San Juan Watershed Program

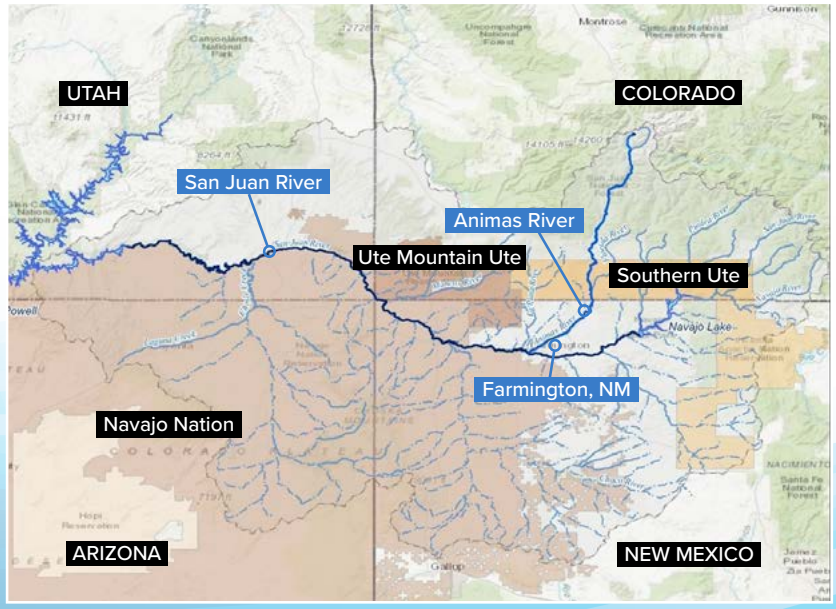
MARCH 2021

BACKGROUND

Water resources in the San Juan watershed, which encompasses the San Juan and Animas Rivers and Lake Powell, are essential for providing drinking water for people and animals, recreating, growing crops, and other cultural uses. Potential contamination sources within the watershed include historic mining activities that disturbed the land and exacerbated naturally occurring levels of metals and mineralization. Other contaminants include nutrients and bacteria from human or animal waste, or agricultural runoff.

From 2017 to 2021, under the Water Infrastructure Improvements for the Nation (WIIN) Act, the U.S. Congress has appropriated $4 million per year to a long-term water quality program for the San Juan watershed. Under WIIN, and other legal authorities, EPA and the states and tribes within the watershed—Arizona, Colorado, New Mexico, Utah, Navajo Nation, Ute Mountain Ute Tribe, and Southern Ute Indian Tribe—are working together to monitor water quality, assess data and literature, inform the public, and act on identified water quality problems.

SAN JUAN WATERSHED AND ENCOMPASSING RIVERS



MONITOR water quality throughout the watershed

PROGRAM HIGHLIGHTS

- Developed watershed-wide monitoring plan
- Implemented ongoing, real-time monitoring using sondes throughout the watershed
- Conducting watershed-wide monitoring through 2021
- Undertaking scientific investigations
- Identifying opportunities for states and tribes to collaborate and align monitoring activities going forward

ASSESS the best data and literature to understand data gaps, identify potential water quality problems, and identify actions to address those problems

PROGRAM HIGHLIGHTS

- Applying new and innovative cross-watershed approaches for identifying water quality standard exceedances to inform monitoring and implantation projects in the future
- Evaluating opportunities to apply common pollutant criteria and screening values across state and tribal boundaries
- Assessing opportunities for using real-time monitoring data to inform emergency response actions and long-term decisionmaking

INFORM the public on the condition of the watershed relative to designated uses

PROGRAM HIGHLIGHTS

- Assessed viability of current incident notification system
- Developed program website and interactive technical resources to communicate on program activities and watershed condition
- Creating additional interactive products to inform the public and other watershed stakeholders on the health of the watershed for agricultural, recreational, and drinking water uses and for aquatic life
- Engaging with local groups to maximize and leverage available resources

ACT on identified water quality problems using the best data and science

PROGRAM HIGHLIGHTS

- Identifying and funding that implement on-the-ground solutions to avoid or manage existing water quality concerns
- Collaborating on opportunities to build a successful, long-term federal, state, and tribal partnership that protects the health of the San Juan watershed for current and future generations

SAN JUAN WATERSHED PROGRAM PROJECTS

Purpose	Project	Use
Monitor	Assess and evaluate existing water quality standards for water used for livestock and agricultural irrigation to evaluate the need for new or revised water quality standards (Navajo Nation).	
	Evaluate the effects of metals in the Animas and San Juan Rivers water on the attainment of water quality standards for livestock watering and crop irrigation (NMED).	
	Sample fish in the Animas and San Juan Rivers to determine the presence of select metals, organics, and emerging contaminants (Navajo Nation).	
	Investigate the sources, and their contribution, of contaminants of concern in tributaries to the San Juan River (Navajo Nation).	
	Evaluate the natural annual variability of benthic macroinvertebrates in the Upper Animas River and develop correlation relationships between benthic macroinvertebrate metrics and metals exposure (CDPHE).	
	Assess water quality in the middle Animas River Canyon to understand appropriate stream segments for future water quality segmentation and standard setting (CDPHE).	
	Identify and delineate the extent of cultural uses of Animas River waters to understand how contaminants may affect tribal uses (SUIT).	
	Evaluate connectivity between surface water and groundwater along the Animas River (NMED and CDPHE).	
	Identify metals or other constituents of concern in the Lake Farmington Reservoir sediment and evaluate concentrations of deposited metals (NMED).	
	Conduct Lake Powell sediment coring study to better understand the concentration, loading, distribution, bioavailability, and source of metals in the lake and evaluate impacts on water quality, human health, and aquatic life (UDEQ).	
	Analyze Lake Powell porewater samples to determine bioavailability of metals in bottom water environments of Lake Powell and the relationship between sediment and porewater chemistry (UDEQ).	
	Maintain sondes throughout the watershed to provide real-time data that can inform management decisions, including closure of drinking water intakes (EPA on behalf of states and tribes, CDPHE).	
	Deliver suspended sediment concentration (SSC) and total metal concentrations and loads in near real time using acoustic Doppler velocity meters (ADVMs) to correlate sound waves to SSC. Develop correlation between SSC and total metals to compute total loads to Lake Powell (UDEQ).	
	Use mobile sondes along the Animas River to relay data remotely via cell phone or satellite signal to tribal servers for public access via a website (SUIT).	

Agriculture | Aquatic life | Cultural | Drinking water | Recreation

Purpose	Project	Use
Monitor	Collect water, sediment, and biological samples to better understand the condition of the watershed (EPA on behalf of states and tribes).	
	Maintain stream gages to monitor four San Juan tributaries to better understand water quality, real-time discharge, and how flows are informed by storm events and snowmelt (Navajo Nation).	
	Conduct detailed geochemical analyses to understand sources of nitrate and other nitrogen species in the watershed and understand how to better manage these sources (NMED).	
	Conduct monitoring to determine sources of elevated aluminum in the Florida and Animas Rivers (SUIT).	
	Collect fish tissue and benthic macroinvertebrate samples to understand whether bioaccumulation of metals and certain organic compounds is occurring in the Animas River, and how it is affecting the river ecosystem (SUIT).	
	Assess nutrient contributions from the Florida River to the Animas River (SUIT).	
Assess	Develop a San Juan Watershed Assessment and Information Synthesis based on information available to date (EPA).	
	Evaluate a watershed-wide modeling effort in the San Juan River drainage to provide a framework to identify areas of importance for resource prioritization and implementation of best management options to restore water quality. UDEQ and EPA determined that at this time, it is not necessary to develop a watershed-wide model (UDEQ).	
	Conduct a feasibility planning study to evaluate potential courses of action (e.g., real-time monitoring or treatment) in response to future release events in the Animas River headwaters and identify necessary updates to the Tribe's Emergency Action Plan (SUIT).	
Inform	Develop the EPA Program website, factsheets, resource library, and other comprehensive outreach materials to support the Program, and EPA (EPA).	
	Develop UDEQ Program website (UDEQ).	
	Develop a San Juan Watershed Assessment and Information Synthesis based on information available to date to communicate watershed condition relative to designated use (EPA).	
	Establish and support a Silverton, CO-based communications and outreach liaison position (CDPHE).	
	Support the Water Resources Research Institute in New Mexico in the development and execution of the 2018, 2019, and 2020 annual conferences on the San Juan Watershed (NMED).	
	Develop a public relations strategy and communicate the benefits of buying locally grown produce to stakeholders in the watershed through (NMED).	
Act	Explore the convening of a possible watershed group(s) to lead the San Juan Watershed Program at the end of WIIN Act funding (UDEQ).	
	Close an abandoned well that is contributing high concentrations of salts and elevated levels of arsenic to the San Juan River (Navajo Nation).	

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https://www.epa.gov/sanjuanwatershed