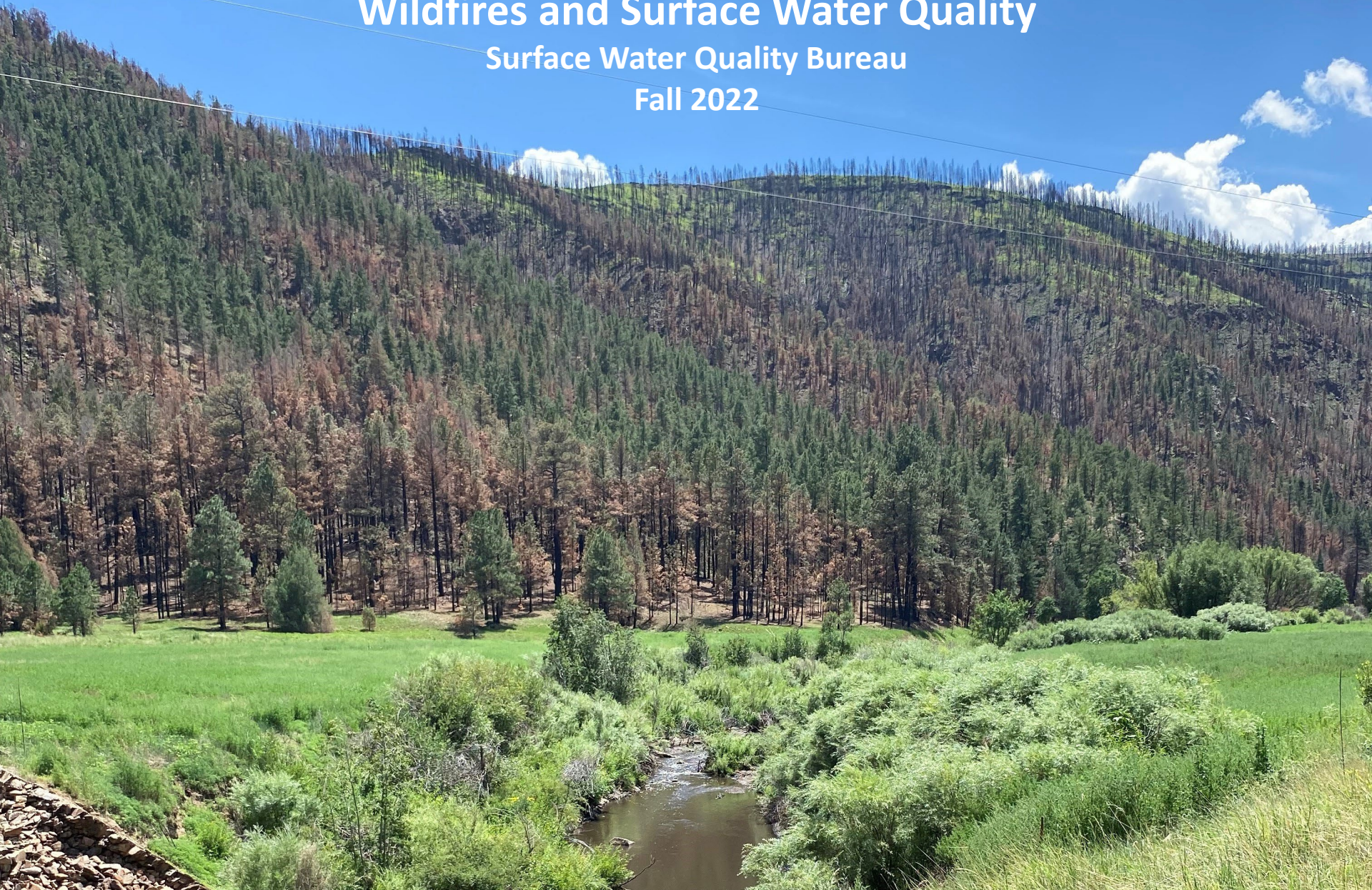


# New Mexico Environment Department

## Wildfires and Surface Water Quality

Surface Water Quality Bureau

Fall 2022

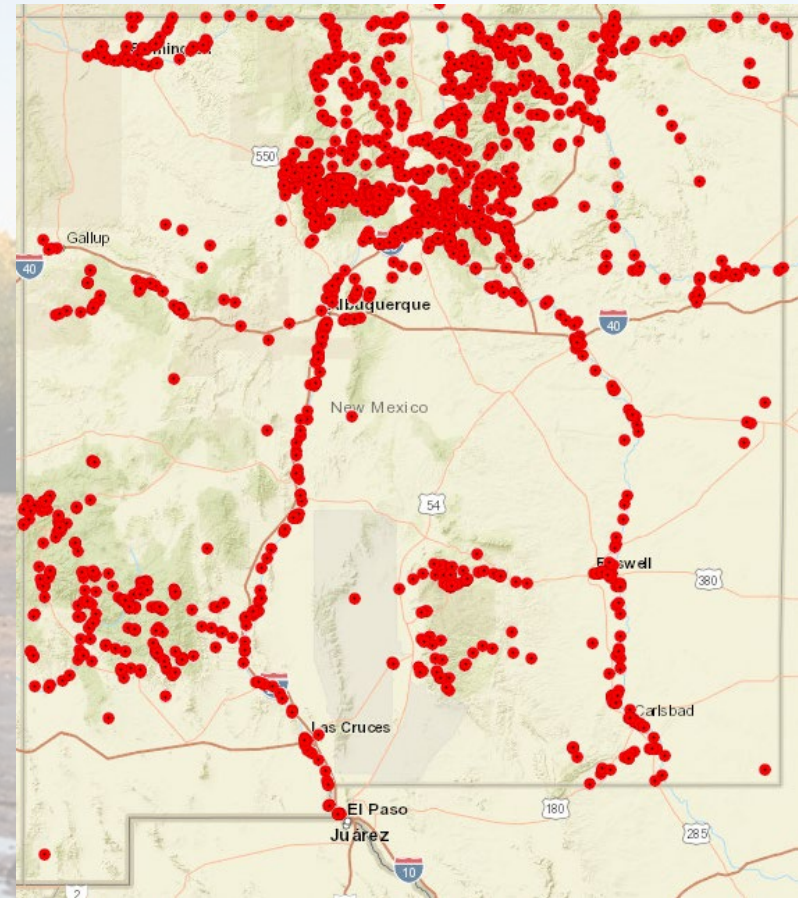




# Water Quality Sampling

The Surface Water Quality Bureau (SWQB) collects water quality samples to monitor surface waters in New Mexico and assess the results by comparing them to the surface water quality standards.

- Water quality standards consist of designated uses and criteria to protect the designated uses.
- Designated use examples are livestock watering, wildlife habitat, irrigation, primary contact, warmwater aquatic life, coldwater aquatic life, secondary contact, and public water supply.
- Surface water quality criteria differ for each stream and designated use.
- Data collected during or immediately after temporary catastrophic events are typically not used to make water quality impairment decisions (aka "CWA §303(d) listings").



Water quality sampling locations (red dots) in New Mexico (2022). Map: <https://gis.web.env.nm.gov/oem/?map=swqb>

**Over 45% of New Mexico's assessed surface waters fail to meet quality standards**

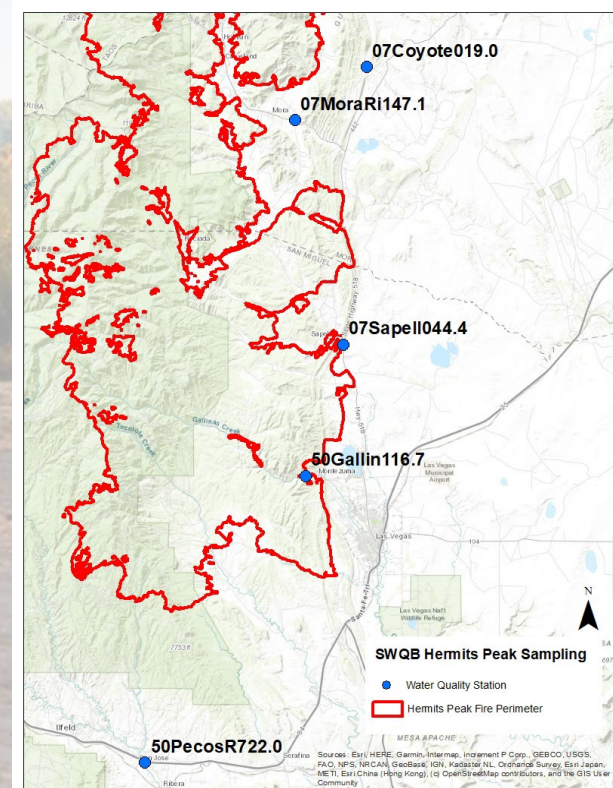


# Water Quality Sampling – Results

The SWQB Monitoring Team conducted water quality sampling in Hermits Peak Fire affected areas on 7/26/22. Sampling occurred between storm events and flows were elevated and turbid.

Samples were collected for *E. coli*, total metals, dissolved metals, volatile and semi-volatile organics, and radionuclides. The following preliminary water quality standards exceedances were recorded:

Station Name	Analyte
Mora River above Mora WWTP lagoons - 07MoraRi147.1	Radionuclides <i>E. coli</i>
Coyote Creek upstream of CR A026 near Lucero	<i>E. coli</i>
Sapello R. at Hwy 518 - 07Sapello044.4	<i>E. coli</i>
Gallinas River abv hot springs - 50Gallin116.7	Radionuclides <i>E. coli</i>



Criteria for radionuclides have been established only for domestic water supply and livestock watering designated uses. The Mora and Gallinas Rivers do not have domestic water supply as a designated use. The exceedances are only for livestock watering designated use.

*E. coli* results are above the standard to protect the designated use for primary contact recreation (e.g., swimming, water skiing). All the *E. coli* results meet the water quality standard for secondary contact recreation (e.g., fishing, wading, boating).



# Results – More about radionuclides and *E. coli*

Station Name	Analyte
Mora River above Mora WWTP lagoons - 07MoraRi147.1	Radionuclides
	<i>E. coli</i>
Coyote Creek upstream of CR A026 near Lucero	<i>E. coli</i>
Sapello R. at Hwy 518 - 07Sapello44.4	<i>E. coli</i>
Gallinas River abv hot springs - 50Gallin116.7	Radionuclides
	<i>E. coli</i>

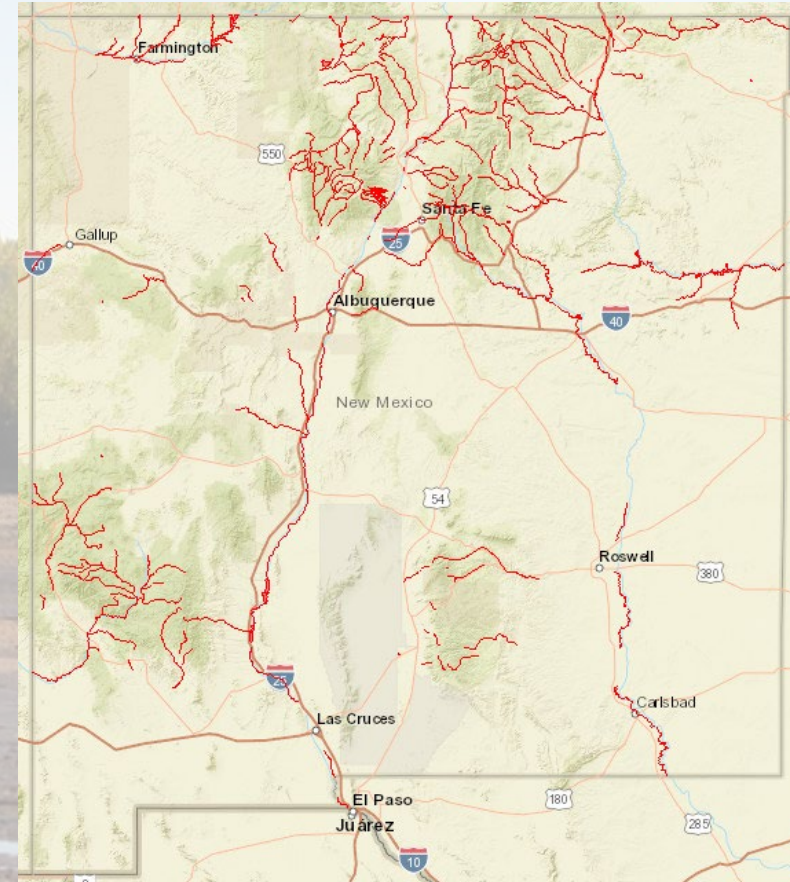
- “Domestic water supply” use means surface water could be used for drinking or culinary purposes after disinfection.
- “Public water supply” use is subject to Drinking Water Regulations (20.7.10 NMAC) and may need to undergo treatment to achieve drinking water quality.
- Gross alpha is primarily associated with particles suspended in the water, and is closely associated with turbidity.
- Wells not inundated by flood water are unlikely to be contaminated by radionuclides or *E. coli* from a nearby river.
- Well owners can have their water tested to be sure.



# Existing Water Quality Impairments

- ❑ **Impaired** means waters with degraded water quality that do not meet the criteria set in the water quality standards.
- ❑ There are many impaired stream reaches within and downstream of areas impacted by the 2022 fires. The following impairments were identified prior to the 2022 fires:

WATER NAME:	IMPAIRMENTS:
Rio Pueblo (Picuris Pueblo bnd to headwaters)	Total Aluminum, Temperature
Mora River (HWY 434 to Luna Creek)	Specific Conductivity
Santiago Creek (Rito Cebolla to headwaters)	Flow Regime Modification
Mora River (USGS gage east of Shoemaker to HWY 434)	Escherichia Coli (E. Coli), Nutrients
Rito Cebolla (Mora River to Rito Morphy)	Dissolved Oxygen
Pecos River (Jack's Creek to headwaters)	Benthic Macroinvertebrates
Sapello River (Arroyo Jara to Manuelitas Creek)	Sedimentation/Siltation
El Porvenir Creek (SFNF bnd to Hollinger Canyon)	Dissolved Oxygen, Temperature
Gallinas River (USFS bnd to headwaters)	Benthic Macroinvertebrates
Gallinas River (Las Vegas Diversion to USFS bnd)	Benthic Macroinvertebrates, Temperature
Gallinas River (Pecos Arroyo to Las Vegas Diversion)	Dissolved Oxygen
Tecolote Creek (I-25 to Blue Creek)	Benthic Macroinvertebrates, Escherichia Coli (E. Coli), Nutrients, Temperature



*Impaired streams in New Mexico (2022). Map: <https://gis.web.env.nm.gov/oem/?map=swqb>*



# SWQB Wildfire and Water Quality Information

- <https://www.env.nm.gov/surface-water-quality/wildfire-impacts-on-surface-water-quality>.
- [FAQ for wildfire impacts on surface water quality](#)
- [This presentation](#) (with links)
- Wildfires can affect physical, chemical, and biological quality of surface waters within the fire area and downstream.

Common post-fire water quality impacts:

- Increased debris and sediment, including black ash, logs, and rocks.
- Increased nutrient loading from burned plants.
- Introduction of radionuclides and heavy metals from ash, soils and geologic sources within the burned area.
- Introduction of fire-retardant chemicals resulting in increased nitrogen as ammonia.
- Increased temperatures from loss of vegetation and black ash.



# Other Water Quality Monitoring (not NMED)

University of New Mexico

New Mexico Highlands University

U.S. Geological Survey (USGS)

Hermit's Peak Watershed Alliance (HPWA)



# Watershed Restoration Post-Fire

Next 319  
Application  
Period: October  
31, 2022 –  
January 3, 2023.

Next River  
Stewardship  
Program  
Application  
Period: July –  
Sept 2023

- Clean Water Act Section 319 (Nonpoint Source) Project Selection: Priority points awarded for post-fire projects. Post-fire plans are an eligible type of plan. SWQB will help applicants complete planning elements as necessary.
- River Stewardship Program project selection: Post-fire rehabilitation is an eligible activity.







# Contact Information

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