



# San Juan Watershed Monitoring Program

## 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. In 2016, under the Water Infrastructure Improvements for the Nation (WIIN) Act, the U.S. Congress authorized appropriations of \$4 million per year in 2017–2021 for 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 throughout watershed



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



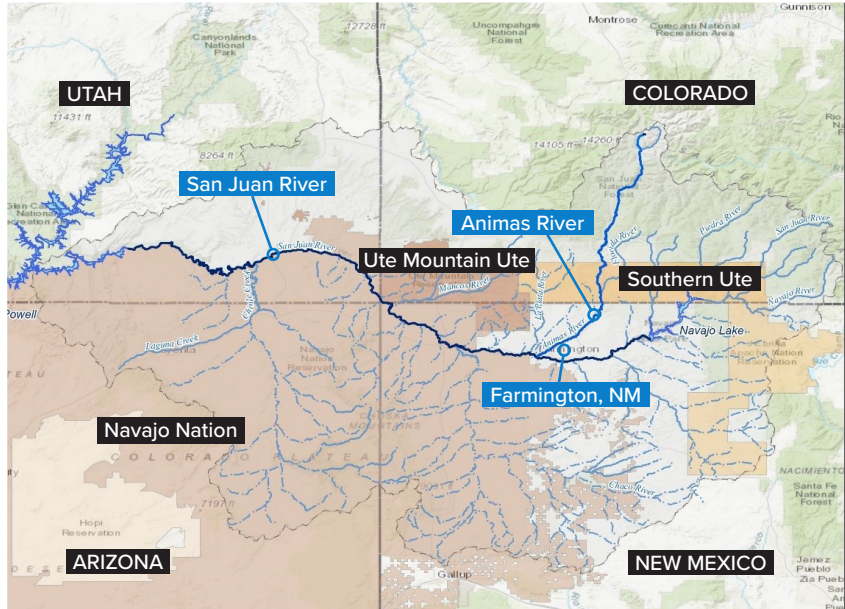
**Inform** the public on the condition of the watershed relevant to various state and tribal uses of the water and state- and tribe-specific decision-making for the watershed.



**Act** on identified water quality problems using the best data and science

## SAN JUAN WATERSHED AND ENCOMPASSING RIVERS

The Animas River originates in the mountain peaks northeast of Silverton, Colorado. It flows southward and into the San Juan River in Farmington, New Mexico. The San Juan River originates in the San Juan Mountains in southwestern Colorado. It flows westerly into New Mexico and is detained in the Navajo Reservoir by the operation of the Navajo Dam in northern New Mexico. The river continues into southern Utah and ultimately terminates in Lake Powell in Utah. Lake Powell is a manmade reservoir on the Colorado River, along the Utah-Arizona border.



## PROGRAM OVERVIEW

The San Juan Watershed Program relies on collaboration among the seven states and tribes within the watershed, in cooperation with their local counterparts. Through the program, federal, state, tribal, and local partners evaluate needed actions based on the growing body of information and data available on the watershed. The Program also helps identify opportunities for future collaborative efforts to maintain the health of the watershed.

Some of these actions span the entire watershed. Others are focused research efforts concentrated in one area of the watershed but may be expanded to other areas in the future, depending on their outcomes. Additionally, states and tribes are carrying out actions designed to address issues specific to a portion of the watershed within their boundaries.

EPA maintains a San Juan Watershed Program website that provides:

- Information on the current condition of the watershed relative to various uses
- A compilation of resources, data, and other materials specific to the watershed
- Descriptions of the various projects funded under this Program













































## 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).	
	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).	
	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).	
Collect water, sediment, and biological samples to better understand the condition of the watershed (EPA on behalf of states and tribes).		

Agriculture	Aquatic life	Cultural	Drinking water	Recreation



Purpose	Project	Use
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).	    
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 third, fourth, and fifth annual conferences on the San Juan Watershed (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).	    

				
Agriculture	Aquatic life	Cultural	Drinking water	Recreation