Animas River Community Forum






WSRF Grant – CTGG1 2018-201 Final Grant Report
December 2018

PREPARED BY:
Mountain Studies Institute

SUBMITTED TO:
Colorado Water Conservation Board
& Southwest Basin Round Table

The **Animas River Community Forum** (ARCF, or Forum) is a community group that formed in the Animas River Watershed in response to the Gold King Mine (GKM) spill incident of August 5, 2015. Since its inception, the Forum's purpose has been to promote communication, coordination and collaborative action; foster public confidence; support resiliency in our communities; and enhance planning, improved public safety and health for the future, all while honoring the institutional authorities and decision making of governmental and community organizations (Partners).

ARCF formed in response to the Gold King Mine blow out with the realization that the health of the Animas River is vital to all water users. ARCF provided a venue within the Colorado watershed to provide agricultural, non-consumptive, and municipal water users with coordinated efforts to anticipate, respond, and (ideally) increase capacity to recover from disturbances and events such as the Gold King spill that may threaten the health of the watershed. The techno-color orange water drew a dramatic line illustrating the connections and implications of all water users to the importance of the health and resilience of the Animas River to many communities for several hundred miles downstream. Therefore, the geographic reach of the ARCF is from the Animas headwaters above Silverton to the New Mexico border, with an effort to include our New Mexico neighbors in discussions and communication for the full reach of the Animas River. Over the course of the project, ARCF contact list includes 160 people, representing over 95 Partner organizations (Attachment 1).

Direction gathered during the first two years of the Forum's formation informed our priorities for action and topics of discussion. The Partners sought to address community concerns regarding response, recovery, and cohesive solutions for water quality and water-related economy in the Animas Valley identified by our community survey and Forum meetings.

Accomplishments

The group's goal continues to be forward thinking, to promote learning for watershed resilience at regional and state-wide networks, and to work on initiatives that have wide agreement and consensus to benefit watershed health. While the Gold King Mine incident was the reason this group formed, there continues to be demonstrated need for an over-arching forum that could be a "table" for all sectors to communicate and collaborate. In full demonstration of the value of such a group, the 416 Fire provided yet another event for the Forum to serve the Animas watershed community in such a capacity.

The WSRF Grant to the Forum covered a 17-month period from August 1, 2017 to December 31, 2018. Two detailed Progress Reports were submitted during this Grant Period, with the last Progress report covering accomplishments through July 2018. In this Final Report, we quantify accomplishments throughout the entire grant period, briefly recap accomplishments detailed in the two previous Progress Reports, and highlight recent accomplishments since our last Progress Report four months ago. In addition, the following attachments provide additional information and products of the group:

Attachment 1 ARCF Contacts & Participant List
Attachment 2 Homeowner Action List- example of public information provided via ARCF
Attachment 3 2019 Our Animas Publication
Attachment 4 Seat at the Table- newspaper article on the Citizens Advisory Group
Attachment 5 ARCF Membership Letter- inviting sustaining support of the Forum

Task 1 Coordinate the Exchange of Information

ARCF shared and disseminated information among watershed Partners by hosting bi-monthly ARCF meetings and disseminating Partner information via emails and the webpage postings. ARCF fostered the relationships among 95 different organizations and watershed stakeholders strengthening and bolstering trust internally and credibility externally of individual Partner efforts. Over the course of the WSRF grant, ARCF coordinated four linked efforts of the Partners: general Forum meetings, the Monitoring Gaps Analysis Team (MGAT), Communications Team, and two new subgroups: the Citizens Superfund Workgroup (CSW) and 416-Fire Team. Together, the Forum and these groups built collaborative relationships that yield outcomes greater than any one Partner could achieve acting in isolation.

ARCF is proud of the efforts of our working groups and their accomplishments. The MGAT Team collaborated to integrate the various data products and analysis produced by over 19 organizations, which they summarized into one assessment report for the public, "Our Animas Publication" (see Task 2). The Communications Team organized joint outreach at festivals and conferences. The CSW produced citizen-backed recommendations to the EPA regarding the Bonita Peak Mining District which as resulted in the formation of a formal EPA-supported Citizens Advisory Group (CAG). The CAG will provide a formal vehicle for community input into the Bonita Peak Superfund process (see Task 3 for details on the public outreach goals, and Attachment 4). Finally, the newest committee, the 416-Fire Team leveraged information and efforts by our Partners to support the emergency responders, public information (Attachment 2), and initial planning for spring of 2019. These efforts are summarized in action steps listed below, and within the various attachments.

Deliverables: Convene bi-monthly meetings, disseminate 2-3 monthly email updates; maintain ARCF website and list serve, and support ARCF sub-committee initiatives (4-6 meetings)

- During the 17-month grant period, eight ARCF meetings were convened. ARCF managed a contact list of watershed stakeholders (165 people). The network of partners were instrumental in convening meetings to exchange information in the aftermath of the 416 wildfire. The broad stakeholders represented by the ARC Forum (including government entities, water users, agricultural interest, conservation organizations, business and economic development interest, and higher Ed resources, and more) provided the opportunity for government agencies—beyond just those with an emergency response role—to exchange information about their priorities, concerns and resources available and needed. Additionally, these meetings provided the opportunity for non-government stakeholders to express their concerns, needs, and make suggestions for how to better get information to those likely to be affected by flooding and debris flow resulting from the fire. Four of the eight ARCF meetings focused on coordinating information and resources specific to mitigating potential wildfire risks in the spring and post 416 Fire impacts. The current ARCF contact list is provided in Attachment 1.

- **Recent Accomplishment:** The need for posting information and resources all in one location was a dominant theme identified during the post-wildfire meetings hosted by the ARCF. Hence, the ARCF webpage was populated with post-wildfire resource links and information tailored for landowners and the general public. Additionally, an abbreviated 1-page summary of the online information was developed and served as a hard copy

handout at meetings and by entities in a role of directly contacting landowners, user groups and other individuals affected by post fire flooding and debris flows; see Attachment 2.

- In addition to the Forum Meetings, there have been 2 email updates per month, and ARCF Subcommittee/Workgroups meetings, including:
  - 14 Monitoring Gaps Analysis Team (MGAT) meetings to develop a river resiliency educational document (further detailed in Task 2 below);
  - 3 Communication Team meetings to coordinate an information booths at the annual Animas River Days event and to coordinate webpage updates, i.e., to have the ARCF webpage serve as the centralized location for post 416-Fire resources (416 Fire);
  - 8 Citizen Superfund Workgroup (CSW) meetings, plus 11 planning meetings by the CSW Advisory Group (further detailed in Task 3 below); and
  - 4 Steering Committee Meetings (further detailed in Task 4 below).

- The following presentations were provided at ARCF Meetings to enhance information sharing:
  - **Recent Panel Presentation:** "Comparison of Impacts From the 416 Fire and GKM spill including Emergency Response, Local Government Officials, Water Quality and Fish, Public Health, and Economic Perspectives" with seven Partners as panelists
  - "Lessons learned about post fire response from experience assisting in the aftermath of a number of large fires," presented by Jonathan Bruno of the Coalitions and Collaboratives.
  - "2018 Wildfire Forecast and Concerns," presented by Richard Bustamante, Fire Management Officer for the San Juan National Forest
  - "Snowpack trends in the San Juan Mountains and understanding the magnitude and timing of snowmelt runoff," presented by Jeff Derry, Executive Director for the Center of Snow and Avalanche Studies
  - "Impounded water in Underground Mines" presented by Kirstin Brown, Colorado Division of Mining, Reclamation and Safety
  - Legal Update on the San Juan's Gold King and Bonita Peak Superfund presented by Anthony Edwards of Sholler Edwards, LLC

Task 2 Support the Monitoring Gaps Analysis Team and Committees

ARCF continued the Monitoring Gaps Analysis Team (MGAT), which meet monthly to share information and leverage monitoring resources to inform the public about the condition of the Animas River. This task was begun in 2016 through the MGAT, a subgroup of the ARCF. Working from the results of the 2016 community survey, the MGAT analyzed various data sources to provide answers to the public's questions about river health and safety; hosted a data swap attended by 18 entities all collecting monitoring data in the Animas Watershed; and developed a framework and systematic analysis approach for answering the public's questions using existing data. The results of this analysis is summarized in an easy to read and accessible summary of information. The report provides the basic education needed to follow the data and answers, interpreting Colorado water policies and regulation as it applies to the Animas River.

Deliverables: Data assessment, Animas River Report Card *(aka "Our Animas 2018")*

- The Monitoring Gaps Analysis Team (MGAT), an ARCF Subcommittee Workgroup, formed with the intent of identifying who was collecting what monitoring data on the Animas

River, and to utilize data to develop an report card/educational document for the general public aimed at increasing river resilience. A community survey was conducted in the summer of 2016 and a data swap attended by 18 entities collecting monitoring data was held in November 2016. Based on public concerns identified in the Community Survey and utilizing nationally accepted standards and local data, the MGAT has developed the first edition of the "Our Animas 2019." The document is designed to promote understanding and dialogue about resiliency and includes actions that individuals can take to support river resiliency.

- **Recent Accomplishment:** In the last four months, the ARCF has completed the maps and graphs for the document, completed fact checks, and secured the additional funding to contract a graphic designer to finalize the publication for web dissemination and print a limited number of hard copies of the first edition of the "Our Animas 2018." The document has been offered to the ARCF Partners for review and comment. The document is currently with the graphic designer and is anticipated to be disseminated and available to the public by the end of February 2019. The Our Animas 2018 document is provided in Attachment 3.

Task 3 Enhance Communication and Outreach

ARCF coordinated communication about watershed issues identified over the course of the year, with the two most pressing issues being: (1) water quality and (2) drought, which ultimately lead to the 416 Wildfire. To guide this effort, the Communication Team updated and improved the web-page and communication efforts. Additionally, the Team defined the Forum's role and level of effort guiding internal (i.e., among Forum Partners) versus external (i.e., public) communication. In particular, the feedback from Forum members was that the "sharing of information amongst partners" was the highest priority for internal communication, and external priorities included providing opportunities for individual partners to help distribute updates and announcements to their individual networks, thus broadening the reach of each partner.

Deliverables: Facilitate a network of partnerships, Give 3-5 presentations to disseminate lessons learned, and promote collaborative events

- The ARCF provided 4 presentations at regional conferences during the grant period and participated in the "416 Fire—What's Next?" Community Forum during the grant period.
- **Citizen Superfund Workgroup:** The Citizens Superfund Workgroup (CSW) was developed by the ARCF and 3 ARCF Partners—the Animas Stakeholders Group, Trout Unlimited and the Animas Watershed Partnership. The objective of the CSW was to educate the public and residents downstream of Silverton about water quality conditions, past and current remediation efforts, and to engage citizens in participating in the clean up effort. Approximately 130 citizens participated throughout the 8-meeting process, with an average of 40 participants at each meeting. The outcome of the CSW process was a set of Citizen Desired Outcomes, which was presented in a memo format and delivered to the EPA (Region 8 Director, Washington Office, and Bonita Peak Mining District (BPMD) staff), Governor Hickenlooper of Colorado, Senators Bennett and Gardner, Representative Tipton, and local government officials in La Plata and San Juan Counties, Colorado. In July the CSW Advisory Group met with EPA officials to

discuss strategies for implementing the CSW desired outcomes and specifically how to improve the public involvement in EPAs clean up process.

- **Recent Accomplishments:** In early August the CSW Advisory Group asked two other community representatives to join the CSW Advisory Group to broaden community representation, including the San Juan County Liaison to the BPMD and the San Juan Citizens Alliance's River Keeper. In late August the 6-person CSW Advisory Group met again with the EPA to discuss a process for forming a Community Advisory Group (CAG), which is the formal EPA mechanism for long-term community involvement in the superfund process.

- **Recent Accomplishments:** Since September, the CSW Advisory Group has developed a CAG application process, developed a CAG webpage (BonitaPeakCAG.org), solicited applicants through newspaper and radio ads, as well as via emails to our constituents, through the contact list of all the ARCF Partners, and in the BPMD monthly update (see Attachment 4). Applications are currently being reviewed. The first CAG meeting is anticipated to be held in late January/early February.

Task 4 Forum Management, Leadership, and Reporting

ARCF maintained our coordinator, Shannon Manfredi, to facilitate the Forum, track expenses and income, raise matching funds, and report to our funders on goals, accomplishments, and impact of the ARCF activities. In addition, ARCF renewed its agreement with Mountain Studies Institute (MSI) to serve as the Forum's fiscal agent. MSI's accounting staff provided financial management, documentation, and review of expenditures. The Steering Committee maintained oversight of the coordinator and the fiscal agent. The Committee members include: Matt Thorpe of Colorado Parks and Wildlife, Laura Lewis Marchino of Region 9 Economic Development, Brian Devine of San Juan Basin Health, Ann Oliver of AWP, Marcie Bidwell of MSI, Ellen Roberts, and Chuck Wagner of AWP (replacing Ann Oliver).

Deliverables: maintain part-time coordinator and steering committee to provide financial oversight, develop ARCF long-term sustainability plan, and track and report accomplishment

- Shannon Manfredi, Marcie Bidwell and Carolyn Moller of Mountain Studies Institute, and the Steering Committee provided leadership and financial oversight for the ARCF throughout the grant period. Additionally, the ARCF Coordinator, with support from Mountain Studies Institute and ARCF Partners, secured funding, provided progress and completion reports, tracked financial and in-kind match, managed and complied grant requirements.

- **Recent Accomplishments:** At the November 2018 ARCF Meeting, a strategy for continuing the ARCF was proposed and a membership program was launched. The 2019 ARCF strategy will include having 2 ARCF meetings; each to be coordinated and co-hosted by 2 ARCF Partners. The first meeting in 2019 will be co-hosted by Mountain Studies Institute and San Juan Citizens Alliance's Animas River Keeper on February 28th at the Animas Valley Grange. Co-hosts for the 2nd meeting will be identified during the first meeting. Funds developed through the Membership Plan will support meeting expenses, and basic functions associated with the exchange of information among Forum Partners (see Attachment 5).

Thus far four ARCF Partners have made a financial contribution totaling an initial $350 by December 31. Additional pledges have been made for support of ARCF in 2019. Our goal is to reach $3500-5000.

Funding Report

CWCB generously awarded ARCF $28,919 in WRSF funds. ARCF utilized the CWCB-WSRA funds to leverage a $24,450 in grants and cash contributions from the following sources:

Cash Match	**Amount**
Southwestern Water Conservation District	$14,840
CO Division of Reclamation, Mining and Safety	$6,950
Ballentine Fund:	$1000
Trout Unlimited:	$1000
MSI fundraising donation	$210
Community Foundation of SW Colorado	$100
Membership Donations	$350
Total Cash Match	**$24,450**

In-Kind Contributions Match

In our grant application we estimated having a value of $28,696.40 in-kind match from volunteer time and donated meeting spaces, supplies and travel. Our original proposed volunteer estimate was in part based on 540 hours from a VISTA Volunteer. In years past we had been supported by the Animas Watershed Partnership's VISTA Volunteer. Unfortunately, AWP was not awarded another VISTA Volunteer in 2017/2018. However, we were able to recover that loss through other volunteer contributions over the course of the grant period through additional participation in meetings and working groups.

The actual value of in-kind match tracked throughout the grant period was $38,628.48 based upon a value of $26.78 (as valued by independentsector.org for volunteer time in Colorado). ARCF has kept a record of contributions listed by category below. A detailed spreadsheet is available upon request.

In-kind Match	**Value**
Partner Volunteer Time (based upon $26.	$35,999.12
Donated Meeting space	$1,910.00
Supplies and Travel	$719.36
Total	**$38,628.48**

CWCB Allocation of Funds

The funds were expended and reported through regular invoicing to CWCB Staff. The final total cost reporting is summarized as the following table of Tasks. Funds were used to support time for ARCF Coordinator and committee chairs, office and meeting supplies, copies, and report card graphic design.

Task & Description	Total Grant Funds	Previously Invoiced	Current Invoice	Remaining Total	Percent Complete
Task 1- Information Exchange	$ 6,650.00	$ 5,793.01	$ 756.25	$ 100.74	98.5%
Task 2- Monitoring and Data Gaps Assessment	$ 10,850.00	$ 8,785.00	$ 1,140.64	$ 924.36	91.5%
Task 3- Communications and Outreach	$ 7,950.00	$ 6,729.85	$ 2,015.50	($ 795.35)	110.0%
Task 4- Forum Mgmt, Leadership, Reporting	$ 3,469.00	$ 3,643.75	$ 55.00	($ 229.75)	106.6%
TOTALS	**$ 28,919.00**	**$ 24,951.61**	**$ 3,967.39**	**$ 0.00**	

In Gratitude for ARCF Support

In conclusion, we wish to thank CWCB, Southwest Basin Roundtable, and Southwest Water Conservation District for making it possible for the ARCF to serve our community and be there when the Animas River community needed help the most. With the recent 416 Fire, our work has only just begun. We have seen the value for a continued effort to prepare for a resilient future in our watershed. We thank you for being part of our preparations.

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Steve Belz	Black Creek Hydrology	steve@BlackCreekHydro.com	
Steve Ruffatto	Sunnyside Gold Corporation	sruffatto@crowleyfleck.com	
Steve Smith	Animas High School	steve.smith@animashighschool.com	560-4118
Susan Palko-Schraa	NM Citizens Advisory Council	susanschraa@gmail.com	
Tami Sheldon	Bureau of Reclamation -Western CO A	tsheldon@usbr.gov	
Thomas Cook	CDM Smith	cookte@cdmsmith.com	406-291-1149
Tom Heinlein	BLM -Front Range District Office	theinlei@blm.gov	719-269-8554
Tom McNamara	La Plata County Office of Emergency	mcnamaratr@co.laplata.co.us	970-749-3484
Tom Schillci	Videographer	schillaci.tom@gmail.com	
Tony Miely	Four Corner's River Sports	tony@riversports.com	
Trevor Denney	Colorado Division of Homeland Securi	trevor.denney@state.co.us	759-1187
Ty Churchwell	Trout Unlimited and San Juan Clean	tchurchwell@tu.org	903-3010
Walt Brown	San Juan National Forest	wabrown@fs.fed.us	970-385-1372
William Tookey	San Juan County Department of Publi	administrator@sanjuancountycolorado.us	970-387-5766
Amanda Kuenzi	Mountain Studies Institute	amanda@mountainstudies.org	
Heather Otter		heather@scan.org	
Gigi Richard	Fort Lewis College	garichard@fortlewis.edu	970-247-6561

Attachment 2: Home Owners Action List
Prepared by Animas River Community Forum: animasrivercommunity.org

BE AWARE AND VIGILANT FOR FLOODING AND DEBRIS FLOWS

We are seeing entirely new conditions and patterns of flooding and debris flow that we have not experienced before. Given the 416 Fire behavior, several years of drought conditions, new developments in the area and other factors, historic areas of flooding and debris flow cannot be solely relied upon to determine where flooding and debris flow may occur now. The maps and resources provided herein provide good information.

Caution: Do not drive or walk through floodwaters. Cars and people can be swept away. All federal lands that burned are closed to the public. On private property, stay away of burned areas. Weakened trees can fall at any time. If you are trapped, call 911 and the operator will provide you with instructions and emergency personnel will respond to your location as soon as possible.

POST-FIRE FLOOD PREPAREDNESS & ACTION LIST FOR HOMEOWNERS

1 – Sign up for Code Red: Register your Cell Phone number with your Physical Address for emergency notifications through the La Plata County Code Red System. If you have moved or changed phone numbers since signing up you will need to re-register with your current information.
http://www.co.laplata.co.us/government/news/what_s_new/sign_up_for_emergency_notifications_with_code_red

2 – Purchase Flood Insurance: Contact your home insurance provider immediately to purchase Flood Insurance. Homeowners' and Renters' policies do not cover flood damage. A provision of the National Insurance Program may allow homeowners in wildfire affected areas to buy NFIP flood insurance and ask for a waiver to make the policy effective in one day, not 30 days. Homeowners in and near the 416 Fire burn area have until September 29, 2018 to purchase a NFIP policy and ask for the waiver.

3 - Evacuate When Advised and Follow all Instructions: Follow all instructions provided by emergency personnel. They will provide you with an evacuation route and timeline. If you are notified of an evacuation, leave as early as possible or respond to the location provided by Code Red notification or the agency coordinating the evacuation on the ground for further instruction.

Contacts:

- In case of emergency, call 911.
- La Plata County Search and Rescue
- American Red Cross La Plata County Chapter, call (970) 259-5383

4 - Pre-Evacuation Check List: Create an evacuation plan and "go bag" using the San Juan Basin Public Health Basic Evacuation Checklist.

5 - Stay Informed: The La Plata County webpage includes the most up-to-date & comprehensive information, maps and resources. **Flood after fire: Assessment, Resources & Preparedness Tools**

6 - Clear Waterways of Debris: Before a storm, start clearing as much debris possible from ditches and within the channel of existing waterways. After a storm even that has resulted in debris flow on your property, contact the NRCS, neighbors, and ditch companies to clear debris and identify a safe location where debris can be moved/relocated.

Pre-storm Event Preparation:

- ✓ Use Sandbags
- ✓ move logs
- ✓ move rocks
- ✓ clean & maintain culverts and ditches

7 - Mitigating Flood Risk to Your Home and Developing a Fire Mitigation Plan: Develop a plan to mitigate flood and fire risk.

Contact NRCS for assistance with:

- assessing the damage to your home (i.e., disaster survey reports)
- learning about home protections such as use & placement of sandbags and other protective barriers, cleaning out culverts, and identifying yard debris that can become hazardous during a flood or debris flow event
- better understanding the path of debris flow on your property & coordinating these actions with adjacent land owners, so as to not cause additional problems.
- NRCS Disaster Recovery Assistance National Webpage
- NRCS Technical Services (Data, Maps, Analysis Tools)

Contact:
Jerry Archuleta
970-259-5466 -Office
jerry.archuleta@co.usda.gov

Contact FireWise of Southwest Colorado to sign up for a Site Visit to include personalized suggestions of actions you should take to prevent damage from future fires.
http://www.southwestcoloradofires.org/take-action/home-wildfire-risk-site-visit/

Contact the Colorado State Forest Service (CSFS) – Durango Field Office has Forestry Information and Resources specific to private lands, including a list of contractors that can assist with debris removal and fire mitigation.

- CSFS Webpage – This website has information on education and programs for homeowners and landowners.
- Contractor list

8 - Re-entry: If you are evacuated or cannot get home because of flooding, immediately go to the evacuation center to receive instructions. In certain areas, you might need a rapid response tag to re-enter the area after a flood. To find current information on evacuation centers, check the La Plata County government social media pages or website. http://co.laplata.co.us/

9 - Post Disaster Recovery: Safety First! Do not enter your home if it was damaged by fire or flooding until authorities have declared it safe, if you smell gas, or have concerns about structural damage. When re-entering, use flashlights in case of a gas leak, turn off electrical power, and avoid using power tools in wet areas. Thoroughly clean and disinfect all hard surfaces and dispose of or have soft surfaces professionally cleaned. If the property has a propane tank, turn off valves and assess damage and make repairs prior to use. For a complete guide to re-entry, consult the following:
http://sjbpublichealth.org/416-fire-reentry/

Attachment 3

Our Animas

2018

Watershed + Community = Resilience

A publication of the

Animas River Community Forum

Edition 1

Our Animas

Our Animas is a report that addresses **10 concern**s of watershed residents. The report compiles and shares information collected by others, and calls on you to bring your own data, experiences and observations of the river and the watershed, to examine longer term concerns surrounding the resilience of our river. Over time, the Our Animas Report will be updated to present current assessments of the Animas River. Our Animas is produced by the partners of the Animas River Community Forum, a collaborative effort to promote communication, coordination and collaborative action; foster public confidence; support resiliency in our communities; and enhance planning, improved public safety and health for the future,

Out of Deep Concern…. Answering the Call to Action

The Animas River Community Forum (ARCF) is a group of citizens, businesses, government agencies and non-profits that came together in response to the Gold King Mine blow-out in late summer of 2015. Our purpose is to:

- promote communication, coordination and collaborative action;
- foster public confidence;
- support resiliency in our communities; and
- enhance planning, improved public safety and health for the future.

All while honoring the institutional authorities and decision making of governmental and community organizations.

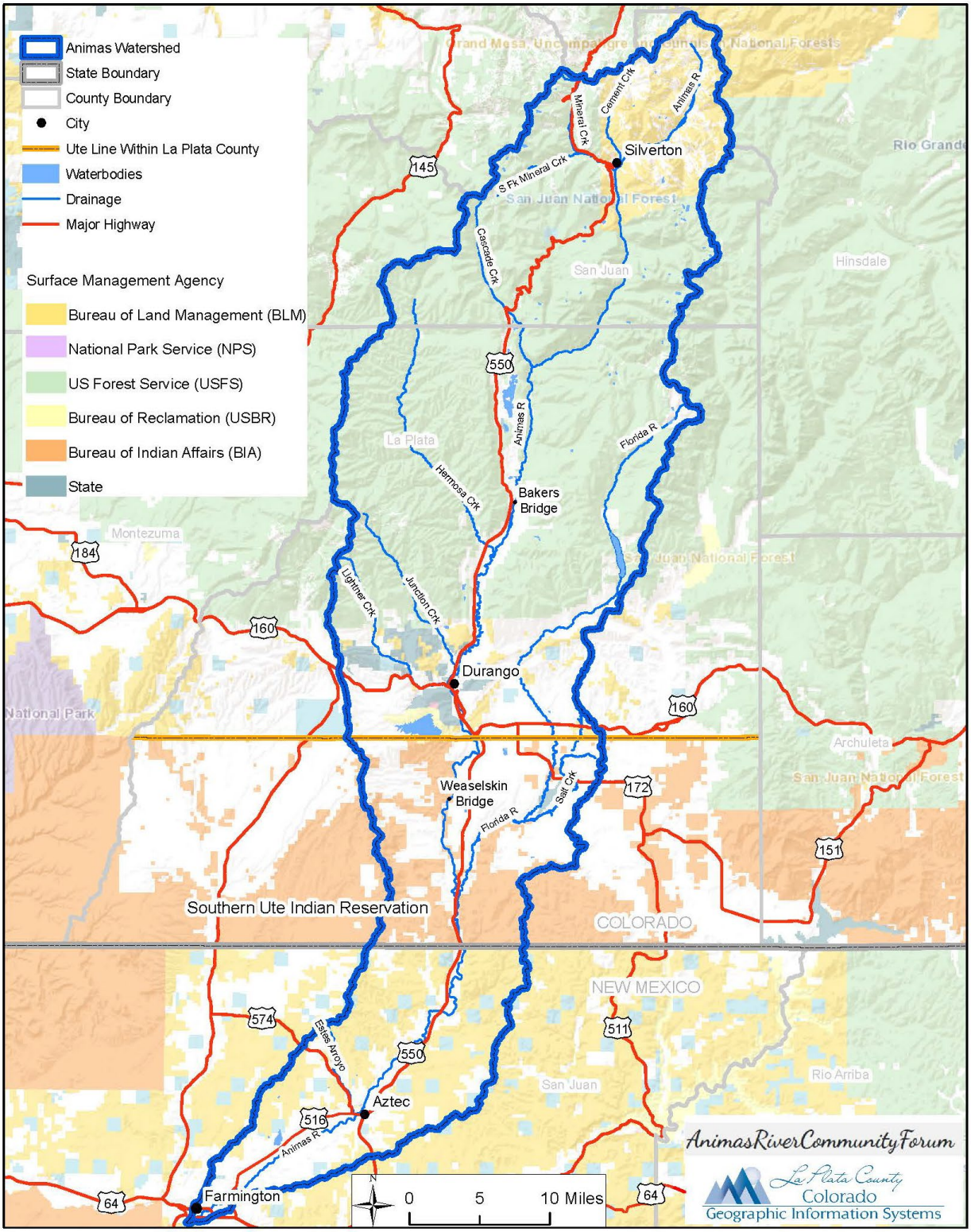
Our Animas 2018 fulfills one goal of ARCF members: to inventory monitoring of the river, to identify any key data gaps, and to share the story that the data tells. An ARCF committee first surveyed local residents to find out their concerns about the river, then identified how existing river monitoring data may address these concerns.

10 Local Concerns about the Animas River

The following 10 questions guide *Our Animas 2018*:

For each question we present widely recognized indicators that reflect current local data to tell the story of the river. Dive in and take a look!

Figure 1 The watershed of the Animas River.



1. Is my water safe to drink?

How is "safe" defined?

If you live in the Animas Watershed, your drinking water may come from a well (groundwater) or from a river or lake (surface water). Your drinking water may be delivered to you through pipes by a public water system, or it may arrive at your faucet directly from your own private well.

If your water comes from a public water system, the Environmental Protection Agency (EPA) requires that the provider tests and treats the water. The EPA sets **Primary Drinking Water Standards** based on risks to human health from drinking the water over long periods of time, and on the ability of water providers to treat water using current technology. P**ublic water systems,** must deliver water to you that meets these standards. To meet this requirement, public water systems may need to treat the water to remove certain pollutants.

The EPA also sets **Secondary Drinking Water Standards** as voluntary guidelines for public water systems in managing the aesthetic quality of the water they provide. Aesthetic quality includes taste, color, and odor, as well as corroded and stained plumbing. One example is manganese, which can cause black to brown color, black staining, and bitter metallic taste when it exceeds the secondary drinking water standard.

If your water comes from your private well, it is not required to meet any of these standards. However, they are still recommended and a good idea for evaluating your water quality and safety in a private drinking water system.

To determine how safe your water is, first answer the question: Is my water from a public or a private system? **If you receive a water bill, you are mostly likely on a public water system.** Most homeowner associations that provide water service are public water systems. Typically, if you are not on a public system, you are connected to a private well.

> **Public water systems are required to test the quality of the water they deliver and to share the results with their customers.** Contact the number on your water bill to request your water provider's most recent sampling results or the annual "Consumer Confidence Report" that summarizes their testing over the past year.
>
> **Private well owners are responsible for ensuring their own water quality is safe.** The only way to ensure that your well water is safe is to arrange for testing with a certified laboratory. **Contact San Juan Basin Public Health at 970-335-2030 for more information.**

What do the data say?

Public Water Systems

Within the Animas River watershed there are 47 public water systems in the Colorado and 8 in the New Mexico. If a public water system cannot deliver water that meets the Primary Drinking Water Standards, EPA mandates that they notify the public. In 2017, none of the public water systems in Colorado portion of the Animas River watershed had testing results that required public notice to their customers. In 2017, two of the public water systems in New Mexico had testing results that required public notice to their customers. Contact your water provider for their annual results.

Private Wells

In 2016 and 2017, San Juan Basin Public Health and the Colorado Department of Public Health and Environment sampled over 100 private wells in the Animas Valley. The results of this project included:

- About 25% of wells tested showed bacteria present. Bacteria in well water can be naturally occurring or related to septic systems, fertilizer, or livestock.
- About 5% of wells tested showed unsafe levels of lead or arsenic. These metals can be naturally occurring or can be introduced from other sources.
- There was **no geographic pattern** as to where high levels of contamination occurred. You should not make any assumptions about your water based on your neighbor's water, or its taste, color or odor. The only way to be certain about your well's drinking water quality is to have it tested on a regular basis.

Between January 2016 and June 2017, the New Mexico Bureau of Geology and Mineral Resources (NMBGMR) collected groundwater samples from 26 existing wells within the animas valley in New Mexico between the NM-CO border and Farmington, NM. Many of wells were sampled several times (up to 6 times), under different flow conditions for the Animas River during this time period. Water samples were analyzed for general chemistry and trace metals, with specific focus on metals associated with the Gold King Mine spill, including iron, aluminum, manganese, lead, copper, arsenic, zinc, cadmium, and mercury. No water samples showed concentrations of these metals that exceeded maximum contaminant levels (MCLs) as defined by the U.S. EPA National Primary Drinking Water Regulations. In fact, with the exception of manganese and iron, most water samples tested below the detection limit for these metals. Several wells exceeded the EPA secondary maximum contaminant levels (SMCL) for iron and manganese. The SMCL is a non-enforceable guideline regarding cosmetic or aesthetic effects. (https://geoinfo.nmt.edu/publications/openfile/details.cfml?Volume=592 visited on Dec. 11, 2018)

What actions can you take?

Know where your water comes from (river, lake or groundwater) and who supplies it to you (public or private system)!

Public Water System Customers should:

- Obtain and read the annual Consumer Confidence Report to know what results their supplier has found over the past year.
- Contact your public water supplier if your water has a color, smell or taste.

Private Well Users should:

- Arrange for your well to be tested. San Juan Basin Public Health recommends first-time sampling for arsenic, fluoride, hardness, iron, lead, manganese, nitrate/nitrite, pH, total dissolved solids, and coliform bacteria.
- Install a filtration and treatment system on your well. Filtration and treatment systems can be very different, and should be selected specifically to treat any contamination found in your well test. There is no "one-size-fits-all" water filter. Some pollutant levels can fluctuate rapidly, so even wells that are tested and shown to be safe should have a basic water treatment system.
- Test your water annually for bacteria, nitrate and nitrite.

Further Resources

Sjbpublichealth.org/waterquality
www.colorado.gov/pacific/cdphe/animas-river-water-quality-sampling-and-data
www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations
http://cwerc.colorado.edu/

Envirofacts Safe Drinking Water Information System:
https://www3.epa.gov/enviro/facts/sdwis/search.html

2. Is my water safe to play in?

How is safe defined?

Whether they are boating, swimming, fishing, wading or simply sitting and splashing, locals and visitors treasure recreation **in** the Animas River. At least two types of pollutants can affect how safe it is to play in the Animas River: metals and bacteria.

Metals

The Environmental Protection Agency has established "recreational screening levels" for the Animas River that represent unsafe levels of metals in water and sediment for skin contact, as well as accidentally swallowing water or sediment. The screening levels incorporate assumptions about how often people recreate and how much exposure to water they have each time they recreate. These assumptions are deliberately set to err on the side of safety.

E. coli

E. coli is a type of bacteria that lives in the guts of animals. If *E. coli* is in the river, it means that animal feces have reached the water. Colorado and New Mexico use the concentration of *E. coli* bacteria in rivers and lakes as an indicator of the risk of getting sick from swallowing that water, either on purpose or by accident. Colorado and New Mexico consider a river or lake safe for recreation if the concentration of E. coli is lower than the standard they set.

What does the data tell us?

Metals

Beginning in Spring 2016, San Juan Basin Public Health, the Colorado Department of Public Health and Environment, and San Juan County, Colorado collected 160 water samples and 168 sediment samples at six locations along the river and compared the results against the recreational screening levels. **All samples were far below the screening levels; they showed no unsafe levels of metals.**) Figure 2 illustrates the levels sampled relative to the recreation screening levels established by the Environmental Protection Agency.

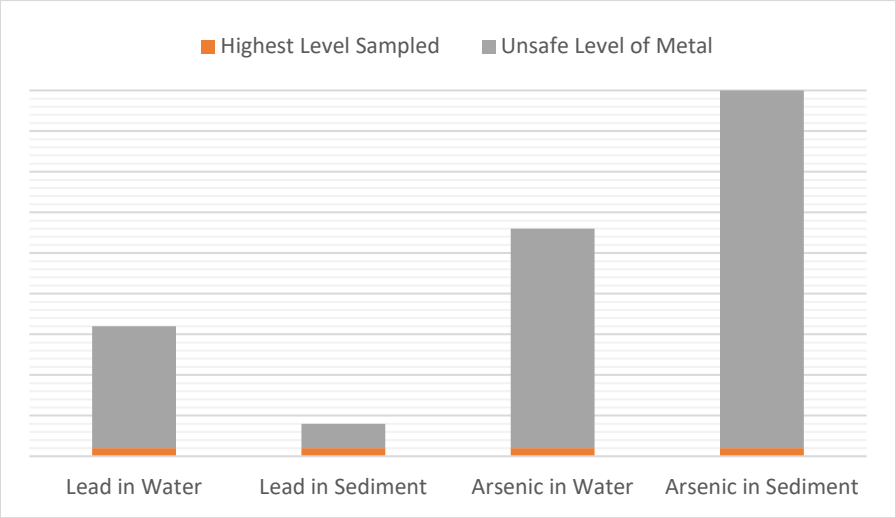


Figure 2: Highest levels of lead and arsenic found in water and sediment samples compared to EPA screening levels.

E. coli

In Colorado, as of 2016, almost all streams in the watershed met the state's *E. coli* standard with three exceptions. One segment has not been sampled and two segments of the Animas and Florida Rivers show elevated levels of E. coli. See Figure 3 on the next page.

In New Mexico, as of 2016, none of the 35.63 stream miles met the state's *E. coli* standard for recreation. In 2013-1014, water samples collected at four sites along the Animas River contained bacteria from humans and ruminants (which could include cows, sheep, deer and/or elk).

Actions You Can Take

Protect Personal Safety:

The data indicates that the river is safe for normal recreation, but always use common sense!

- Do not drink river water.
- Wash your hands after playing in the river and before eating.
- Wash your body after a day of playing in the river.
- Ensure that children don't ingest large amounts of river water or sediment.

Protect the River:

- Maintain your septic system as recommended.
- Manage livestock away from streams.
- Maintain or restore riverside vegetation to filter runoff.
- Pick up and dispose of your pet's waste.

Further Resources

http://sjbpublichealth.org/waterquality/
https://www.colorado.gov/pacific/cdphe/animas-river-water-quality-sampling-and-data

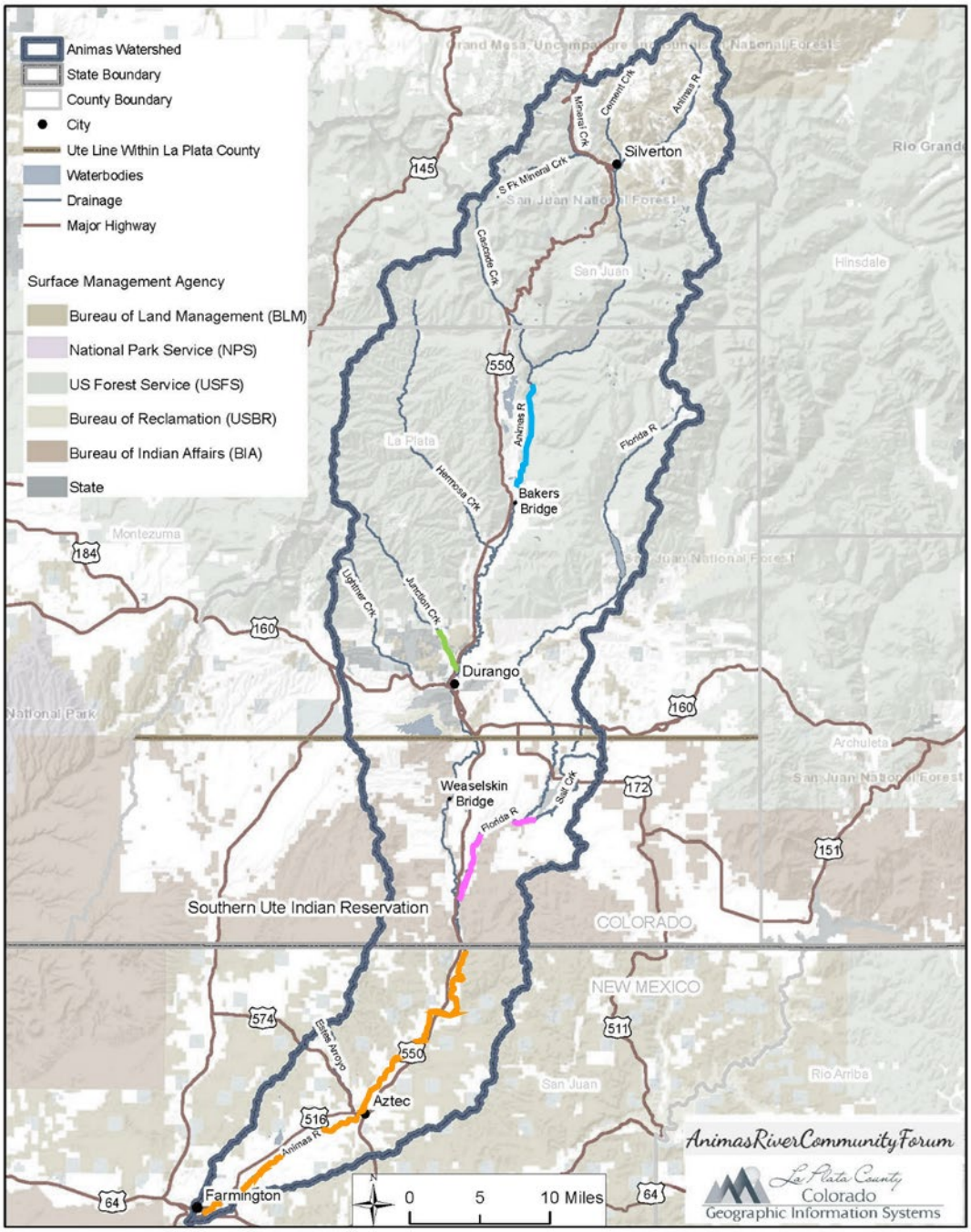


Figure 3: E. coli levels in the Animas River and tributaries.

- Meeting E. coli standard (126 cfu/100 ml)
- Not meeting E. coli standard (126 cfu/100 ml)
- More information needed
- Elevated levels of E. coli
- No data available.

3. Is food produced with my water safe to eat?

How is "safe" defined for crops and livestock?

Colorado and New Mexico consider water safe for livestock to drink and for irrigating crops if it meets standards for levels of specific pollutants, including certain metals, nitrate/nitrite (forms of nitrogen), and 3 radionuclides (radioactive materials).

How is "safe" defined for fish consumption?

Fish is another food that many people enjoy from the waters in our watershed. Fish caught in polluted waters sometimes can be risky to eat, because some pollutants may "bio accumulate," or build up to higher concentrations in the fishes' bodies.

In order to protect people from these health risks, Colorado and New Mexico have identified standards for pollutants that have the potential to harm the health of people who eat fish caught in rivers and lakes. These standards address certain metals, including mercury, and organic compound, such as PCBs and DDT. The standards set by the states are based on studies of the likely health impacts if a person consumes 17.5 grams of fish per day (picture about 1/6 of a drained can of tuna).

What do the data say?

Irrigation and Livestock

As of 2016, Colorado and New Mexico identify all stream segments and lakes used for irrigation of crops and for watering of livestock as meeting the standards set to protect those uses.

Fish Ingestion

As of 2016, the only water body in the Animas River watershed that is known to support fish, but that does not meet the fish ingestion standards is Farmington Lake in New Mexico (see Figure 4). The pollutants that exceed the safe consumption standards in fish from Farmington Lake are mercury and PCB (polychlorinated biphenyl).

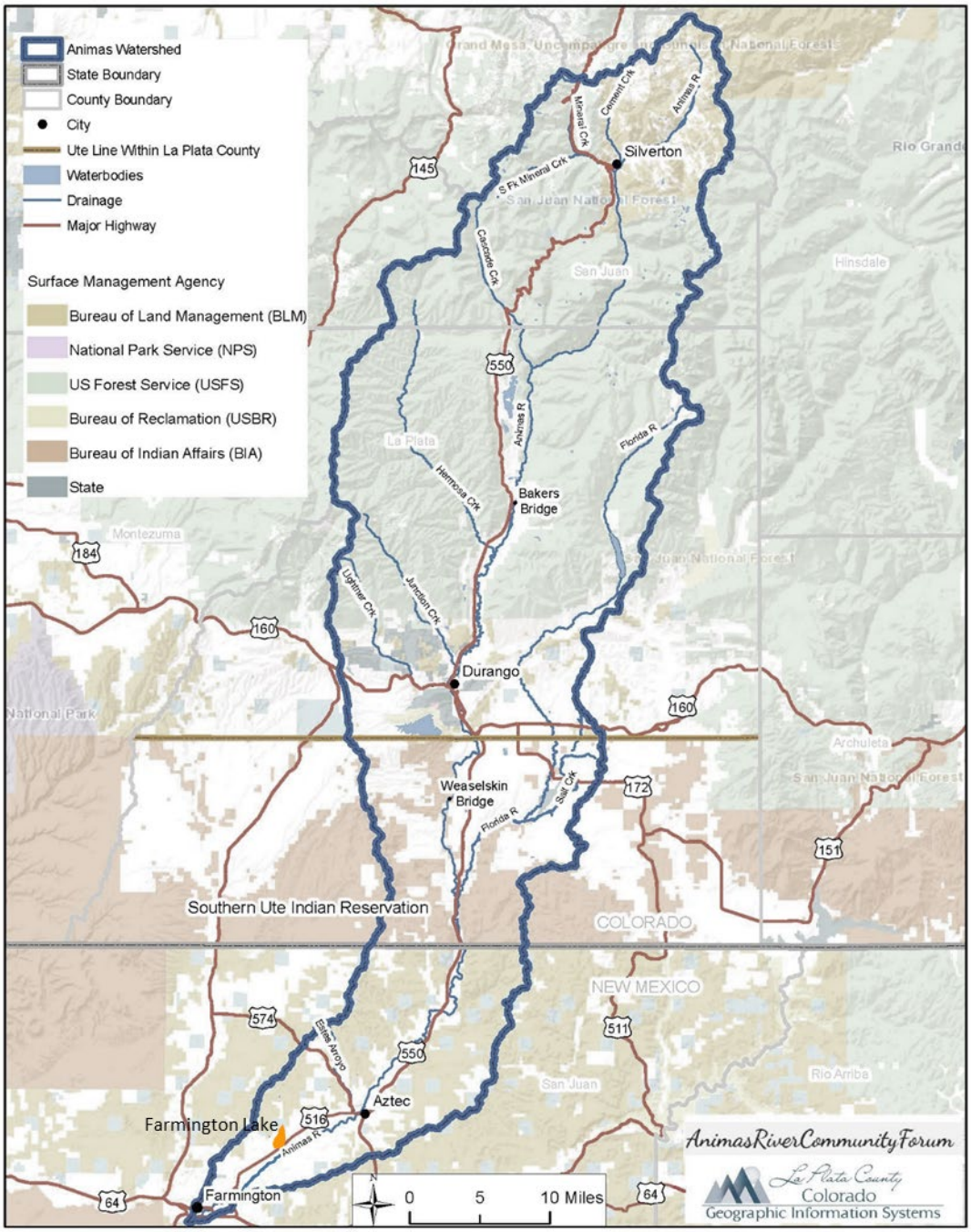


Figure 4: Animas River and tributaries meeting and not meeting fish consumption standards.

Meeting standards for fish consumption

Not meeting standards for fish consumption

Actions You Can Take

Protect personal safety:

- Use common sense: wash all garden and farm produce with treated water.
- Limit consumption of fish from Farmington Lake. New Mexico identifies the maximum number of meals (defined as 8 raw ounces of fish) per month that you can safely consume: 3 meals of channel catfish (10-14 inch), 4 meals of largemouth bass (10-14 inch), 1 meal of carp (18-22inch) and 1/2 of meal of carp (22-26 inches) (https://www.env.nm.gov/swqb/advisories/)

Protect the River:

- Dispose of household chemicals at periodic county collection events.
- Minimize use of pesticides, and be sure to apply them as directed.
- Support renewable energy and reduce emissions. Fossil fuels are one source of mercury pollution.

Further Resources

2016 NM Fish Consumption Advisories: https://www.env.nm.gov/swqb/advisories/

San Juan Basin Public Health Water Quality Services: http://sjbpublichealth.org/waterquality/

2015 and 2016 Animas River Fish Tissue Sampling and Data: https://www.colorado.gov/pacific/cdphe/animas-river-water-quality-sampling-and-data

Colorado Regulation 31: https://www.colorado.gov/pacific/sites/default/files/31_2018%2801%29.pdf

Colorado Integrated Water Quality Monitoring and Assessment Report 2016: https://www.colorado.gov/pacific/sites/default/files/2016-Integrated-Report_FINAL.pdf

2016-2018 State of New Mexico Clean Water Act (CWA) §303(d)/§305(b) Integrated Report and List: https://www.env.nm.gov/swqb/303d-305b/index.html

4. Is the river safe for fish and wildlife?

How is "safe" defined?

Safe means that all wildlife that lives in or uses the Animas River and its tributaries is not harmed when using the water. Most birds and mammals drink river water. Some wildlife, like macroinvertebrates, fish, beaver, otter or American dipper also depend upon the river and wetland environments for their homes and food. Macroinvertebrates are organisms that live on the river bottom, in the rocks, sand and sediment and are big enough to see with the naked eye. As such, contaminants that settle in or on the river bottom will affect the health and condition of the macroinvertebrate community, as well as fish, birds and other species that depend upon these organisms for food.

Animals and plants that live all or part of their life **in** streams and lakes are the most sensitive to water quality, and therefore require the most restrictive or "safe" criteria of all the uses protected by water quality standards. In order to protect the animals and plants in streams and lakes, Colorado and New Mexico identify safe levels of physical habitat conditions, such as **dissolved oxygen**, **temperature** and **sedimentation**, as well as a wide range of pollutants including **metals**, and **organic chemicals**.

In addition to safe habitat conditions and levels of pollutants, the states use **benthic macroinvertebrates (BMI)** as an indicator of the health and safety of a stream for aquatic life.

BMI are small animals with no backbones that live on the bottom of rivers and lakes (see pictures). BMI make great indicators of water quality and stream health because they:

- are key to the aquatic and riverside food chain,
- have a wide range of eating habits, life spans, and tolerances to pollution,
- cannot swim away when disaster strikes, or seek refuge in other streams.

Colorado uses a measure called the Multi-Metric Index (MMI) to gage how much the BMI in a stream or lake may have changed because of stress to the habitat or water quality. MMI helps evaluate whether a water body is safe for aquatic life. A MMI score below the state identified safe level for that stream or lake is evidence that the site may be impaired for aquatic life.

What does the data tell us?

Colorado and New Mexico consider almost all streams and reservoirs in the Animas Watershed capable of supporting aquatic life. However, in Colorado, there is one stream segment not capable of supporting aquatic life due to unsafe levels of metals and pH from a combination of natural geology and historic mining practices. There are five stream segments where their capability of supporting aquatic life is not known. Combined, these six segments total 110 stream miles (see Figure 5). In New Mexico, all 36 stream miles do not meet safe criteria for aquatic life because they have excess nutrient levels (nitrogen and or phosphorus), temperature and turbidity. The sources of this contamination include surrounding land uses and the natural geology of the lower watershed.

In 2014 and 2015, the benthic macroinvertebrate MMI was calculated for 15 sites in the Animas Watershed in Colorado. The 2015 MMI measurements show that the benthic macroinvertebrate community would be considered impaired at 11 sites on the Animas River and 1 site on Elk Creek (see Figure 6).

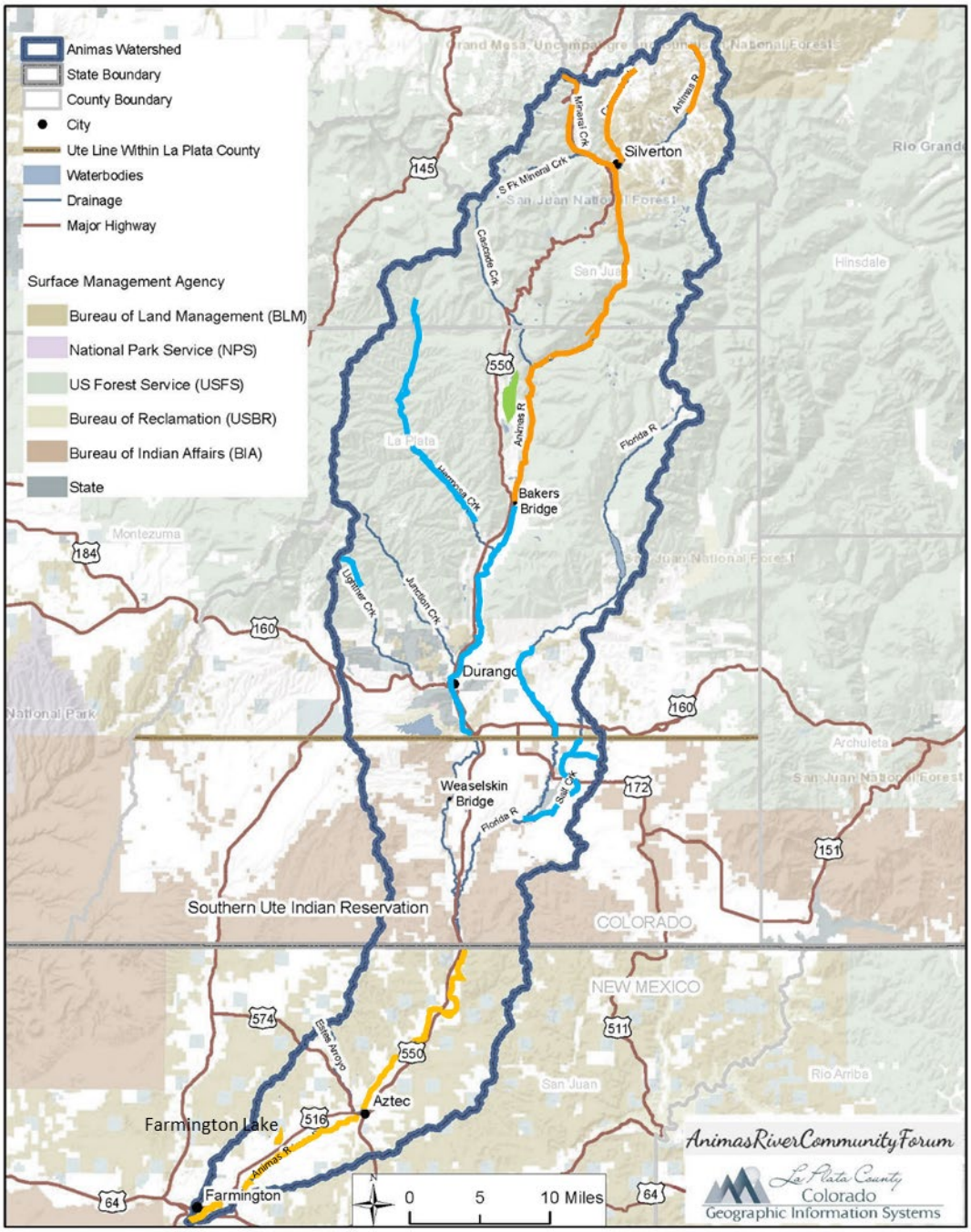


Figure 5: Aquatic life standards in the Animas River and tributaries.

- Meeting standards to support Aquatic Life
- Not meeting standards to support Aquatic Life
- More information needed
- No data available

Actions You Can Take

Protect the River:

- Maintain or restore riverside plants to shade the channel, avoid erosion, and filter runoff.
- Maintain your septic system as recommended to avoid bacterial pollution
- Manage your livestock away from streams.
- Dispose of household chemicals and motor oil properly.
- Wash your car at the carwash to minimize runoff into streams.
- Minimize the amount of fertilizer applied to your lawn.
- Follow instructions very carefully if you need to apply pesticides.
- Use water conservation practices.
- Dispose of all medicines at local collection points. Never flush medicine down the toilet or sink.

Further Resources

CO Regulation 31: The Basic Standards and Methodologies for Surface Water
https://www.colorado.gov/pacific/cdphe/water-quality-control-commission-regulations

Regulation 34: Classifications and Numeric Standards for San Juan River and Dolores River Basins
https://www.colorado.gov/pacific/cdphe/water-quality-control-commission-regulations

CO Regulation 93: Colorado's Section 303(d) List of Impaired Waters and Monitoring and Evaluation List
https://www.colorado.gov/pacific/cdphe/water-quality-control-commission-regulations

2016 Integrated Water Quality Monitoring and Assessment Report. Includes Colorado's Section 305(b) Report. https://www.colorado.gov/pacific/cdphe/wqcc-reports-and-plans

New Mexico's Water Quality Standards as approved by the New Mexico's Water Quality Control Commission (WQCC) (effective March 2, 2107) and EPA (effective August 11, 2017).
https://www.env.nm.gov/surface-water-quality/wqs/

2016-2018 State of New Mexico Clean Water Act (CWA) §303(d)/§305(b) Integrated Report and List
https://www.env.nm.gov/swqb/303d-305b/2016-2018/index.html

5. How is the overall function of the Animas River system?

How can you tell if the river is "healthy"?

If the Animas River went to the doctor for a check-up, what would the Doc measure to gage how healthy she is and how well she can recover from injury? Some indicators the doctor might measure include the pattern of flows in the rivers, her channel stability, her ability to escape her banks when flows are high, how much and what types of aquatic life can she can support, how diverse and intact is her riparian zone? Just as with human weight, blood pressure, and temperature, each indicator below tells a part of the story of overall river health and resilience.

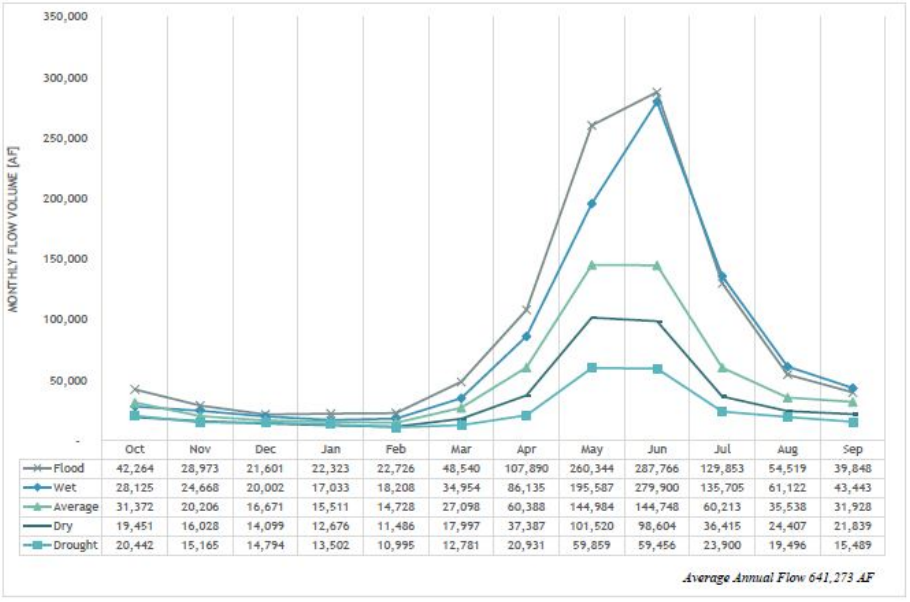
What does the data tell us?

How are the Flows?

The pattern of high and low flows in a river is called the flow regime. Similar to the blood flow in a person, the flow regime of a river determines the condition and function of that river. High flows move rocks and sediments around to form and clean the variety of habitats for fish and bugs.

Flood flows carry and deposit sediment and nutrients on the floodplain, preparing the way for riparian plants to lay down seed and mature into older stands (see photo) Low flows sustain riparian and aquatic life through the heat of summer and the cold of winter. When it comes to water quality, higher flows dilute pollutants, while low flows concentrate them.

While dams built to store water have significantly changed the flow regime on many rivers around the world, the Animas River is not dammed, and the overall pattern of her seasonal flow regime has changed little, as illustrated by the average monthly flows taken over a 62 year period in Figure 8 below. However, the actual timing of when the river increases and decreases throughout the year is highly variable, and will vary year to year as illustrated in Figure 9 below.



	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Flood	42,264	28,973	21,601	22,323	22,726	48,540	107,890	260,344	287,766	129,853	54,519	39,848
Wet	28,125	24,668	20,002	17,033	18,208	34,954	86,135	195,587	279,900	135,705	61,122	43,443
Average	31,372	20,206	16,671	15,511	14,728	27,098	60,388	144,984	144,748	60,213	35,538	31,928
Dry	19,451	16,028	14,099	12,676	11,486	17,997	37,387	101,520	98,604	36,415	24,407	21,839
Drought	20,442	15,165	14,794	13,502	10,995	12,781	20,931	59,859	59,456	23,900	19,496	15,489

Figure 8: Flood, Wet, Average, Dry and Drought Flows on the Animas River (Average Monthly Flows in the Animas River Near Cedar Hill, NM (just north of State Line) (wy 1950 to 2012) (SWBR 2015)

Typically the highest flows of the year on the Animas occur in the spring driven by melting snow, and the lowest flows of the year typically occur between November and February. While high flows driven by

snowmelt have typically occurred in May and June, flow data in recent are demonstrating peak snowmelt flows occurring earlier in the year and shorter in duration and magnitude. Monsoon season storms and late-season tropical storms can also cause high flows on the Animas river and cause flooding. Notice in Figure 9 below that in 2013 the Animas River had peak flows from three different causes of runoff: Snowmelt, monsoon storms, and tropical storms.

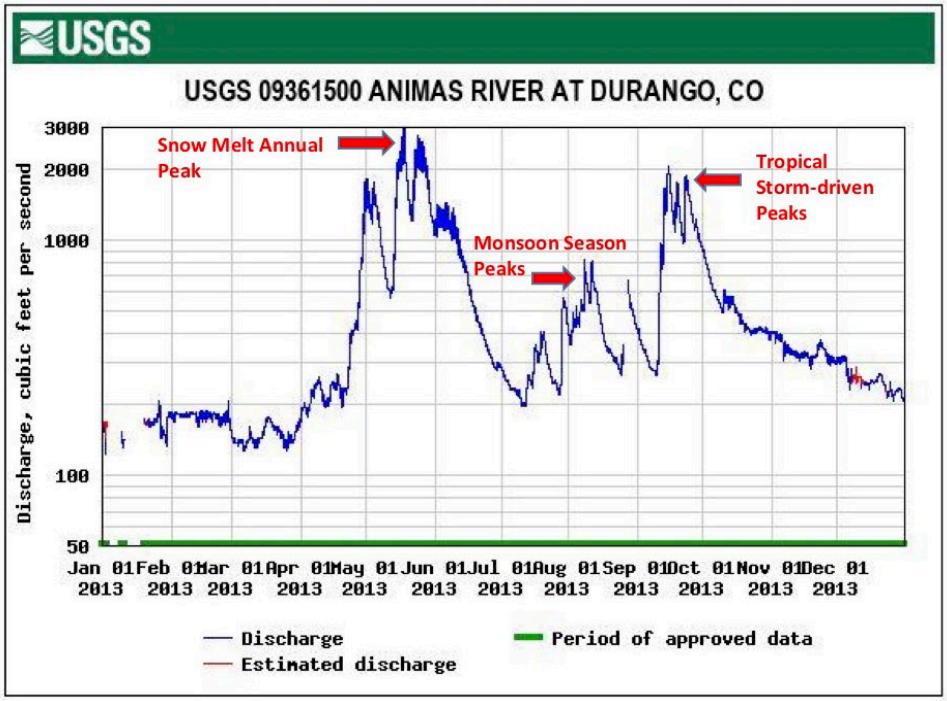


Figure 8: Discharge of the Animas River at Durango, Colorado in 2013, USGS.

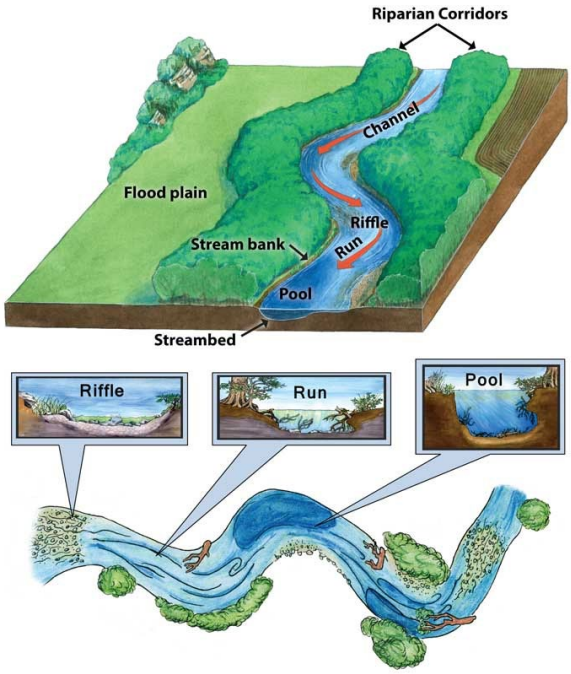
Figure 7: In late May 2005, the Animas River flooded its banks, reaching a flow of 8500 cubic feet per second.

Did you know that the largest flood recorded on the Animas River occurred on October 5, 1911 as the result of a tropical storm? During that storm event, the river peaked at over 25,000 cfs.

How are the Channel and riverside vegetation?

Figure 9 illustrates components of a healthy river. Whenever you walk, drive or float along a section of the Animas River, study the channel, banks and bottom and judge for yourself how healthy the channel and riverside vegetation are.

- Can the river water escape the banks at higher flows, or hardly ever to deposit sediment and nutrients on the floodplain?
- Are there a variety of different habitats for fish and bugs within the channel (deep pools, shallow riffles, overhanging banks, logs, etc.?)
- Are the gravels and cobbles in the bottom clean enough to provide spaces for bugs and baby fish, or are they clogged with silt?
- Is there a dense over story and understory of trees, shrubs and plants to hold the river banks and provide cover for wildlife?
- Are the plants that you see mostly native to the valley or are they non-native and invasive?



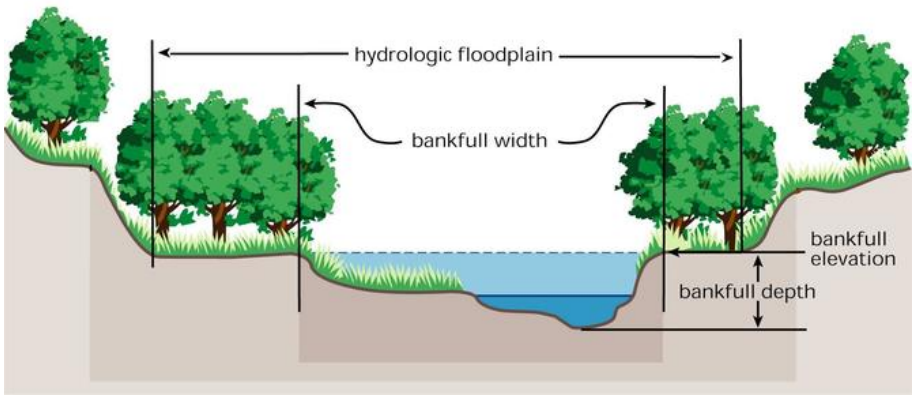


Figure 9:

How are the fish doing?

Fish require river ecosystems for their existence. Fish communities use the variety of underwater habitats that the river creates and maintains. Fish are good indicators of overall river condition because they depend on these habitats to complete every stage of their life cycle, from egg to spawning adult, and because they depend on aquatic plant life, macroinvertebrates, and/or smaller fish for their food.

Biologists assess the health of a population of fish by measuring the number of fish in each age class. As with humans, a healthy fish population needs young, adult and old fish. A population with many old fish and few young or adult fish may not be able to grow or even maintain its size or genetic diversity.

Biologists assess the health of fish habitat by the community of fish species it can support. The total number of individuals and the total number of species indicate a food web that provides for all species. Changes in factors including flow, water quality, sedimentation and macroinvertebrate production affect these indictors. The availability of habitat features such as pools, riffles, and cover are key to maintaining healthy populations and communities of fish.

Fish communities change upstream to downstream because of changes in elevation, temperature, flow, water quality, precipitation, climate, geology and other factors that create their habitat. The Animas River begins at high elevation, in cold, small headwater streams. Flow increases downstream as the river drops to lower, warmer elevations, draining more area. Like many rivers in Colorado, cold water species like trout dominate the Animas River in the higher elevations. Downstream of Durango a transition occurs where trout diminish and warm water fish begin to appear and then dominate, due to warming water temperatures.

Native, introduced, stocked and invasive fish species all exist in the Animas River. **Native fish** evolved in the Animas River and other tributaries of the San Juan River. The native cold water fish in the Animas are the Colorado River Cutthroat Trout. Warmer water fish include mottled sculpin, speckled dace, roundtail chub, bluehead sucker and flannel mouth sucker. The Animas River has some of the few remaining Colorado River Cutthroat Trout populations, in Hermosa Creek, the Bear Creek tributary to Mineral Creek, the Bear Creek tributary to the Animas, and in Grasshopper Creek.

Introduced species are those that people have placed into the river. Some species were introduced long ago and persist without additional stocking. This is true for Animas River brook and brown trout populations. Colorado Parks and Wildlife and Southern Ute fisheries managers routinely stock rainbow trout of different sizes into reaches of the Animas River in order to maintain and enhance fishing opportunities in the watershed. **Invasive fish** are non-natives that get into the river but are undesirable because they tend to out-compete native or desired fish for habitat and food. Many, such as green sunfish and carp, end up in the river when people dump bait or unwanted pets into a river.

Fishery Data by Segment

Segment 1: Animas River Headwaters (Figure 10)

Historically, headwaters of the Animas River had Colorado Cutthroat Trout in streams not influenced by the highly mineralized caldera geology. Many streams located in the caldera are naturally devoid of fish due to low pH (acid) and high metals. In other streams, steep gradients limit fish habitat. Anecdotal evidence suggests that historic mining activities contributed to loss of the small and isolated native fishery communities in these headwaters. Brook and rainbow trout were introduced to provide food initially. CPW ceased stocking rainbow trout in this segment in the mid 1990's. A healthy population of brook trout exists in the reach upstream of Cement Creek (with a few rainbow and cutthroat trout

individuals as well). The length frequency distribution data shows a range of fish sizes/ages, from young of year to older, egg laying adults.

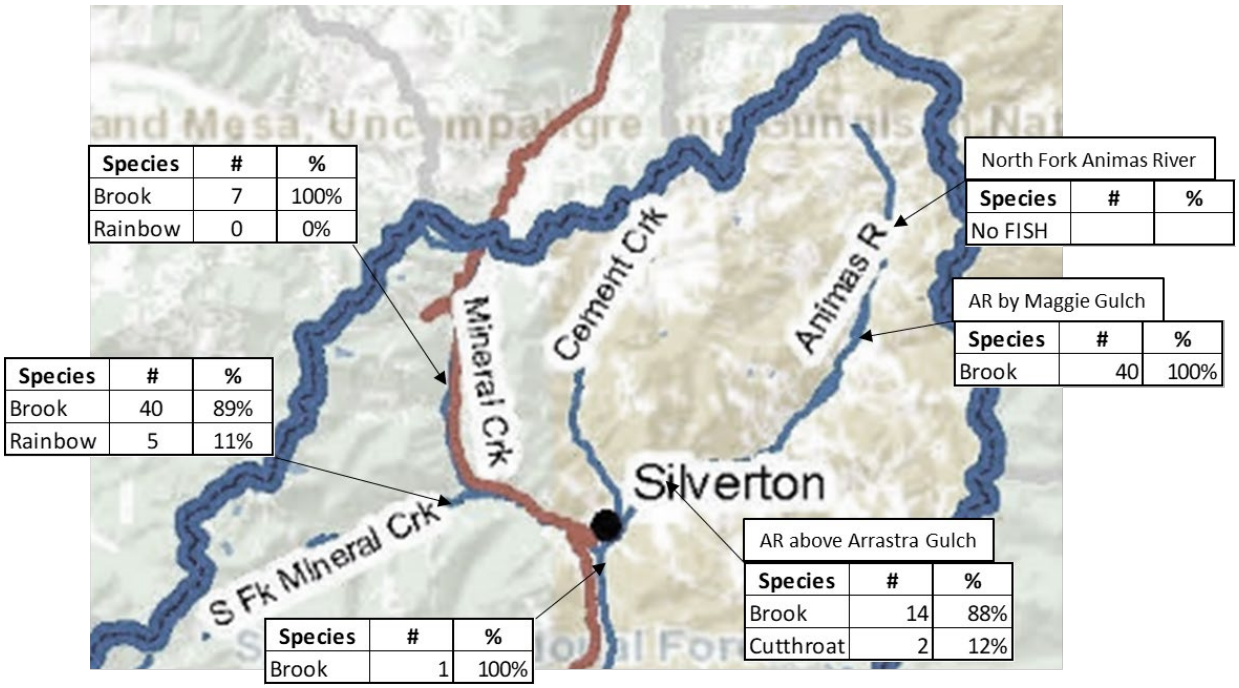


Figure 10: Fish Presence/Absence Sampling Data collected by Colorado Parks and Wildlife, September/October 2016 in Segment 1-the Animas River headwaters.

Segment 2: Animas River Canyon (Figure 11)

The Animas Canyon is difficult to access, so there are few sampling stations in this segment. In many healthy rivers, the fishery increases in individuals and species with as sampling moves downstream. This IS not the case for this segment of the Animas River. The fishery here supports very few individuals, primarily brook trout, although brown trout and rainbow trout have been collected. Low numbers of individuals and species, as well as a community comprised solely of adult fish indicate an unhealthy environment for fish in most of the Canyon. Cutthroat and rainbow trout are the most sensitive to the elevated metals present in this reach, then brown and brook trout.

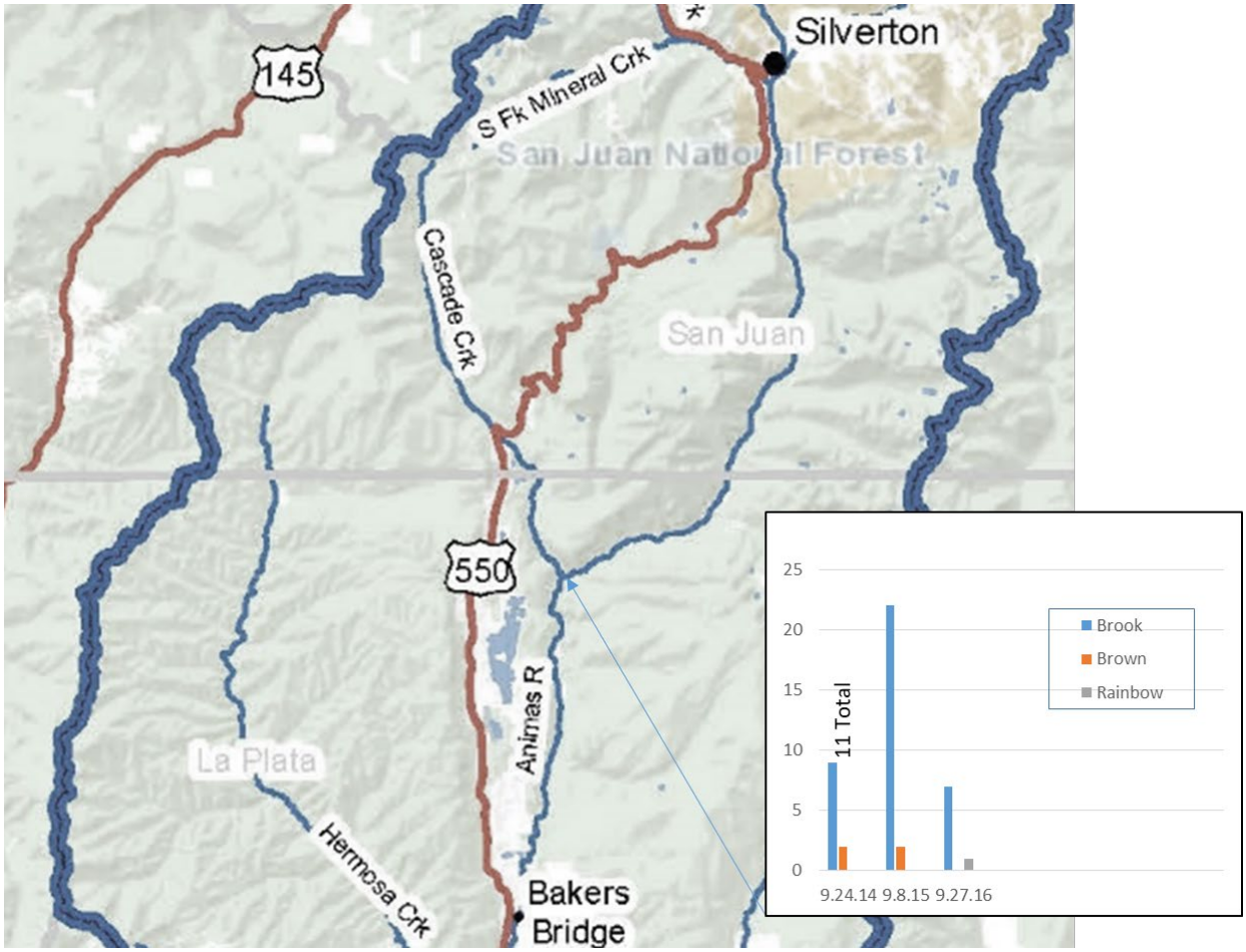
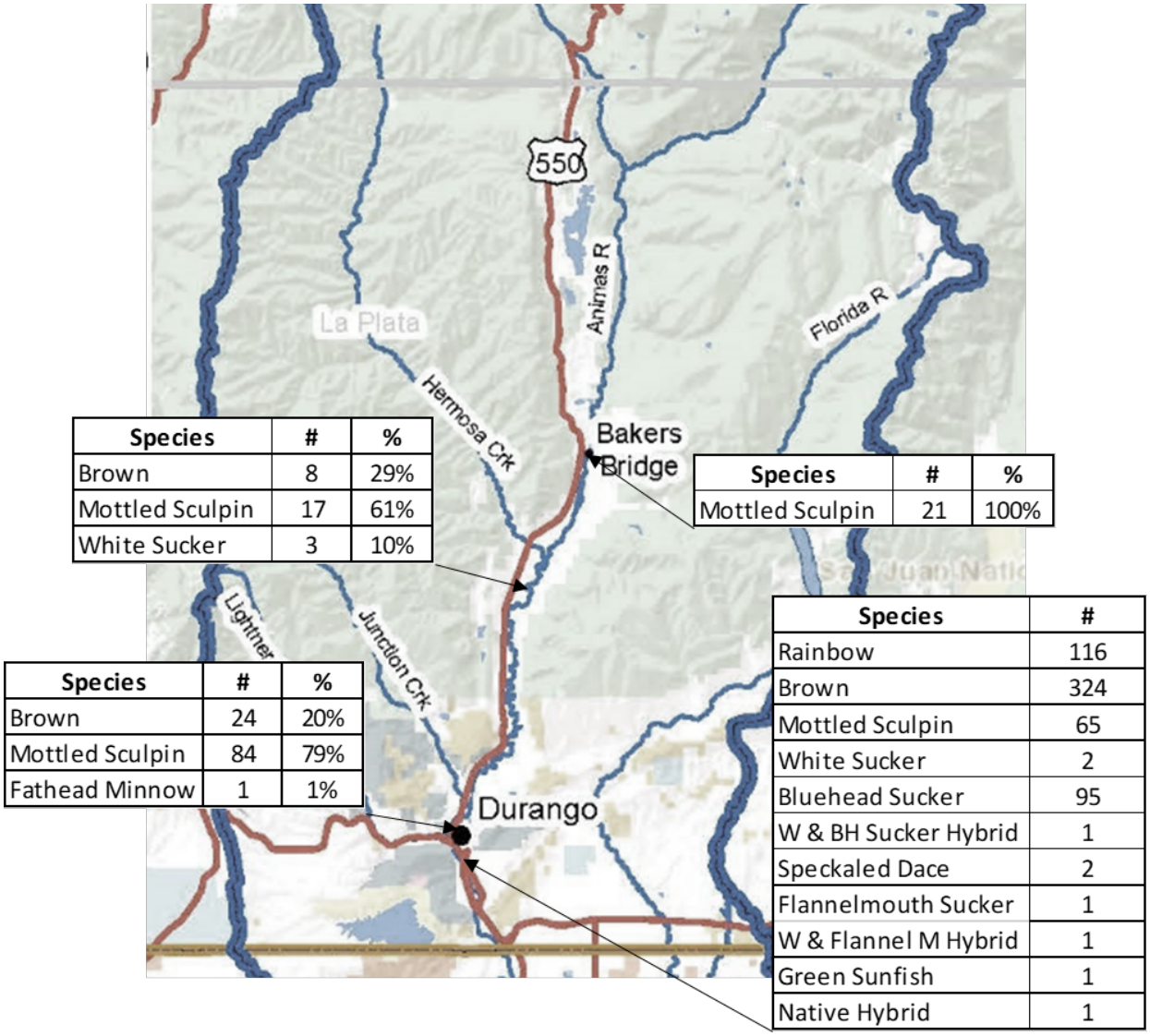


Figure 11. Fish Presence/Absence Sampling Data at Segment 2-Teft Spur, Colorado Parks And Wildlife, September 2014, 15 and 16.

Segment 3: Animas River Valley and Town (Figure 12)

Through this segment the Animas transitions from a steep canyon to a flat valley, then again increases its gradient and gradually shifts from a cold to warm water fishery. The number of individuals and species increases as sampling moves downstream, indicating a health supporting system. Sampling data shows a mix of native, introduced and invasive fish, both cold and warm water species. Overall, Segment 3 supports a healthy fishery, in spite of the increased human impacts through this reach.

South of Highway 160 the Animas River supports a CPW-designated Gold Medal Trout fishery. To qualify as a Gold Medal water, the river must support a minimum of twelve (12) “quality trout” 14 inches or larger per acre. It also must be able to produce 60 pounds of standing stock or biomass per acre, meaning the amount of living organisms in the ecosystem including fish, plant life and micro invertebrates, and the area must be accessible to the public. The rainbow trout population in this segment is stocked. As the river picks up gradient through Durango, and south of town, the brown trout population increases. As the Animas transitions from a cold to warm water system, the numbers of trout decline, as warm water fish increase. Indeed, we see mottled sculpin, speckled dace, white, bluehead and flannel mouth suckers all increase downstream. Some invasive green sunfish and fathead minnows also occur.



Species	#	%
Brown	8	29%
Mottled Sculpin	17	61%
White Sucker	3	10%

Species	#	%
Mottled Sculpin	21	100%

Species	#	%
Brown	24	20%
Mottled Sculpin	84	79%
Fathead Minnow	1	1%

Species	#
Rainbow	116
Brown	324
Mottled Sculpin	65
White Sucker	2
Bluehead Sucker	95
W & BH Sucker Hybrid	1
Speckaled Dace	2
Flannelmouth Sucker	1
W & Flannel M Hybrid	1
Green Sunfish	1
Native Hybrid	1

Figure 12. Fish Sampling Data at Segment 3 of the Animas River. Colorado Parks and Wildlife, July/September 2016.

Segment 4: Animas River Southern Ute Tribal Waters (Figure 13)

A dramatic decrease in fish numbers and species occurs in this stretch relative to the section above. The low numbers of individuals is likely a reflection of low flows in this stretch. This section has more withdraws than any upper section which helps dilute pollution and provides habitat. Some years entire sections are bone dry. However, the mottled sculpin and speckled dace have adapted well to these conditions.

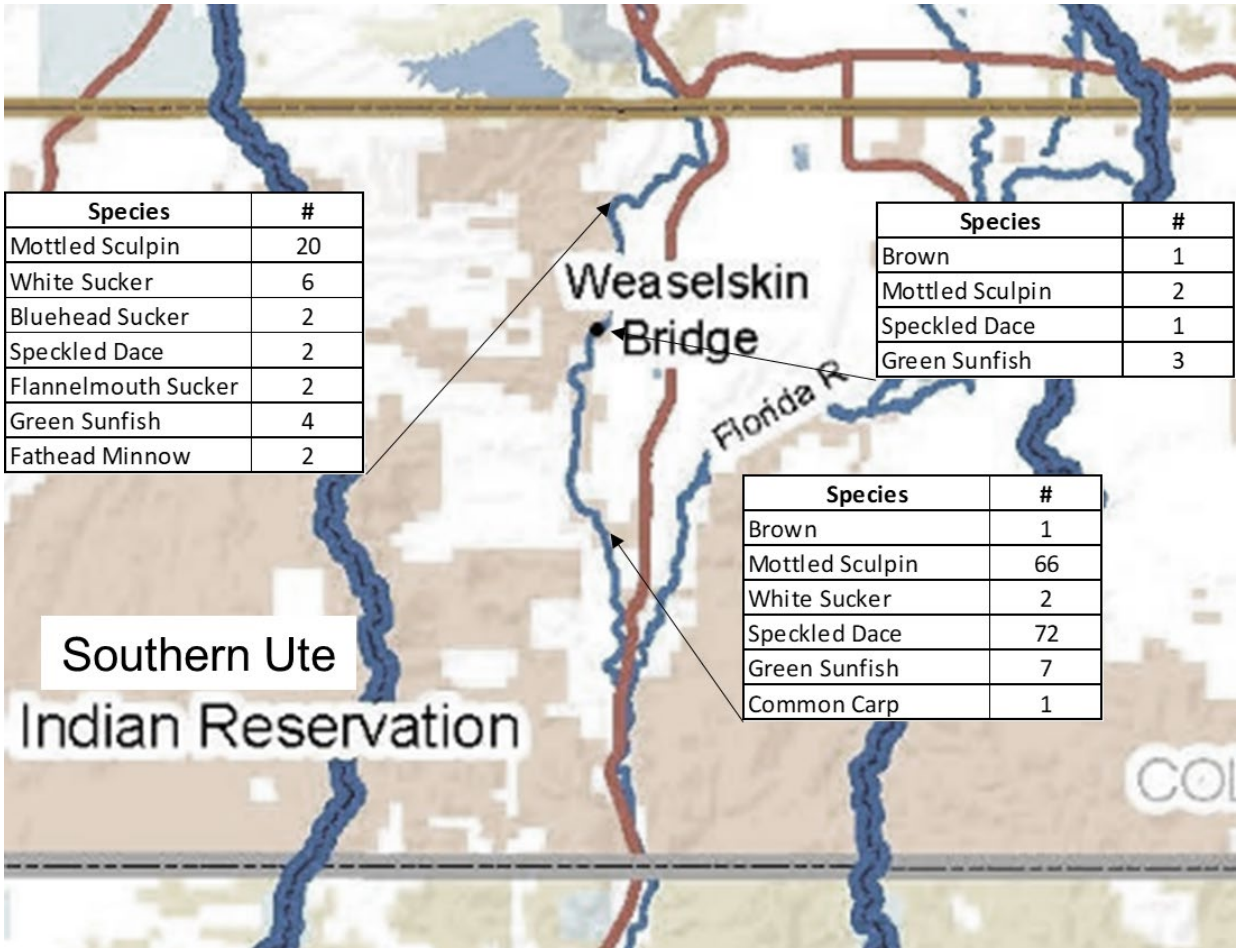


Figure 13. Fish Sampling Data at Segment 4 of the Animas River Colorado Parks and Wildlife, July 2016.

Segment 5: Animas River in New Mexico

This edition of Our Animas does not include fishery data for New Mexico.

How are the birds and wildlife that depend on the river?

Most birds and wildlife species utilize the river not just for drinking water, but also for the food and habitat it provides along the river corridor.

You might be surprised to know that the following animals have called the Animas and its tributaries home (and may still!):

- Black Swift
- Peregrine Falcon
- River Otter
- Northern Leopard Frog
- Western Yellow Billed Cuckoo
- Southwest Willow Flycatcher
- NM Meadow Jumping Mouse.

Many birds prefer to nest in dense thickets near the river or its tributaries. At least 210 bird species use the Animas Watershed on either a year round, seasonal or migratory basis (Ortega 2017). Many of these use wetland or riparian habitat at some time during their lives. Annual bird surveys tracking 175 of these species around North America indicate that 46 species (or 26%) have significantly declined since 1966.

Some wildlife, like the beaver, otter and the American dipper spend a large part of their lives in the river's waters, not just on its banks. American dippers are amazing birds, because although they are songbirds, their behavior is more like a duck, as they dive underwater, float down small rapids and sing a lovely and bubbling song.

Dippers spend their lives along river corridors, and are commonly seen during the winter and spring in the Animas River in Durango. Dippers do not migrate south the way most other songbirds do. Instead they migrate uphill, moving from Durango to spend summer months living in higher mountain streams.

Dippers forage for invertebrates and small fish by walking, swimming, and diving in the water, and therefore they have a higher risk of accumulating toxins from river sediments than other bird species. For this reason American Dippers are great indicators of a healthy mountain water system.

Dippers prefer to build their nests close to moving water, usually on a rock cliff or under a bridge. In 2016 a group of bird watchers began monitoring Dipper nests on the Animas River and tributaries.

Their Dipper surveys in 2016 and 2017 revealed that the bird's populations are healthy on the Animas River in Durango and on tributary streams, but are non-existent or impaired upstream from town.

Figure 14:

Figure 15:

Actions You Can Take to Ensure a Healthy Animas River System:

- Restore and protect native riverside plant life.
- Maintain or restore riverside vegetation to filter runoff and avoid erosion.
- Avoid building close to the river: this will save you money and worry as the river continues its natural movements.
- Remove and control invasive plants on your land (e.g. Russian olive, Siberian elm, tamarisk, thistles, Russian knapweed, etc.)
- Join The Dipper Project and other citizen science efforts.
- Don't flush nemo down toilet or release your pet frogs, toads or turtles outside.
- Bury your bait: do not dump it in any river or pond or lake.

Further Resources/Who's monitoring?

- Colorado Breeding Bird Atlas
- Colorado Parks and Wildlife
- Colorado Water Quality Control Division
- EPA
- Fort Lewis College
- Mountain Studies Institute
- USGS Stream Gages
- The Dipper Project

Question 6: How is the Animas River important to our quality of life?

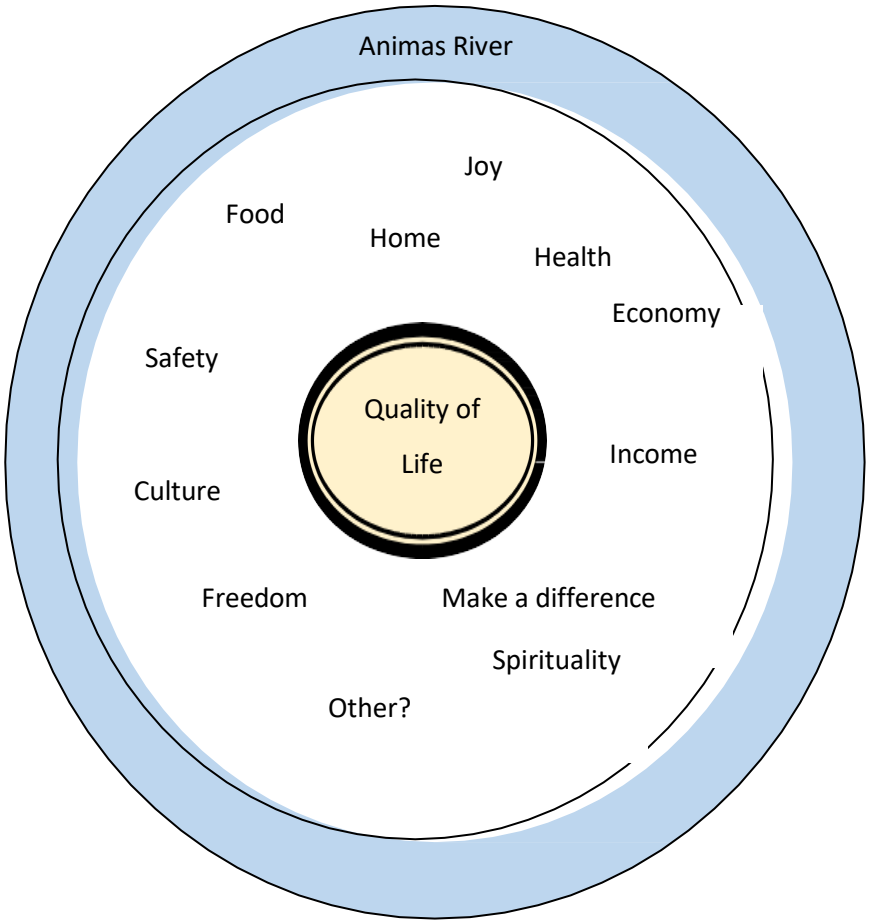
The Animas River plays a role in quality of life for residents and visitors to the watershed. “Quality of life” describes the health, comfort, and happiness experienced by individuals and communities of people. Simply put, quality of life is how good or bad we perceive our life to be.

There is no one indicator for quality of life: people perceive and value quality of life differently. However, the fact that people express concern for how safe the water is for drinking, playing, and for wildlife suggests some of the ways that the river supports quality of life.

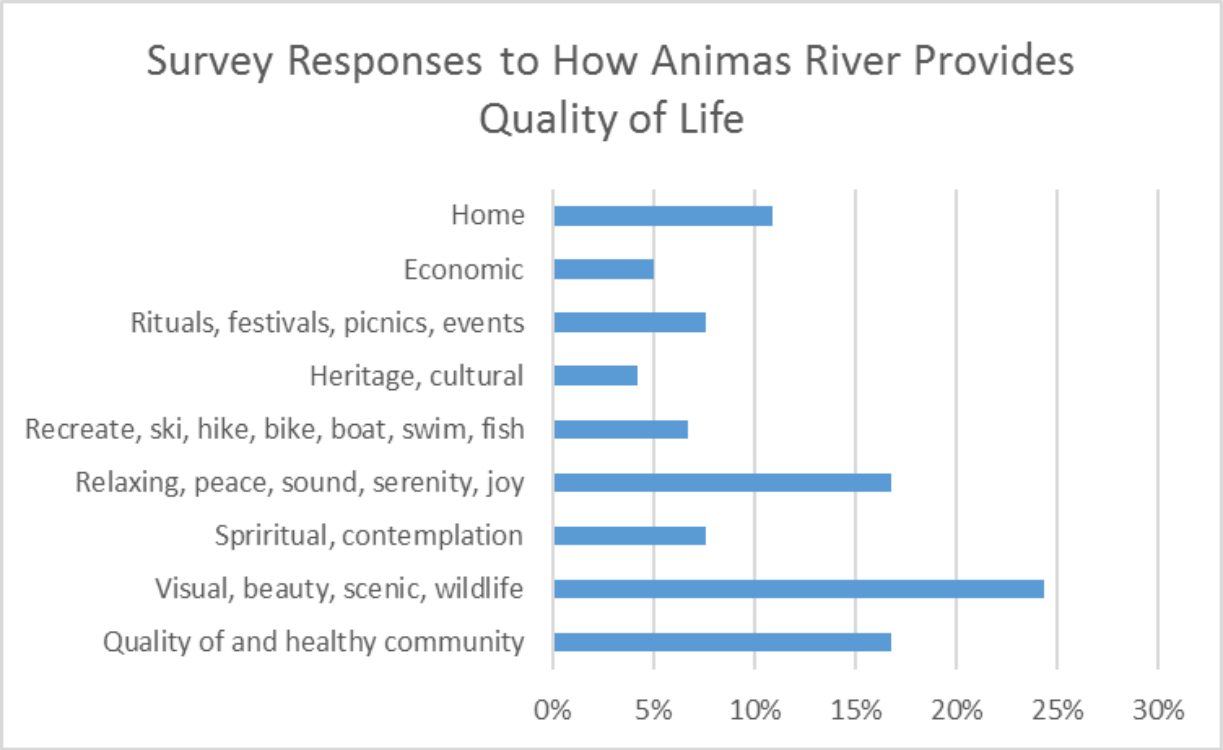
How does the river and watershed influence the quality of your food, home, income and health?

Does the river influence your values, freedom, spirituality and/or desire to make a difference?

Our relationship with the Animas is dynamic and collective, as well as personal. Quality of life is unique to each individual. In what ways is the river important to your quality of life?



Here is what others have shared about how the Animas River supports quality of life:



Monitoring Gaps Analysis Survey Report, Animas River Community Forum July 2016 Survey Report

Here are some of the things community members we surveyed said that describe the importance of the Animas River to their lives:

The Animas River is a “source of peace and joy”

“The Animas is a big reason I chose to make Durango my home”

The Animas provides a “place to relax and for contemplation”

The Animas is “energizing and provides aesthetic enjoyment”

The Animas River is a “vital part of my heritage as a Native American”

The Animas River is where we have “family time”

The Animas River is “pretty and draws people – tourism”

I appreciate the Animas river “for its beauty, the environment, and the scenic river trail.”

The Animas River is part of my “lifestyle.”

Question 7: What is impacting the natural system?

Natural events and human activities have a range of impacts on the Animas River system. Examples of impacts include use by animals and people; seasonal events such as snow, rain, heat and cold; and less frequent events such as fire, flood and drought. Resilient river systems can withstand or bounce back from significant disturbance. Some natural "disasters," such as fire and flood, are important triggering events for some species to flourish. For example, cottonwood trees depend on high, overbank flows (aka floods) to deposit sand and gravel where their seeds can establish and survive. The changing climate in the Southwest is altering the frequency, duration, amount and timing of rain and snow. These changes influence the risk of fires and floods, leading to longer term, as yet unknown, changes in the river system.

As we consider what may be impacting the Animas River, this report will focus on human activities, especially "nonpoint" sources that people can manage in order to maintain a healthy, resilient Animas River system. Whereas "point" sources of pollution (aka pipes that discharge to the river) require permits and are regulated, "nonpoint" sources of pollution are not regulated and so depend on the voluntary action of landowners to address pollutants reaching the river (figure x).

Runoff from agriculture, forestry and residential areas outside the cities are not regulated by a permit system. In these areas, keeping soil and pollutants from entering waterways depends on land managers to learn and use the best available knowledge and techniques ("Best Management Practices").

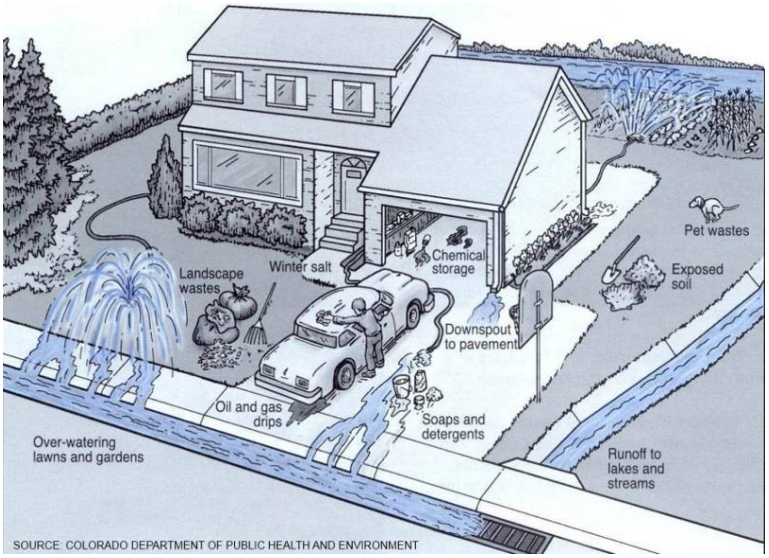


Figure 3 What you do at home matters to the river.


Is Pollution Regulated?
Yes: Point Source
• NPDES Permit
• WW Treatment plants
• Construction sites
• Factories
• Draining Mines
No: Non-point Source
• Roads
• Yards
• Fields
• Abandoned mine waste

The table below shows some common connections between what happens on the land and how that can influence our rivers and streams.

Table X: Activities and their potential effects and influences on the river system

Activity	Potential Side-effects	Potential Influences on River System
RESIDENTIAL Homes and lawns on river banks.	Chemical runoff: fertilizers, herbicides, insecticides, household products, de-icers. Pet waste runoff. Vegetation removed from stream banks. Floodplain wetlands drained or filled to create dry building sites. Riverbanks stabilized with rock or concrete to protect homes from channel movement.	Increase in pollutants such as sediment, nutrients, metals, salts and bacteria. Increase in stream temperature and algae growth. Decrease in clarity and dissolved oxygen. Altered flow regime from natural flows. Changes in plants, bugs, fish, birds and other wildlife.
Septic Systems	Human wastes, medicines and cleaning agents leaking into groundwater and/or surface water from malfunctioning septic systems.	Increase in pollutants such as detergents, nutrients, metals, drugs and bacteria. Increase in algae growth, decrease in dissolved oxygen. Changes in plants, bugs, fish, birds and other wildlife.
Waste Water Discharge	Permitted discharge of nutrients and bacteria, temperature. Discharge of Unregulated pollutants, such as medicines,	Increase in pollutants such as detergents, nutrients, metals, drugs and bacteria. Increase in algae growth, decrease in dissolved oxygen. Changes in plants, bugs, fish, birds and other wildlife.
CONSTRUCTION and Urban Areas Buildings and Roadways	Soil erosion and runoff to streams and rivers. Increase in impervious surface: pavement and roofs do not absorb runoff. Vegetation removed from stream banks. Floodplain wetlands drained or filled. Impervious parking lots, roads and roofs cause excessive runoff. Riverbanks stabilized with rock for protection from channel movement.	Increase in pollutants such as sediment, nutrients, metals, and organic chemicals. Increase in stream temperature and algae growth. Decrease in clarity and dissolved oxygen. Altered flow regime from natural flows. Changes in plants, bugs, fish, birds and other wildlife.
Culverts and Bridges	Sediment deposition in the channel.	Loss of channel stability due to channel widening. Changes in bug and fish communities.
RECREATION Parks, Sport Fields and Golf Courses	Chemical runoff: fertilizers, herbicides, insecticides, household products. Pet waste runoff. Impervious parking lots and roads cause excessive	Increase in pollutants such as sediment, nutrients, metals and bacteria. Increase in stream temperature and algae growth.

	runoff. Vegetation removed from stream banks. Floodplain wetlands drained or filled. Riverbanks stabilized with rock for protection from channel migration.	Decrease in clarity and dissolved oxygen Altered flow regime from natural flows. Changes in plants, bugs, fish, birds and other wildlife.
Activity	Potential Side-effects	Potential Influences on River System
Poorly planned and "rogue" trails.	Erosion and soil runoff to streams.	Sedimentation of channel bottom. Loss of channel stability due to channel widening. Changes in plants, bugs, fish, birds and other wildlife.
Illegal camping	Human waste, trash and/or soil runoff into surface water.	Increase in pollutants such as sediment, nutrients, metals, bacteria and medicines. Changes in plants, bugs, fish, birds and other wildlife.
AGRICULTURE Cultivated Fields	Soil erosion and runoff. Chemical runoff: pesticides, herbicides, insecticides. Vegetation removed from stream banks. Wetlands drained and/or filled.	Increase in pollutants such as sediment, nutrients, metals, pesticides, fertilizers and insecticides. Increase in stream temperature and algae growth Decrease in clarity and dissolved oxygen Changes in plants, bugs, fish, birds and other wildlife.
Livestock Pastures	Soil erosion and runoff. Manure runoff. Streamside vegetation may be suppressed or lost due to heavy livestock browsing. Chemical runoff: pesticides, herbicides, insecticides.	Increase in pollutants such as sediment, nutrients, pesticides, fertilizers. insecticides and bacteria. Increase in stream temperature and algae growth Decrease in clarity and dissolved oxygen. Changes in plants, bugs, fish, birds and other wildlife.
Irrigation diversions	Annual disturbance of channel bottom and/or banks.	Decreased flow to support fish and bugs downstream. Shallower, warmer river downstream. Increased channel instability- channel widening or down-cutting.
Industry Oil and gas well pads, roads and pipelines.	Erosion and soil runoff to streams. Chemical runoff: herbicides, oil, fracking chemicals, produced water. Riverbanks stabilized with rock for protection from channel migration.	Increase in pollutants such as sediment, metals, oil, industrial chemicals, dissolved solids. Sedimentation of channel bottom. Channel-bed down-cutting. Changes in plants, bugs, fish, birds and other wildlife.

Communities along the Animas River depend on the river's ability to absorb and mitigate our waste water and runoff. Often "the solution to pollution is dilution." In other words, more water in the river can reduce the impact of pollutants. However, as climate change continues to alter the amount of snow and rain falling on Southwest Colorado, the Animas River may not be able to absorb and process pollutants as well as it has in the past.

What human and/or natural influences on the Animas River have you observed?

How do you think they affect the river's ability to be resilient?

Actions to take

- Learn about and implement Best Management Practices wherever you can.
- Encourage others to do the same!
- See summary in "Question 10: What is my impact and what can I do?" page X or add your own.

Further Resources

Urban and Residential BMPs:

- Animas Valley
- Florida River Valley
- City of Durango
- City of Aztec
- City of Farmington
- CO Roadway BMPs

Agricultural BMPs:

- NRCS Conservation Planning - Colorado
- NRCS Conservation Planning - New Mexico

Recreation BMPs:

- Leave No Trace Principles

Disposal of Drugs and Hazardous Products:

- Disposal of Hazardous Products in Durango, Colorado
- Hazardous Products in Farmington, New Mexico: https://farmingtonnm.org/events/household-hazardous-waste-collection/
- Disposal of Prescription Drugs in Colorado
- Disposal of Prescription Drugs in New Mexico

Water Conservation:

- Colorado Waterwise
- New Mexico Water Use and Conservation

Question 9: Can the river sustain impacts?

Impacts to a river system can come in physical, biological or chemical forms. Impacts can have positive, neutral or negative effects on a system. Examples of physical impacts include drought, wildfire, floods, sedimentation, erosion, rip rap, dams, diversions, and dredging. Biological impacts can include bacterial pollution, algal blooms, invasive plants and animals, shifts in species composition, loss of native plant or animal populations and revegetation. Examples of chemical impacts include changes in the pH and/or the amount of chemicals such as metals, nutrients, salts, medicines, pesticides, and solvents in the river.

The river's ability to sustain negative impacts is often described as resiliency: the ability of the system to absorb impacts and still retain its basic form and functions. Resiliency depends upon both the condition of the river before the impact and on the magnitude, frequency and duration of the exposure to that impact. Plants, animals, people and the river have different exposure thresholds or limits before harm occurs from a given impact, such as elevated zinc in river water. Is the exposure to the impact greater than the system's ability to absorb it? If so harm will occur.

People often hope to maintain resiliency in the face of various, necessary impacts, such as discharge of waste water effluent into the river. Maintaining resiliency while continuing these impacts depends on finding ways to minimize the risk that the impacts pose to the river system.

Exposure

Magnitude

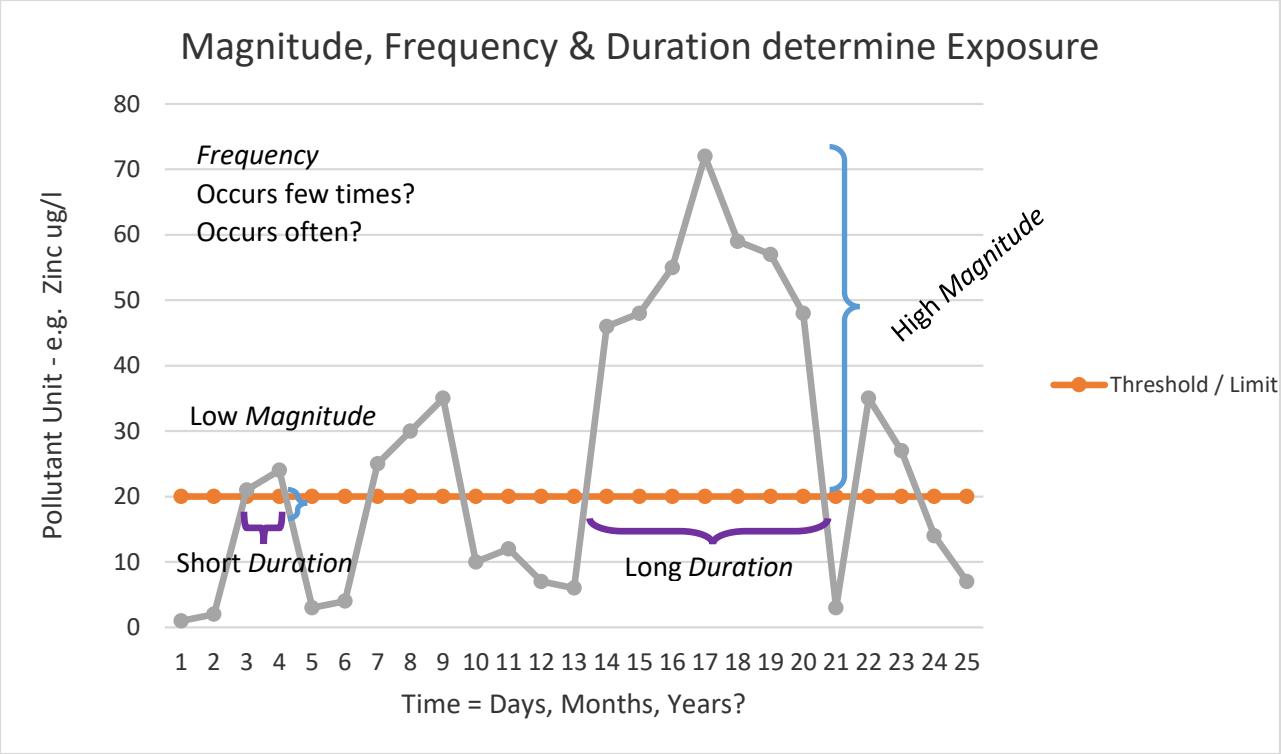
Is the magnitude of the exposure large or small? Can you find high and low exposure events relative to the threshold in the graph below?

Frequency

How many times is the system exposed to the impact? Is this a one-time event or does it happen often over time? Can you find the low and high frequency exposure event relative to threshold in the graph below?

Duration

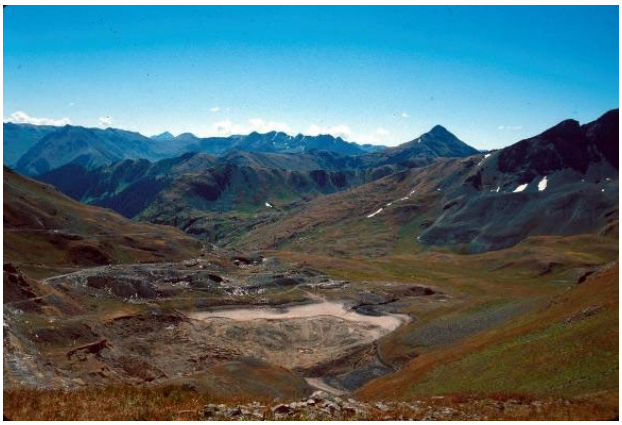
How long is the exposure to the impact? Was the exposure one minute, one hour or 20 years? Can you find the short and long duration exposure events relative to the threshold in the graph below?



Acute versus Chronic Exposure

As described above, exposure to an impact is the combination of magnitude, frequency and duration of that impact. Each one alone could produce an 'acute" exposure or a "chronic" exposure.

Usually, acute exposure is high magnitude, happens once and is short. Acute exposure results in loss of the organism or severe damage to the system. For the Animas River system, an example of acute exposure occurred in June 1978 when Lake Emma collapsed into the mine workings below, out the mouth of the Sunnyside Mine and eventually reached the river, killing fish as far downstream as Farmington, New Mexico (https://www.daily-times.com/story/san-juan-county/2015/08/12/mine-waste-has-fouled-animas-river-several-times/73044374/). Another example of acute exposure occurred following the Missionary Ridge fire in 2002 when storms washed ash and soil into the Florida River, killing fish in the reach immediately downstream of the burned area. In both examples, the fish populations were resilient, quickly repopulating the impacted reaches (Missionary Ridge Burned Area Timber Salvage Project Draft Environmental Impact Statement, February 2003; page 3-109 San Juan National Forest.



On the other hand, chronic exposure is low magnitude, happens frequently, and is longer in duration. Chronic exposure causes long term stresses and changes. For a river system, an example of chronic exposure is decades of legacy mining sites releasing metals into a river, and slowly changing or eliminating fish or macroinvertebrate life downstream. Another example would be a mild drought occurring every year for a decade that slowly lowers soil and ground water levels, impacting vegetation, wildlife, people, and the ability of the river to dilute and absorb pollutants.

Risk

An impact to a river system carries risk. Risk is the chance that the impact may cause harm to the system. Some impacts, like drought and wildfire, combine to increase risk to the river. Also, multiple impacts happening simultaneously can increase the risk to the system's resiliency.

While risk is difficult to eliminate, people who depend on and value the river often seek ways to minimize the risk that the river will lose its ability to absorb impacts. Examples of such "risk management" strategies include best management practices in forestry and agriculture, improving technologies for waste water management or irrigation, water quality standards and regulations, discharge permits, water conservation tools and behaviors, and grant funding to support and incentivize implementation of best management practices. Managing risk helps to maintain the river system's resiliency.

Question 10: What is my impact and what can I do?

If you live here or visit the Animas Watershed, you will have some level of impact on the river system.

How many ways can you identify that you impact the Animas River?

Are these negative, neutral or positive impacts?

There are many actions, large and small, that each person in the Animas watershed can take to minimize the risk of our cumulative impacts on our river. Look at the columns in the table X below for the things you want (or need!) from the river. Then look below for X's in those columns marking some actions that can help protect or improve that desire. Can you find at least one new action that you would like to take today?

Table X: Actions that can be taken to protect river functions

	I Want….						
Things I can do every day!	**Safe Drinking water.**	**A safe river to play in.**	**Safe river water for food and fish consumption.**	**A safe river for fish and wildlife.**	**A resilient river.**	**A river for great quality of life!**	**Find out more in Question:**
Conserve water.	X	X	X	X	X	X	1, 2, 3, 4, 5, 9
Follow Leave No Trace recreation principles.		X			X	X	2, 5, 9
Pick up pet poop and put it in the trash.		X		X	X	X	2, 4, 5, 9
Dispose of my household chemicals and motor oil properly.	X	X	X	X	X	X	1, 2, 3, 4, 5, 9
Minimize my use of pesticides.	X	X	X	X	X	X	1, 2, 3, 4, 5, 9
Never flush my medicines down the toilet or sink. Instead, deposit at local collection sites.	X	X	X	X	X	X	1, 2, 3, 4, 5, 9
Bury my fishing bait. Do not dump it in rivers, ponds, or lakes.				X	X	X	4, 5, 9
Minimize my application of fertilizer to my lawn.				X	X	X	4, 5, 9
Wash my car at a carwash to minimize runoff into streams.	X	X	X	X	X	X	1, 2, 3, 4, 5, 9

Control nonnative trees and weeds on my land.					X	X	5
Keep my pet shop fish, frogs, and turtles in captivity. They can become invasive and spread disease to natives.				X	X	X	4, 5, 9
Ways I can make a difference!	**Safe Drinking water.**	**A safe river to play in.**	**Safe river water for food and fish consumption.**	**A safe river for fish and wildlife.**	**A resilient river.**	**A river for great quality of life!**	**Find out more in Question:**
Test my well routinely, and follow up.	X						1
Maintain and restore riverside vegetation to shade channel, stabilize banks and filter runoff.			X	X	X	X	4, 5, 9
Maintain my septic system.		X	X	X	X	X	2,3,4,5,9
Manage my livestock away from stream and banks.		X	X	X	X	X	2,3,4,5,9
Learn and apply best management practices on my land.	X	X	X	X	X	X	1,2,3,4,5,9
Help prevent the spread of zebra mussels.					X	X	5.9
Avoid building close to the river – to save money and worry as the river continues to move.					X	X	5,9
Help monitor river health and wildlife.	X	X	X	X	X	X	1,2,3,4,5,9

(e.g. The Dipper Project, CO RiverWatch)**							
Read annual Consumer Confidence Reports (CCRs) from my water supplier.	X						1
Read fish consumption guidance from San Juan Basin Public Health Department.			X				2

Ways I can learn more!

As you have seen, assessing the safety and resiliency of the Animas River is valuable. Collecting the data needed for these assessments is a big job. Many local, state and national organizations, both governmental and non-governmental help collect this data. Want to know more about this data, or even help collect it? Check out the ARC Forum website (www.AnimasRiverCommunity.org) and the websites and contacts in the table below.

**Animas Watershed Monitoring Inventory as of June 2017. This table summarizes current monitoring efforts pertaining to the health and function of Animas River and tributaries.

Monitoring Entity	Monitoring Question(s)	Segments	SW-Quality	SW-Quantity	GW-Quality	GW-Quantity /level	Sediment	Aquatic Life	Riparian/ Floodplain	Geomorphology	Sondes	Fish Tissue
CO River Watch	Baseline/trend- Are CWA uses met?	Animas River Watershed Upstream of Mineral Creek	x					*				
San Juan Basin Health/ CDPHE	Assess risks to public health and the environment	Animas River Watershed Upstream of Mineral Creek	x				x	x				
USGS		Animas River Watershed Upstream of Mineral Creek	X	X								
CO River Watch	Baseline/trend- Are CWA uses met?	Mineral Creek Watershed to Animas River	x					*				
EPA Remedial	Water quality impacts due to 48 sites named in NPL listing	Mineral Creek Watershed to Animas River	X	X								
CO River Watch	Baseline/trend- Are CWA uses met?	Tributaries to AR, Silverto to Bakers Bridge	X					*				
USGS		Tributaries to AR, Silverto to Bakers Bridge	X	X								
CO River Watch	Baseline/trend- Are CWA uses met?	Animas River Mineral Creek to Bakers Bridge	x					*				
CPW Aquatics	Baseline/trend in fish distribution and abundance	Animas River Mineral Creek to Bakers Bridge						x				
San Juan Basin Health/ CDPHE	Assess risks to public health and the environment	Animas River Mineral Creek to Bakers Bridge										
USGS	General stream health	Animas River Mineral Creek to Bakers Bridge	X	X								
CO River Watch	Baseline/trend- Are CWA uses met?	Tributaries to AR, Bakers Bridge to 32nd Street	X					*				
CPW Aquatics	Baseline/trend in fish distribution and abundance	Tributaries to AR, Bakers Bridge to 32nd Street						x				
Mountain Studies Institute	What is the health of the benthic community? What is the annual variability of Animas benthic communities?	Animas River Bakers B. to 32nd Street						X				
San Juan Basin Health/ CDPHE	Assess risks to public health and the environment	Animas River Bakers B. to 32nd Street										
San Juan Basin Health/ CDPHE	Assess risks to public health and the environment	Animas River Bakers B. to 32nd Street			x							
FLC Geosciences & Biology	groundwater monitoring for intra- & inter-annual variation in G	Oxbow Park & Preserve (als Aztec Ruins, NM)				X			X	X		
CO River Watch	Baseline/trend- Are CWA uses met?	Tributaries to AR, 32nd Street to Southern Ute Northern Boundary	x					*				
Bureau of Reclamation	General water quality monitoring	Animas River 32nd Street to Southern Ute Northern Boundary	x									
CO River Watch	Baseline/trend- Are CWA uses met?	Animas River 32nd Street to Southern Ute Northern Boundary	X					*				
CPW Aquatics	Baseline/trend in fish distribution and abundance	Animas River 32nd Street to Southern Ute Northern Boundary						x				
Mountain Studies Institute	Do metal concentrations in the reach pose any threat to	Animas River 32nd Street to Southern Ute Northern Boundary	X					*				
Mountain Studies Institute	What is the health of the benthic community? What is the	Animas River 32nd Street to Southern Ute Northern Boundary						X				
San Juan Basin Health/ CDPHE	Assess risks to public health and the environment	Animas River 32nd Street to Southern Ute Northern Boundary										
USGS		Animas River 32nd Street to Southern Ute Northern Boundary	X	X								
CO River Watch	Baseline/trend- Are CWA uses met?	Animas River Southern Ute Northern Boundary to Stateline	x					*				
Southern Ute Tribe	Assess GKM risks to public health and the environment	Animas River Southern Ute Northern Boundary to Stateline	X		X		X	X			X	X

Monitoring Contacts:

Colorado River Watch	Barb Horn, barbhorn@state.co.us
Mountain Studies Institute	Scott Roberts, scott@mountainstudies.org
Bureau of Reclamation	Matt DeAmico, mdeamico@usbr.gov
San Juan Basin Health	Brian Devine, bdevine@sjbhd.org
U.S. Geologic Survey	Steve Anders, spanders@usgs.gov
Southern Ute Tribe	Curtis Hartenstine, charten@southernute-nsn.gov
U.S. EPA Remedial Program	Jamie Miller, miller.jamie@epa.gov
Colorado Parks and Wildlife	Jim White, j.white@state.co.us
Fort Lewis College	Gary Gianniny & Cynthia Dott, gianniny_g@fortlewis.edu; dott_c@fortlewis.edu

the durango telegraph

The Independent Weekly Line on Durango and Beyond

Seat at the table

Locals launch official Superfund citizen group

Locals are putting together a Community Advisory Group that will be an official part of the Superfund in Silverton, the Bonita Peak Mining District. The group will serve as the primary point for communication between the Environmental Protection Agency heading up the site and the communities who depend on the Animas River./Photo by Stephen Eginoire

Tracy Chamberlin - 11/29/2018

It's time to make it official. Since the Bonita Peak Mining District was first declared a Superfund site in the summer of 2016, residents have been looking for ways to stay involved.

Whether it's keeping up with meetings hosted by the Environmental Protection Agency, creating a citizen workgroup, or simply signing onto the latest email list, locals have been putting in the time to stay informed.

Now, they're getting a seat at the table.

Pull up a chair

For decades, residents have struggled to deal with the hundreds of abandoned mines littering the mountains surrounding Silverton and the waste seeping from those mines into the headwaters of the Animas River.

Efforts to address the situation gave rise to groups like the Animas River Stakeholders Group in 1994 and, most recently, the San Juan Clean Water Coalition. The community even debated a Superfund designation as a way to help long before the Gold King Mine spill in August 2015.

But, once the spill happened and the river turned orange, any opposition to the idea of Superfund status dwindled, and the community came together in support of it.

When the Bonita Peak Mining District was created a year later, many locals considered forming an official Community Advisory Group, or CAG – most Superfund sites across the country have them. But, at the time, lawsuits were flying and the blame game over the Gold King spill was in full swing. It was believed the CAG could quickly become political.

Instead, a Citizens Superfund Work-group was formed. As an unofficial part of the Superfund story, its goal was partly to educate the public and partly to stay involved.

The group met several times starting in the fall of 2016, hosted tours of some of the abandoned mines – including the EPA's processing site for waste from Gold King – and put together a list of goals that residents wanted to see the EPA address in coming years. They even hand delivered that list to EPA officials in the region and elected leaders in Washington, D.C., this past summer.

Now that the Citizens Superfund Work-group has finished what it set out to do and the flurry of litigation and politics has settled down, it's time to move forward with the creation of an official Community Advisory Group.

One of the big differences – and benefits – of a Community Advisory Group versus a citizen workgroup is that it's part of Superfund law.

Superfund designations are governed by the Comprehensive Environmental Response, Compensation and Liability Act, also known as CERCLA. Under that law, the EPA is required to give local communities representation and a way to engage with the process. They do that through the advisory group.

"It is the primary communication mechanism between the EPA and those in the affected watershed," Ty Churchwell, San Juan Mountains Coordinator for Trout Unlimited and a member of the CAG Formation Committee, said.

Although the EPA needs to approve the group, they don't really have any say in it. Churchwell said it's initiated, driven and funded by the community. The only requirement the EPA gave to the CAG Formation Committee is that it must be diverse and include representatives from recreation, environment, agriculture, mine remediation, public health, local government and more.

"As long as we have people on the CAG that represent a broad group of stakeholders, (the EPA) will endorse our process," Churchwell added.

The CAG will be limited to 15 members, but the entire process is open to the public. Meetings will be posted online and anyone can sign up to receive updates. The group also plans to host meetings in Silverton and Durango.

The formation committee includes Churchwell; Peter Butler, co-coordinator for the Animas River Stakeholders Group; Marcel Gaztambide, Animas Riverkeeper for the San Juan Citizens Alliance; Shannon Manfredi, facilitator for the Animas River Community Forum; and Anthony Edwards, community liaison for San Juan County and the Town of Silverton. The group is taking applications through Dec. 22, and members will be announced in early January.

Butler said he thinks they'll likely receive a lot of interest from locals looking to be part of the CAG. But, even if someone isn't selected to serve, everyone can still be involved.

"I think we're really lucky we have a lot of citizens who are knowledgeable and experienced," Gaztambide added.

CAG members will likely serve three-year terms, but those details can be ironed out in their first meeting set for Jan. 31. Time will also be taken in that first meeting to write a mission statement, develop operating procedures and decide on future meeting times.

Most CAGs last the duration of the Superfund designation, which could easily be 15-20 years – or more.

"It's a completely open and public process," Gaztambide said. "Even if you don't feel you could be a member or at every meeting, you can still stay informed about what's going on with the headwaters of your river."

Above: Wastewater from the Gold King Mine, along with lime, is pumped into gigantic bags designed to allow the water to leach out while metals and other materials, which attach to the lime, remain. In the end, only a burnt orange sludge is left. An excavator then rips open the bags and the sludge is moved up the hill to be laid out to dry. For the past two years, this has been the process for addressing mine waste flowing from the Gold King, but no permanent facilities have been built and even nearby mines have not been addressed. It's something the EPA has been criticized for in recent weeks. At a November meeting, EPA officials said although it is taking longer than they hoped to collect initial data and craft a long-term plan for addressing mine waste in the Bonita Peak Mining District, it's still early on in the process./File photo

Pre-July 2016 Archives (http://archives.durangotelegraph.com/archives/)

Durango Telegraph eEdition (https://www.durangotelegraph.com/eedition/)

Animas River Community Forum

Keeping Watershed Stakeholders Connected

November 8, 2018

Dear Animas River Community Forum Partners:

Coordinating the exchange of information, resources and collaborative efforts within a large geographic area, such as the Animas Watershed, does not come easy or quickly. While we know that together we can achieve more than any single organization or agency can do on their own, the practicality of such endeavors requires building trust and relationships, ***time,*** resources and commitment over the long-term. I want to thank you for your commitment to the Animas River Community Forum (ARC Forum) over the last three years!

When an incident strikes, where do you go? When events like the 416 Fire and Gold King Mine spill happen, people want to know what is happening. They want to plug in and help in meaningful and impactful ways. Most importantly they want to prepare their community to be resilient for future events.

The ARC Forum has had many successes from co-hosting public information events and providing a forum for the various stakeholders to get to know one another and share information about what they are doing, to featuring presentations, conducting a community survey and workshop among Animas River data collectors, to developing an educational document accessible to the public so that everyone in the watershed can better understand their role in creating a more resilient river and watershed. Additionally, one of the most critical and valuable roles of the Forum, in our opinion, has been the ability to pull together meetings among key stakeholders in the aftermath of watershed incidents.

While we have had these and other successes, there is still much more to do. The Citizen Superfund Workgroup is an example the type of synergy that comes from building relationships and collaborating together to impact our community in a positive way. Through the ARC Forum you are facilitating post fire recovery and educational efforts, securing permanent radar and stream gauge infrastructure, continuing forest and watershed restoration efforts, and responding to other unforeseen watershed incidents.

The ARC Forum is at a crossroads. We have fulfilled our initial purpose and our commitments to funders, but we have also just begun to get the traction that collaboration requires to accomplish great things. We know that there will be more incidents in our watershed, and more issues that will require us to collectively join forces to accomplish what needs to be done to sustain and strengthen our resiliency in this watershed. With the future in mind, we encourage you to continue your support and commitment to participating in semi-annual ARC Forum meetings.

Attached is a membership form. For more information please contact Marcie Bidwell, the ARC Forum Fiscal Coordinator, at marcie@mountainstudies.org or by phone at (970) 387-5161.

Respectfully,

Marcie Bidwell, Executive Director
Mountain Studies Institute
Animas River Community Forum, Fiscal Sponsor

Shannon Manfredi, Coordinator
Animas River Community Forum

Animas River Community Forum

Keeping Watershed Stakeholders Connected

Your contribution will help ensure the success of watershed resiliency and future collaborative opportunities. In addition to a cash donations, please consider hosting a semi-annual ARC Forum Meeting, i.e., sending out notices, securing the venue and logistics, contacting presenters, and providing meeting notes, etc. There are also other ways in which you can provide in-kind support, such as writing letters of support for collaborative efforts, sending out email updates and updating community calendars with ARC Forum Partner events, and much more.

_____ **Enclosed please find our 2019 contribution in the amount of:**

$50.00_____ **$100.00** _____ **$250.00**_____ **Other** _____

_____ Unfortunately, we cannot make a financial contribution at this time.

_____ We would like to provide in-kind assistance

- Host semi-annual meeting _____
- Provide refreshments for ARC Forum Meeting _____
- Write letter of support on behalf of ARC Forum _____
- Support community calendar updates & email blasts _____
- Other _____

  _____

Name _____

Business/Organization/Affiliation _____

Amount Enclosed $_____

Mailing Address_____

City _____ State _____ Zip _____

Phone _____

E-mail_____

Website: _____

Please make all checks payable to "Mountain Studies Institute" and specify "Animas River Community Forum." MSI is ARCF's fiscal sponsor as a 501(c)3 nonprofit in Colorado.

For more information please contact Marcie Bidwell: marcie@mountainstudies.org 970-387-5161. Online donations may also be made at www.mountainstudies.org/donate/.

Please return this form to:

Mountain Studies Institute, 679 E. Second Ave., Unit 8, Durango, CO 81301