposes. Funding for this program is subject to SWCD's discretion as well as its annual budget and appropriation process. The Board retains the right, in its sole discretion, to approve, reduce, or deny any grant request.

B. GENERAL PROGRAM INFORMATION

For the 2020 grant program, applications may be submitted from November 1st through December 13th of 2019. Applicants are encouraged to submit their application as early as possible within the given time frame so that there is adequate time to work with SWCD staff to ensure that the application meets all requirements in advance of the December 13th deadline. Applications received after December 13, 2019 will not be considered. Final decisions will be provided to grant applicants no later than March 15, 2020.

The deadlines provided above apply to routine grant requests and may be modified to address emergency situations. SWCD understands that emergency situations may arise from catastrophic or unforeseen events, such as flooding, at other times of the year. Examples of emergency situations may include, but are not limited to: flood event causing damage to diversions or measurement structures, catastrophic canal or pipeline failure leading to no ability to deliver water, spillway or dam failure, regulatory restrictions, and toxic spills. Please contact SWCD staff directly if this occurs to discuss the possibility of submitting an emergency grant application.

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[1] *See* C.R.S. § 37-47-101 through -151.

SWCD anticipates receiving grant requests well in excess of the available funds. The maximum amount of money potentially available from SWCD in the 2020 calendar year for all grant recipients is shown on the table below.

Grant Funding Category	**Proposed 2020 Funds Available**
Educational purposes, including teaching seminars, workshops and related programs	$20,000
Development or improvement of water supply and watershed restoration projects, including related design, engineering and construction	$160,000
Participation in public forums, including work groups, performance of studies, stream management planning	$60,000
Emergency requests	$160,000

The maximum amounts for each category will be proportionally adjusted on an annual basis after development of the initial budget for the upcoming fiscal year. Prior to submitting an application, please visit the District's website.

C. ADDITIONAL REQUIREMENTS

1. ELIGIBILITY

SWCD will consider financial assistance requests from "qualified entities" for grants for: (1) development or improvement of water-related projects, (2) studies and facilitating stakeholder involvement on water-related matters, including water quality, and (3) water-related educational programs. "Qualified entities" include any public entity, non-profit corporation, not-for-profit corporation, carrier ditch company, mutual ditch or reservoir company, unincorporated ditch or reservoir company, or cooperative association within the boundaries of the District. Projects, studies, and program grants are generally limited to "raw" or untreated water supplies (see below).

SWCD will not consider grant requests or funding for:

a. Projects that have already been completed;

b. Municipal and domestic drinking water treatment projects, or wastewater treatment projects[2];

c. Legal fees or payroll costs. If your project includes these costs, please identify them as a separate line-item in the proposed budget and explain how you will pay for those costs without using SWCD grant funds;

d. Weed management projects, although consideration will be given to programs that specifically remove phreatophytes if the applicant can demonstrate it has a plan to pay for and perform any necessary ongoing maintenance.

To ensure consideration for funding by the District, please apply for a grant before the water project, study or educational program has been initiated.

2. MATCHING CONTRIBUTIONS

SWCD will not award a grant for more than 50% of the total project costs,[3] and Applicants must demonstrate that they are actively contributing to the project for which they are requesting a grant. Any grant approval will be contingent on the recipient ultimately demonstrating that they have secured funding of the remaining 50% of the total project costs.

In addition, Applicants or beneficiaries of the proposed project must also demonstrate that they will provide, through a cash contribution and/or the performance of in-kind services, at least 25% of the total project costs (in other words, half of the matching funds). The board has the discretion to consider previous expenditures directly related to the proposed project as matching contributions if those expenditures occurred within six months of the grant application deadline. Non-profit, or non-governmental organizations, serving on behalf of a broad group of local constituents that do not receive tax revenues and do not have opportunities for third party contributions for the project, may request a reduction of the match requirement to 10% of the total project cost (subject to approval by the board) by garnering and documenting strong community or watershed support for the project.

3. LIMITS ON GRANT FUNDING

The amount of funding each "qualified entity" may receive from the District is further limited to the following:

a. Recipients of grants for educational purposes may not apply for, or receive, more than $5,000 in a single year or a total of $10,000 in any given five (5) year period.

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[2] Funding requests for treated water projects can be pursued with the Colorado Water Resources and Power Development Authority (https://www.cwrpda.com) or the Colorado Department of Local Affairs (https://www.colorado.gov/dola).

[3] For multi-phase projects, "total project costs" shall mean all costs related to the particular phase of the project for which the Applicant is requesting funding.

b. Recipients of grants for development or improvement of water-related projects may not apply for, or receive, more than $75,000 in a single year or a total of $150,000 in any given five (5) year period.

c. Recipients of grants for participation in public forums and the performance of studies may not apply for, or receive, more than $20,000 in any single year or a total of $40,000 in any given five (5) year period.

Additional funds, outside of SWCD's grant program, may be available through SWCD's loan program. Please review Section I below or contact SWCD staff in order to find out more about SWCD's loan program.

4. APPLICATION INSTRUCTIONS AND PROCESS

Completion of the application form is required in order for the District to consider requests for financial assistance. Please use the following applications:

General Application for Financial Assistance 2020

Each Application should be typed or printed legibly and include, at a minimum, the following:

a. Project type, description and location

b. Total grant amount requested

c. Total project cost[4]

d. Anticipated timeline for the project, study or educational request

e. Matching contributions provided by or requested from other funding partners, including the anticipated decision date for those funding requests if not already approved

f. Detailed project expense budget

g. Applicant's matching contributions

h. Identification of project partners and beneficiaries; and

i. Summary of Applicant's previous funding requests and grant awards from SWCD

Please attach additional sheets as necessary to fully answer any question in order to assure that all information that might be helpful in evaluating your application is considered. Please return the **signed copy** of the application to Southwestern Water Conservation District and retain

[4] If the requested grant will be used to fund part of a multi-phase project, please provide a summary, including a total project cost estimate and anticipated timeline, for completion of the overall project.

a copy for your records. Please submit to the following address or email: Southwestern Water Conservation District, 841 E. 2nd Avenue, Durango, CO 81301 *or* **lauras@swwcd.org**. Once your grant application is received, it will be reviewed by District staff to ensure that it meets the minimum requirements before consideration by the Board.

The board will hold a work session in February 2020 to review and consider the applications. Applicants are encouraged to attend the work session at which the funding requests will be considered, either in person or by phone, so that they can answer questions that may arise and participate in the discussion. The board requests a thorough, completed application form be submitted in lieu of a formal presentation.

For questions about the application or board meeting, please contact District staff by phone (970-247-1302) or e-mail (**lauras@swwcd.org**). For your reference, agendas are posted to the **swwcd.org** website one week prior to regular board meetings.

D. EVALUATION CRITERIA

Grant proposals will be evaluated based upon how well the proposed project, study or educational request carries out the purposes of the District. The Board will give special consideration to grant proposals that further the use of pre-compact water rights and the development of Colorado River Compact entitlements as well as educational-related requests that complement or otherwise further the District's existing programs.

E. FUNDS DISBURSEMENT

Upon **completion** of the project, grant funds may be requested. The applicant must complete a "Request for Release of Funds" form found on the website. As part of the disbursement request, the applicant must provide a description of the work accomplished as presented in the application, along with a summary of the actual costs in the format provided in the grant application. Specifically, the cost summary should specify if expenses are to be funded by the applicant, other project partners, or SWCD. The applicant must also provide supporting documentation for items and services billed, such as invoices or receipts.

Photos, studies, participant surveys and other demonstrations of project completion are welcome. Additional, documentation may be requested at the District's discretion.

In the event the project, study or program ultimately comes in under budget, the grant disbursement will be prorated to the percent of SWCD's share in the total project cost originally estimated in the grant application.

F. CHANGING THE USE OF FUNDS

If the Board approves funding for the application, and at a future date the intended use of funds changes, please notify staff as soon as possible. Board review and approval of the change will be necessary.

G. GRANT EXTENSION REQUESTS

If your entity will not be able to use the funds in that year, please contact the SWCD office as soon as possible. If the Board approves funding for the application, and progress toward completion of the project has not occurred within a year of the time frame listed in the application, it may be necessary to request from the Board a grant extension. Applicants requesting an extension will not be given preferential treatment over other applicants and will be handled on a case by case basis. Grant extensions are usually limited to one year, and any additional extensions may require submittal of a new application.

H. ANNUAL REPORTING REQUIREMENT

If the Board approves funding for the application, the authorized entity will provide a written final report of the work accomplished by this application no later than December 31st of the year in which the grant is awarded. This written report will include a detailed accounting of the use of funds. Additional documentation may be requested at the discretion of the District. See sample final reports at **swwcd.org**.

I. LOANS

Loans and/or loan-grant packages may be approved for water-related projects or construction, studies, educational programs, and sponsorships. The terms and security for payment will be determined at the time the loan is approved. All documents required by the District for the loan shall be executed before the District will release the approved loan amount. Documents that the District, at its discretion, may require include, but may not be limited to, a loan agreement, promissory note, deed of trust for real property, and/or a uniform commercial code financing statement for personal property.

redline proposed revisions

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In the event the project, study or program ultimately comes in under budget, the grant disbursement will be prorated to the percent of SWCD's share in the total project cost originally estimated in the grant application. ~~that was originally approved.prorated contribution of funds must be returned to the District within 45 days of completion. For example, if the completed project, study, or program is $20,000 under budget, and SWCD contributed 20% of the total project costs, then the grant recipient shall be required to return $4,000 (20% of $20,000) to SWCD.~~

F. CHANGING THE USE OF FUNDS

If the Board approves funding for the application, and at a future date the intended use of funds changes, please notify staff as soon as possible. Board review and approval of the change will be necessary. ~~Otherwise, the District may request reimbursement of funds.~~

G. GRANT EXTENSION REQUESTS

If your entity will not be able to use the funds in that year, please contact the SWCD office as soon as possible. If the Board approves funding for the application, and progress toward completion of the project has not occurred within a year of the time frame listed in the application, it may be necessary to request from the Board a grant extension. Applicants requesting an extension will not be given preferential treatment over other applicants and will be handled on a case by case basis. Grant extensions are usually limited to one year, and any additional extensions may require submittal of a new application.

H. ANNUAL REPORTING REQUIREMENT

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Kugel signs offer to become executive director for Southwestern Water Conservation District

By Chris Mannara
Staff Writer

The Southwestern Water Conservation District (SWCD) has made a conditional offer of employment to Frank Kugel to fill the position of executive director, which was formerly held by Bruce Whitehead.

Kugel currently serves as the general manager of the Upper Gunnison River Water Conservancy District.

Kugel was identified as Whitehead's potential replacement at a regular board meeting of the SWCD on July 15.

Whitehead announced his retirement from the district in March and the retirement was made effective on April 1.

Kugel signed the conditional offer of employment on Aug. 10.

Additionally, the offer states that it is contingent upon the outcome of Kugel passing a pre-employment alcohol and drug test.

Kugel will remain a "conditional employee" until additional documents are provided to the SWCD, such as a valid driver's license, the pre-employment alcohol and drug test is passed, and he is determined to be acceptable for SWCD and/or its insurance company, the offer reads.

Additional details state that Kugel's initial salary will be $145,000 per year, paid bimonthly.

Frank Kugel

Kugel's position with the SWCD will begin on Sept. 1, the offer reads.

The interest in the position came from Kugel living in Durango previously and also having experience with the SWCD board and learning about the issues it faced, he explained in an interview.

"I felt that I had developed a skill set that would lend itself well for that position," he said.

Kugel explained that Whitehead is "an icon" in southwest Colorado for all of his work in the water community.

"I can't attempt to fill his shoes, but what I hope to do is reach out and have a good working relationship with local users and the governmental entities, water districts, counties, municipalities to see what southwest (water conservation district) can do for them," he said.

Meeting community members and informing them about the district, as well as being informed of the public's concerns, are some early goals, Kugel explained.

"I want to develop policies for both internal and external operations so that we have clear guidance and clear understanding from the board on what staff should accomplish," he said.

Developing an in-stream flow policy for guidance on current and future applications was also mentioned by Kugel.

Dought-contingency planning and how the state will respond to shortages that are projected in the future are all things the SWCD needs to keep in mind, he added.

"I think drought-contingency planning is a huge one, and demand management is part of that," he said. "The potentials for shortages on the Colorado River are very real and we need to understand that there could be compact curtailment in the future and what can be done to either avoid that or postpone that or deal with it when it comes."

chris@pagosasun.com

Will Shoemaker

Frank Kugel's last day with the Upper Gunnison River Water Conservancy District is tomorrow, Aug. 30.

Kugel bids farewell to Upper Gunnison District

Accepts job with Southwest District in Durango

Will Shoemaker
Times Editor

Perhaps at no other time in Colorado's history has there been a more intense period of head-scratching and hand-wringing in the realm of water planning than in the last 15 years.

It all started with the formation of diverse groups of water stakeholders called "round-tables" representing the state's various river basins following enabling legislation in 2005. More recently, those round-tables were tasked with develoeping the Colorado Water Plan, delivered to former Gov. John Hickenlooper in 2015.

The plan seeks to identify how Colorado will meet its water needs based on projections for a population that's expected to double by mid-century.

For 13 of those last 15 years, Frank Kugel has been at the helm of the Upper Gunnison River Water Conservancy District — this area's primary leader for all issues affecting water resources. However, Kugel has been hired to become executive director of the Durango-based Southwest Water Conservation District.

His last day with the Upper Gunnison is tomorrow, Aug. 30.

Originally from the Green Bay area of Wisconsin, Kugel attended college at University of Colorado-Denver.

He worked in private practice in the geotechnical field in Denver from 1977-1984. From 1988-1999, Kugel was a dam inspector out of Durango for the Colorado Division of Water Resources.

He served as an assistant division engineer from 1999-2003, and subsequently became division engineer for the state water division, covering the Gunnison, San Miguel and Little Dolores river basins as well as lower reaches of the Dolores basin.

In 2006, Kugel became gen-eral manager of the Upper Gunnison. Around the same time, longtime local water leader George Sibley joined the Upper Gunnison board.

"He's really good with human interactions, and I think he's done a lot for just pulling peo-ple together to deal with water issues," Sibley said of Kugel. "He's made a lot of good friends for the Upper Gunnison and has been a great up-front person to have meeting with the public when they come in."

An accomplishment of which Kugel is most proud is the con-struction of an outlet structure at Lake San Cristobal near Lake City — a three-way partnership involving the Upper Gunnison, Hinsdale County and Town of Lake City. The newly installed spillway gate controls the top three feet of lake storage — help-ing augment existing and future wells in the Lake City area.

The structure helps address a problem resulting from the town's right for its municipal supply which is quite junior to others in the area. While the town had been pumping water from wells since the 1880s, its right to the water was not for-mally recognized in water court until more than a hundred years later.

"As a division engineer, I rec-ognized the precarious legal position they were in because of that," Kugel said. "It was gratifying to come to the Upper Gunnison and be part of the solution."

Kugel also reflected with fond memory of his time on the Gunnison Basin Roundtable — including developing the basin's portion of the Colorado Water Plan.

"It was a very lofty eff ort and we did a lot of learning about

What: Farewell gathering for Frank Kugel
When: Friday, Aug. 30, 5-7 p.m.
Where: Upper Gunnison River Water Conservancy District office, 210 W. Spencer Ave.
What else: Refreshments will be served.

Kugel has indicated that his new role will offer a chance for a greater voice in matters related to the Colorado River — a waterway from which the resource is used by seven Western states before it reaches Mexico. The Southwest District serves nine counties in Colorado — and nine separate river basins, most of which flow out of the state.

Eventually, Kugel's wife, Debbie Harris, who works as a court reporter for the 7th Judicial District, plans to move to Durango as well. However, in the meantime, they'll be splitting time between the two cities.

"We'll be commuting on weekends, one or the other," Kugel said.

Always modest, Kugel credits a staff — including general counsel John McClow and longtime Upper Gunnison employees Jill Steele and Beverly Richards — as well as a well-informed board for making his job easier.

"It's been a very rewarding, challenging, interesting and enjoyable job the past 13 years," Kugel said. "I've made a lot of friends and met a lot of good people in the Gunnison Basin. I'll miss that."

The Upper Gunnison is currently advertising the vacancy with a due date for applications of Sept. 16. Afterward, candidates will be selected with interviews to follow Sept. 24-28. Finalists are expected to be named by the end of next month, and the board plans to make an offer by Oct. 14.

(Will Shoemaker can be contacted at 970.641.1414 or editor@gunnisontimes.com.)

swimming upstream

Field Report 2019

San Juan River Basin Recovery Implementation Program
Upper Colorado River Endangered Fish Recovery Program

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The San Juan River below Navajo Dam

In this issue

COVER PHOTO BY MELANIE FISCHER, USFWS

swimming upstream

Swimming Upstream is a publication of the Upper Colorado River Endangered Fish Recovery Program and the San Juan River Basin Recovery Implementation Program. These programs are national models of cost-effective public and private partnerships. The programs are working to recover endangered fishes while water development continues in accordance with federal and state laws and interstate compacts, including fulfillment of federal trust responsibilities to American Indian tribes.

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Program Coordinator's Message

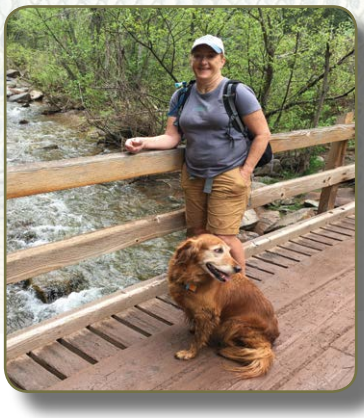
By **Melissa Mata**, *Program Coordinator, San Juan River Basin Recovery Implementation Program*

First, I want to thank all who have contacted me to offer kind words of congratulations and welcome during my recent transition from the Assistant Program Coordinator to the role as Program Coordinator for the San Juan River Basin Recovery Implementation Program. I am looking forward to working closely with my staff and colleagues from the Upper Colorado River Endangered Fish Recovery Program and their partners as we strive for progress toward recovery. I would also like to take this opportunity to thank my predecessor, Sharon Whitmore, for all she did for the San Juan Recovery Program during the past 4 years, in assisting the growth of both the staff and program itself.

The Upper Colorado and San Juan Recovery Programs and partners worked together to develop a Species Status Assessment (SSA) for humpback chub and razorback sucker. The SSA is a focused, repeatable, and rigorous scientific assessment that provides the foundation for all Endangered Species Act (ESA) policy decisions. This SSA provided the opportunity to receive input from technical experts and recovery partners using the best available science through consistent analysis structure to review species needs, under current and future conditions. The Recovery Programs and partners had reasons to celebrate based on these SSA's because the U.S. Fish and Wildlife Service (USFWS) recommended downlisting the humpback chub and razorback sucker from endangered to threatened. This would not be possible without our recovery programs partners' long standing commitment to collaboration that drives the success of these Programs.

Both Recovery Programs have been highly regarded for their collaborative approach working with recovery program partners to help recover endangered fishes while continuing to meet the needs of water development in the Upper Colorado Basin. This has been possible through the established cooperative agreement, program guidance and forums for open communication. Communication is the key to building trust, developing and maintaining partnerships, and as Program Coordinator/Director, one of our primary objectives is to keep the lines of communication open, as well as encourage program partners and others to work cooperatively toward shared goals and outcomes. The Recovery Program's success, again, would not be possible without the hard work and dedication from everyone involved. We thank you for your efforts that have led to our success thus far.

A special acknowledgment goes out to Sharon Whitmore, recently retired Program Coordinator for the San Juan River Program, for her career of dedication to the recovery of the endangered fishes of the San Juan River.



Fish Illustration © Joseph R. Tomelleri

The Upstream March of Spawning San Juan River Razorback Sucker

By **Steven P. Platania and Michael A. Farrington**, *American Southwest Ichthyological Researchers, L.L.C.*

Some of the most important metrics researchers use to gauge progress towards recovery of endangered fish are the distribution of spawning individuals and the magnitude of their reproductive effort. And in both cases, more is better.

Stocking of razorback sucker in the San Juan River began in 1994. Four years later, efforts began to see if stocked individuals were finding each other and spawning. In May 1998, larval razorback sucker were collected for the first time ever about 12 river miles downstream of Aneth, Utah. The discovery reinforced belief that razorback sucker could be recovered in the San Juan River.

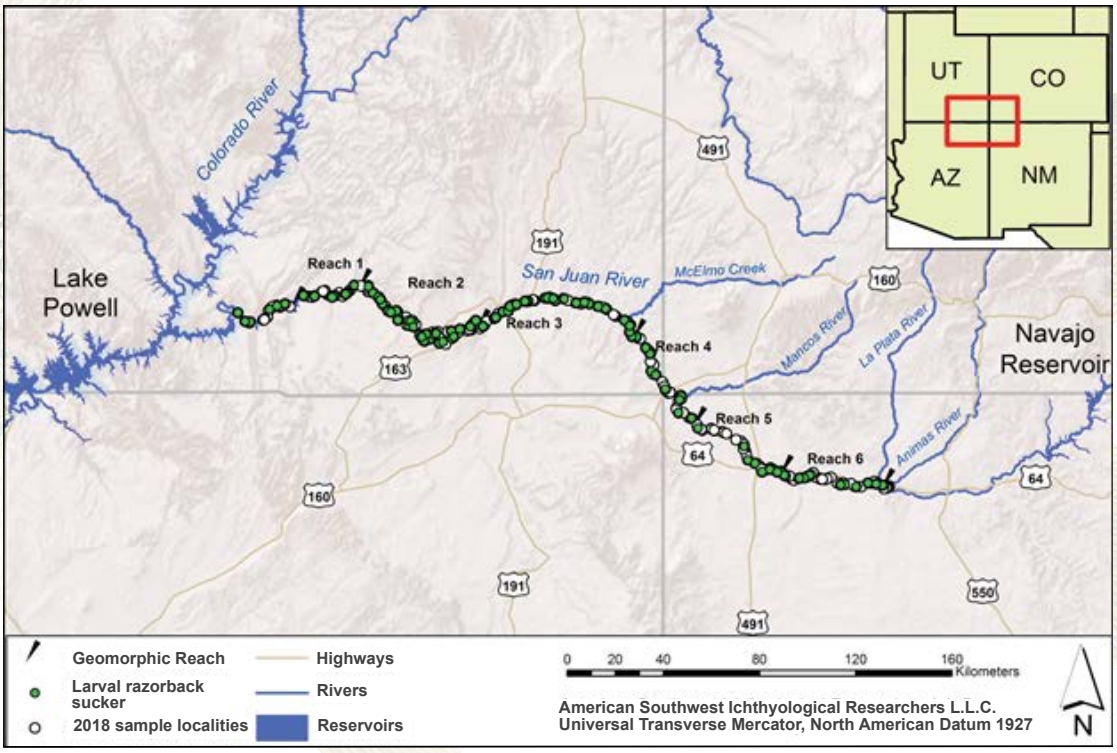
Once researchers knew razorback sucker were spawning, they wanted to know 'when, where, and how much'. The following year, sampling efforts expanded. In April, May, and June of 1999, larval fish were sampled from just upstream of Four Corners, near the Mancos River confluence river mile (RM 127.5),all the way downstream to Clay Hills Crossing (RM 3). Seven more larval razorback sucker were collected near Clay Hills (RM 11.5) and near Aneth (RM 96.2). Two consecutive years of documented spawning in the San Juan River buoyed hopes for continued reproductive success.

Annual larval fish surveys created a picture of success and, like marking the height of growing children on a bedroom door jamb, documented 'the growth' of the range of this endangered fish. By the end of the 20th Century, razorback sucker larvae had been collected upstream an additional 28.6 river miles and were collected in New Mexico for the first time. In 2010, the number of larval razorback sucker collected exploded to over 1,250 at 62 sites throughout the study area, and larvae were collected as far upstream as RM 139.7.

In 2012, the study area was again expanded upstream, this time to the U.S. Highway 64 Bridge at Shiprock, New Mexico (RM 147.9). In the first year of the new study area, larval razorback sucker were collected within 0.4 river miles of the upstream boundary of the study area, indicating that spawning was already occurring above the new study area.

In 2018, sampling from Farmington, New Mexico to Shiprock, New Mexico produced a surprising 90 larval razorback sucker with the most upstream collection being immediately downstream of the Animas River confluence (RM 179.8). Researchers have not yet decided how far upstream the next study area boundary should be, but recognize the range of spawning razorback sucker appears to be expanding.

In the 7,320 days since the collection of the first larval razorback sucker in a backwater downstream of Aneth to the specimen taken on June 5, 2018 less than 1 river mile below the confluence of the San Juan and Animas rivers, spawning razorback sucker have continued their promising and progressive 100 river mile upstream march in small, deliberate, and incremental steps, and in doing so, have left a well-documented legacy of their march towards recovery.



The Importance of Larval Razorback Sucker in the River

By **Steven P. Platania and Michael A. Farrington**, *American Southwest Ichthyological Researchers, L.L.C.*

The presence of larval fish at a sample site provides researchers with several important snippets of information. First and foremost, it equips researchers with proof that adult fish successfully spawned, thereby producing the offspring. While researchers do not know where the adults spawned, they know spawning occurred upstream of where the larval fish were collected, based on their knowledge of spawning behavior, egg type, and early life-history of razorback sucker. They have discovered that razorback sucker eggs are laid in the gravel, that they are adhesive, and that they remain in the interstitial spaces of the gravel where the embryo develops for about eight days before hatching.

After the egg hatches, the larval fish begins its free-wheeling downstream journey, during which it lacks any control over its movement and is at the mercy of the current. In the underwater whirlwind that characterizes the environment which drifting organisms must navigate, some larval fish may remain in the thalweg (deepest part of the main channel) and be rapidly (within one week) transported to Lake Powell. However, the more likely scenario is that somewhere on their turbulent downstream journey, larvae will be transported into low velocity habitats such as shorelines, backwaters, or lateral canyons where the warm water, as compared to cooler main channel temperatures, provides more food, a safer environment, and the ability to grow more rapidly. Within a few weeks of hatching, larval fish will have developed most of their fin rays, become very strong swimmers relative to their size, and will no longer be passive members of the drift.

In addition to knowing that spawning occured somewhere upstream of where larval suckers are collected, the size and developmental phase serves as a relative indicator of how far upstream those individuals were spawned. The smaller or less developed the larvae, the shorter the distance to the putative spawning area. When these snippets are combined with a concurrent absence of larval fish at study sites upstream of a larval fish collection site, the researcher has a good indication of the approximate upstream limit of the distribution of spawning adults.

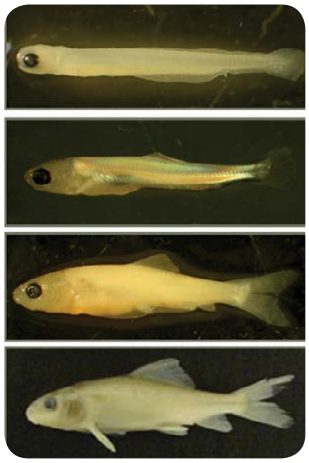


PHOTO BY USFWS

Razorback sucker proceed through several larval developmental stages before transitioning to juvenile fish that are characterized by completely absorbing their fin folds, developing the full complement of rays and spines, and developing segmentation in at least a few rays. These stages of larval development proceed sequentially through protolarvae, mesolarvae, and metalarvae (top to bottom).

A "Field of Dreams" Moment: Razorback Sucker Numbers Up

By **Eliza Gilbert,** *San Juan River Basin Recovery Implementation Program*

Fishery surveys conducted by SJRIP have revealed surprising—and quite welcome—information. The number of young-of-year razorback sucker discovered during fall 2018 reached an all-time high. Biologists captured over 200, the greatest number found since surveys began more than 20 years ago and implies that young-of-year fish in the river could have numbered in the thousands. Moreover, last year marks only the second time that yearling razorback sucker were captured in the fall.

PHOTO BY NMGF

Large amounts of water purposely released for weeks at a time from Navajo Reservoir by the Bureau of Reclamation in the spring of 2016 and 2017, created fish habitat. The high flows scoured the channel and restored slow-flowing, warm backwaters needed by young fish. After these large flows, backwater habitat was at the highest levels observed in the river since the mid-1990s.

"It was amazing to see these little fish in the river," said USFWS biologist Dr. Nathan Franssen. "We have been stocking razorbacks and managing the river for many years hoping to see these signs of recovery. It's a 'Field of Dreams' moment: build habitat and they will come."

What's more, Navajo Nation biologists moved nearly 300 adult razorback sucker over a migration barrier in the upper portion of the river in 2018, while researchers led by the Bureau of Reclamation moved another group of adults upstream of a waterfall at the bottom end of the river near Lake Powell. Both of these efforts assisted razorback sucker, which migrate upstream in the spring to spawning habitats. Razorback suckers live in eight rivers in the Colorado River basin and only those in Lake Mead, Nevada, show consistent survival past the larval fish stage. These young-of-year fish may indicate the same is possible in the San Juan River.

Matheson Wetlands Preserve: A Nursery for Endangered Fish

By **The Nature Conservancy (TNC)**

PHOTO © TNC / LINDA WHITHAM

Scott M. Matheson Wetlands Preserve in Utah

PHOTO © TNC / LINDA WHITHAM

A razorback sucker captured in the Scott M. Matheson Wetlands Preserve in Utah

In the perfect spot on the Colorado River, we're blending science and engineering to give razorback suckers a fighting chance.

For the Colorado River's endangered razorback sucker, survival to adulthood is a struggle. The fish—which sports a tell-tale, sharp-edge hump behind its head—can live up to 40 years. Instead, today most don't live past their first year.

At TNC's Scott M. Matheson Wetlands Preserve near Moab, Utah, scientists and engineers are giving nature a boost. Taking advantage of the preserve's location along the Colorado River, the team plans to bring razorback sucker larvae into the preserve's sheltered habitats in late spring, where they will be protected during their most vulnerable stage of development.

Engineers will widen the connecting channel, allowing the water and larval razorback suckers to enter the preserve, floating through a control gate and into the central pond. After several months of safely growing in the preserve's pond, the more mature fish will be released back into the river's mainstem in early fall.

What is the goal for this project? Restore what has been disrupted on the river through years of human impacts, and re-establish a wild, self-sustaining population of an endangered species.

A River Forever Changed

More than 100 years ago, razorback suckers thrived throughout the Colorado River Basin, at home in the swift waters of the free-flowing rivers in seven states and Mexico. They often migrated hundreds of miles in one year and grew up to 3 feet in length. But then the Colorado River entered a new era: one of dam building, increasing water withdrawals and sport fish stocking. Like other native fish, the razorback suckers began to die off, veering toward extinction as the Colorado River's flows and habitats were altered. Climate change—and its deepening impacts on the entire Colorado River Basin—hasn't helped. Intensifying high temperatures and on-going low precipitation have caused river levels to drop steadily, with predictions even more dire for the future. "We used to say it's a drought," Taylor Hawes, TNC's Colorado River Program Director, told the Durango Herald last summer. "After 19 years, we can say this is a pattern and trend that is punctuated by super dry years like 2002 and 2018."

The sad reality is that for many native fish like the razorback sucker, the Colorado and its tributaries are drastically less livable.

It's a Hard-Knock Youth

Since 1991, when the razorback sucker was placed on the endangered species list, conservation partners and state and federal agencies have been working throughout the Colorado River Basin to bolster populations. One key challenge is getting the fish in the wild to survive past their larval and juvenile phases. For reproduction and the first year of life, razorback suckers need slow-moving, back-eddy waters—a type of habitat that has been dramatically reduced along the Colorado as dams change flow dynamics and invasive plants crop up along river banks. To make matters worse, over the past 100 years, more than 70 non-native fish species have been introduced into the Colorado River Basin, many as sport fish. These invasive species wreak havoc on the river's native ecosystem. Razorback sucker eggs and juveniles are easy prey for toothed non-native predators.

Discovery at the Matheson Preserve

A few years ago, at TNC's Scott M. Matheson Wetlands Preserve along the Colorado River near Moab, biologists made an exciting find while sampling for native fish. They uncovered a surprising number of wild-born razorback sucker larvae along the shoreline of the preserve. In fact, the scientists concluded the Matheson Preserve provides the only suitable nursery habitat for this species along 65 miles of the river. Encouraged by these findings, and the prospect that there could be a way to help these fish reach adulthood in the wild, TNC joined forces with the Utah Division of Wildlife Resources, Jones and DeMille Engineering, and PE Engineering to transform the preserve's central pond into a protective nursery habitat for the fish.

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Creative Engineering

Inspired by a similar effort on the middle Green River near Jensen, Utah, the team of scientists and engineers developed a plan to modify a portion of the preserve's wetlands by widening an existing channel from the Colorado River to the preserve's central pond. This will allow more water into the preserve during spring runoff—the time when the larvae need a safe place to grow.

Engineers have designed a control structure to channel both the water and the razorback larvae into the preserve. They are also exploring strategies to bring in alternative water sources to ensure the baby fish have enough good quality water during their three-month stay.

PHOTO BY MORGAN JACOBSEN, SERO, UDWR

Excavator widening a wetland connecting channel

"This unique control structure will be the key to our success," said Ryan Jolley, PE Engineering Project Manager. "It will have a specially designed concrete channel with a control gate and screen system that will only allow larval fish to pass while keeping larger non-native predatory fish from entering. The structure will also have a fish capture area where the young fish can be measured and tagged before being released back to the Colorado River."

Prior to the introduction of any razorback sucker larvae, the team will drain the preserve's central pond to remove non-native fish that entered the wetland as larvae during the previous year. Large machinery will also deepen the pond to provide more habitat and optimize water quality.

Scott Durst & Nathan Franssen Named 2018 Researchers of the Year

By **Melissa Mata,** *San Juan River Basin Recovery Implementation Program*

Scott Durst, Science Coordinator and Nathan Franssen, Fish and Wildlife Biologist were selected as the 2018 San Juan River Recovery Program Researchers of the Year. Both have been instrumental in improving the San Juan River Basin Recovery Implementation Program's progress toward recovering Colorado pikeminnow and razorback sucker populations. They have been the drivers in emphasizing the need for annual data integration and analyses, cross project coordination, and appropriate study design to answer specific biological questions to make better informed management decisions. Their work has been documented in over a dozen scientific journal publications since 2006. Through these publications, their exemplary efforts in research, collaboration and leadership, have improved future efforts not only along the San Juan River, but other areas where the species are (or could be) present.


PHOTO BY USFWS

Nathan Franssen and Scott Durst

Mike Gross & Zane Olsen Named 2019 Researchers of the Year

By **Melanie Fischer,** *UpperColorado River Endangered Fish Recovery Program*

Mike Gross, USFWS and Zane Olsen, Utah Division of Wildlife Resources were selected as the 2019 Upper Colorado River Recovery Program Researchers of the Year. Both have been instrumental in improving the health of hatchery raised endangered fish. They both have the ability to distill complex scientific information and communicate it to the general public in a way that can easily be understood. Their individual outreach work reaches thousands of people each year. Mike Gross spearheaded the effort to put an aquaculture facility inside Palisade High School in Palisade, CO. Mike's work helped to unite a community in support of endangered fish recovery. His work engages thousands of students in the Grand Valley each year. Zane Olsen attends trade shows and stakeholder meetings bringing live bonytail. His contagious enthusiasm for conservation affords him the opportunity to engage water users and other stakeholders with solid reasons as to why native fish conservation is important to the health of the Colorado River system. Through their collective efforts, they help to meet the goals of the Recovery Programs and their partners.


PHOTO BY USFWS

Paul Badame & Zane Olsen


PHOTO BY USFWS

Dale Ryden, Melanie Fischer & Mike Gross

Palisade High School Fish Hatchery Project: A Student Perspective

By **Michael Gross,** *USFWS*

Every project, no matter the scale or the impact, takes true grit and perseverance to see through. The development of a hatchery at Palisade High School (PHS) is no exception. A dedicated group of students and teachers planned and raised money to make the hatchery a reality.

Last year's seniors: Kaleb Hawkins, Isabelle Haderlie, and Emily Tucker, raised more than $3,000 by donating scholarships they were awarded and selling peaches to help fund the project. In addition, they were instrumental in establishing relationships with many of the donors and organizations that committed to the PHS Fish Hatchery project.

This year's seniors: Levi Van Pelt, James Soria, and Dyllon Hoaglund, played a major role in recruiting younger students to create a legacy project. They also acted as public liaisons to develop public relations and secure the additional $35,000 in funding that enabled the fish hatchery's construction and maintenance to begin.

"This project has meant so much more to me than a simple service project," says Van Pelt. "Through my work on the Palisade High School Fish Hatchery, I have been able to truly act on the ideals of the International Baccalaureate Program, not only working to improve my local community, but embodying the ideals of altruism while making a substantial difference to address global challenges. This project has allowed all of us working on it to address the global issues of water scarcity, biodiversity, and the education that surrounds both of them, and make an actual impact in changing them. With a strong passion for environmental science and the goal to expand my education through collegiate studies, this project has provided me with an opportunity to make headway into something that falls in-line with what I plan to pursue as a career field, environmental studies and sustainability."

The dedication displayed by PHS students is evidence of the collaboration and excitement that has made this project a profound success. "The passion behind this project originates with education and environmental protection. To have the ability to encompass both in a single venture is an outstanding feat that has made me so proud to be a part of this community," says Hoaglund. "Palisade's academic and nurturing culture has had an amazing effect on its students, and it has been evident throughout this project." This project is, and will continue to be, a prodigious addition to Palisade High School and the rest of the district, where environmental education will continue to thrive and develop.

Isabelle Haderlie and Kaleb Hawkins, former Palisade High School (PHS) students, sell peaches to raise money for the PHS Fish Hatchery project. They raised $1,500 by selling peaches and donating scholarship money.

Pictured from left to right: Patrick Steele, PHS science teacher, Levi Van Pelt and James Soria, PHS students, and Mike Gross, USFWS, hold four endangered fish raised at the Ouray National Fish Hatchery, Grand Junction, CO

The Piute Farms Waterfall; Options for Solving the Fish Passage Problem

By **Mark McKinstry**, *U.S. Bureau of Reclamation*, **Casey Pennock**, *Kansas State University*, **Eliza Gilbert,** *USFWS*, **Chuck Cathcart,** *Alaska Dept. of Fish and Game*,and **Peter MacKinnon,** *Utah State University*

The Piute Farms Waterfall, located just upstream of Lake Powell on the San Juan River, has prevented movement of endangered razorback sucker and Colorado pikeminnow back upstream to the San Juan River almost continuously since 2001 and may have done so even earlier. The waterfall is not a historically natural feature of the San Juan River. Rather, it was formed through superimposition: the river moved out of its original channel and cut a new channel through the lakebed sediments, eventually hitting a sandstone ledge that formed the approximately 18-foot waterfall. In March of 2015, a single submersible PIT tag antenna was placed in an eddy just below the Piute Farms Waterfall. During the next three months over 600 individual endangered fish were detected. From 2015-2018, a total of 1,625 unique fish have been detected at this site, including 1,377 razorback sucker, 63 Colorado pikeminnow, and 19 flannelmouth sucker. These are significant numbers when one considers that 4,000 razorback sucker are required to meet recovery goals in the San Juan River and the 2016 estimated population of adult Colorado pikeminnow was 133.

The majority of the razorback sucker are 4+ years old, suggesting they are attempting to move into the river to spawn. In addition, 17 of the razorback sucker were stocked in the Gunnison, Green, and Colorado rivers, suggesting that razorback sucker move much further than originally thought, and that Lake Powell is not an insurmountable barrier for this species. In fact, additional work by the USFWS and UDWR suggests that Lake Powell may provide essential habitat for at least the adult life-stage of these fish.

When the issue of the Piute Farms Waterfall is brought up many people comment that it should be "blown up" with explosives. This seems simple and feasible, but upon further inspection is not that simple. Removing the waterfall would allow free passage of nonnative fish to the San Juan River, a risk that may be more than the reward. Furthermore, removing the waterfall might require a large excavation project since the sandstone ledge likely extends hundreds of meters upstream. Other solutions have been proposed including: restoring the river to the old channel, constructing a selective fish passage, continuing to trap and transport fish from below the falls upstream, altering habitat below the waterfall to provide spawning habitat for fish that are trapped there, and ignoring the issue. All of these solutions have pros and cons but none are easy, especially considering the remote location of the waterfall, nor will the solution be cheap. The SJRIP is currently investigating various fish passage options at the waterfall to support the endangered species.

Chris Cheek, displays an endangered razorback sucker captured below the Piute Farms Waterfall, which is in the background.

Mark McKinstry, holds a striped bass and walleye, two of many nonnative fish captured below the Piute Farms Waterfall (in far background)

ALL PHOTOS BY MARK MCKINSTRY, BOR

Casey Pennock (oaring), and Nate Cathcart (netting) capture native and nonnative fish in the eddy below the Piute Farms Waterfall.

The Redlands Diversion Dam 1996-2018, Reconnecting Habitat

By **T.A. Francis,** *USFWS*

In Western Colorado, the upper ends of the Grand Valley have four dams (Government Highline Roller Dam {GVWU}, Price Stubb, and Grand Valley Irrigation Company Dam {GVIC} on the Colorado River and Redlands Diversion Dam on the Gunnison River) that have provided water annually to the residents of the Grand Valley since the early 1900s. These diversions have been paramount in developing these communities; however, they have also negatively impacted native fishes that call these rivers home by disconnecting over 100 miles of habitat and altering natural flows downstream of the diversions. Beginning in the 1990's, the Upper Colorado River Endangered Fish Recovery Program partnered up with water user groups and built passages at each of these facilities. The 2 facilities furthest upstream (GVWU and Redlands Diversion Dam) have fish traps so non-native fish can be sorted from native fish and the remaining two (Price Stubb and GVIC) are "pass through" facilities where all fish can make passage. Redlands passage was opened in 1996 and much attention was given to it by the local media because of the costs associated with providing passage to "rough fish" (fish that some people consider less desirable as sport and table fare). Unfortunately, the big news from 1996 was that only one endangered Colorado pikeminnow made passage at a cost of one million dollars. Nowhere in the articles and editorials published in 1996 was it mentioned that passage was given to another 7,885 native fishes which included roundtail chub, flannelmouth sucker, bluehead sucker and mountain whitefish.

Fast-forward to 2018, an annual record number of adult Colorado pikeminnow (n=39) made passage from the end of June through end of August. Surprisingly, flows immediately below the fish passage last year were among the lowest on record. This reach had riffles that would have made it difficult to get your ankles wet when walking across the entirety of the river – and these fish likely had their bodies exposed to the air. Yet, they made the trek during a time of year when they were most likely looking for good foraging habitat as their spawning season typically ends toward the latter part of June.

After 23 years of operation we can report 226 fish trap captures of 201 individual pikeminnow (*Figure 1*). Twenty-five (12%) of those fish are repeat users of the facility, 19 were re-encountered in future years and 6 were re-encountered during the same year. We began translocating Colorado pikeminnow further upstream in 2015, to hopefully aid in long term retention of fish in the Gunnison River. Prior to this operational change, only one Colorado pikeminnow was re-encountered in the Gunnison River above Redlands Diversion Dam in a future year (after making passage). This fish made passage in 1998, was collected at Gunnison RM 8.2 in 1999, and was collected again in the Gunnison River at RM 25.3 in 2000. This same fish was collected in 2001 in the Green River only to return and be re-encountered in the Colorado River each year from 2003-2005. Even after implementing translocation of fish in 2015, only the previously mentioned fish has been re-encountered in the Gunnison River above the Dam during a future year. However, 135 (67%) of the fish that have made passage have not been re-encountered and some of these fish may have remained in the Gunnison River above Redlands Diversion Dam evading detection. Only two electrofishing passes occur each year in the Gunnison River since 2011, and only one antenna array (deployed and managed by Kevin Thompson, Colorado Parks and Wildlife) is in the system in Roubideau Creek. Therefore, evading detection or capture is possible. After 23 years of operation, I believe the following graph's data speaks for itself when answering the question "Is it worth it?"

For more information, contact Travis Francis, 970-628-7204, travis_francis@fws.gov

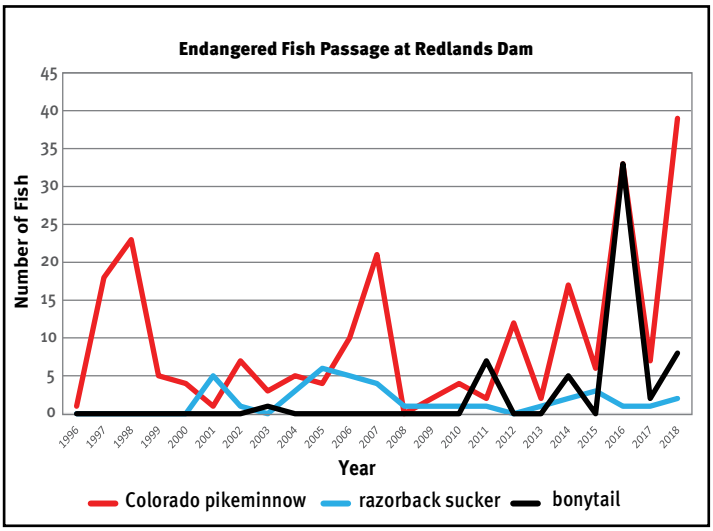


Figure 1. Total number of endangered fish that made passage at Redlands Fish Passage from 1998-2018. Note – these are encounters not individuals, some fish made multiple passages.

PHOTO BY T.A. FRANCIS, USFWS

From 1996–2018 a total of 161,538 native fish passed through the Redlands Diversion Dam.

CPW's Fishing Tournaments Offer Fun, Education and Participation

By **Mike Porras**, *Colorado Parks and Wildlife*

To encourage angler harvest of two non-native predatory fish species, Colorado Parks and Wildlife created two annual fishing tournaments on the state's Western Slope, one at Ridgway Reservoir (Uncompahgre River) beginning in 2015, the other at Elkhead Reservoir (Yampa River) the following year.

Ridgway Reservoir holds a large population of smallmouth bass. Elkhead Reservoir, located near the town of Craig, also supports a sizable population of smallmouth bass in addition to northern pike. Both non-native fish species compete with and prey on Colorado's native fishes that exist downstream of both reservoirs.

With the possibility of going home with big prizes on their minds, many anglers have participated in the free tournaments each year, catching and removing several thousand smallmouth bass and northern pike. Based on responses, a clear majority of anglers have had a great experience during the tournaments. Several have gone home with cash prizes and other rewards for catching tagged fish, catching the most fish, the largest fish and even the smallest fish.

The annual tournaments have several goals; suppress populations of non-native predators, provide outstanding outdoor recreation, educate the public about non-native fish concerns, and involve anglers with native fish conservation. On each count, CPW says the tournaments have been effective and have so far precluded the need for additional rigorous, management actions considered unpalatable by many anglers, although those options remain on the table.

According to CPW's Southwest Region Senior Aquatic Biologist John Alves, contestants removed 1,439 smallmouth bass during the nearly month-long tournament at Ridgway Reservoir last year. Prior to the tournament's inaugural year in 2015, an estimated 3,632 smallmouth existed in the reservoir; however, current population estimates are 1,511 - a 58% reduction.

Lori Martin, CPW's Northwest Region Senior Aquatic Biologist reports 269 anglers removed 540 smallmouth bass and 319 northern pike during last year's tournament at Elkhead Reservoir. Smallmouth bass ranged in size from three to 19 inches, and northern pike ranged in size from nine to 41 inches.

In 2017, 332 anglers at Elkhead Reservoir harvested 963 smallmouth bass and 395 northern pike. In 2016, the inaugural year of the Elkhead Reservoir Fishing Classic, 57 anglers harvested 529 smallmouth bass and 53 northern pike.

In 2019, Ridgway's Smallmouth Bass Classic is scheduled from July 6-27, and the Elkhead Fishing Classic will take place June 22-30.


PHOTO BY CPW


PHOTO BY CPW


PHOTO BY CPW

YES - Compatible Sportfish can be stocked in reservoirs


BLACK CRAPPIE


YELLOW PERCH


BLUEGILL


RAINBOW TROUT


KOKANEE


BROWN TRUTH


LARGEMOUTH BASS


WALLEYE (STERILE FISH)


HYBRID STRIPED BASS (STERILE FISH)

...and many others!

NO - Incompatible Sportfish cannot be stocked in reservoirs


SMALLMOUTH BASS


WALLEYE (FERTILE FISH)


NORTHERN PIKE


BURBOT

Walleye Invasion of the Upper Colorado River Basin

By **Tildon Jones,** *Upper Colorado River Endangered Fish Recovery Program*

Walleye are a large-bodied fish that primarily prey upon other fish species. They are recognizable for their large eyes, mouth full of teeth, and large, spiny dorsal fin. Walleye are not native to the Colorado River basin. The species is a desirable sport fish with a reputation as an excellent food fish. As such, the species has been introduced into reservoirs, both by state agencies and through illegal stocking. Lake Powell, the downstream reservoir into which the upper basin drains, has had a walleye population since it began filling in the 1960s.

Walleye were generally considered rare in the Green and Colorado rivers until around 2010. At that time, numbers of the fish increased until reaching a peak for both basins in 2013. Biologists believe the expansion corresponded to increasing numbers of gizzard shad, a preferred prey species for walleye. Gizzard shad numbers rose in Lake Powell, and the species began moving upstream into the rivers. In response, walleye populations multiplied in the lake and started following their prey upstream. Once upstream, walleye also prey upon native species, which lack heavy scales and spines for defense.

Walleye numbers in the Green and Colorado rivers have been highest in the lower reaches, which are also important nursery habitat for Colorado pikeminnow and razorback sucker. Larvae and young-of-year fish of both species drift into these reaches and use backwaters and other habitats sheltered from the river's current to feed and grow quickly. The presence of high densities of large, toothy predators in these same reaches presents obvious risks to these small, young native fishes. The young fish in these lower reaches also move upstream to contribute to populations throughout the basin as they grow into adults. As a result, losing young fish to predation in the nursery reaches can influence the population river-wide.

Partners in the Recovery Program have implemented containment actions including in-river removal, reservoir renovation, and screening of source populations. Throughout the Green and Colorado rivers, field crews remove walleye whenever they are encountered. After an illicit introduction of walleye into Red Fleet Reservoir near Vernal, UT, Utah Division of Wildlife Resources mounted a rotenone project to eliminate this source population. As a preventative measure, they have reintroduced sterile triploid walleye to the reservoir, and are in the process of installing a screen to prevent escapement. Other reservoirs with walleye have also been screened, including Rifle Gap near Rifle, CO and Starvation Reservoir in Utah. The measures help reduce the risks of walleye escaping into river systems while still providing anglers with the opportunity to fish for the species.

Want to help? Just go fishing! Remember to keep all size classes of walleye, smallmouth bass and northern pike you encounter in the upper Colorado River basin.

PHOTO © KEVIN BESTGEN

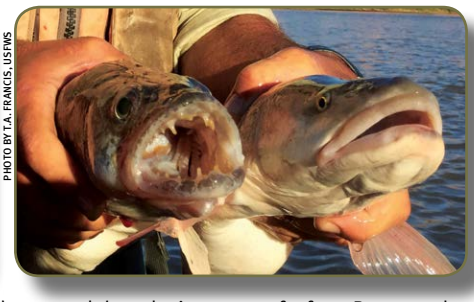


PHOTO BY T.A. FRANCIS, USFWS

PHOTO BY T.A. FRANCIS, USFWS

Colorado pikeminnow can live to be 40 years old and can reach lengths in excess of 4 feet. Because they are long lived fish, they are not mature enough to spawn until they are 7-8 years old. In the far left picture, you can see the size disparity between a young Colorado pikeminnow and an adult walleye. The young pikeminnow is easy prey for this top line predator. In the center picture, please note the sharp teeth of the walleye and the hard lips of the adult Colorado pikeminnow. A fish can eat another fish up to two-thirds of its size. At this point, the adult Colorado pikeminnow is too large for the toothy walleye. Colorado pikeminnow are vulnerable to predation by walleye up to 3 years old. In the far right picture, a biologist is holding a walleye that was captured in critical habitat of the Colorado pikeminnow.

Estimating Population Size of Razorback Sucker Dwelling in the San Juan River-Lake Powell Inflow Area

By **Casey Pennock & Keith Gido,** *Kansas State University (KSU),* **Darek Elverud & Travis Francis,** *US Fish & Wildlife Service (USFWS),* **Mark McKinstry**, *Bureau of Reclamation (BOR)*

It's a 60-mile boat ride to our Lake Powell base camp. All four boats are loaded to the brim with enough personal gear, food, and gasoline to get us through the next week of work. The "whale", a boat previously set up for trawling, causes the ride to take up to 4 hours because it is carrying so much weight. Spirits are high, though we know we'll make this trip two more times over the next month and other crew members will make it every week for eight straight weeks.

Since 2011, researchers from Utah Department of Wildlife Resources (UDWR) and USFWS have been making these trips to sample the San Juan River-Lake Powell (SJR-LP) inflow area to document endangered razorback sucker. In May 2018, KSU, USFWS, BOR, and UDWR combined efforts to estimate the population size of razorback sucker using the SJR-LP area. For three weeks, we set nets across ~25 miles of shoreline capturing 2,567 fish (*Figure 1*) and estimated the population size of tagged razorback sucker using a combination of acoustic telemetry receivers and traditional mark-recapture techniques.

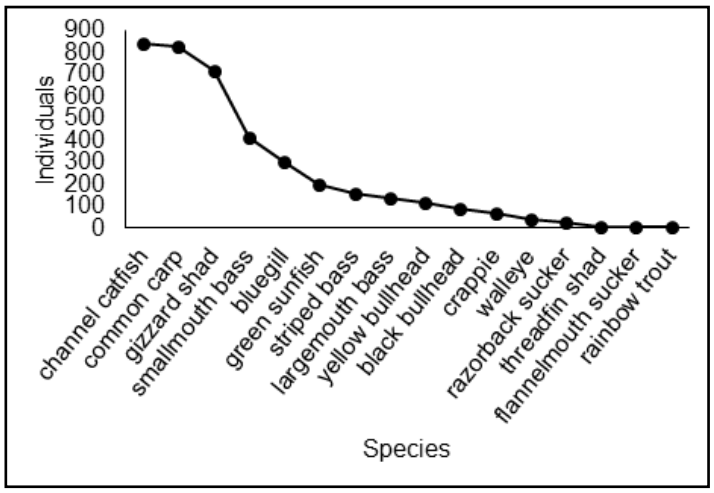


Figure 1: Razorback sucker were the 13th most abundant species. We captured 28 unique fish, eight out of a single net in addition to ~500 lbs of common carp.

From our work, we estimated the minimum population size of razorback sucker in May 2018 to be 499 with a possible range of 103-895 individuals. This estimate was similar to those using data from additional sampling efforts by USFWS and UDWR.

In a more upstream portion of the SJR-LP, an impassable waterfall has been present since 2001. During a different effort in February and March 2017, we estimated the minimum population here below the waterfall to be 755 individuals (Cathcart et al. 2018, in River Research and Applications).Together these minimum seasonal estimates and the detection of a total of 1,377 unique individuals below the waterfall from 2015-2018, suggest the SJR-LP supports a substantial number of razorback sucker and presents an interesting opportunity for managers. In the San Juan River upstream of the waterfall, population estimates in 2015 were 2,300-4,000. Allowing passage upstream of the waterfall could allow a substantial number of reproductively active fish to enter the upper river and contribute to spawning. More larvae in the upper river could lead to greater population capacity.

The potential conservation value of reservoirs for native fish is generally under-studied, but river-reservoir inflow areas such as SJR-LP could provide high quality habitats (e.g., high turbidity, abundant food, warm temperature, and slow velocity) not typical in contemporary river reaches throughout the Colorado River Basin. Thus, another consideration is to manage the population of Lake Powell-dwelling razorback sucker. If the SJR-LP provides adequate habitat then perhaps it is time to consider stocking these inflow areas with larvae or juvenile fish. The threat of non-native fishes is hard to ignore, but complex habitat (e.g., submerged riparian vegetation, gradients of turbidity) available in river-reservoir inflows might afford stocked fish adequate protection. Until options like those mentioned above are researched thoroughly, it is difficult to assess the true potential of areas like SJR-LP to recovery of fish such as the razorback sucker.

A razorback sucker collected during trammel netting efforts in Lake Powell.

Turbid water from river inflows coupled with submerged vegetation might provide refugia from non-native fish predators.

PHOTOS © CASEY PANNOCK, KSU

Hydropower Plants Turn Water into Power

By **Kevon Storie,** *Western Area Power Administration (WAPA)*

From processing food to providing energy for factories and plants to powering cities, people have harnessed rushing water to grow civilizations for thousands of years. Today, flowing water turns turbines in hydroelectric plants to supply 7 percent of the nation's electricity with an environmentally clean, renewable and economical energy source.

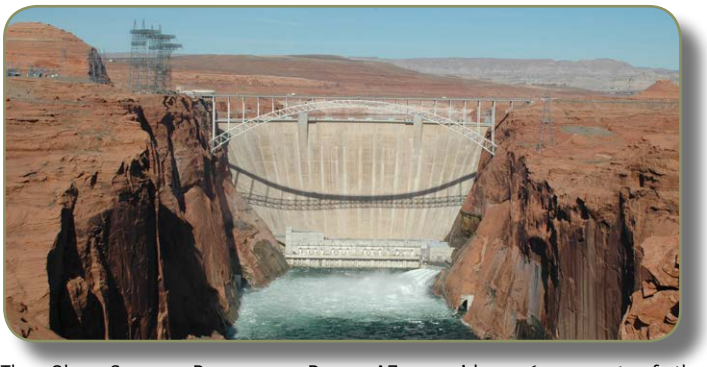


PHOTO BY WESTERN POWER ADMINISTRATION

The Glen Canyon Dam near Page, AZ, provides 76 percent of the generated energy to the 157 customers of the Colorado River Storage Project Management Center. WAPA staff assist the Glen Canyon Dam Adaptive Management Program with experiments focused on improving the health of the Colorado River below Glen Canyon Dam for the benefit of all the river's users.

From Rivers to Electricity

Rain and melting snowpack fill rivers and rivers flow to oceans. As water flows, it becomes a source of kinetic energy, the energy of motion. There are two types of hydropower plants that convert energy into electricity. The first is a run-of-the-river plant that uses little or no stored water to provide flow through the turbines. Seasonal changes in stream or river flow and weather conditions affect the plant's output. The second type, a storage plant or dam, offers a more constant supply of electricity. A dam on the river stores the water flowing down from the mountains, creating a reservoir. This manmade lake acts much like a battery, holding the power of water in reserve.

To generate power, water falls to a lower elevation, releasing its stored energy. The energy-producing potential of a hydropower plant depends on the difference in elevation between the reservoir (forebay) and the water below the dam (tailwater) and the volume of water available for release. The greater the volume of water stored in the reservoir and the greater the difference in elevation, the more potential for energy production.

The difference between these elevations is called head. Dams are divided into three categories:

- **High-head (800 or more feet)**
- **Medium-head (100 to 800 feet)**
- **Low-head (100 feet or less)**

Some plants may operate as a medium-head plant part of the year and as a low-head plant other parts of the year, depending on the amount of rainfall and snowmelt.

As energy is needed for power generation, water stored behind the dam is released through a penstock, or tunnel, to a turbine-driven generator below the dam. The turbine converts falling water into mechanical energy when the force of water spins the turbine blades, which, in turn, drive a rotor, the moving part of a generator. The rotor contains coils of wire wound on an iron frame to create a strong magnetic field. As the rotor's magnetic field sweeps past the generator's stationary coil, it converts mechanical energy into electrical energy.

After the water passes over the turbine blades, it exits through an exhaust structure under the turbine called the draft tube. The water then flows back into the riverbed in an area called the tailrace or afterbay and on down the river.

From Powerplant to Consumers

Electricity exits the powerplant through power lines to a substation, which feeds the electricity into the transmission grid, where WAPA takes over from the Bureau of Reclamation.

WAPA delivers hydropower from 12 powerplants in the Upper Colorado River Basin across more than 2,000 miles of transmission line. High-voltage transmission lines act much like a highway system. Instead of cars, the lines carry electrical energy from hydropower, wind farms, fossil fuel and nuclear plants and other generators to local utilities across the country. These utilities distribute electricity to homes and businesses.

From Power Provider to Environmental Partner

Dams offer many benefits that other forms of generation do not. In addition to being a source of safe, economical, renewable electricity, dams regulate rivers for navigation, provide flood control and store water for irrigation and domestic supplies. Dams can improve downstream conditions by allowing mud and other debris to settle out. Reservoirs have scenic and recreation value for campers, fishing enthusiasts and those who enjoy water sports.

The water is also home to fish and wildlife, and WAPA has participated in many innovative programs in recent years to ensure that hydropower generation protects sensitive downstream habitats. For example, fish screens have been added to prevent fish from swimming through dam turbines, and fish ladders have been constructed to assist native fish in navigating rivers. The Recovery Program has been a valuable partner in WAPA's continuous search for innovative ways to protect the hundreds of plant and animal species that depend on the rivers, lands and reservoirs.

Program Partner Collaboration Eases the Pain of a Bad Water Year

By **Don Anderson,** *Upper Colorado River Endangered Fish Recovery Program*

2018 was the kind of year that West Slope Colorado water users would just as soon forget. Disappointing winter snowpack was followed by hot and dry conditions that set in early and persisted for most of the irrigation season. The 2017-2018 Water Year was the warmest in 124 years of recorded Colorado history, and the second-driest. River flows dwindled and reservoirs were drawn down to alarmingly low levels.

Drought conditions threaten endangered fish recovery too. Low river flows and high water temperatures in early summer stress native fish by reducing their food base and forcing them to seek refuge in scarce pools and backwaters. Problematic non-native species like smallmouth bass get a jump-start under warm conditions. They eat young endangered fish, and grow to a size that promotes over-winter survival, allowing them to wreak more havoc in subsequent years.

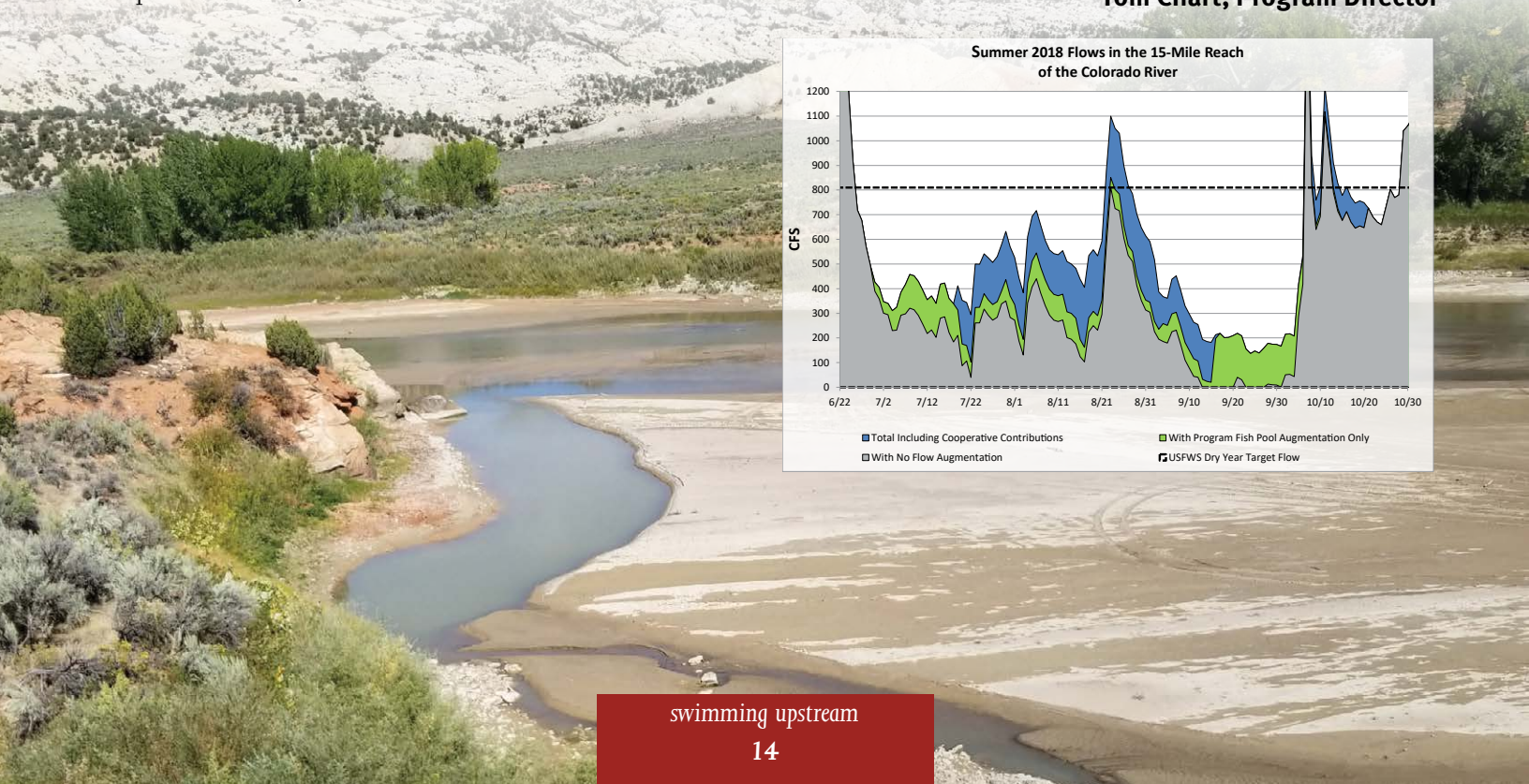
The Recovery Program accesses substantial amounts of water from reservoirs annually to boost flows for endangered fish during low-flow periods of the year. However, in years when augmentation water is most crucial, less is available. Thousands of acre-feet accessible in a "normal" year from West Slope reservoirs like Green Mountain and Ruedi are unavailable in very dry years. As a result, flow conditions for endangered fish grew particularly dire in 2018, especially in the lower Yampa River and in the '15-Mile Reach' of the Colorado River above the Gunnison River confluence.

The good news: Recovery Program partners stepped up to provide extraordinary support for maintaining instream flows for endangered fish in 2018. In the lower Yampa River basin, the Colorado River Water Conservation District (CRWCD) leased water from Elkhead Reservoir to help prevent the dismally low flow conditions in the lower Yampa from becoming worse. In the Colorado River above the 15-Mile Reach, multiple partners stepped up and voluntarily provided desperately needed water. The CRWCD advantageously timed their maintenance releases from Wolford Reservoir to provide maximum benefits for endangered fish. The Ute Water Conservancy District of Grand Junction leased their unused water in Ruedi Reservoir to support flows in the 15-Mile Reach. ExxonMobil subsidiary XTO Energy released their hold on 5,000 acre-feet of contract water in Ruedi Reservoir, enabling an equivalent amount to be released for endangered fish. The collective benefits of these multiple water contributions are illustrated in the accompanying graph – note that without these collaborative efforts, the 15-Mile Reach likely would have gone completely dry for approximately 12 days in late September and early October. Not good.

Others making these water deliveries possible included the Colorado Water Conservation Board, the U.S. Bureau of Reclamation, the Colorado State Engineer's Office, and agricultural water users like the Grand Valley Water Users Association and Orchard Mesa Irrigation District in Palisade, Colorado. The Recovery Program is fortunate to count these entities among its Program partners.

"Our public and private partners are amazing at coming up with instream flow solutions, even in drought years like this. Without their collective expertise and collaborative efforts, we'd struggle to find sufficient water for these fish."

Tom Chart, Program Director



Endangered species updates

PHOTO BY USFWS

An adult Colorado pikeminnow caught in the San Juan River.

Colorado pikeminnow

The US Fish and Wildlife Service office in Grand Junction began another three-year round of population estimates on the Colorado River for 2019-2021. Field crews conduct four to five trips in order to sample the river from the Grand Valley Project diversion dam through the Grand Valley to Westwater, and from Cisco to the confluence for a total of 182 miles of river. The Grand Junction office also monitors the Gunnison River for pikeminnow, and captured 39 fish using the Redlands fish ladder in 2018. This is the most pikeminnow at that facility since 1996.

PHOTO BY UDWR

Humpback chub encountered in Westwater on the Colorado River.

Humpback chub

Humpback chub prefer the deep and turbulent habitats found in the whitewater canyons of the Green and Colorado rivers. UDWR or USFWS crews completed population estimates for humpback chub in Westwater Canyon, Black Rocks and Cataract Canyons of the Colorado River in 2016 and 2017 and resumed estimates in Desolation Canyon (Green River) in 2018. Biologists reported strong numbers of young adults in all four locations. The USFWS has recommended that the humpback chub be downlisted from endangered to threatened based on the persistence of the upper basin populations and a larger population found in the lower basin in the Grand Canyon.

PHOTO BY UDWR

Zane Olsen holds a bonytail raised at UDWR's Wahwep Fish Hatchery in Big Water, Utah

Bonytail

Despite low survival of stocked bonytail, encounters have increased over the years. In 2018, USFWS crews captured an age-12 bonytail within miles of where it had been stocked almost 11 years prior by Utah Division of Wildlife Resources. While bonytail captures occur, over 95% of bonytail encounters are PIT tag antenna detections. In 2015-2018, Colorado Parks & Wildlife stocked 2,305 bonytail in Salt Creek: 520 have been detected while only one has been captured, with eight individuals detected beyond five months post release. An additional 118 bonytail were detected in Salt Creek that were originally stocked in the mainstem Colorado River.

PHOTO BY NPS

Close up of a razorback sucker.

Razorback sucker

Razorback sucker populations continue to expand throughout the Green, San Juan and Colorado basins, showing up in tributaries where they have not been seen before. After a dismal snowpack in 2018, which did not provide many floodplain connections, the flows in 2019 are expected to connect four managed floodplains along the Green River to entrain razorback sucker larvae. The floodplains provide warm, rich, predator-free environments for larval razorback sucker to thrive. In the San Juan River, sightings of record numbers of age-0 razorback sucker in 2018 and age-1 razorback sucker in spring of 2019 provide the first consistent signs of recruitment on a large scale.

PHOTO© MARK NEWELL III

Never in my Wildest Dreams

By **Janay Newell,** *Conservationist, Angler and Artist*

Every year, my husband and I go hunting for elk and mule deer antler shed while camping along the White River. In 2018, as we packed up, I baited and cast a line into the river hoping to catch a few bass to take home for dinner. First cast, I throw it across and WHAM, I get a huge hit and keep reeling and there's a giant huge fish on! It immediately took drag. The line kept zipping and I had to pull it around some huge snags and downstream towards the beach. My husband got behind the colossal fish as I pulled it toward the edge of the water. I was sure it was a big catfish but my husband said it wasn't. I felt all the fins for spines which it had none. I looked inside the mouth which had no teeth and was pure white inside. I held the fish in place in the water with just my thumb in the end of its mouth. Rather than teeth it felt as though his mouth was more beak-like with flesh over top. The mouth was large enough to fit a young mallard inside. The head was smooth and the body of the fish had beautiful pale gold reflecting smooth scale shapes that became more condensed and sparkly towards the tail. We tried to estimate the size and knew it was over 4 feet long. In the photograph I am holding the fish with my knee supporting it because its HEAVY and it would have been uncomfortable to the giant fish to be held with just two hands. I set it back in the water and enjoyed a little more time looking over this gorgeous Colorado pikeminnow as it gently swam away.

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HELP PREVENT THE SPREAD OF NONNATIVE SPECIES

CATCH & keep

SMALLMOUTH BASS

NORTHERN PIKE

WALLEYE

UTAH AND WYOMING HAVE
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REGULATIONS. IT IS ILLEGAL TO RETURN THESE FISH TO THE RIVER.

One hundred years ago only 13 native species swam in the Upper Colorado River and its tributaries–today they have been joined by more than 50 nonnative species. Introduction and establishment of problematic nonnative predators affect native fishes, the Recovery Program, anglers, and local communities with high environmental and economic costs.

Removing illegally introduced species is expensive and time-consuming. We must all join forces to prevent the spread of these problematic nonnative predators in order to preserve native fish in the river and desirable sport fisheries in the reservoirs.

Review your state fishing regulations. State regulations may vary based on river mile and are the LAW. Regulations on the river may be **very different** than in reservoirs. **Know the law.**

http://cpw.state.co.us/Documents/RulesRegs/Brochure/fishing.pdf
https://wildlife.utah.gov/guidebooks/2019_fishing.pdf
https://wgfd.wyo.gov/Fishing-and-Boating/Fishing-Regulations
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