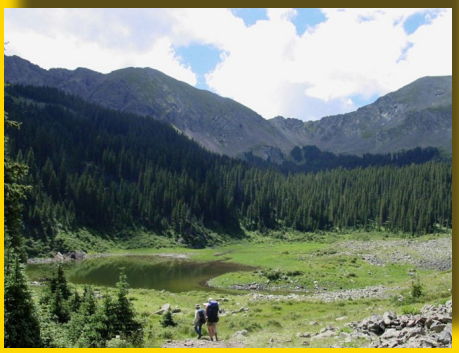
State of New Mexico

NONPOINT SOURCE MANAGEMENT PROGRAM



2024 Annual Report

New Mexico Environment Department
Surface Water Quality Bureau
Watershed Protection Section

State of New Mexico
Nonpoint Source Management Program

2024 Annual Report

Published By:

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Copies of this report and other reports are available on the Surface Water Quality Bureau website:
www.env.nm.gov/surface-water-quality/watershed-protection-section/

January 27, 2025

Troy Hill
Water Division Director
U.S. Environmental Protection Agency, Region 6
1201 Elm Street, Suite 500
Dallas, Texas 75270

Dear Director Hill:

I am pleased to submit New Mexico's 2024 Nonpoint Source Management Program Annual Report (Report). In this Report we document the progress made in meeting the program milestones set forth in our Nonpoint Source Management Plan.

The Nonpoint Source Management Program has six core objectives, and I would like to briefly highlight our progress and accomplishments made during 2024 for each:

1. **Complete Watershed-Based Plans.** New Mexico continued two watershed based-planning projects: one with the Village of Ruidoso for watersheds in the Sacramento Mountains and one with the San Juan Soil and Water Conservation District for watersheds on the San Juan River. No New watershed-based plans were approved during the reporting period.

2. **Improve Water Quality.** New Mexico submitted a Nonpoint Source Success Story nomination for the Rito de Los Indios in the Valles Caldera National Preserve. The nomination provided compelling evidence that turbidity decreased as a result of projects in the area. Thirteen Section 319-funded implementation projects continued and five of those projects were completed.

3. **Protect Water Quality.** New Mexico Environment Department (NMED) staff responded to 10 reports of refuse in a watercourse, reviewed 57 projects authorized by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act (CWA) for consistency with New Mexico's CWA Section 401 certification, and reviewed 27 New Mexico Mining Act actions to ensure protection of surface water quality in New Mexico.

4. **Share Information on Surface Water Quality.** NMED staff continued to collaborate with watershed groups and other stakeholders to improve surface water quality and encourage development of watershed-based plans and water quality improvement implementation projects. Two issues of *Clearing the Waters* newsletter (www.env.nm.gov/surface-water-quality/newsletters) were published and distributed to over 1,900 subscribers.

5. **Protect Ground Water Quality.** NMED's Ground Water Quality Bureau issued 19 new, renewal, or modification discharge permits to protect groundwater resources and hosted seven water fairs in San Miguel, Doña Ana, Sierra, Lincoln, Luna, Catron, and Bernalillo counties where residents brought 187 well water samples for analysis of common pollutants such as nitrate.

6. **Cooperate with Other Agencies on Water Quality Protection and Improvement.** NMED staff continued to collaborate with federal, state, and local agencies to protect and improve surface water

quality in 2024. Of note, New Mexico submitted and received approval from EPA to begin implementation of the 2024 Nonpoint Source Management Plan, guiding activities of the Nonpoint Source Management Program in New Mexico through 2029.

We thank you for your support of these efforts and look forward to working together to improve water quality and to continue to reduce nonpoint source pollution in New Mexico. Should you have any questions about New Mexico's Nonpoint Source Management Program Annual Report please feel free to contact me (505-470-5018) or Kate Lacey-Younge, Watershed Protection Section Program Manager, at (505-946-8863) or kathryn.lacey@env.nm.gov.

Sincerely,

Shelly Lemon Digitally signed by Shelly Lemon
Date: 2025.01.27 00:00:01 -07'00'

Shelly Lemon, Bureau Chief
Surface Water Quality Bureau

Cc: Anthony Suttice, State and Tribal Grants Project Officer, US EPA Region 6
Brian Fontenot, Nonpoint Source Program Technical Team, US EPA Region 6
Jonas Armstrong, Director, NMED Water Protection Division
Kate Lacey-Younge, Program Manager, NMED Watershed Protection Section

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2024 Executive Summary

This annual report to the United States Environmental Protection Agency is required by Section 319(h) of the Clean Water Act and provides an overview of the activities and accomplishments New Mexico made in administration of the Nonpoint Source Management Program from October 1, 2023 through September 30, 2024.

New Mexico administered its Federal Fiscal Year 2024 Nonpoint Source Management Program according to six core objectives identified in the 2019 Nonpoint Source Management Plan, each listed below with the highlights from the reporting period.

Complete Watershed-Based Plans. In 2024, New Mexico continued two watershed-based planning projects, one with the Village of Ruidoso for watersheds in the Sacramento Mountains and one with the San Juan Soil and Water Conservation District for watersheds on the San Juan River. No new watershed-based plans were approved during the reporting period.

Improve Water Quality. New Mexico submitted a Nonpoint Source Success Story nomination for the Rito de Los Indios, a stream within the Valles Caldera National Preserve, that demonstrated improvement in a turbidity impairment following restoration work completed after the devastating 2011 Las Conchas Fire. Thirteen Section 319-funded implementation projects continued and five of those projects were completed during the reporting period.

Protect Water Quality. New Mexico Environment Department staff responded to 10 reports of refuse in a watercourse in 2024, reviewed 57 projects authorized by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act for consistency with New Mexico's Section 401 certification, and reviewed 27 New Mexico Mining Act actions to ensure protection of surface water quality in New Mexico. In addition, NMED staff responded to post-fire support requests from the Village of Ruidoso where the Salt Fire and South Fork Fire devastated the community in 2024.

Share Information on Surface Water Quality. New Mexico Environment Department staff continued to collaborate with watershed groups and other stakeholders to improve surface water quality and encourage development of watershed-based plans and water quality improvement implementation projects. Two issues of *Clearing the Waters* newsletter (https://www.env.nm.gov/surface-water-quality/newsletters/) were published.

Protect Ground Water Quality. New Mexico Environment Department's Ground Water Quality Bureau issued 19 new, renewal, or renewal and modification discharge permits to protect groundwater resources and hosted seven Water Fairs in San Miguel, Doña Ana, Sierra, Lincoln, Luna, Catron, and Bernalillo counties where a total of 187 water samples were evaluated.

Cooperate with other Agencies on Water Quality Protection and Improvement. New Mexico Environment Department staff continued to collaborate and coordinate with other agencies in 2024, including meeting with the U.S. Forest Service regularly to discuss implementation projects and Outstanding National Resource Waters on Forest Service lands and meeting with Soil and Water Conservation Districts to encourage further development of projects. New Mexico Environment Department staff collaborated with the

New Mexico Interstate Stream Commission on the development of the New Mexico Integrated Water Financing Plan and with the New Mexico Department of Game and Fish on the update to the State Wildlife Action Plan.

Perhaps the biggest achievement of 2024, New Mexico Environment Department submitted the 2024 Nonpoint Source Management Plan to United States Environmental Protection Agency for approval on September 25, 2024. This new management plan will guide activities of the Nonpoint Source Management Program in New Mexico through 2029.

Introduction

This annual report to the United States Environmental Protection Agency (EPA) provides an overview of nonpoint source (NPS) management related activities conducted in New Mexico in federal fiscal year 2024 (October 1, 2023 through September 30, 2024) by the Watershed Protection Section (WPS) of the New Mexico Environment Department (NMED) Surface Water Quality Bureau (SWQB). The report presents the state's progress in meeting the milestones outlined in the goals and objectives of the New Mexico Nonpoint Source Management Program and provides information on reductions in NPS pollutant loading and improvements to water quality of New Mexico watersheds as required under Section 319(h) (11) of the Clean Water Act (CWA).

Most funding to support the New Mexico Nonpoint Source Management Program was provided through Section 319(h) grants awarded to NMED by EPA. Activities and projects reported are CWA Section 319 projects, and those implemented under the state funded River Stewardship Program (RSP), the New Mexico Wetlands Program, CWA Section 401 activities, New Mexico Mining Act activities, and NPS projects implemented by other natural resource agencies outside of NMED.

Roads expert Steve Carson, Rangeland Hands Inc., leads a workshop in Grant County, NM to educate road operators the importance of managing sediment and runoff on rural roads. Operators created rolling dips in the workshop.

What is Nonpoint Source Pollution?

According to information from EPA at www.epa.gov/nps:

> "NPS pollution generally results from land runoff, precipitation, atmospheric deposition, drainage, seepage or hydrologic modification. NPS pollution, unlike pollution from industrial and sewage treatment plants, comes from many diffuse sources. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters and ground waters."

Some examples of nonpoint source pollution include:

- Excess fertilizers, herbicides and insecticides from agricultural and residential areas;
- Oil, grease and other water contaminants from urban runoff and human activities;
- Improper disposal of trash and other refuse materials that may wash or leach contaminants into streams;
- Sediment from improperly managed construction sites, agricultural operations, and roads; channel erosion and instability resulting from the reduction of riparian vegetation or hydromodification; post-fire erosion from increased wildfire intensity and severity exacerbated by climate change and the alteration of natural fire regimes;

- Salt from irrigation practices and deicing roads and sidewalks;
- Acid drainage from abandoned mines;
- Bacteria and nutrients from livestock, pet waste, and faulty septic systems. Nutrient contributions are also derived from soils and accelerated erosion.
- Atmospheric deposition of gases and particles from the combustion of fossil fuels and human activities;
- Solar radiation that increases surface water temperatures from the reduction of riparian shade or hydromodification;

As in most other states, NPS pollution is the leading cause of water quality problems in New Mexico.

Clean Water Act Section 319

NPS pollution is the leading cause of water quality degradation in the United States and poses a substantial problem for the health of New Mexico's rivers, wetlands, lakes, and streams. When Congress amended the CWA in 1987, Section 319 was added to provide federal leadership to assist states, territories and tribes in developing programs that address NPS pollution. Under Section 319, states, territories, and tribes receive grant funding to support the following activities: outreach and education, training, watershed-based planning, implementation of best management practices (BMPs), and monitoring to assess implementation efficacy. At the heart of the Section 319 program in New Mexico is working with stakeholders to seek solutions through collaboration in developing and implementing watershed-based plans that mitigate NPS pollution.

Section 319 contains three main strategies for addressing NPS pollution:

- Requires states to prepare assessment reports of their NPS pollution problems.
- Requires each state to develop a management program to control NPS pollution and improve water quality problems within the state.
- Creates a grant program to fund the implementation of the management program for the assessment and control of NPS pollution.

This Annual Report follows New Mexico's NPS Management Program as described in the 2019 *New Mexico Nonpoint Source Management Plan* approved by EPA on August 1, 2019. The 2024 *New Mexico Nonpoint Source Management Plan* was approved by EPA on December 11, 2024, and will guide New Mexico's NPS Management Program through 2029. The plan is available to review at http://www.env.nm.gov/surface- water-quality/watershed-protection-section.

The NPS Management Program is supported largely by Section 319(h) grant funds. Recent years' funding awarded by EPA for New Mexico's NPS Management Program has been stable, with annual funds averaging $2.2 million in fiscal years 2017-2024.

Clean Water Act Sections 303(d) and 305(b)

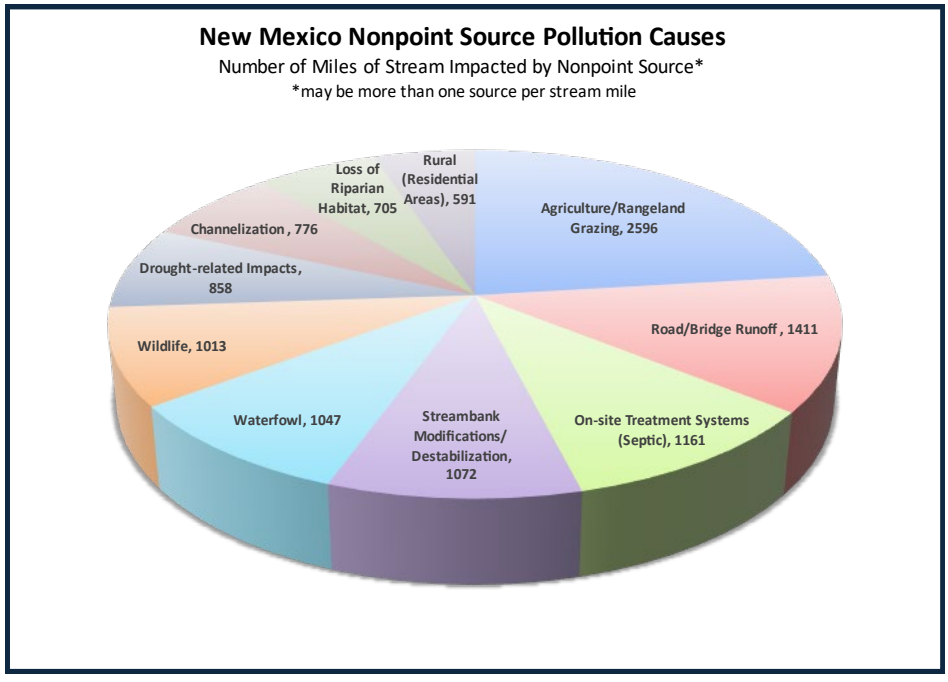
Two sections of the CWA designed to help understand both point sources and nonpoint sources statewide are Sections 303 and 305. Under Section 303(d), states are required to list all polluted surface waters in their

jurisdiction which do not meet state water quality standards (also known as the impaired waters list). Under Section 305(b), states must publish a biennial report on the health of all surface waters. In New Mexico, the 305(b) report includes the 303(d) list and is referred to as the *State of New Mexico CWA Section 303(d)/305(b) Integrated Report* (*Integrated Report*, for short). Current and past *Integrated Reports* are available at www.env.nm.gov/surface-water-quality/303d-305b.

In New Mexico, the most common NPS impairments in streams are caused by (in order of prevalence, based on the *2024-2026 Integrated Report*) temperature, *E. coli*, nutrients, suspended or settleable solids (including turbidity and stream bottom sediments). In lakes and reservoirs, the most common water quality parameters in excess of water quality standards are mercury in fish tissue, polychlorobiphenyls (PCB's) in fish tissue, temperature, and eutrophication (nutrient impacts).

These pollutants prevent designated uses from being fully supported in many of New Mexico's waters. Designated uses not fully supported in New Mexico's assessed rivers and streams (with the percentage of assessed waters not supporting uses in parentheses) include aquatic life uses (50%), primary and secondary contact (16%), wildlife habitat (1%), livestock watering (1.4%), irrigation (0.9%), and domestic water supply (0.4%). Most of these impairments are primarily or entirely caused by NPS pollution.

The majority of NPS pollution in New Mexico's streams is preliminarily attributed to (in order of prevalence) unidentified sources, unmanaged or improperly managed rangeland grazing, road and bridge runoff, on-site treatment systems (e.g., septic systems), streambank modifications and destabilization, waterfowl, wildlife (other than waterfowl), and drought (Figure 1). The *2024- 2026 Integrated Report* provides probable source summary information only for waters with Total Maximum Daily Loads (TMDLs). Only one lake in New Mexico (Bluewater Lake) had an approved TMDL when the *2024-2026 Integrated Report* was approved, and the pollutant source was listed as "unknown" in that TMDL document. Later in 2024, the Canadian and Upper Rio Grande Basin Lakes TMDLs were developed and approved and included detailed pollutant sources for each lake. TMDLs developed for New Mexico are available on our website



https://www.env.nm.gov/surface-water-quality/tmdl/.

Figure 1 - Pie chart showing New Mexico's Nonpoint Source Pollution Causes *by stream mile.*

New Mexico's Nonpoint Source Management Program

The overall, long-term goal of New Mexico's NPS Management Program is:

> *To implement an adaptive watershed-based restoration and protection program with the active assistance of stakeholders, for all watersheds within New Mexico, to meet and maintain water quality standards and designated uses of surface water, and to protect ground water resources.*

As lead agency for the management of NPS pollution, NMED coordinates activities within the state through the SWQB and the Ground Water Quality Bureau (GWQB). In accordance with the CWA, the SWQB has developed a Nonpoint Source Management Program planning document (NPS Management Plan). The NPS Management Plan that guides this Annual Report is the 2019 NPS Management Plan, approved by EPA in August 2019. On December 11, 2024, EPA approved New Mexico's 2024 NPS Management Plan which will guide the NPS program in New Mexico through 2029. The new 2024 NPS Management Plan is available at https://www.env.nm.gov/surface-water-quality/nps-plan/.

The NPS Management Program includes activities carried out by NMED staff to meet the objectives of the program and directs funding to support watershed-based planning projects, watershed-implementation projects, and RSP projects. The NPS Management Program also relies on established resource protection programs, national and state NPS pollution prevention programs, and activities of other land management and resource protection agencies to address NPS pollution. New Mexico identifies programs and activities that will facilitate the achievement of surface water quality standards, using a voluntary approach to implement water quality improvements.

NMED reports how CWA Section 319(h) funds and state matching funds are used in EPA's Grants Reporting and Tracking System (GRTS). On-the-ground implementation or restoration projects and watershed-based planning projects in progress or completed in the reporting period (October 1, 2023 through September 30, 2024) are depicted in the project map in Figure 2. More information about each of the Section 319-funded watershed-based planning projects (Table 1), Section 319-funded implementation projects (Table 2), and RSP (state-funded) projects (Table 3) are included in GRTS and the tables below.

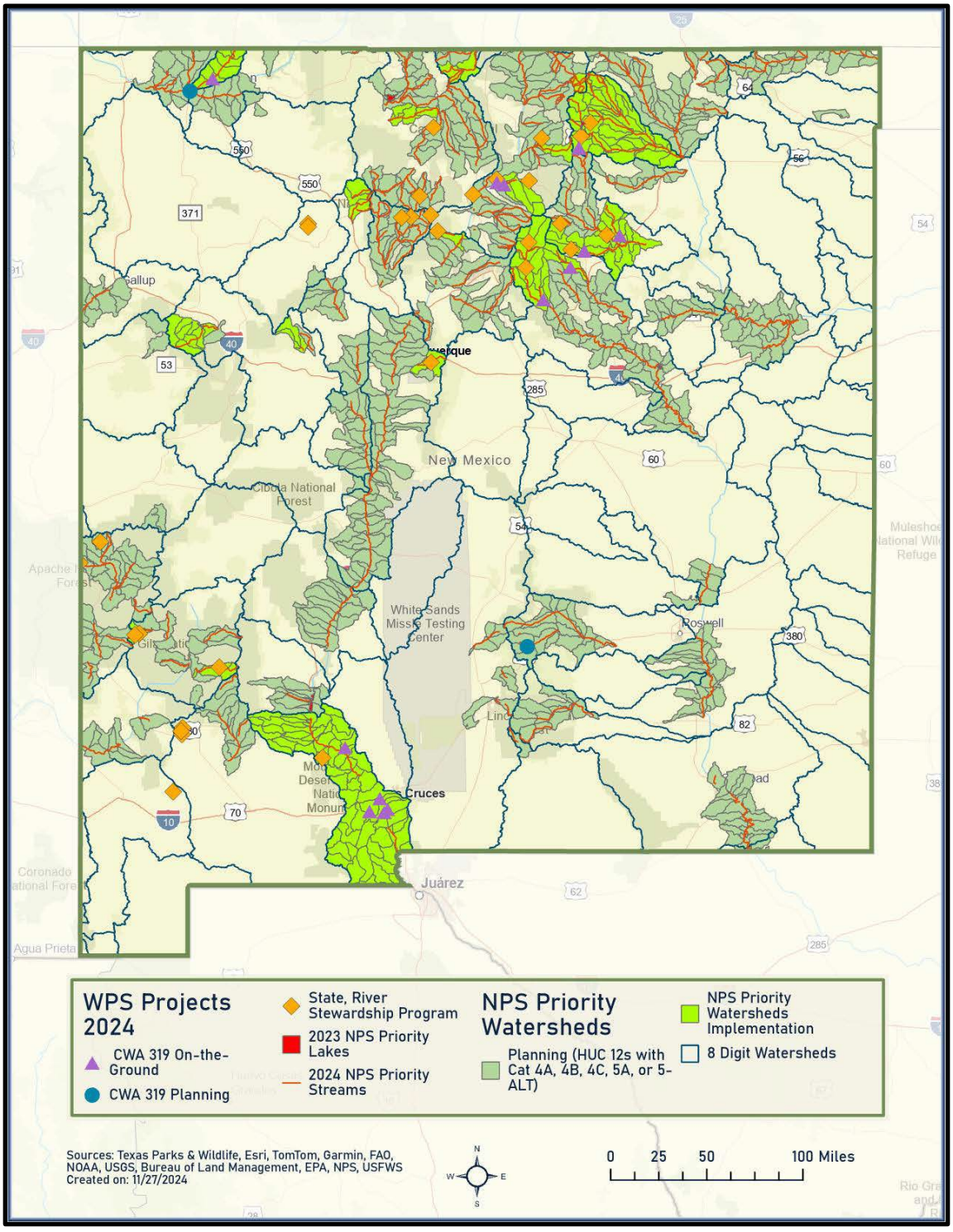


Figure 2. Map of CWA Section 319 and River Stewardship Program projects active in 2024.

Watershed-Based Planning Projects

An important component of the NPS Management Program is the watershed-based plan (WBP) approach as outlined in the guidance provided in EPA's *Nonpoint Source Program and Grants Guidelines for States and Territories* (www.epa.gov/nps/319-grant-current-guidance). A WBP expands on the information provided in a TMDL by identifying causes and sources of impairment, recommending management measures, estimating expected load reductions from management measures, providing methods to measure implementation success, estimating funding needs, and outlining potential education and outreach efforts. NMED supports watershed-based planning through a competitive subgrant process, conducted approximately every other year, and through technical support provided to partner agencies and stakeholder groups interested in water quality. WBP projects completed or in progress in 2024 are listed in Table 1 below. Completed WBPs and more information on watershed-based planning are available at www.env.nm.gov/surface-water-quality/wbp.

Table 1 - Watershed-based planning projects completed or in progress, 10/1/2023 through 9/30/2024.

Grant Number	Project Number	Project Title	Project End Date	Section 319 Funds	Local Match	Summary Report
01F98701	22-SJW	San Juan Watershed-Based Planning Project	12/31/2024	$116,056	$77,626	VIEW
99610120	23-C	Rio Ruidoso Watershed Improvement Project - Planning Phase	6/30/2026	$137,250	$91,500	VIEW

Watershed Implementation Projects

Through a combination of funding programs, partnerships, education and outreach activities, New Mexico encourages interested parties to implement WBPs to control or reduce water quality impairments. The following table lists New Mexico's current and recently completed Section 319 watershed implementation projects.

Projects denoted by "Part 1," "Part 2," or "Part 3" indicate a single project funded by more than one Section 319 grant from EPA to NMED. Projects with "Phase" in their titles were developed and funded separately under separate agreements from earlier projects completed in the same area.

Table 2 - Section 319 Watershed Implementation Projects completed or in progress, 10/1/2023 through 9/30/2024.

Grant Number	Project Number	Project Title	Project End Date	Section 319 Funds	Local Match	Summary Report
99610119	20-Q	Restoring the Rio Quemado Riverine Wetland on Los Potreros Open Space, in Chimayo, NM (Part 2)	12/31/2023	$143,718	$81,097	VIEW

Grant Number	Project Number	Project Title	Project End Date	Section 319 Funds	Local Match	Summary Report
99610119	20-R	Watershed Project Implementation for the Mora River – Upper Canadian Plateau Phase IB (Part 3)	12/31/2023	$174,859	$76,088	VIEW
99610119	21-C	Rincon Arroyo Watershed Stabilization Project to Reduce *E. coli* loading to the Rio Grande (Part 3)	04/30/2025	$256,952	$214,008	VIEW
99610119	21-F	Bonito Meadow Stream and Wetland Restoration Project, Phase 1	06/30/2024	$227,824	$194,227	VIEW
99610119	21-H	Rio Nutrias Watershed-Based Plan Implementation Phase II	06/30/2024	$219,377	$310,950	VIEW
01F98701	21-SJW	Lower Animas Watershed Based Plan Implementation Projects Phase 3	09/30/2024	$230,807	$153,643	VIEW
99610120	22-C	Temperature and Erosion Reduction in Lower Cow Creek – Phase III	09/30/2025	$257,640	$172,076	VIEW
99610120	22-D	Restoring Springs and Wetlands on State Trust Lands in the Lower Embudo Valley	12/31/2024	$150,510	$104,408	VIEW
99610120	22-E	Managing Watershed Runoff into the Mesilla Valley	06/30/2026	$443,067	$295,378	VIEW
99610120	22-F	Watershed Project Implementation for Upper Gallinas River and Porvenir Creek - Phase IV	12/31/2024	$505,063	$345,967	VIEW
99610121	24-C	Upper Cieneguilla Creek Wetland Restoration and Enhancement Project	06/30/2026	$99,695	$74,894	VIEW
99610121	24-D	Watershed Project Implementation and Post-Fire Remediation for Sapello River Watershed - Phase I	12/31/2026	$782,147	$522,686	VIEW
99610121	24-E	Watershed Project Implementation for Wolf Creek Watershed - Phase I	12/31/2026	$93,884	$82,690	VIEW

River Stewardship Program

A key part of the NPS Management Program is the state-funded RSP. The goal of RSP is to fund projects that enhance the health of rivers by addressing the root causes of poor water quality and stream habitat. The New Mexico Legislature appropriates funds for RSP to design and construct projects that improve surface water quality or river habitat statewide and to provide state matching funds to match NMED CWA grants. Annual appropriations have range from $500,000 to $12,250,000. The New Mexico Legislature appropriated $2,000,000 in capital outlay funds for state fiscal year 2025. In July 2024, the RSP received its first annual distribution from the Land of Enchantment Legacy Fund, a conservation fund that funds multiple New Mexico state programs aimed at conservation. NMED received a total of $1,250,000, from the Land of Enchantment Legacy Fund for state fiscal year 2025. To further support the growing RSP, NMED submitted a request for $10,000,000 in capital outlay funds for RSP for state fiscal year 2026. The amount the RSP will receive of the $10,000,000 request will be determined during the 2025 New Mexico Legislative Session and reported in the 2025 NPS Annual Report.

On October 27, 2023, NMED issued a Request for Proposals (RFP) for new RSP projects. The RFP was finalized in December 2024 and new projects will be reported in the 2025 NPS Annual Report.

Table 3 - River Stewardship Program projects completed or in progress, 10/1/2023 through 9/30/2024.

Grant Number	Project Number	Project Title	Project End Date	State Funds	Summary Report
99610119	20-N	Pecos River Cowles Restoration Project	12/31/2023	$281,081	VIEW
99610120	22-G	Restoration of Gila Trout and Riparian Habitat on Black Canyon Creek, Gila National Forest	06/30/2024	$207,246	VIEW
99610120	22-H	Restoring Stream and Riparian Health along the Santa Cruz River on Los Potreros Open Space	11/15/2023	$42,484.97	VIEW
99610120	22-I	Reimagining San Vicente Creek	06/30/2024	$170,467	VIEW
99610120	22-K	Centerfire Creek Headwaters Restoration Project	06/30/2025	$445,370	VIEW
99610120	22-L	Los Alamos Canyon Creek Watershed Restoration Project	06/30/2025	$291,709	VIEW
99610120	22-M	Riparian Restoration in Torreon Wash Watershed - Phase II	06/30/2024	$206,742	VIEW
99610120	22-N	San Antonio Creek Headwaters and Erosion Control Project	06/30/2025	$259,214	VIEW

Grant Number	Project Number	Project Title	Project End Date	State Funds	Summary Report
99610120	22-O	Chihuahueños Creek Headwaters Restoration Project	06/30/2025	$209,990	VIEW
99610120	22-P	Post-Wildfire Restoration of Little Turkey Creek, Willow Creek Watershed, Southwestern New Mexico	06/30/2024	$133,061	VIEW
99610120	22-Q	Dalton Fishing Area Restoration Project	06/30/2025	$243,245	VIEW
99610120	22-R	Two Rivers Park River Restoration Phase III	06/30/2024	$215,730	VIEW
99610120	23-D	Stream and Wetland Restoration along the Arroyo La Mina in the Lower Embudo Valley	6/30/2025	$310,080	VIEW
99610121	24-F	Expanding Riparian and Wetland Resilience in Burro Ciénaga, NM	6/30/2025	$416,875	VIEW
99610121	24-G	Stream and Riparian Restoration on Stone Creek, Quemado Ranger District, Gila National Forest	6/30/2025	$291,174	VIEW
99610121	24-H	Restoration of Trout Habitat on the Cimarron River – Phase II	6/30/2025	$471,935	VIEW
99610121	24-I	Wetland and Stream Restoration in the Moreno Valley	6/30/2025	$95,737	VIEW
99610121	24-J	Restoration of Tijeras Creek Floodplain, Streambed and Riparian Habitat	6/30/2025	$824,352	VIEW
99610121	24-K	Reimagining San Vicente Creek and the Silver City Watershed – Phase 2	6/30/2025	$298,387	VIEW
99610121	24-L	Mora River Restoration, Rio Mora National Wildlife Refuge – Phase II	6/30/2025	$439,981	VIEW
99610121	24-M	Sapello River Restoration, Pritzlaff Ranch	6/30/2025	$415,720	VIEW
99610121	24-N	Taos Pueblo Ecological Restoration of Buffalo Pasture and the Rio Lucero Project	6/30/2026	$676,859	VIEW
99610121	24-O	Santa Clara Creek Restoration Project	11/15/2026	$1,031,352	VIEW
99610121	24-P	Improving Watershed Hydrologic Function along Farming and Rangeland Communities of the Rio Grande Basin	6/30/2025	$2,449,437	VIEW

Grant Number	Project Number	Project Title	Project End Date	State Funds	Summary Report
99610121	24-Q	Calf Canyon and Hermit's Peak Post-fire Rapid Response Mitigation and Protection of Acequias in Mora County	11/15/2026	$515,906	VIEW
99610121	24-R	San Antonio Creek Riparian and Beaver Habitat Restoration Project	06/30/2025	$211,377	VIEW
99610121	24-S	Adapting and Improving River Stewardship in the Torreon Wash Watershed	06/30/2025	$221,660	VIEW
99610121	24-T	Willow Creek Watershed Restoration Project – Private Lands Reach	06/30/2025	$598,980	VIEW
99610121	24-U	Curb Cuts and County Roads: Greening Urban Infrastructure to Improve Water Quality in San Vicente Creek	06/30/2025	$302,658	VIEW
99610121	24-V	Rio Pueblo Restoration Project	06/30/2025	$788,562	VIEW

The comprehensive list of current and past Section 319, RSP and other state-funded projects, including project work plans and reports, is available on our website: https://www.env.nm.gov/surface-water-quality/watershed-protection-section/

River Stewardship Program Project, Post-Wildfire Restoration of Little Turkey Creek, Willow Creek Watershed, Southwestern New Mexico *completed in June 2024. Allen Haden from Natural Channel Design Engineering leads a training session on bank erosion restoration techniques to eager volunteers ready to improve bank stability of Little Turkey Creek. This project was located entirely within the Gila Wilderness and volunteers were a critical component that afforded an opportunity to employ low-tech, hand operated procedures to restore habitats and to attain project goals.*

NPS Management Program Accomplishments in 2024

NMED seeks to meet the long-term goal of the NPS Management Program with specific actions described in the NPS Management Plan taken over approximately a five-year period. The NPS Management Plan includes at its core six objectives aimed at reducing and preventing NPS pollution in New Mexico:

1) Complete WBPs to Enable Effective Implementation,

2) Improve Water Quality,

3) Protect Water Quality,

4) Share Information on Surface Water Quality,

5) Protect Ground Water Quality, and

6) Cooperate with other Agencies on Water Quality Protection and Improvement.

With each objective is a list of activities necessary to achieve the objective and verification milestones used to evaluate whether objectives have been attained. Milestones are an integral part of the NPS Management Program and a requirement under Section 319(b)(2)(c) of the Clean Water Act. The six program objectives and corresponding milestones from the NPS Management Plan are listed below, along with reports of progress made in federal fiscal year 2024 (October 1, 2023 through September 30, 2024). Use of *italics* below indicates text cited directly from the 2019 NPS Management Plan. Non-italics text is used to provide progress for 2024.

Objective 1 – Complete WBPs to Enable Effective Implementation

To produce WBPs that meet all nine elements identified in the **Nonpoint Source Program and Grants Guidelines for States and Territories*, and acceptable alternatives to WBPs, for an average of three priority watersheds per year.***

Objective 1 Verification Milestones and Reports of Progress

- *In 2019 through 2023, at least one WBP per year, covering at least one priority watershed each, will be supplemented, updated, or completed, and accepted by the EPA as meeting the nine elements of WBPs.*

  There were no new EPA-accepted WBPs during the reporting period. There are two active WBP projects: San Juan Watershed-Based Planning Project (ending 12/31/2024) and the new Rio Ruidoso Watershed Improvement Project – Planning Phase (ending 6/30/2026).

  Accepted WBPs are available at www.env.nm.gov/surface-water-quality/wbp, via a "list of EPA-Accepted WBP, Draft WBP, and Watershed Restoration Action Strategies" near the bottom of that page.

- *Development of an index to use Recovery Potential Screening (RPS) to prioritize watershed-based planning projects will be reported in the NPS Annual Report for 2020. (Recovery Potential Screening is described in depth at http://www.epa.gov/rps.)*

  A report of NMED's use of RPS was provided in the earlier NPS Annual Report for 2020.

- *One or more streams are included within assessment category 5-alternative, as a result of cooperative WBP completion by WPS, MASS, and stakeholders, by 2022.*

  The WBP for American Creek, a tributary of Cieneguilla Creek (HUC 110800020104) within the larger Cimarron River watershed, was accepted as a WBP on May 17, 2022 and as a TMDL alternative on May 19, 2022 by EPA for the impairment parameters total recoverable aluminum and *E. coli*. American Creek is in the *2024- 2026 Integrated Report* approved by EPA on May 17, 2024 and listed in reporting Category 5-alternative for both of these parameters.

- *An inventory of watersheds covered by WAPs and an associated GIS coverage (posted on the SWQB mapper web site at https://gis.web.env.nm.gov/oem/?map=swqb) is completed, to update the list of priority watersheds for implementation, in 2019.*

  This work was completed in an earlier reporting period. The result is available to review in the Surface Water Quality Bureau mapper linked above, in a group called "Wetland Action Plans."

- *A post-fire response plan or project work plan that qualifies as a WBP alternative will be submitted to EPA within two years of any major wildfire occurring in the watershed of one or more streams with a cold water or cool water aquatic life designated use and a fire severity that falls outside the natural range of variability for the affected forest types.*

  This milestone was met in previous reporting periods. In 2023, Hermit's Peak Watershed Alliance submitted a post-fire mitigation project (Project 24-D in Table 2) for work on the Sapello River watershed (HUC 1108000402). The Sapello River Watershed, among many others, was impacted by the Hermit's Peak – Calf Canyon Fire in 2022. This project was selected for funding under the Section 319 Implementation Solicitation for Applications in 2023. A post-fire mitigation work plan was developed as part of the Section 319 subgrant agreement, and a post-fire mitigation action plan was also written from a template provided by the Federal Emergency Management Agency (FEMA) and New Mexico Department of Homeland Security and Emergency Management (NMDHSEM) interagency working group. Both the subgrant agreement and the post-fire mitigation action plan were accepted by the EPA.

- *Watershed plans include information from major land owners and land management agencies, and all states, Indian nations, pueblos, and tribes, within their planning areas.*

  The WBP completed in 2023 for Wolf Creek Watershed is nearly entirely privately owned and includes less than 1% of public land owned by the National Park Service; no tribal lands are within the Wolf Creek Watershed planning area. Working with the private landowners on the

Wolf Creek Watershed was necessary to ensure that the information in the plan about land use was correct.

The San Juan Watershed-Based Planning Project (Project 22-SJW in Table 1) began in 2022, and the project area includes portions of Navajo Nation and Ute Mountain Ute lands. The work plan for this project describes how the sub-grantee (San Juan Soil and Water Conservation District (SWCD)) will work with the Navajo Nation Environmental Protection Agency, chapter houses, and Diné College to develop the WBP.

During the reporting period, staff from the SWQB worked with staff from the United States Forest Service (USFS) to build a crosswalk between requirements of the WBP, Watershed Restoration Action Plan (USFS requirement), TMDLs and other alternative WBPs. The crosswalk is still a work in progress, but SWQB staff hope the final product will be useful to groups interested in developing planning documents and assist in converting existing Watershed Restoration Action Plans into full 9-element WBPs.

Objective 2 – Improve Water Quality

Effective watershed-based NPS restoration programs are implemented, using multiple funding sources, in identified priority watersheds at an average of three new watersheds per year.

Objective 2 Verification Milestones and Reports of Progress

- *Water quality conditions are improved in one priority watershed annually in 2019 through 2023 because of projects or improvements in land management funded or encouraged by New Mexico's NPS Management Program. Some actions leading to this water quality improvement likely will have been initiated before 2019.*

Rito de los Indios on the Valles Caldera National Preserve showed an improvement in turbidity following restoration efforts and therefore was selected as our next NPS Success Story.

Rito de los Indios on the Valles Caldera National Preserve (Preserve) is a tributary to the headwaters of San Antonio Creek. The watershed was affected by the Las Conchas fire of 2011, with burned areas delivering sediment and ash to the stream. Water quality surveys documented problems, including turbidity levels exceeding the standards. The non-profit group Los Amigos de Valles Caldera in conjunction with the Preserve and the NMED set out to improve the creek with a stream and wetland restoration project, which was successful in reducing turbidity.

Flooding in the Valles Caldera National Preserve on the Rito de los Indios after the 2011 Los Conchas Fire.

The Las Conchas wildfire of 2011 burned in the watershed of Rito de los Indios, killing trees and creating hydrophobic soil conditions, which led to floods that caused erosion and sedimentation. Water quality surveys on Rito de los Indios in 2013 documented problems with temperature, nutrients, and turbidity. Preserve and SWQB staff deployed sondes that provided nutrient and turbidity data showing levels exceeding the NM water quality standards, including a maximum temperature of 24.6 degrees Celsius which also exceeded the threshold for the cold water aquatic life designated use. Therefore, nutrients, temperature, and turbidity were added as impairments to Rito de los Indios in the *2016 Integrated Report*. Prior to the Las Conchas fire, Rito de los Indios was listed for aluminum, which was thought to be from natural background sources.

In response to the wildfire and flooding impacts, Los Amigos de Valles Caldera worked with the Preserve and NMED to carry out a restoration project on Rito de los Indios, with the goal of building structures to reduce flow velocity, spread out sediment and ash, and prevent further erosion. The restoration methods relied on inexpensive materials collected locally to construct structures to improve wetlands and streams. The "Plug and Pond" technique was the primary method to preserve and restore wet meadows damaged by wildfire runoff and gullying.

Restored section of the Rito de los Indios in the Valles Caldera National Preserve.

Other structures also used to prevent erosion and sedimentation include one rock dams, contour swales, rock arch dams, rock rundowns, and Zuni bowls. A wide swale channel lengthened the flow path of a tributary which had flowed with so much sediment that it moved the stream out of the channel. This treatment stabilized the alluvial fan to prevent further erosion. Roads in the watershed were also damaged by post-fire flooding and are additional sources of sediment, so the project also included rolling dips, culvert repair, and porous fill road crossings.

Post-treatment monitoring has shown that the project was successful in improving Rito de los Indios, including vegetation surveys, pond sediment capture measurements, and water quality monitoring.

Surveys of the ponds showed that while one was filled with sediment, others were not. The pond sites that were found to have captured less sediment are downstream from areas of wetland or meadows, where channels transition to sheet flow. The sheet flow areas appear to have been effective in capturing sediment in tall grasses and wetland plants. The combination of ponding and sheet flow together can be expected to capture much more sediment than ponds alone. Surveys of vegetation using the line point intercept method showed an increase in cover after the restoration project.

The SWQB of NMED measured water quality on Rito de los Indios as part of the Jemez Survey of 2021-22. A sonde deployment in June of 2022 showed that turbidity duration thresholds were not exceeded. Furthermore, grab samples showed no more than four consecutive values greater than 7 NTU, therefore the turbidity impairment was removed. However, the nutrient and temperature impairments remain, therefore further monitoring is recommended on the Rito de los Indios.

More information about NPS Success Stories, including New Mexico's past NPS Success Stories, is available at www.epa.gov/nps/success-stories-about-restoring-water-bodies-impaired- nonpoint-source-pollution.

Highlights of WPS effectiveness monitoring in 2024 are summarized in Table 4.

Table 4 - Stream assessment units and notes summarizing WPS effectiveness monitoring in 2024. These streams were monitored to determine the effects of restoration projects on water quality. The water quality parameter that was monitored is stream temperature unless otherwise indicated. Several project reaches from previous years were removed this year to allow more time for data analysis.

Assessment Unit	Notes
Comanche Creek (Costilla Creek to headwaters)	Monitoring continued at this Rio Grande Cutthroat trout re-introduction area, at six previously measured sites upstream and downstream of a myriad of projects. Data loggers recorded stream temperature from July 3, 2024 to October 22, 2024.
Holman Creek (Comanche Creek to headwaters)	Stream temperature loggers measured the effects of the Keyline design Wetlands project on two sub-watersheds and just upstream of the confluence with Comanche Creek. Data loggers recorded stream temperature at three sites from July 3, 2024 to October 22, 2024. Emile Sawyer, a former SWQB employee now volunteering, has continued to collect shallow groundwater data on this project for the Wetlands Program.
Jaramillo Creek (East Fork Jemez to headwaters)	Stream temperature loggers continued to record data at three sites to follow up on potential temperature improvements after good vegetation growth, to follow up on trend of improvement identified in Success Story. The planted willows are still thriving and the fishing is still good. Data loggers recorded stream temperature from June 28, 2024 to October 10, 2024.
San Antonio Creek (East Fork Jemez to VCNP boundary)	Continued post-implementation stream temperature monitoring following construction of beaver dam analogs (BDAs). Data loggers re- corded stream temperature at two sites (upstream, downstream) from June 26, 2024 to October 29, 2024. Some structures showed stream bank erosion around the edges from high flow events, and some showed increases in backwater aquatic habitat.
Willow Creek (Gilita Creek to headwaters)	The Effectiveness Monitoring Coordinator and WPS staff continued baseline monitoring of stream temperature and metals. Several restoration projects are now complete. We deployed stream temperature loggers and collected metals samples upstream and downstream of the project area, and measured stream flow in the middle of the reach. Stream temperature loggers recorded stream

	temperatures from July 1, 2024 to December 20, 2024. We collected metals and hardness samples at both locations during each of the two visits and submitted them for analysis to the State Laboratory Division for analysis, including blanks for QA/QC.
Rio de las Vacas	Post-implementation monitoring of Rio de las Vacas continued in 2024. Vegetation inside the exclosures appeared healthy and well-established. Stream temperature loggers collected data from June 26, 2024 to October 16, 2024.
Rito Peñas Negras	Data loggers recorded stream temperatures from June 25, 2024 to October 17, 2024 at three locations above and below previous and ongoing restoration activities. In addition to planting inside cattle and elk exclosures, recent efforts include beaver dam analogs and in-stream structures.

- *Begin implementation of watershed restoration projects described in WBPs or WBP alternatives to reduce NPS pollutant loads within two priority watersheds per year in 2019-2023.*

  There were no new projects started during the reporting period. However, the RSP Request for Proposals (RFP) was released on October 27, 2023 and 12 new projects to improve surface water quality were selected for funding. These new projects will be included in next year's report as the contracts were finalized in the next reporting period. A Request for Application for on-the-ground projects that implement projects described in WBPs will be issued in the next reporting period.

- *Report on the use of RPS to prioritize watershed implementation projects in the NPS Annual Report for 2020.*

  WPS used RPS in the SFA that was conducted in 2020 and reported on this in the NPS Annual Report for 2020.

- *Water quality improvements are documented in each NPS Management Program Annual Report.*

  Water quality improvements are documented in the sections *NPS Pollutant Load Reduction Reporting, Summaries of Section 319 Projects Completed in 2024*, and *Summaries for the New Mexico River Stewardship Program Projects Completed in 2024*.

- *The NMED Construction Programs Bureau provides a summary of activities related to use of the Clean Water SRF to protect or improve water quality for each NPS Management Program Annual Report.*

  The Construction Programs Bureau prepared and submitted an annual report for state fiscal year 2024 (July 1, 2023 – June 30, 2024) to summarize funding and activities for the Clean Water State Revolving Fund (CWSRF). Included in the report are current nonpoint source projects in progress: Santa Fe River Stormwater Mitigation and City of Anthony South Arroyo Flood Control Project.

The Santa Fe River project addresses damage done in the 2018 floods, including bank damage allowing livestock and agricultural contamination to enter the Santa Fe River. The City of Anthony project addresses stormwater contamination entering the Rio Grande.

The CWSRF FY 2025 Intended Use Plan (IUP) lists non-point source aligned projects. These projects are all eligible for funding and are in various stages of financial and technical review and consideration.

- Flora Vista Sanitary Sewer Collection
- City of Santa Fe Sewer Rehabilitation Project

The Flora Vista Sanitary Sewer Collection System could help implement the Lower Animas River WBP. The WBP describes the problem of liquid waste treatment in the Flora Vista area and recommends a Flora Vista sewer extension among management measures to reduce nutrient and *E. coli* loading to the Animas River. The City of Sante Fe Sewer Rehabilitation Project will protect surface waters in the Santa Fe metropolitan area, including the Santa Fe River. The CWSRF Annual Report, IUP, and Project Priority List are available at www.env.nm.gov/funding-opportunities.

Objective 3 – Protect Water Quality

The quality of surface water resources is maintained through coordinated activities, permitting programs, and technical assistance provided to assist cooperating agencies and landowners with efforts to understand water quality and protect surface waters from NPS pollution.

Objective 3 Verification Milestones and Reports of Progress

- *NMED will document procedures for SWQB to enforce regulations at 20.6.2 NMAC pertaining to refuse in a watercourse in 2019.*

  In a previous reporting period (2020), NMED staff developed a draft Standard Operating Procedure (SOP) for responding to complaints related to surface water quality, including complaints of refuse disposed of in watercourses. However, the effort to complete the SOP stopped due to complexities in combining all relevant regulations which are not limited to those at 20.6.2 NMAC. It was noted that state or local regulations, not specific to surface water quality, apply to refuse dumping and other bureaus within NMED and other local agencies should be consulted in developing appropriate responses to complaints.

  In 2023, the SWQB developed a Civil Penalty Assessment Policy should civil penalties be required for enforcement actions issued pursuant to the New Mexico Water Quality Act. Should a violation of the 20.6.2 NMAC pertaining to refuse in a watercourse lead to enforcement actions that include issuing a civil penalty, this policy would be used to determine a fair and consistent penalty.

- *The NPS Annual Report will include a summary of actions taken to prevent and abate disposal of refuse in watercourses.*

  The SWQB received 10 reports from the public related to refuse in a watercourse including three reports concerning sewage, four reports related to construction activity, and one report each regarding

crashed vehicles, irrigation water, and illegal dumping. SWQB staff coordinated with local county code enforcement on the illegal dumping incident which was occurring adjacent to a waterbody. SWQB conducted a site visit and coordinated with NMED's Onsite Wastewater Program, part of the Environmental Health Bureau, regarding the sewage reports. No evidence of sewage was identified during one site visit, and the Onsite Wastewater Program staff worked to ensure compliance with appropriate state septic permits for the other incidents. SWQB Watershed Protection Section staff coordinated with SWQB Point Source Regulation Section staff and the U.S. Army Corps of Engineers (USACE) to ensure construction activities were in compliance with CWA Sections 402 and 404 permits. Two vehicles crashed into lakes at Bluewater Lake and Bottomless Lakes on property managed by the New Mexico State Parks Division – there were no fatalities, both vehicles were recovered with cranes.

Within two years of any major wildfire occurring in the watershed of one or more streams with a cold water or cool water aquatic life designated use, with severity outside the natural range of variability for the affected forest types, NMED will fund post-fire actions that reduce sedimentation and protect aquatic habitat, with support of Section 319 watershed project funds.

During the reporting period, no new post-fire projects were funded. However, SWQB staff continue to be very involved in multi-agency collaboration groups coordinating post-fire responses and recovery efforts. As a result, the SWQB expects to continue to fund post-fire projects to reduce sedimentation and protect aquatic habitat, especially in waters with cold water or cool water aquatic life designated uses.

In 2024, the Salt Fire and South Fork devasted Ruidoso, NM and the surrounding watersheds. Watersheds impacted by the fires included: Middle Rio Ruidoso (HUC 130600080106), Cherokee Bill Canyon (HUC 130600080102), Carrizo Creek (HUC 130600080101), Upper Rio Ruidoso (HUC 130600080103), Devils Canyon (HUC 130600080105), Upper Rio Bonita (HUC 130600080201), and the Middle Rio Bonita (HUC 130600080207). Several streams, including Carrizo Creek, Rio Hondo, Rio Bonito, and Rio Ruidoso, all are designated for cold water aquatic life uses but have existing water quality impairments resulting in these streams not supporting this designated use. The SWQB expects to amend a watershed-based planning project (project 23-C, Table 1) for the Rio Ruidoso to expand the scope of work to include additional watersheds impacted by the Salt Fire and South Fork Fire in 2024.

- *A summary of CWA Section 401 certification activity will be reported annually in the NPS Management Program Annual Report.*

The purpose of CWA Section 401 is to ensure that federally issued permits and licenses, including CWA Section 404 permits authorized by the USACE for the discharge of dredged or fill material into waters of the United States, comply with State water quality standards. The USACE generally issues three kinds of permits in New Mexico: Standard Individual Permits (IPs), Nationwide Permits (NWPs), and Regional General Permits (RGPs). The most commonly used permit is the NWP which covers a wide range of activities that generally have no more than minimal individual and cumulative adverse environmental effects. SWQB ensures that these permits comply with State water quality standards by either granting certification with or without conditions, denying certification which prohibits the federal

permit or license from being issued, or waiving certification which allows the permit or license to be issued without comment. The NWPs and RGPs are generally re-issued every five years along with re-issued 401 certifications.

In 2024, SWQB staff reviewed fifty-seven projects covered by NWPs, three projects covered by NWPs that required expedited certifications, seven projects covered by RGP 16-01 (utility line construction, maintenance, repair or removal), and one project requiring an Individual Permit. The most common NWP issued in 2024 was NWP 27-Aquatic Habitat Restoration Projects (18 projects), followed by NWP 14-Linear Transportation Projects (15 projects), NWP 13-Bank Stabilization Projects (7 projects), and NWP 3-Maintenance Projects (6 projects). An Individual Permit was required for a project involving a recreational wave feature on the Animas River; the SWQB initially declined issuing the water quality certification due to concerns raised by the U.S. Fish and Wildlife Service and a lack of information provided by the project proponent in the certification request. The SWQB requested additional information from the project proponent to demonstrate how the recreational wave feature will allow upstream fish passage and support the state surface water quality standard for Biological Integrity at 20.6.4.13.M NMAC. Among other things, SWQB's review evaluates the BMPs that have been selected for each project to protect water quality and ensures that each project is consistent with the CWA Section 401 Water Quality Certification (WQC). More information about New Mexico's CWA Section 401 program is available at SWQB's website: www.env.nm.gov/surface-water-quality/dredgeandfillactivities/.

- *A summary of activities related to the New Mexico Mining Act will be reported annually in the NPS Management Program Annual Report.*

  A separate section below summarizes the New Mexico Mining Act activities carried out under the NPS Management Program in 2024.

- *A summary of significant developments related to ONRWs will be provided in the NPS Management Program Annual Report.*

  USFS often considers some aspects of a larger fire event to constitute an emergency (e.g. when human life or infrastructure is threatened) and initiates suppression activity. The Antidegradation Policy in New Mexico's water quality standards at 20.6.4.8 NMAC allows for short term water quality degradation in Outstanding National Resource Waters (ONRWs) "[w]here an emergency response action that may result in temporary and short-term degradation to an ONRW is necessary to mitigate an immediate threat to public health or safety…" In these situations, 20.6.4.8 NMAC requires "the discharger [to] notify the department of the emergency response action in writing within seven days of initiation of the action" and "within 30 days of initiation of the emergency response action, the discharger shall provide a summary of the action taken."

  In 2024, the SWQB received two ONRW reports from the USFS regarding fire suppression and emergency actions associated with the Indios Fire (Figure 3) and the Ridge Fire. The USFS avoided retardant drops in close proximity to ONRWs and perennial streams. The USFS follows Minimum Impact Suppression Tactics (MIST) approved for suppression activities in wilderness areas, where both fires occurred.

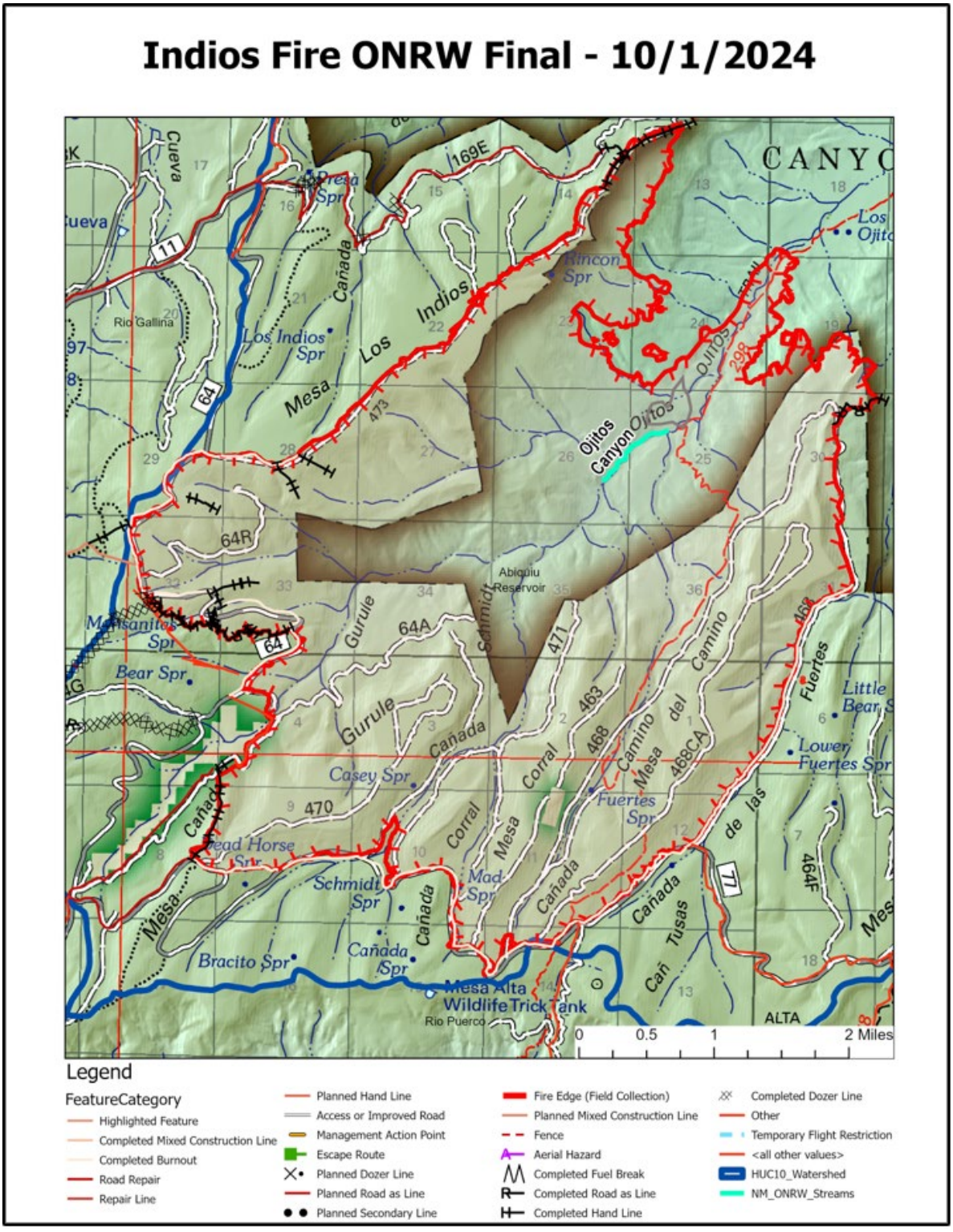


Figure 3. Map of the Indios Fire and ONRW streams within the fire footprint.

During 2024, the New Mexico Department of Transportation submitted a Clean Water Act Section 404 permit application, under Nationwide Permit 14, and a Clean Water Act Section 401 certification request to replace the existing bridge #3926 over the Rio Mora along NM 63 through Pecos Canyon in San Miguel County. The bridge is located within an ONRW and required an individual water quality certification, because the general water quality certification for the Nationwide Permits does not cover activities located in ONRWs other than restoration activities. SWQB issued the individual certification on June 3, 2024. The new bridge will fully span the Rio Mora, and once construction is completed towards the end of 2025, the old bridge and center pier will be removed during low flow. To protect water quality when the center pier is removed, surface flows will be separated from the work area using non-erodible materials such as a concrete wall barrier. All disturbed ground will be revegetated. The new bridge will not have a center pier which will allow the Rio Mora to have more unrestricted flow and therefore enhance water conveyance and ecological functions.

Old Bridge #3926 over the Rio Mora during a high flow condition.

- *A summary of federal consistency review under NEPA will be reported annually in the NPS Management Program Annual Report.*

NMED's environmental review coordinator in the Office of the Secretary receives most requests for comments on National Environmental Policy Act (NEPA) documents, forwards them to the NMED bureaus, and applicable bureaus usually prepare comments. The coordinator compiles the comments and submits them to the requesting agency. Agencies that would like NMED to review a project or NEPA document should submit their documents via email to env.review@env.nm.gov.

In federal fiscal year 2024, NMED conducted 61 environmental reviews and SWQB submitted comments for 39 of the projects. Most SWQB comments informed project proponents of the need to comply with Sections 402 and 404 of the Clean Water Act and provided more background to assist them in doing so.

- *A summary of activities related to forest restoration will be reported annually in the NPS Management Program Annual Report.*

  NMED continued to participate in the state Forest and Watershed Restoration Act (FAWRA) program managed by New Mexico State Forestry. One new project that will protect water quality for downstream users was selected for FY 2024: Tres Rios Watershed Coalition project which will help protect the Rio de las Trampas and Embudo Creek downstream. More information about FAWRA, including a list of ongoing projects, is available at www.emnrd.nm.gov/sfd/forest-and-watershed-restoration-act-fawra/. Additional forest restoration efforts by New Mexico State Forestry are summarized in the New Mexico Forestry Division section.

- *The biennial* State of New Mexico CWA §303(d)/§305(b) Integrated Report and List *will provide summaries of water quality survey activity, analysis, and conclusions in 2020 and 2022. The NPS Annual Report for these years will provide the percentage of assessed stream miles or watersheds designated as impaired, for comparison with previous years.*

  This milestone was completed in the previous reporting cycles. The 2022-2024 *Integrated Report* was approved by the New Mexico Water Quality Control Commission (WQCC) on March 16, 2022, and by EPA on April 26, 2022. Appendix A of the *Integrated Report* is the combined Sections 303(d) and 305(b) list of impaired waters.

  The 2024-2026 *Integrated Report* was approved by the New Mexico Water Quality Control Commission (WQCC) on March 12, 2024 and by EPA on May 17, 2024. Of 8,673 miles of streams with assessment status provided in the 2024-2026 *Integrated Report*, 4,874 (56%) were classified as impaired (Category 4 and 5 waters).

  Current and previous versions of the *Integrated Report* are available at www.env.nm.gov/surface-water-quality/303d-305b/.

- *A summary of activities and accomplishments under the Wetlands Program will be provided in each NPS Management Program Annual Report.*

  This summary is within the **Wetlands Program** section below.

- *At least one project outlined in a WAP supported with Section 319 watershed project funds will begin by 2021.*

  This milestone was met. One new project funded with Section 319 watershed project funds in 2023 (Project 24-C in Table 2) will implement projects outlined in both the Moreno Valley Wetlands Action Plan and the Cimarron Watershed-Based Plan.

- *The NMED Construction Programs Bureau will provide a summary of activities related to the use of the Clean Water SRF to protect or improve water quality for each NPS Management Program Annual Report.*

  This information is reported above under **Objective 2 Verification Milestones and Reports of Progress**.

Objective 4 – Share Information on Surface Water Quality

General public awareness of NPS pollution and water quality is increased and maintained through an effective education and outreach program using strategically selected educational resources available throughout the State.

Objective 4 Verification Milestones and Reports of Progress

- *SWQB will organize a data sharing network to solicit external data, meeting data quality standards, that will be assessed in the State of New Mexico CWA §303(d)/§305(b) Integrated Report and List for 2022-2024. The data collected by non-NMED partners will be submitted in 2021.*

  This milestone was met. Data Sharing Network resources such as presentations and guidance documents are available, at https://cloud.env.nm.gov/water/?r=7549&k=98cfe2b2a2.

  Ten external (non-NMED) organizations submitted data for the 2022-2024 *Integrated Report*. Seven of these had participated in the Data Sharing Network. Eleven submittals were received for the 2024-2026 *Integrated Report*.

- *Watershed groups will address water quality problems as indicated by verification items listed above [related to WBP completion and implementation], accurately drawing on information resources for which the SWQB is responsible.*

  Milestone was met. SWQB staff continue to work with watershed groups to ensure they are using the most up-to-date information about water quality in their watershed, but also coordinating with groups to receive monitoring data they collect or assist with monitoring or data processing, as needed. For example, SWQB staff regularly assist with processing quarterly water samples for bacteria from San Vicente Creek for the Silver City Watershed Keepers, a local citizens' volunteer water resources stewardship program, coordinated by SWQB cooperator Gila Resources Information Project. Their program engages students and community members in the protection and restoration of the Silver City Watershed. San Vicente Creek is an impaired stream and identified in the 2008 NMED SWQB *Silver City Wetlands Action Plan*.

- *The SWQB email list, used for various surface water quality informational purposes (including distribution of Clearing the Waters), is maintained above 2,000.*

  Milestone not met. The email circulation during this period reached 1,919 subscribers. This number is below our targeted goal of 2,000. In January 2024, due to a bot within our

subscriber's list, an unknown number of our subscribers' emails may have been deleted from the system reducing the number of overall circulations. People can add themselves to the list by clicking a button at the bottom of the SWQB's home web page, which links to https://public.govdelivery.com/accounts/NMED/subscriber/ new?topic_id=NMED_4.

- *Clearing the Waters will be published quarterly with an email circulation of at least 2,000.*

Clearing the Waters (www.env.nm.gov/surface-water-quality/newsletters) was published April 4, 2024 and September 10, 2024. The April issue was dedicated to the Cold Springs Creek Success Story and highlighted a Section 319 restoration project, "*Restoring Springs and Wetlands, Lower Embudo Valley"* completed by NMED cooperator, Ecotone Landscape Planning LLC. The September issue focused on the Redondo Creek Success Story, Watershed Protection Section staffing changes, and two project profiles for completed Section 319 and RSP projects.

- *Educational opportunities provided for the public and private sector, and completed small publication projects, will be reported in the NPS Management Program Annual Report.*

SWQB staff presented at the Rio Rancho Children's Water Festival on October 23-24, 2023 at the Rio Rancho Events Center. The water festival is hosted annually for fifth graders to learn about water in an arid environment. Staff presented "The Incredible Journey" activity to 200 fifth graders over the course of the two-day festival. Students learned about their local source of domestic water, the water cycle, how pollution can travel through the water cycle, and then brainstormed ways to protect our limited water resources in New Mexico.

SWQB sponsored and helped plan the June 11-14, 2024 Animas and San Juan Watersheds Conference that was hosted by the New Mexico Water Resources Research Institute. This year's conference was tuition-free and held both virtually and in-person at the San Juan College Henderson Fine Arts Center in Farmington, NM themed, "Water Without Borders – Four Corners, Three Rivers." The conference provided technical sessions with both poster and oral presentations, plus field trips to the Animas-La Plata project, Navajo Dam, and the water treatment plant located at the outlet of the Gold King Mine. The full conference program and recorded presentations are available online (https://custom.cvent.com/71B2195CE27E41E183C8FD5B8C65755C/files/event/e95ef7b62ce74c69933fc2aa7dbabd85/978e813e54bc48f1894c6f26b068d1df.pdf). Funding for the conference was provided by EPA via a grant awarded under the Water Infrastructure Improvements for the Nation (WIIN) Act following the 2015 Gold King Mine Spill.

On November 8, 2023, SWQB staff presented at the 68th Annual Water Resources Research Institute (WRRI) New Mexico Water Conference. The conference theme was "the Colorado River's role in New Mexico's past, present, and future water management." Staff presented on "Waters of the United States (WOTUS) Rule Change and the Impacts in New Mexico:

Overview of a State-Led Surface Water Permitting Program" discussing the recent changes to the definition of WOTUS as a result of the U.S. Supreme Court's decision on Sackett v. EPA and how the SWQB is building a State Surface Water Permitting Program to ensure protection for New Mexico's surface water quality for the future. Staff also presented on "Water Quality and Riparian Restoration Projects in the San Juan-Chama Watersheds" to discuss details about the RSP and CWA Section 319 funding opportunities and showed the water quality impairments to be addressed in the San Juan River and Rio Chama watersheds in New Mexico.

SWQB staff presented to the Eight Northern Indian Pueblos Council's Intertribal Resource Advisory Committee on the RSP and CWA 319 funding opportunities on October 19, 2023. The presentation to the Intertribal Resource Advisory Committee shared information on SWQB programs, including the nonpoint source management program for New Mexico, and discussed opportunities for collaboration with the northern Indian Pueblos to protect and improve surface water quality.

SWQB cooperator, Hermit's Peak Watershed Alliance, developed and produced a post-fire restoration video series following the Hermit's Peak – Calf Canyon Fire to help inform landowners about restoring their landscapes after devasting fires. SWQB staff were

interviewed as part of the video series to provide expertise on what happens to the watershed after a catastrophic wildfire. The post-fire video series can be found on their website: (https://hermitspeakwatersheds.org/post-fire-restoration-video-series/).

SWQB staff attended and presented on addressing nonpoint source pollution and climate change at the 2023 National Nonpoint Source Workshop in Minneapolis, MN on November 9, 2023.

On August 8, 2024, SWQB staff provided the Santa Cruz Watershed Group with a presentation on the Total Maximum Daily Load and Watershed-Based Planning process. The goal of the presentation was to encourage the newly formed Santa Cruz Watershed Group to continue their planning process and turn their watershed planning efforts into an EPA-approved WBP. SWQB staff will continue to participate in group meetings and encourage WBP development.

Objective 5 – Protect Ground Water Quality

The quality of ground water resources is maintained through the water fair and water-quality outreach program along with permitting and compliance assistance for large capacity septic tank leachfields with efforts to understand water quality and protect ground water from NPS pollution.

Objective 5 Verification Milestones and Reports of Progress

- *The GWQB will report to EPA-Region 6 in the Semi-Annual Report summarizing GWQB activities conducted under the CWA Section 319 grant for the New Mexico Water Fair and Water Quality Outreach Program and Permitting and Compliance for Large-capacity Septic Tank Leachfields.*

The GWQB works to protect ground water quality from NPS pollution attributed to large capacity septic tank and leachfield systems (septic systems) and septage disposal facilities, sludge disposal facilities, and land farms (surface disposal facilities). Technical personnel in GWQB review state Discharge Permit applications, prepare and issue Discharge Permits, perform compliance assistance activities for permittees, and enforce Discharge Permit requirements for septic systems and surface disposal facilities. From October 1, 2023 through September, 30, 2024, GWQB issued 19 New, Renewal, or Renewal and Modification Discharge Permits.

Residents of New Mexico primarily rely on ground water for drinking water, and in some locations ground water is the only available source of drinking water. Since many communities are concentrated in river valleys where ground water is shallow, their drinking water supplies are susceptible to contamination from NPS pollution. To identify possible NPS water quality problems in rural New Mexico communities, GWQB conducts free testing of domestic wells ("Water Fairs") throughout the state. In 2024, GWQB conducted seven water fairs, receiving approximately 187 water samples. The Water Fairs were conducted in San Miguel, Doña Ana, Sierra, Lincoln, Luna, Catron, and Bernalillo counties.

Objective 6 – Cooperate with other Agencies on Water Quality Protection and Improvement

With assistance provided by the WPS and other SWQB programs, federal and State agencies in New Mexico actively manage a variety of natural resources to protect and restore water quality.

Objective 6 Verification Milestones and Reports of Progress

- *A Memorandum of Agreement (MOA) to allow NMED to fund on-the-ground restoration projects on United States Forest Service (USFS) managed land will be drafted and under review by NMED and USFS by December 2019. The MOA will be signed and effective by December 2020.*

  This milestone was met. The New Mexico Watershed-Based Plan Implementation Agreement was approved on December 9, 2021. No projects have been developed or funded under the agreement in 2024. The agreement allows NMED to fund USFS to implement WBPs. USFS continued to support several WBP implementation projects in 2024 carried out by other organizations.

- *The Memorandum of Understanding (MOU) between NMED and the Southwestern Region of the USFS, scheduled to expire in 2022, will be renewed.*

  This milestone was met. In May 2023, NMED and the USFS Southwestern Regional Office renewed MOU #23-667-2090-27688 which is set to expire May 2, 2028. The MOU recognizes that both entities, the USFS and NMED, are responsible for protection of water quality in New Mexico and further outlines actions for each agency to achieve this goal together.

- *The MOU between NMED and the BLM New Mexico State Office, which does not have a termination date, will be reviewed and revised if appropriate, and implemented. The resulting activities will be reported in the NPS Annual Report.*

  The Bureau of Land Management (BLM) submitted summaries of activities related to water quality management and nonpoint source pollution control in the section **Bureau of Land Management (BLM)** below.

- *The grant from the DOE that currently supports the work of the DOE Oversight Bureau will be re-issued in 2023.*

  The Department of Energy (DOE) Oversight Bureau at NMED oversees multi-year federal grants that support surface water monitoring at and near Los Alamos National Laboratory (LANL), Sandia National Laboratory (SNL), and the Waste Isolation Pilot Plant (WIPP). The five-year grant that supports monitoring at LANL and SNL was awarded in October 2023.

- *The summary of activities and accomplishments under the Wetlands Program provided in each NPS Management Program Annual Report will include a description of the Wetlands Roundtable meetings.*

  See the **Wetlands Program** section below for a description of the Wetlands Roundtable meetings.

- *For each year starting in 2019 and through 2023, NRCS will report that agricultural BMPs funded under NWQI or other conservation programs have been implemented during the calendar year and will provide sufficient details to enable WPS staff to estimate pollutant load reductions for water quality impairments identified by the State.*

In 2024, NRCS did not list any watershed implementation projects in New Mexico funded through the National Water Quality Initiative (NWQI). However, NRCS did list three watersheds in New Mexico for implementation in federal fiscal year 2024: Tucker Canyon-Animas River (HUC 140801041003), Estes Arroyo-Animas River (HUC 140801041004), and Flora Vista Arroyo-Animas River (HUC 140801041005). NRCS listed two watersheds in New Mexico for planning purposes in federal fiscal year 2024: Picacho Drain-Rio Grande (HUC 130301020608) and Vado Arroyo-Rio Grande (HUC 130301020803). The watersheds listed for planning will begin watershed assessments and planning efforts to prepare to implement projects in the watershed to address impairments through voluntary conservation efforts.

WPS staff attended the New Mexico Technical Committee Meeting in May 2024 where NRCS staff provided overviews of their programs, including the Emergency Watershed Protection (EWP) Program, the Environmental Quality Incentives Program (EQIP), and the Conservation Stewardship Program (CSP) among others.

- *The NPS Annual Reports for 2019 through 2023 will include information about the Farm Service Agency's (FSA's) riparian buffer sub-program within the Conservation Reserve Program (CRP) and report on any efforts to coordinate on future projects.*

  In December 2021 FSA clarified that the "sub-program" is actually a Conservation Practice, CP-22, Riparian Buffers, under Continuous CRP. CP-22 entails payment to participants for not harvesting or grazing within the practice area (among other requirements), and payments covering part of the eligible costs of establishing the practice, such as installation of fencing and alternative watering facilities. A fact sheet for CP-22 is available at: https://www.fsa.usda.gov/tools/informational/fact-sheets/practice-cp22-riparian-bufferpdf.

  No further activities were coordinated in the WPS during the reporting period.

- *SWQB attendance at SWCD meetings will increase, and each year starting in 2019 the NPS Annual Report will include at least one profile of a project intended to protect or improve water quality implemented by a SWCD or SWCD clients.*

  SWQB staff attended three SWCD board meetings, with three different SWCDs, in 2024. This compares with eight meetings with four SWCDs in 2023, ten meetings with five SWCDs in 2022, nine meetings with two SWCDs in 2021, and six meetings of three SWCDs in 2020. Two of the three SWCDs with which SWQB staff attended meetings in 2024 are among the eight whose jurisdictions contain most of New Mexico's impaired stream miles and are identified as priorities in the NPS Management Plan. SWQB staff attended and presented on both the Nonpoint Source Program and the RSP at the 2024 Annual Meeting of the New Mexico Association of Conservation Districts.

  Although SWQB staff did not attend many SWCD board meetings in 2024, staff are attending multiple collaborative meetings also attended by local SWCD staff. For example, SWQB staff attended two South Central New Mexico Stormwater Coalition meetings, the 2024 New Mexico Watershed and Dam Owners Coalition annual meeting, the 2024 New Mexico Water Dialogue (conference consortium of water resources professionals in New Mexico), and four meetings of the East Jemez Resource Council. Staff also are in contact with several SWCDs through RSP

and CWA Section 319 funded projects with the Ciudad SWCD, San Francisco SWCD, San Juan SWCD, and Taos SWCD as well as through the New Mexico Association of Conservation Districts.

- *By 2022, NMED will fund at least one competitively awarded water quality or aquatic habitat improvement project with an SWCD with which NMED has not had an agreement within the previous ten years.*

  This milestone was met. In 2023, the RSP awarded a water quality improvement project to the San Francisco SWCD to implement stream restoration projects on Willow Creek in a private lands reach within the Gila National Forest. This project will nearly complete all implementation work in this subwatershed that was proposed in the Willow Creek Watershed-Based Plan.

- *Statewide planning efforts related to water resources will give serious consideration to water quality protection and restoration and convey accurate summaries of information generated by SWQB programs.*

  In 2024, Watershed Protection Section staff reviewed the New Mexico Integrated Water Financing Plan and participated in two workshops. The Integrated Water Finance Plan is being developed by SWCA Environmental Consultants in partnership between the Western States Water Council, Western Federal Agency Support Team, and the State of New Mexico along with funding from the Thornburg Foundation, the Walton Family Foundation and the Water Foundation. The Integrated Water Financing Plan includes an overview of federal funding opportunities, an inventory of water funding needs, and a selection of demonstration projects for aquifer mapping and monitoring, regionalization of community drinking water systems, and the conservation and restoration within the Upper Rio Grande.

  Governor Michelle Lujan Grisham, in the 50-Year Water Action Plan, and the State Legislature have directed the NMED to develop a state-led discharge permitting program to protect the water quality of the state's surface waters. In 2024, SWQB held six meetings with the Surface Water Advisory Panel (SWAP). The SWAP process will provide technical information, practical considerations, and policy perspectives relevant to adopting and implementing the permitting program. The process will inform NMED's development of legislation and rules for consideration by the Water Quality Control Commission. More information about the SWAP process is available online at SWQB's website: https://www.env.nm.gov/surface-water-quality/swap/.

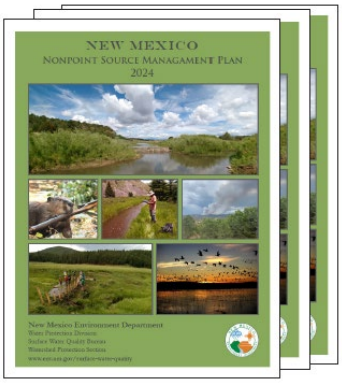
  In 2024, Watershed Protection Section staff also participated in the scoping process for the Hermit's Peak and Calf Canyon Burned Area Recovery NEPA Project Initial Ideas of Recovery Work, led by the Santa Fe National Forest. The specific proposed actions for this project are in development and currently focus on five project categories including forestry treatments (e.g. removal of hazardous trees), watershed restoration (e.g. instream, side-channel and floodplain restoration projects), recreation (e.g. road and trail erosion control), engineering (replacing and/or relocating damaged bridges and crossings), and range (e.g. repairing and maintaining fences, corrals and water developments).

- *The NPS Management Program Annual Report will be submitted to EPA by January 31 and will be made available to the public by early February, each year.*

  The 2023 NPS Annual Report was submitted to EPA on January 31, 2024. It is available to the public at www.env.nm.gov/surface-water-quality/nps-annual-reports/.

- *A revised plan describing the New Mexico NPS Management Program will be submitted by the Governor of New Mexico, or by the Governor's designee, to the EPA Regional Administrator, in 2024. The plan will reflect input and review by implementing agencies and organizations.*

  In 2024, NMED finalized the 2024 Nonpoint Source Management Plan. SWQB staff posted the final draft plan online for public comment for 30 days, open from June 21, 2024 through July 22, 2024. The SWQB received comments from three organizations: New Mexico Interstate Stream Commission, Albuquerque Metropolitan Arroyo Flood Control Authority, and Ecotone Landscape Planning LLC. Comments were addressed in the plan and SWQB staff presented the plan to the Water Quality Control Commission on September 10, 2024, seeking their approval to submit the final plan to EPA. The final plan was submitted to EPA on September 25, 2024. The 2024 Nonpoint Source Management Plan was approved by the EPA on December 11, 2024.



NPS Pollutant Load Reduction Reporting

Section 319(h)(11) of the Clean Water Act requires each state to report to EPA on an annual basis "reductions in nonpoint source pollutant loading," as a component of the Nonpoint Source Management Program Annual Report. EPA and NMED use GRTS to implement this reporting requirement. Pollutant load reduction estimates reported by NMED for January 1, 2024 through December 31, 2024 will be available after February 28, 2025 in GRTS. Table 5 shows the load reduction estimates for projects in New Mexico to improve surface water quality between May 1, 2023 and April 30, 2024. Projects that do not have load reduction estimates did not complete construction in the reporting period and may have load reduction estimates in previous years or will be reported in future years when construction is completed.

Table 5 - Estimated load reductions of pollutants from May 1, 2023 to April 30, 2024 for projects to improve water quality in New Mexico.

Grant Number	Project Title	Nitrogen (lbs/year)	Phosphorus (lbs/year)	Sedimentation-Siltation (tons/year)
99610119	Adair Spring Restoration (RSP)	0	0	0
99610119	Riparian Restoration in Torreon Wash Watershed (RSP)	0	0	60

Grant Number	Project Title	Nitrogen (lbs/year)	Phosphorus (lbs/year)	Sedimentation-Siltation (tons/year)
99610119	Santa Fe River – East Alameda Rain Garden and Camino Escondido Zuni Bowls (RSP)	1	1	0
99610119	Pecos River Cowles Restoration Project (RSP)	1	0	0
99610119	Restoring the Rio Quemado Riverine Wetland on Los Potreros Open Space, in Chimayo, NM (Part 2)	3,485	1,342	2,178
99610119	Watershed Project Implementation for the Mora River – Upper Canadian Plateau Phase 1B (Part 3)	1,802	402	0
99610119	Rincon Arroyo Watershed Stabilization Project to Reduce *E. coli* loading to the Rio Grande (Part 3)	0	0	1,340
99610119	Rio Nutrias Watershed-Based Plan Implementation Phase II	7	3	5
99610119	Bonito Meadow Stream and Wetland Restoration Project, Phase 1	817	314	445
99610120	Managing watershed runoff into the Mesilla Valley	0	0	0
99610120	Watershed Project Implementation for Upper Gallinas River and Porvenir Creek - Phase IV	507	195	315
99610120	Reimagining San Vicente Creek (RSP)	60	28	44
99610120	Centerfire Creek Headwaters Restoration Project (RSP)	5	3	3
99610120	Los Alamos Canyon Creek Watershed Restoration Project (RSP)	2	1	1
99610120	Post-Wildfire Restoration of Little Turkey Creek, Willow Creek Watershed, Southwestern New Mexico (RSP)	68	30	42
99610120	Two Rivers Park River Restoration Phase III (RSP)	3	1	2
99610120	Stream and Wetland Restoration along the Arroyo La Mina in the Lower Embudo Valley (RSP)	19	7	14
99610121	Upper Cieneguilla Creek Wetland Restoration and Enhancement Project	0	0	0

Grant Number	Project Title	Nitrogen (lbs/year)	Phosphorus (lbs/year)	Sedimentation-Siltation (tons/year)
99610121	Watershed Project Implementation and Post-Fire Remediation for Sapello River Watershed – Phase I	0	0	54,624
99610121	Expanding Riparian and Wetland Resilience in Burro Cienaga, NM (RSP)	0	0	0
99610121	Stream and Riparian Restoration on Stone Creek, Quemado Ranger District, Gila National Forest (RSP)	0	0	0
99610121	Restoration of Trout Habitat on the Cimarron River - Phase II (RSP)	0	0	0
99610121	Wetland and Stream Restoration in the Moreno Valley (RSP)	0	0	0
99610121	Restoration of Tijeras Creek Floodplain, Streambed and Riparian Habitat (RSP)	0	0	0
99610121	Reimagining San Vicente Creek and the Silver City Watershed - Phase 2 (RSP)	0	0	0
99610121	Santa Clara Creek Restoration Project (RSP)	0	0	0
99610121	Improving Watershed Hydrologic Function along Farming and Rangeland Communities of the Rio Grande Basin (RSP)	0	0	0
99610121	San Antonio Creek Riparian and Beaver Habitat Restoration Project (RSP)	0	0	0
99610121	Adapting and Improving River Stewardship in the Torreon Wash Watershed (RSP)	0	0	0
99610121	Willow Creek Watershed Restoration Project - Private Lands Reach (RSP)	0	0	0
99610121	Curb Cuts and County Roads: Greening Urban Infrastructure to Improve Water Quality in San Vicente Creek (RSP)	0	0	0
	TOTAL	**6,777**	**2,327**	**59,074**

Summaries of Section 319 Projects Completed in 2024

Restoring the Rio Quemado Riverine Wetland on Los Potreros Open Space, in Chimayo, NM (Part 2) (20-Q)

Project Cost $143,717.95 (Section 319 funds) and $81,096.97 (matching funds and in-kind)

This project was managed by Ecotone Landscape Planning, LLC. The project started October 2020 and ended December 2023. The goal of this project was to halt channel degradation (by creating Rosgen C3 and B3 channel types), raise the channel invert elevation by approximately 1 foot, and induce at least once-annual overbank flows and sub-irrigation of streamside wetlands while increasing the river's efficiency of moving sediment and ability of spreading woody debris across the floodplain. Prior to implementation work, six beaver dams were in the construction area. Contractors decided that the dams did not need to be removed and only 4 of the proposed BDAs would be constructed. Four BDAs and two boulder cross vanes were constructed in November 2021 and January 2022. Ecotone Landscape Planning LLC coordinated planting of 126 cottonwoods, more than 900 willows, and 110 potted plants and removed all non-native and invasive herbaceous plants in the project area. Due to high spring runoff flow events and beaver activity contributing to higher water elevation, all of the new plants were inundated in 2023 and all of the remaining invasive plants died during the high flows. Pond levelers were installed to manage water levels. After a site visit on June 2, 2024, widespread flooding occurred across the upper reach of the project area, achieving the goal of once-annual overbank flows for both 2023 and 2024 since the project was constructed. The post construction monitoring report indicated that total wetland acreage increased from 7.5 acres to nearly 10 acres. The goal of floodplain connectivity and natural irrigation of the emergent palustrine wetland was achieved, the wetland function of water storage in the landscape improved, grazing pressure was eliminated, and biological activity due to beavers increased.

Photo Left; Baseline conditions on 3/25/2021. Photo Right; Post-implementation conditions on 9/21/2022. The high-water level is due to the BDAs and in part due to a new beaver dam on top of a BDA in the middle of this treatment area.

Bonito Meadow Stream and Wetland Restoration Project Phase 1 (21-F)

Project cost: $227,824.20 (Section 319 funds), $363,606.35 (matching funds and in-kind)

This project was managed by Philmont Scout Ranch, Boy Scouts of America (BSA), which started in July 2021 and ended in June 2024. The goal of this project was to increase base flow, reduce sedimentation, reduce nutrient loading, monitor *E. coli*, and reduce stream temperature in Bonito Creak using low-tech processes such as one rock dams (ORDs) and BDAs. Bonito Creek is a tributary to Rayado Creek. Bonito Creek has not been assessed by NMED. Based on sonde data from 2023, there is evidence that indicates Bonito Creek exceeds thresholds for temperature, nutrients, dissolved oxygen, and *E. coli*. Water quality samples were collected at three monitoring locations on Bonito Creek. A multi-parameter sonde was deployed from June 2023 through September 2023. Long term temperature data collected in 2022 and 2023 did show that the max temperature slightly decreased from pre- to post-construction. Water quality samples and long-term sonde data were collected in 2024. All long-term data collected will be submitted to NMED during the call for data Seasonal work crews, scouting participants, and volunteers were used to install the restoration structures:

- 9 zuni bowls were constructed.
- 127 posted BDAs and 28 post-less BDAs were installed.
- 55 Board Assisted Riffles (BARs) were installed.
- 5 exclosures were constructed around stream and riparian areas (42.1 acres).
- 98 bluestem willow and 294 alder seedlings were planted.
- 14 acres of seeding were completed using native grass and forb mix.
- 4.1 miles of total channel length was treated.

Before and after photos of a Zuni bowl that was constructed in the project area to repair a headcut.

Rio Nutrias Watershed-Based Plan Implementation Phase II (21-H)

Project cost: $219,323.79 (Section 319 funds) and $86,429.75 (matching funds and in-kind)

Aguas Norteñas LLC, in collaboration with Rio Arriba County and the Cebolla/Nutrias Watershed Group, has successfully implemented the project titled, "Rio Nutrias Watershed-Based Plan Implementation Phase II." The Rio Nutrias is located in Rio Arriba County within the greater Rio Chama watershed. The watershed ranges in elevation from 6,700 feet at the west boundary to 10,700 feet at the east and includes diverse ecosystems primarily piñon, juniper and sagebrush at the lower elevations, aspen, mixed conifer and ponderosa woodlands at mid elevation and alpine meadows at the summits. The Rio Nutrias was listed as impaired for turbidity by the New Mexico Environment Department in 2004. The goal of this project, which was identified in the 2015 Rio Nutrias Watershed-Based Plan, was to reduce turbidity and improve water quality by replacing two undersized and improperly placed culverts which were increasing bank erosion and channel scour and contributing to the turbidity impairment. The project also completed a Best Management Practice demonstration project by repairing 21 rock and brush structures that were damaged during a spring flood event in 2023.

River crossing #2 looking upstream before construction.

River Crossing #2 looking downstream after construction.

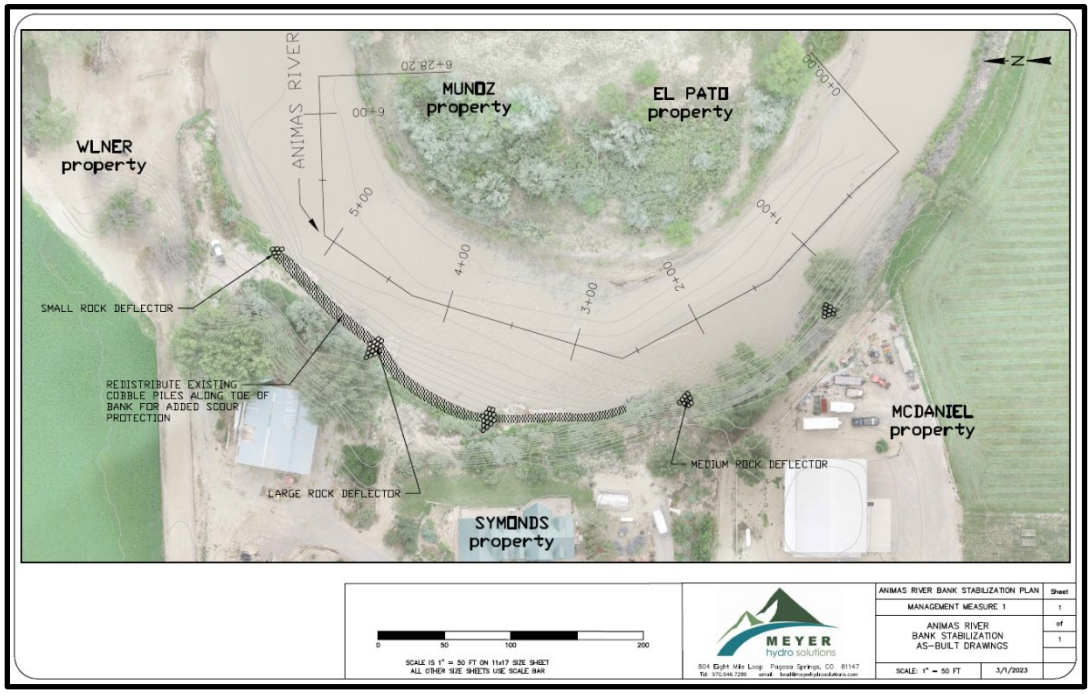
Lower Animas Watershed-Based Plan Implementation Projects – Part 3 (21-SJW)

Project Cost $230,789.51 (Section 319 funds) and $153,642.72 (matching funds and in-kind)

The San Juan Soil and Water Conservation District in collaboration with Meyer Hydro Solutions, B&B Excavation, two private property owners, the City of Farmington, and the Friends of the Riverside Nature Center have successfully completed the project titled, "Lower Animas Watershed Based Plan Implementation Projects Phase 3." The headwaters of the Animas River originate in the San Juan Mountains of southwestern Colorado and flow south through the towns of Silverton, CO, Durango, CO, lands of the Southern Ute Tribe, Aztec, NM, Flora Vista, NM, and finally to the confluence with the San Juan River within the town of Farmington, NM. Portions of the lower Animas River are impaired for turbidity, temperature, nutrients and phosphorus. Contributing sources of pollution include lack of riparian vegetation, invasive plants, poor soil health on cropland and pastureland, overwatering/over-fertilization of cropland and pastureland, erosion from dirt roads and other land disturbances, urban stormwater runoff, and faulty septic systems. The project helped address these impairments by implementing a streambank stabilization and floodplain restoration project at two different private properties along the Animas River, eradicating and masticating approximately 60 acres of salt cedar and Russian olive and reseeding native grasses (match contribution), planting 115 native trees and shrubs, spreading 50 pounds of wildflower/grass mix at the Animas Park, conducting seven soil health workshops and providing water conservation demonstrations to approximately 2,000 4th graders.

Water conservation demonstration for 4th graders with "Rolling Rivers Trailer."

Animas River with rock deflectors and cobble piles used to reduce bank erosion and support vegetation.



As-built drawing showing rock deflectors and cobble piles used to reduce bank erosion and support vegetation.

Summaries for the New Mexico River Stewardship Program Projects Completed in 2024

Pecos River Cowles Restoration Project – Part 2 (20-N)

Project cost: $281,081 (River Stewardship Program funds) and $ 18,740.27 (local match)

The Pecos River Cowles Restoration Project was implemented by the Upper Pecos Watershed Association (UPWA) on the Santa Fe National Forest in San Miguel County to address temperature and sediment issues. The Cowles area is a high-use area within the Pecos Canyon providing many recreational opportunities including fishing and hiking. The river in this section meets a high quality cold water aquatic life designation but contributes to downstream impairments.

The project included four overall goals to improve the overall conditions along 400 yards of the Pecos River.

1. Improve stream geomorphology, sediment transport, and habitat value.
2. Improve resistance to impacts from future flooding, reduce temperatures, and further benefit trout habitat.
3. Reduce sediment entering the river from gravel parking lots.
4. Improve water quality and habitat.

UPWA met these goals by installing instream structures to narrow the channel to increase flows and move sediment through the system. The structures also help stabilize banks and create deeper pools for fish habitat. UPWA planted 426 willow poles within the project area to provide shade and cover and help reduce temperatures. The two parking areas along the river were graded to divert runoff away from the river through vegetation or to soak into ground.

Before and after photos of installed stream structures.

Restoration of Gila Trout and Riparian Habitat on Black Canyon Creek, Gila National Forest (22-G)

Project cost: $207,255.24 (River Stewardship Program funds) and $0 (local match)

The Restoration of Gila Trout and Riparian Habitat on Black Canyon Creek, Gila National Forest (GNF) project was proposed and designed to address downcutting, widening, and elevated stream temperatures due to decades of overgrazing by domestic livestock and several large wildfires. NMED issued a Notice to Proceed in March 2022 to the cooperator, Bat Conservation International (BCI), and they immediately began evaluating the existing design prepared by Natural Channel Design Engineering (NCDE), to determine what modifications would be needed. In June 2022, the Black Fire ignited and burned more than 330,000 acres of the GNF, including much of the upper watershed of Black Canyon. Immediately after the fire was extinguished, the watershed experienced a month of strong monsoon precipitation resulting in extreme flooding and debris flows. All four miles of the floodplain, stream channel, and fluvial geomorphology were affected by post-fire floods including the creation of almost a dozen cut-off channels, downcutting of the stream bed, and a significant increase in stream width and cut banks. These changes rendered the majority of the original NCDE restoration prescriptions no longer applicable. In September 2022, BCI walked the post-fire project reach and redesigned the project with Steve Carson, BCI's contractor and stream restoration specialist, to address the post fire and flooding conditions.

Restoration efforts started at the top of the Black Canyon Creek stream reach just below the confluence of Aspen Creek and continued downstream to just above the confluence with Bonner Canyon. Five 7-day work sessions, with crews of approximately seven, were conducted from November 2022 through May 2024. Due to the extensive post-Black Fire flood damage, BCI prioritized treating the most damaged sites; those contributing the most to sedimentation and instability, and those that would best withstand future high flows. More than 4,000 willow whips were planted in patches as poles or in bundles where they would best reduce erosion, protect stream banks, provide stream shading, and fortify the installed instream restoration structures. Overall willow survival was greater than 90% and several willows planted in November of 2022 were almost 4' tall and flowering in May of 2024. BCI also constructed and installed more than 150 rock or log structures to slow stream velocity, increase pool depth, raise the water table, and reconnect the stream to the flood plain. This included more than 50 rock or log baffles, vanes or barbs, cross vanes, deflectors, or weirs, 34 boulder clusters, and 26 one-rock dams. Twelve bankfull benches were constructed that treated more than 1,000' of eroding cut banks, and 16 channel plugs and channel realignments were installed. As of May of 2024, practically all structures were functioning as intended, with the structures bolstered by willow planting becoming more secure each day.

The entire restoration reach for this project is within the Aldo Leopold Wilderness and all work was conducted in accordance with Forest Service Wilderness guidelines. Tools and supplies were packed in by mules to set up a spike camp approximately halfway up the four-mile reach to reduce daily mobilization time and increase efficiency for each work session.

Willow whips were packed in on horseback contributing to the more than 4,000 willows that were planted in the project area.

Newly planted willow pole bundles.

Work crew hand installing rock vanes.

Reimagining San Vicente Creek (22-I)

Project cost: $170, 537 (River Stewardship Program funds) and $33,300 (local match)

The Gila Resources Information Project (GRIP) worked cooperatively with the Town of Silver City, private landowners and subcontractor Stream Dynamics, Inc. to complete the *Reimagining San Vicente Creek* project in southwestern New Mexico. San Vicente Creek drains the 38-square mile Silver City Watershed into the Mimbres River 16 miles northwest of Deming, NM. The upstream perennial reach flows through the urbanized downtown Silver City area, through Big Ditch Park and the San Vicente Creek open space. San Vicente Creek, its riparian corridor, and the trails and open space system are important natural assets that are enjoyed by those who recreate there and provides important riparian habitat that serves as breeding, nesting, and forage habitat for migrating birds, including the state threatened Mexican Blackhawk, and other wildlife.

The project aimed to improve surface water quality and the riparian habitat of San Vicente Creek. This was accomplished by reducing nutrient and sediment loads by constructing instream structures, improving stream geometry and floodplain access by induced stream meandering and grade control structures. Selectively removing non-native trees from approximately 20 acres of the riparian corridor along 1 mile of San Vicente Creek helped to protect legacy cottonwoods and other native trees and in turn removed approximately 63 tons of biomass reducing riparian fire risk in the project area. Additionally, GRIP, along with volunteers, planted 505 native trees, over 650 whips or posts of harvested cottonwood and willow, seeded 148 pounds of native grass and 53 pounds of native wildflower to restore the riparian corridor and stabilize stream banks. To assist the Town of Silver City to conduct routine sewer line maintenance to prevent sewage leaks that impair water quality, GRIP completed a redesign of the sewer access routes which included modifying and hardening low water crossings, creating rolling dips, and building grade control structures.

In April of 2023, GRIP was awarded a contract to conduct the *Reimagining San Vicente Creek and the Silver City Watershed – Phase 2* project with funds through the RSP. This phase focuses on some of the best remaining and attainable areas for restoration of the floodplain and wetland habitat on San Vicente Creek and its tributaries and builds on further sediment control of arroyo erosion work completed in Phase 1.

Photo above, San Vicente Creek - Pre-construction.

Photo left, Post-construction. Constructed log vane and willow planting will induce meandering helping to restore stability to this incised stream section, as well as push the creek to the opposite bank away from the sewer line to protect it from being undermined by high volume/high velocity stormwater.

Riparian Restoration in Torreon Wash Watershed - Phase II (22-M)

Project cost: $206,742.96 (River Stewardship Program funds)

Rio Puerco Alliance in collaboration with River Source Inc., the Ojo Encino Farmers and Ranchers Committee (OEFRC) and Hasbídító, the Navajo Summer Youth Program, and West Construction successfully completed the project titled, "Riparian Restoration in Torreon Wash Watershed - Phase II." Ecological challenges in Torreon Wash and the Rio Puerco Watershed include decades of overgrazing, severe drought, dominance of sagebrush, pervasive erosion issues, and lack of infrastructure such as fencing and available water sources. To address these issues, the project planted native vegetation on the banks of the main arroyos, installed fencing to protect the plants, constructed erosion control structures to remediate gullies, and addressed erosion from unpaved and abandoned roads by installing rolling dips to improve drainage and reclaiming these uncommissioned and abandoned roads. 2,412 cottonwoods, 723 willows, and 392 potted plants were planted, and 346 one-rock-dams, two Zuni bowls, and 12 rolling dips were constructed over the three-year project period.

Photo Above: Cottonwood poles one month after planting (May 2023).
Photo Below: Cottonwood poles thirteen months after planting (June 2024), 86% survival rate.

Post-Wildfire Restoration of Little Turkey Creek, Willow Creek Watershed, Southwestern New Mexico (22-P)

Project cost: $133,060.00 (River Stewardship Program funds) and $50,294.00 (local match)

The Rio Grande Chapter of Trout Unlimited, along with several subcontractors and volunteers, completed this restoration project on Little Turkey Creek utilizing the planning document, *Willow Creek Watershed-Based Plan* which outlines restoration strategies and techniques for the Willow Creek Watershed. Little Turkey Creek is a tributary of Willow Creek which is designated as a high quality coldwater aquatic habitat stream within the Gila National Forest. The federally threatened Gila trout *Oncorhynchus gilae* occurs in Willow Creek and tributaries, along with three other species of native fish (desert and Sonora suckers, and speckled dace).

The boundaries of the Little Turkey Creek project area included the drainage beginning at the Wilderness Boundary and upstream for approximately two miles. The headwaters of Little Turkey Creek were burned intensely by the Whitewater-Baldy Wildfire in 2012, severely impacting watershed health. Extreme stream bank erosion, channel migration, loss of riparian vegetation that had provided canopy cover, and loss of pool habitats due to sediment transport and associated low flows were observed. Wetland conditions in the Little Turkey Creek were heavily degraded by channel incision and water storage in soils was greatly impaired.

The goal of this project was to reduce stream instability and improve water quality, in turn provide aquatic habitats to support Gila trout for species conservation and recreational angling. Specific project objectives were to: improve stream channel morphology as measured by entrenchment ratio, increase riparian vegetation as measured by canopy cover, reduce bank erosion as determined by photo point monitoring and Bank Erosion Hazard Index (BEHI), and improve fish habitat as measured by pool-to-riffle ratio and residual pool depth. The location of Little Turkey Creek required all work to be completed by hand with materials locally sourced. Mules were used for transport of materials, equipment, and supplies from the wilderness boundary upstream in Little Turkey Creek.

Considerable activity was placed on building rock structures, including one rock dams, toe rocks, rock chutes, and Zuni bowls, measures that are critical to erosion control and sediment retention. During this project, over 75 one rock dams were built, 12 toe protection rock lines at base of steep eroding banks were placed, 11 log sills/vanes in the channel to protect eroding banks and center current were placed, four Zuni bowls, one rock chute and two log jams. A total of 48 willow vertical bundles were planted along four severely eroding banks. Willow poles numbering 1,637 were planted along both sides of the stream channels, for a total of 4,094 ft of stream shoreline planted.

Horses and mules were used to pack in supplies and hand tools. All work was conducted in accordance with Forest Service Wilderness guidelines.

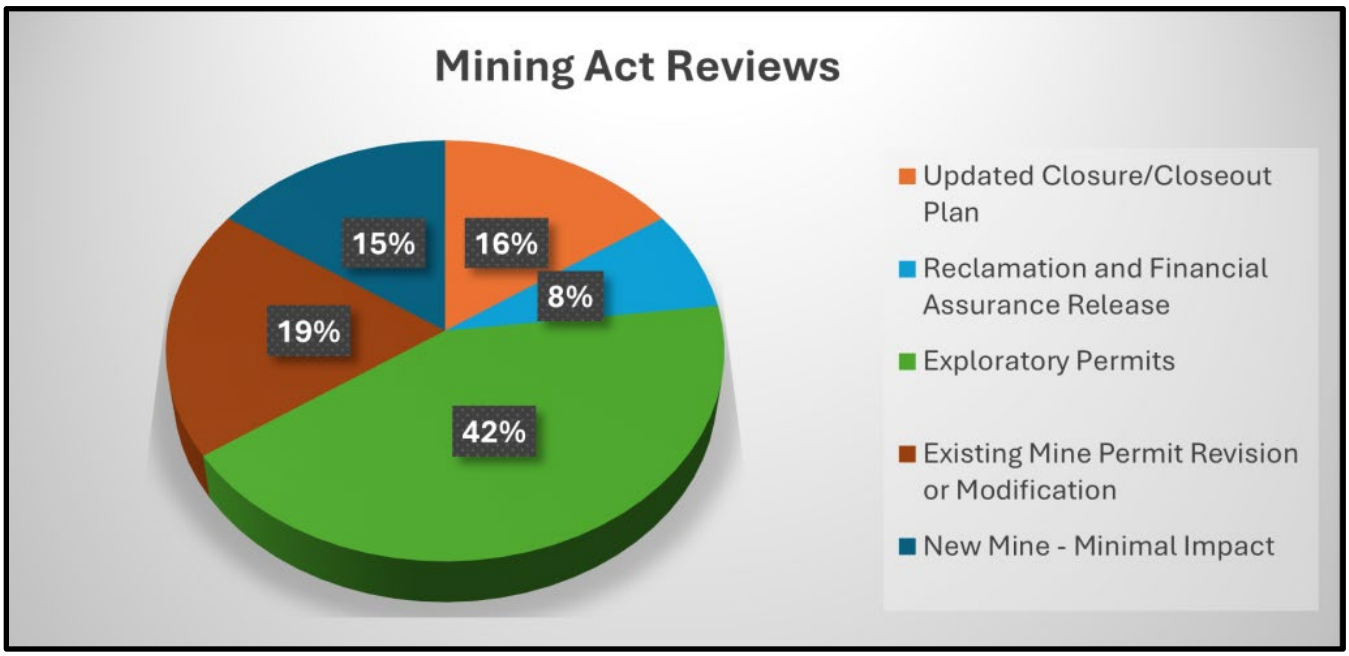
Photos above pre and post-construction. First one rock dam built at the beginning of the project. Willow poles were then harvested from Willow Creek and carried by mule to be planted. Less than two years later, the channel is narrowing and increased vegetative cover of the reworked bank is visible.

New Mexico Mining Act

The New Mexico Mining Act obligates the NMED to review and comment on various applications associated with non-coal mining in New Mexico. Proposed actions range from recreational mining (such as panning for gold) to large mine and mill operations. For minimum-impact exploration applications or modifications of existing exploration permits, NMED is provided an opportunity for formal comment. For new mining operations, NMED is responsible to "certify that water quality standards are expected to be met" and to determine that the proposed post-mining closeout plan will "achieve compliance with all applicable air, water quality and other environmental standards if carried out as described." For modification of existing operations, NMED has the opportunity to comment on proposed permit changes.

NMED has a Mining-Act team that includes representatives from SWQB, GWQB, and the Air Quality Bureau (AQB) to review mining applications and otherwise support the work of the New Mexico Mining and Minerals Division (MMD) of the Energy, Minerals, and Natural Resources Department (EMNRD). This work involves reviewing applications, site inspections, hydrologic interpretations, and evaluating water quality standards against proposed mining activities. SWQB discusses BMPs and other mitigation measures with MMD to implement mining plans that prevent or minimize environmental risks. The team's written comments often include conditions necessary to ensure compliance with both state and federal environmental standards. The team also participates in meetings and reviews documents in collaboration with EMNRD, New Mexico Department of Game and Fish (NMDGF), USFS, New Mexico State Land Office (SLO), the USACE, EPA, and others.

During the October 1, 2023, to September 30, 2024, reporting period, SWQB staff reviewed and submitted comments on 27 (15 from southern NM – 12 from northern NM) Mining Act submissions from MMD. The majority of mining permit activity was exploratory permits.



The Tijeras Mine and Mill has been in operation since 1959. In 1995, GCC Rio Grande purchased the site and the facility. The mine consists of a Portland cement plant and multiple limestone quarries, located near the Village of Tijeras, New Mexico. Current operations include a Portland cement manufacturing plant equipped with coal-fired kilns. The cement plant produces various types of cement used in concrete, mortar, and other construction materials. The primary raw material used in this process is limestone which is mined from its on-site quarries. GCC Rio Grande submitted an application requesting a revision of the 5-Year Mine Closeout Plan. Reclamation efforts would ensure that canyons in the area will be reconstructed and connected to an undisturbed channel downstream of the permit boundary. SWQB staff provided comments that supported the restoration goal to re-establish the channels and re-establish functions that were impacted from mining. Additional comments were provided regarding restoration designs and ensuring the material used will handle future discharges.

Tijeras Mine and Mill, Quarry 1 reclamation. Photo taken December 20, 2023, after seeding and mulching.

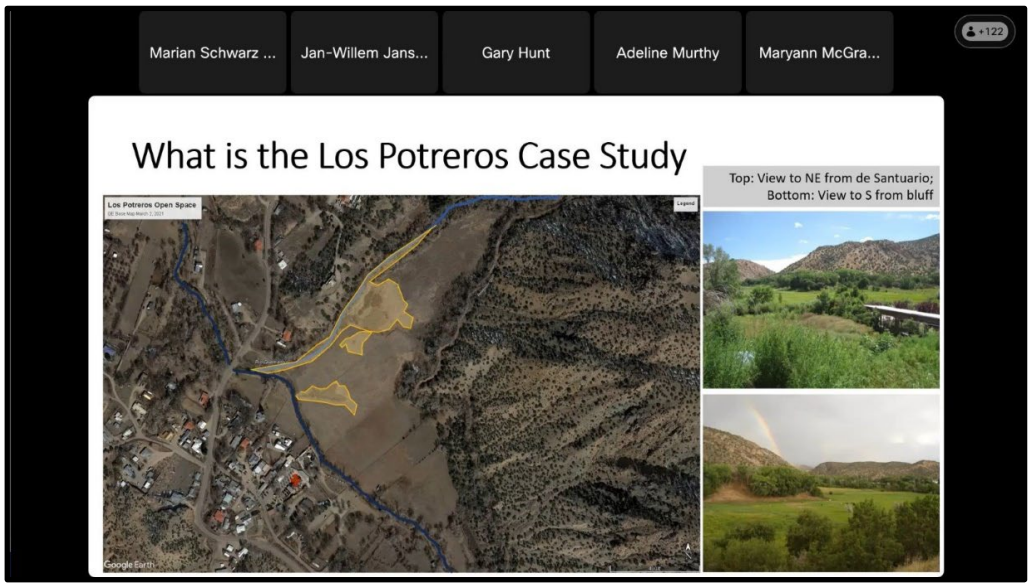
The Creek Tunnel mine is a small gold mine located in Taos County, NM on land managed by the United States Forest Service. The mining claim is owned by a private individual. Mining activities were inactive for ~40 years. A minimal impact exploration permit was submitted and SWQB provided comments on the application. Work will include restoring the collapsed adit and reinforcing the tunnel (photo below). SWQB staff provided comments that included a list of BMPs for mining related activities to further protect surface water quality. Common BMPs for mining exploration activities include cleaning equipment and checking equipment for leaks, having spill clean-up materials on site, locating roads away from streams and arroyos, maintaining roads and avoid driving on roads in wet conditions that can damage roads and increase erosion, installing erosion controls for ground disturbing activities, and obtaining all appropriate environmental clearances and permits.

Restored adit at the Creek Tunnel Mine located in Taos County, NM. Photo taken August 27, 2024.

Wetlands Program

Wetlands Roundtables

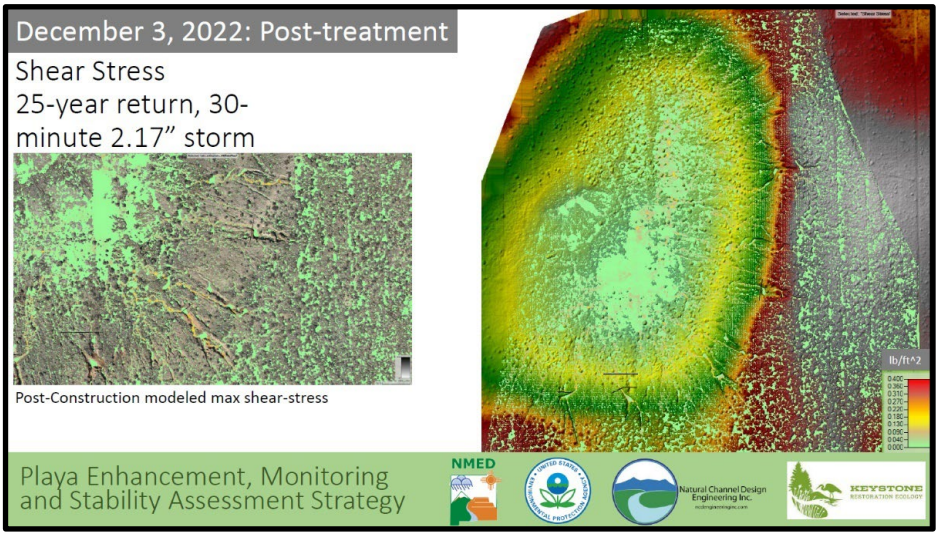
The SWQB Wetlands Program conducted an exceptional virtual New Mexico Northern Wetlands Roundtable on November 29, 2023, featuring a diverse array of presentations, attracting 190 on-line attendees. The online event covered a spectrum of topics, ranging from funding opportunities for restoration efforts to the potential impacts of the recent Supreme Court case Sackett v. EPA, along with inspiring restoration success stories. NMED SWQB delivered a presentation called "Surface Water Quality Permit Primacy," emphasizing New Mexico's need to establish a state water quality permitting process after recent changes to the definition of Waters of the U.S. University of New Mexico (UNM) Natural Heritage New Mexico shared insights into the newly developed NM Rapid Assessment Method for headwater slope wetlands. Ecotone Landscape Planning provided updates on the Santa Fe County Wetlands Action Plan and showcased a restoration success story that underscored the positive effects of beavers on surface water quality and quantity in the Rio Quemado. The USACE discussed updates to the definitions of WOTUS since the Supreme Court case Sackett v. EPA. USACE focused on the significant nationwide loss of Clean Water Act protections for wetlands and ephemeral water bodies. The Water Advocates for NM and the Rio Grande shed light on the 2023 Water Security Planning Act, presenting it as a catalyst for collective action to transform New Mexico's water governance. Two additional noteworthy presentations in the Roundtable from Jacobi & Associates, discussing the Two-Mile Pond on the Santa Fe River, and Rio Grande Return, offering valuable insights into the benefits of low-tech process-based restoration in various northern NM streams. Concluding the event, Theodore Roosevelt Conservation Partnership provided an overview of funding opportunities for restoration work. They also shared how Colorado is establishing its own permitting process to safeguard wetlands and streams that no longer have federal protection under the CWA.



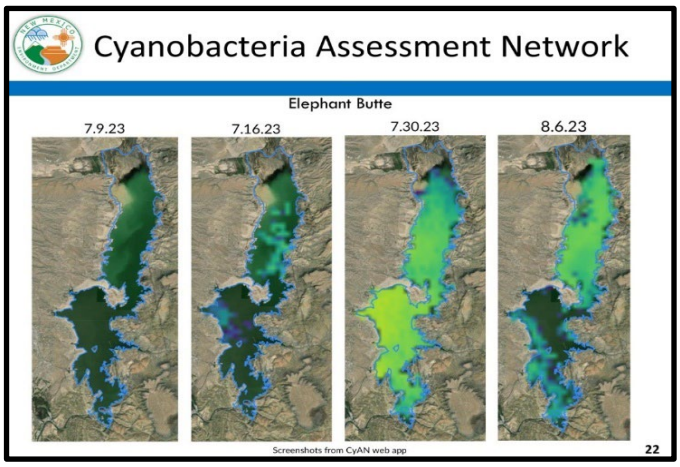
Clip from the Northern New Mexico Wetlands Roundtable in November 2023 highlighting the Los Potreros Open Space Restoration Project presentation by Ecotone Landscape Planning describing a successful restoration project to attract beaver back to a stretch of the Quemado River in Santa Fe County.

Another exceptional virtual New Mexico Southern Wetlands Roundtable was conducted on December 14,

2023, featuring a diverse array of presentations, attracting 110 attendees. The online event covered a spectrum of topics, ranging from wetland mapping, restoration, and monitoring projects to regulatory updates. The Water Advocates for NM and the Rio Grande shed light on the 2023 Water Security Planning Act, presenting it as a catalyst for collective action to transform New Mexico's water governance. Staff from Natural Channel Design Engineering showcased their playa restoration and monitoring project at the Grasslans Foundation Playa in eastern New Mexico. Center for Environmental Health Monitoring and Management (CEHMM), presented the Texas Hornshell mussel Candidate Conservation Agreement with Assurances Program and related flow regime research. The USACE, discussed district updates and updates on the definitions of WOTUS since the Supreme Court case Sackett v. EPA. New Mexico State University (NMSU) discussed approaches for restoration at the Placitas Arroyo near Hatch, NM. Professional photographer, Bremner Benedict, showcased "Hidden Waters", a photographic documentation of springs and discussion of their natural history. Angel Fire Wetland Conservation Committee introduced the Angel Fire Wetland Project that aims to reduce sediment loads affecting wetlands downstream of Angel Fire Ski Resort. And lastly, SWQB staff reported on the mapping and classification of wetlands in the Bootheel and Permian Basin of New Mexico.



Clip from Playa Enhancement, Monitoring and Stability Assessment presentation showing the shear stress model and reduced shear stress after implementation of erosion control structures (Plug and Pond) in channels entering the Grasslans Charitable Foundation Playa.

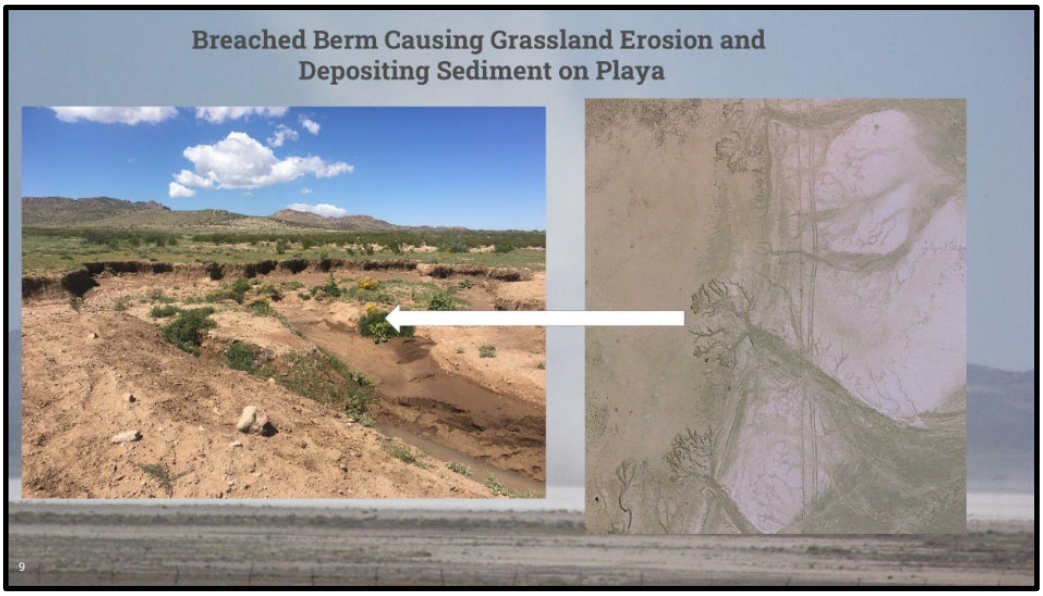


The SWQB Wetlands Program hosted the virtual Spring New Mexico Northern Wetlands Roundtable on March 26, 2024 via WEBEX. This Roundtable featured excellent presentations during the morning session including from our own SWQB staff who presented on the Harmful Algal Blooms Program, UNM Natural Heritage New Mexico presented "NMRipMap: A Public Map Resource to support Riparian Conservation and Restoration," Amigos Bravos presented "Communicating the Impacts of Sackett in New Mexico," NM Bureau of Geology and Mineral Resources presented "Groundwater Resources for

Clip from Harmful Algal Blooms Program presentation showing real-time satellite data of cyanobacteria bloom in Elephant Butte Lake in 2023 from New Mexico Spring Northern Wetlands Roundtable.

Small Communities in Rio Arriba County," Bernalillo County and Rio Grande Return co-presented the "Tijeras Creek Watershed Restoration Project." During the afternoon session, New Mexico Tech presented "NM Water Data Initiative: Working to Make Water Data Accessible for Management and Planning in New Mexico," Ecotone Landscape Planning presented "Meeting Community Needs with SWQB Funds: A Review of Experiences and Lessons Learned," The Water Advocates for NM and the Rio Grande presented "The Opportunity for Immediate Self Organization to Assert Riverine, Riparian, and Wetland Values in New Mexico Water Resources Planning," and Philmont Scout Ranch presented "Restoration on Bonito Meadow Creek Near Cimarron, New Mexico." Over 130 participants joined online to hear the presentations.

Then on April 3, 2024, the SWQB Wetlands Program hosted the virtual Southern Wetlands Roundtable via WEBEX with over 100 participants joining online for this exceptional program of presentations. This Roundtable featured presentations from the Gila National Forest on the unique circumstances of working with endangered species during the "Tularosa Slab Aquatic Organism Passage/Wetland Restoration." Also, Amigos Bravos presented on "Gila Wetland Jewels", Natural Channel Design Engineering presented on "Spur Lake Basin, Restoration of the Headwaters of the San Francisco River in Western New Mexico," The Nature Conservancy presented on "Systematic Conservation Planning with Marxan for New Mexico's Wetlands" during the morning session. UNM Natural Heritage New Mexico presented "NMRipMap: A Public Map Resource to Support Riparian Conservation and Restoration," USACE gave the Corps Regulatory Update, and NM Department of Transportation presented a unique and innovative restoration tecnique to mitigate dust caused by erosion and alluvial fan deposition on the Lordsburg Playa, and the Water Advocates for NM and the Rio Grande rounded out the day of presentations with "The Opportunity for Immediate Self-Organization to Assert Riverine, Riparian, and Wetland Values in New Mexico Water Resources Planning." The NM Wetlands Northern and Southern Wetlands Roundtables feature presentations on water resources relevant to the northern and southern parts of New Mexico.



Clip from Lordsburg Playa Watershed Restoration to Reduce the Severity of Dust Storm on I-10 presentation showing the origin of dust in the playa bottom is from eroding gullies adjacent to the playa. The playa bottom is hard pan but the deposition of sediment over it is the main source of dust.

Wetland Projects Completed in 2023 and 2024

East Fork Jemez River Innovative Wetland Restoration Using Contour Swales, Sod Bowls and Sod Berms

Project Cost: $260,576.17 Wetlands Program Development Grants (WPDG) Federal Funds and $122,268.72 Final Match Amount

The main goal of this project was to develop a demonstration restoration project to restore at least 30 acres of former wetlands in the upper reaches of the East Fork Jemez River watershed on the Valles Caldera National Preserve (VCNP) using contour swales, sod bowls and sod berms. The project demonstrates the effectiveness of these innovative water-slowing, spreading, and infiltrating structures and at the end of project implementation, 65 acres of former wetlands were restored. This Project was developed to create strategies that build capacity on public lands in New Mexico as a demonstration that emphasizes proactive climate change activities shaping policy for land and water management by restoring headwater wetlands on the VCNP managed by the National Park Service (NPS). It built capacity on public lands by including VCNP staff, the surrounding Santa Fe National Forest, and the Pueblo of Jemez in planning through the development of a Wetlands Action Plan, in the project design and restoration, through inclusion in outreach, and by sharing technical materials.

Headwater slope wetlands on the East Fork of the Jemez River on Valles Caldera National Preserve.

The Rio Puerco Alliance (RPA) was the principal contractor in partnership with SWQB Wetlands Program for the WAP, the technical guide, and the demonstration restoration work. RPA entered into a sub-contractor agreement with Keystone Restoration Ecology (KRE) to complete the design, implementation, and monitoring of the restoration work and write the technical guide.

Design and implementation information about the new techniques was shared with agencies, tribal members and landowners, during field trips, at New Mexico Wetlands Roundtable presentations, at a stakeholder on-site meeting during the development of a Wetlands Action Plan (WAP) for the East Fork Jemez River, and through the distribution of a Technical Guide. Hands-on techniques were shared with volunteers on two restoration days. The Technical Guide "Wetland Restoration Technical Guide Using Innovative Sod Structures" about contour swales, sod bowls and sod berms was produced by subcontractor Keystone Restoration Ecology and is distributed through the SWQB Wetlands Program website; hard copies are available from the SWQB Wetlands Program. The new techniques are applicable to headcuts, gullies and

erosion of slope wetlands on gentle topographic gradients that have vegetation and soils characteristic of former wetlands. This project also convened stakeholders to develop a WAP for the East Fork Jemez River watershed titled "East Fork Jemez River Wetlands Action Plan". This WAP was developed to guide future monitoring, restoration, management and protection in a coordinated and comprehensive manner and is available on the SWQB Wetlands Program website.

Plug and Pond restoration structures on the East Fork. The very top of the gully formation can be seen here at the bottom of the photo. Darker lines are contour swales diverting water flow away from the headcut and spreading water to surrounding areas.

Volunteers for the Outdoors members building sod structures using wetland sod (Left). Subcontractor Keystone Restoration Ecology creating an excavator plug that will re-direct and spread water from the channel into historic wetlands (Right).

New Mexico Rapid Assessment Method for Headwater Slope Wetlands, and USACE NMRAM Phase 3

Project Cost: $350,762.00 WPDG Federal Funds and $246,959 Final Match Amount

This Project is a continuation of the development of wetlands rapid assessment methods for New Mexico with a focus on headwater slope wetlands in montane regions of the state. The project resulted in the development of New Mexico Rapid Assessment Method (NMRAM) Headwater Slope Wetlands Field Guide Version 1.0 that provides specific protocols for evaluating ten wetland ecological condition metrics using a combination of Geographic Information Systems (GIS)-based measurement and field surveys. Fillable data collection worksheets were developed to support efficient data collection. The Field Guide can be found at https://www.env.nm.gov/surface-water-quality/wetlands-rapid-assessment-methods/.

Another project goal was to update and improve the NMRAM Manual to include a description and the rationale for Headwater Slope Wetlands metrics and to include any new or updated metrics and the updated stressor checklist from past NMRAM development. The NMRAM Manual 2.1 is the overarching document that explains the goals and objectives of NMRAM, provides information about the subclasses of wetlands for which NMRAM is currently developed, and explains the approach for NMRAM development. The updated NMRAM Manual Version 2.1 is available at https://www.env.nm.gov/surface-water-quality/wetlands-rapid-assessment-methods/.

UNM Natural Heritage New Mexico was the principal contractor in partnership with SWQB Wetlands Program in developing the Headwater Slope Wetlands NMRAM 1.0 for this Project and for the NMRAM Manual Version 2.1 update. The Reference Domain for NMRAM for the development of headwater slope wetlands includes high-altitude broad valleys in the Jemez Mountains Valles Caldera National Preserve, the Upper Rio Grande in the Southern Rockies, the Tres Piedras Ranger District, Questa Ranger District, and the Valle Vidal on the Carson National Forest and private lands including Philmont Scout Ranch and the Vermejo Park Ranch in northern New Mexico. The results of this project have statewide application for headwater slope wetlands in mountainous regions in New Mexico and throughout the Rocky Mountain region.

The Assessment Team viewing a Headwater Slope Wetland.

Overall, this Project included the continued enhancements of the SWQB Information Database (SQUID) Temporary Wetlands Database to accept and store NMRAM data, and six New

Mexico Wetlands Roundtables, maintained by the SWQB Wetlands Program, were conducted in the Fall 2020 and Spring 2021 under this project. In addition to the development of NMRAM for Headwater Slope Wetlands, work was conducted on a regulatory version of NMRAM for USACE use (Phase 2). This work was conducted in conjunction with the Albuquerque District of the Corps of Engineers. Under this grant, a draft NMRAM Riverine Wetlands Regulatory Version 1.2 Field Guide was reviewed by the USACE Engineer Research and Development Center with favorable results and the comments were incorporated into the Field Guide.

A field training was conducted in 2019 for both USACE and SWQB staff to test metrics in the field, and a half day training was also conducted for the regulated community. Draft electronic data collection worksheets were developed, and Version 1.3 was updated to increase utility. Additional work under this grant included continued installation of piezometers and sample acquisition from a previous project, to understand the groundwater component of headwater slope wetlands, principally to collect isotope data that provides age dating of groundwater that support headwater slope wetlands and their component springs and fen wetlands.

Headwater Slope Wetlands on the Tres Piedras Ranger District, Carson National Forest (Left). Trainers and Data Collection Team discuss where to set up a Sampling Area on degraded headwater slope wetland site on Holman Creek in the Valle Vidal (Right).

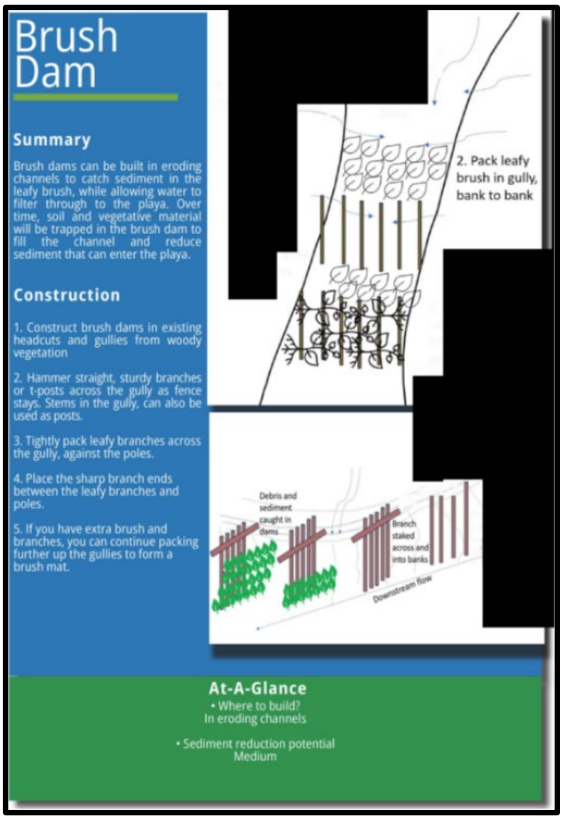
Wading into Wetlands Story Map

The SWQB Wetlands Program, in collaboration with the University of Saint Mary's University of Minnesota Geospatial Services, completed an interactive ArcGIS Story Map titled, "Wading into Wetlands of New Mexico" as part of an EPA-sponsored wetlands development program grant. Story Maps are excellent educational tools, and this particular Story Map educates the public on what a wetland is and why they are important. It highlights types and classifications of wetlands in New Mexico, provides wetland statistics, and introduces wetland functions including bank and shoreline stabilization, groundwater recharge, sediment and other particulate retention, streamflow maintenance, surface water detention, wildlife habitat, carbon sequestration, and nutrient transformation. Lastly, the Story Map encourages viewers to get out and enjoy

wetlands around the State of New Mexico with an interactive mapper! Wading into Wetlands of New Mexico Story Map is hosted on the SWQB website at: https://www.env.nm.gov/surface-water-quality/storymap.

Playa Wetlands Erosion Control Technical Guide

Natural Channel Design Engineering, Inc. completed the "Playa Erosion Control Field Guide" for the Surface Water Quality Bureau Wetlands Program. This Field Guide was created with landowners, land managers and resource protection agencies in mind, especially those working on and conserving playas on the Southern High Plains in eastern New Mexico and neighboring states. Playa wetlands are an important water source and sedimentation degrades playa function. Healthy functioning playas have a clay basin which forms cracks when dry. These cracks allow precipitation to slowly seep into the ground and to the regional aquifer. Upland erosion allowing sediment to enter the playa changes this function. Sediment accumulation within the playa also changes the hydroperiod and vegetation within the playa.



This guide illustrates practical erosion control methods with local materials to reduce sediment from entering the playa. Technical Guide 5: Playa Erosion Control Field Guide is available for viewing and download on the SWQB Wetlands Program Technical Guide webpage, https://www.env.nm.gov/surface-water-quality/wetlands-technical-guides/. This project was funded through a Wetlands Program Development Grant awarded by EPA Region 6 to the SWQB Wetlands Program.

Santa Fe County Wetlands Action Plan – 2023 Update

Ecotone Landscape Planning LLC completed the Santa Fe County 2023 Wetlands Action Plan (WAP) Update, prepared in partnership with the NMED's SWQB Wetlands Program and with additional support from Santa Fe County. The 2023 WAP Update was written to satisfy the grant objectives of a U.S. EPA CWA Section 319 Sub-Grant with NMED SWQB (Agreement No. 667-429-2D), as part of the project "Restoring the Rio Quemado Riverine Wetland on Los Potreros Open Space, in Chimayo, NM (Part 2) (20-Q)." A WAP is a guide for the planning and implementation of projects and activities essential to the understanding, conservation, protection, restoration and management of wetlands in a planning area. To view the updated WAP, titled *Caring for Santa Fe County's Wetlands and Rivers WAP* visit https://www.env.nm.gov/surface-water-quality/wap/.

Wetlands Projects funded by EPA

Springs Mapping Phase 1 and Technical Guide for Arid-Land Spring Wetlands

The SWQB Wetlands Program is excited to announce that a Wetlands Program Develop-ment grant was awarded funding to NMED by EPA Region 6. The federal grant total $420,540.00 in federal assistance awarded through the FFY23-24 EPA Wetlands Program Development Grant authorized by CWA Section 104(b)(3). This project proposes to map springs and collect sampling data at spring wetlands in Northern and Northeast New Mexico. The Level 1 inventory will include the springs' location, springs type, geologic context, photographs, flow rate, and water samples analyzed for oxygen and hydrogen isotopes to show how these springs are recharged (winter snowmelt vs. summer monsoons or older waters.) Wetland ecological functions (potential designated uses) will be assigned to springs in the project area as a step toward developing narrative Wetland Water Quality Standards for springs. The Wetlands Program will provide presentations to local schools and colleges and will recruit students through local science programs to assist in springs data collection. Protecting springs and their associated wet meadows (ciénegas) and spring brooks (outflow channels), and planning their restoration requires tools for land use planning, land conservation, buffer zones, development site design, agricultural practices, forestry practices and watershed stewardship as well as on-the-ground restoration methods. This project will create an Arid Land Springs Restoration Technical Guide based on successful methods for protecting, monitoring and restoring spring-fed wetland locations.

Wetlands Standards, Regulations, and Monitoring Team for New Mexico

This Wetlands Program development project was awarded $500,000.00 in federal assistance funding to NMED by EPA Region 6. This project proposes to create narrative wetland standards and designated uses for Confined Valley Riverine wetlands and Headwater Slope wetlands, participate in state permitting program development to include wetland protection, develop a SWQB Wetlands Monitoring Team to collect NMRAM data on a rotating basin schedule, create web-based NMRAM training videos and refine NMRAM data collection certification, continue the development of a wetlands database, work with local watershed groups representing disadvantaged communities to develop two Wetlands Action Plans (WAPs), coordinate six Wetlands Roundtables, and update the 2021 Wetlands Program Plan for New Mexico to include the change in program emphasis caused by the Sackett decision, include and emphasize climate change-directed activities, and other activities that can effectively address impacts to communities and the underserved in New Mexico.

New Mexico Rapid Assessment Method for Sub-Alpine Riverine Wetlands

This project will further develop and validate NMRAM for New Mexico wetland subclasses to include sub-alpine riverine wetlands at high elevations in the Upper Rio Grande, Chama, Canadian watersheds and Jemez Mountains in North Central New Mexico. This project furthers the development of a Level 2 monitoring tool (NMRAM) and applies it to a specified wetland subclass to determine condition thresholds relative to reference standard condition, establishes reference conditions and identifies potential reference standard sites for the subclass, determines the location, extent and coverage of sub-alpine riverine wetlands subclass, refines Level 2 core indicators that are relevant to the Wetlands Program's established monitoring objectives, and continues to promote the use of NMRAM through on-site demonstrations, NMRAM training, and coordination with New Mexico Wetlands Roundtable members and a Technical Advisory Committee (TAC) to ensure that statewide objectives are met. The web-based application used to record, track and analyze NMRAM data in the Wetlands Program (SQUID) temporary database (which is under development for integration with other SWQB water quality data), will be expanded to include data specific to the sub-alpine riverine wetland subclass. The project will include outreach to schools, community groups, watershed groups, tribes, and others to ensure disadvantaged communities and individuals in Northern New Mexico are informed about wetlands and sub-alpine riverine wetlands. High elevation sub-alpine riverine wetlands are particularly sensitive to a changing climate that affects snowpack and the seasonal hydrologic cycle, and significantly increases vulnerability to drought, devastating fire, and extreme flooding events. This NMRAM will include a vulnerability index that emphasizes factors that make sub-alpine riverine wetlands exposed and susceptible to a changing climate.

Equity and Environmental Justice

President Biden signed Executive Order (EO) 14008, "Tackling the Climate Crisis at Home and Abroad," in January 2021. Section 223 of EO 14008 outlines next steps for the Justice40 Initiative, including establishing a goal that 40 percent of the overall benefits of certain federal investments flow to disadvantaged communities that are marginalized, underserved, and overburdened by pollution.

The CWA §319 grant program is considered a covered program by the Justice40 Initiative. The anticipated result of this effort is a set of options for revising the New Mexico NPS Management Program to be more inclusive of and better serve disadvantaged communities and increase equity and environmental justice. Beginning in 2023, the EPA guidelines will allow current EPA-approved Tribal Nonpoint Source Management Plans to be considered as an acceptable alternative to a nine-element WBP. States may award CWA Section 319 watershed project funds to CWA Section 319-eligible Tribes to implement projects consistent with these plans. Additionally, the EPA guidelines will allow watershed project funds to be used to support WBP development and capacity building in disadvantaged communities, and these projects can also include implementation of demonstration projects where a WBP will be developed. The Climate and Economic Justice Screening Tool (https://screeningtool.geoplatform.gov/en), developed as guidance for EO 14008, shows that approximately 90% of New Mexico qualifies as a disadvantaged community.

The New Mexico NPS Management Program intends to further support environmental justice and disadvantaged communities by reducing the non-federal match required for projects funded by SWQB. Section 319(h)(3) of the CWA states, "[t]he Federal share of the cost of each management program

implemented with Federal assistance under this subsection in any fiscal year shall not exceed 60 percent of the cost incurred by the State in implementing such management program and shall be made on condition that the non-Federal share is provided from non-Federal sources." States usually pass on this 40% non-federal match requirement to sub-grant recipients and often to contractors, such that an individual project can only be funded with Section 319 funds up to 60% of the project cost. However, 2024 Nonpoint Source Management Plan establishes that NMED may reduce the match requirement to **as low as 10% of total project costs** depending on its ability to comply with Section 319(h)(3) through other sources of non-federal funds that support the NPS program, such as RSP funds. Reducing the non-federal match requirement for individual projects will facilitate project development in areas with a prevalence of federal land and federal cooperators whose expenses can't be reported as match and will reduce the burden on disadvantaged communities.

In 2018, NMED adopted two new policies related to equity and environmental justice. First, Policy 07-11 ("Limited English Proficiency (LEP) Accessibility & Outreach") requires programs to conduct limited English proficiency analyses for activities or proceedings that require public participation. LEP analyses typically use the American Communities Survey data from the U.S. Census Bureau accessed within EPA's Environmental Justice Screening and Mapping Tool (www.epa.gov/ejscreen) to determine the number or percentage of linguistically isolated households, and the languages spoken in those households, within the area affected by the NMED activity or proceeding. The SWQB staff continue to make every effort to announce opportunities in multiple languages, respond to public water quality inquiries in the language they were received, and to ensure there is equal opportunity for public participation.

Secondly, NMED adopted Policy 07-13 ("Public Participation.") A key aspect of this policy is to support the involvement of all people in NMED's activities and proceedings by further educating NMED staff on the topics of federal civil rights requirements, environmental justice, and public participation. The policy also supports providing opportunities for public participation above and beyond NMED's statutorily mandated public participation requirements. In addition to limited English proficiency, the policy requires NMED staff to consider how best to reach minority communities and people with low income. The policy requires development of a Public Involvement Plan (PIP) for any activity or proceeding requiring public participation. Example PIPs are available on NMED's public notices web page (www.env.nm.gov/public-notices/). To better comply with this policy, WPS began providing all announcements made to subscribers of the SWQB email list in English and Spanish (with translations provided by a certified translator) in 2022.

Additional Management Practices by Non-NMED Agencies

The following land management agencies implemented various projects and best management practices in New Mexico that ultimately contribute to the reduction of NPS pollutants in surface waters. The most common NPS issues being addressed are excessive erosion, sedimentation, encroachment of exotic vegetation, streambank instability, excessive nutrients, and excessive water temperature. The following summaries were submitted by the agencies and included here.

New Mexico Department of Game and Fish

Fisheries Management Division (FMD)

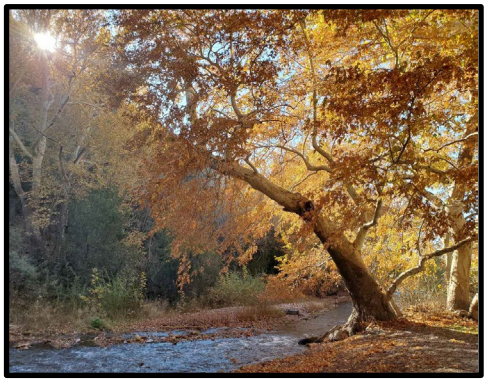
Cimarron River Channel Morphology

NMDGF partnered with the Cimarron Watershed Alliance, Trout Unlimited (TU), NMED, and New Mexico State Parks to continue instream improvements along the Cimarron River within the Colin Neblett Wildlife Management Area (WMA). Activities included reshaping the channel to reduce width-to-depth ratios and provide a low-flow channel, installing several rock structures to increase habitat complexity, and excavating pools to increase resting areas for trout. Activities focused on increasing over-wintering habitat for resident brown trout, holding areas for stocked rainbow trout, and improving water quality and river function. Two reaches were improved in prior years, one in 2021 (1.0 mile) and one in 2022. In addition, NMDGF and partners secured funding through the RSP and completed improvements on about 7 miles of the Cimarron River within the Colin Neblett WMA in the fall of 2024.

Rio Costilla Habitat Improvements

NMDGF completed construction of habitat improvements along the Rio Costilla within the Valle Vidal in the spring of 2024. This work extended from Comanche Point downstream to the terminal fish migration barrier. The project focused on improving overwinter fish habitat to mitigate low flows associated with dam operations. Activities included reshaping the channel to form a low-flow channel and increase habitat connectivity, installing large woody debris to increase habitat complexity, and installing rock structures to mitigate erosion and stabilize stream banks, which will reduce nonpoint source pollution. Monitoring efforts are underway to document the success of the habitat improvements over the next five years. The project dovetails with an ongoing restoration project for Rio Grande cutthroat trout (RGCT), Rio Grande Sucker (RGS), and Rio Grande Chub (RGC).

Constructed point bar, woody debris, and bank hardening in the Rio Costilla. S Ferguson



Whitewater Creek Instream Restoration - Planning

In partnership with the GNF, NMDGF has developed engineering plans for instream restoration work in Whitewater Creek in the Catwalk Recreation Area. The project includes instream habitat improvements to improve fish habitat and water quality for Gila trout and other native species, which will reduce nonpoint source pollution. Planning is ongoing and construction is anticipated to begin in late winter 2025.

Whitewater Creek as it flows through the Gila NF. NMDGF

Rio Bonito Habitat Improvements - Planning

NMDGF has partnered with the BLM Roswell Field Office to develop plans to improve the Rio Bonito near Lincoln, NM. The planning continues habitat improvement efforts completed along the lower Rio Bonito in 2018. The project involves channel shaping to reduce width-to-depth ratios, adding woody debris and rock structures to increase habitat complexity, and excavating pools to increase resting areas for trout. Project activities will improve habitat conditions for resident brown trout, RGC, RGS, and stocked rainbow trout. With the plans completed, project implementation is planned for 2025.

Rio Bonito as is flows through lands managed by the Bureau of Land Management. NMDGF

Willow Creek Habitat Restoration

Willow Creek is an important Gila trout recovery stream and provides a unique angling opportunity for a native trout. The 2012 Whitewater-Baldy Fire impacted Willow Creek and a watershed plan was developed by the GNF and the NMED to address the water temperature impairment. NMDGF completed construction of in-stream habitat improvements in Willow Creek within the GNF in the spring of 2024. This work extended from the private land boundary downstream to the confluence with Gilita Creek. The project focused on improving fish habitat and addressing the stream's temperature impairment. Activities included installing rock and log structures to create pools, increase sinuosity, stabilize stream banks, and decrease erosion. In addition, the project included a short reach of Little Turkey Creek downstream of the wilderness boundary. The activities in this reach included rerouting and reshaping the creek channel to increase sinuosity and reconnect a historic wetland area to the creek. These activities will result in reducing nonpoint source pollution. This project was completed in partnership with the GNF and the San Francisco SWCD.

Wildlife Management Division (WMD)

Edward Sargent Wildlife Management Area (WMA)

The NMDGF continued with the implementation of the Edward Sargent WMA Watershed Restoration Assessment and Concept Plan (Watershed Artisans, November 2021). Using excavated lead-out channels and constructed riffles, approximately 6 acres of off-channel wetland habitats were re-wetted and pool habitat was created. This restoration work was completed in July 2024. These actions will improve water quality by restoring wetlands in headwater systems.

Excavated lead-out channel and pool habitat in the Edward Sargent Wildlife Management Area. C Parris

Rio de las Vacas Restoration – Planning

The Rio de las Vacas is an important watershed at the headwaters of the Rio Puerco. The valley bottom contains several miles of wet meadow and wetland habitats. These wetlands provide water and habitat for a variety of wildlife including elk, mule deer, and wild turkey. The watershed has been negatively impacted by drought, historic livestock grazing practices, and other management issues, resulting in an incised and poorly functioning wetland system. This project is the first step of a multi-year restoration project on the Rio de las Vacas that is slated to begin in the summer of 2025. Objectives of the restoration project focused on reconnecting the channel with the historic floodplain, improving wetland function, and increasing water levels in the Rio de las Vacas, all of which will reduce nonpoint source pollution.

Black Mesa Habitat Restoration Project

The Black Mesa area of the Cibola National Forest sits between the Ignacio Chavez grant of the Rio Puerco BLM to the north, and the newly acquired LBar Wildlife Management Area of the NMDGF to the south. The Rio Puerco BLM and the Cibola National Forest have partnered with the NMDGF in restoration efforts throughout this landscape. Thousands of acres of ponderosa pine forest have been collaboratively thinned in an effort to reduce the risk of catastrophic wildfire which can contribute to nonpoint source pollution, restore wildlife habitat, and allow for prescribed fire use as a management tool. 650 acres of forest were thinned using HSP funds during this project cycle. A project to thin an additional 700 acres of forest was prioritized for Habitat Stamp Program funding, and implementation will occur in the Spring of 2025. This project has significantly improved the wildlife habitat on Black Mesa and has facilitated the ability for the Mt. Taylor Ranger district to move closer towards managing this landscape with optimally planned intervals of broadcast prescribed fire.

Ponderosa pine forest stand in the Cibola National Forest. NMDGF

New Mexico Forestry Division

New Mexico's forests are at high risk of wildfire due to overgrown conditions, drought, and climate change, requiring significant forest thinning and watershed restoration treatments to reduce these hazards and protect communities, source waters, and ecosystems. Through careful resource management, community engagement, and productive collaborations, New Mexico Forestry Division (the Division) promotes healthy forests and sustainable watersheds. The primary activities undertaken by the Division to achieve these goals are watershed restoration projects, forest thinning, prescribed burning, and permitting of commercial timber sales. In Federal Fiscal Year 2024, the Forestry Division accomplished 3,751 acres of watershed restoration projects in Priority Watersheds (see Table 6 and Figure 4).

Using BMPs to Address NPS Pollution

New Mexico Forestry Division resource management programs involve the application of both regulatory and voluntary silvicultural BMPs on state and private forest lands in New Mexico. Through the federally supported Cooperative Forestry Assistance Program, the Division provides technical forest resource management assistance to landowners and recommends application of NPS pollution BMPs in all silvicultural activities. Types of technical assistance include:

- Community wildfire protection planning and hazardous fuels treatments
- Post-fire soil stabilization
- Reforestation practices
- Management of forest disease, insects, and invasive plants
- Issuing permits and inspecting private timber harvests according to New Mexico Forest Practices Guidelines

This assistance is designed to meet a wide range of landowner management objectives. In conjunction with these programs, the Division has technical responsibility for application of forestry practices through the federally funded Forest Health Improvement (FHI) Program, a landowner cost-share program which specifically addresses forest health issues and forest management planning, as well as various thinning programs that address wildfire threats to communities and watersheds.

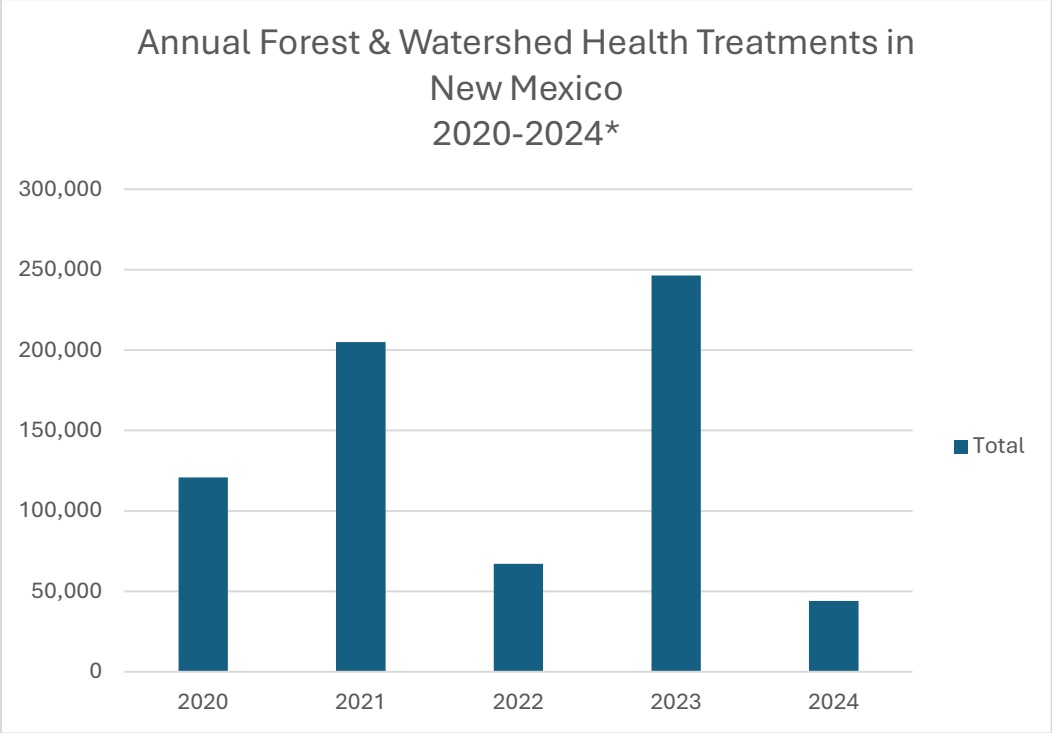
The Division provides technical assistance to partner agencies and organizations on matters related to forestry, wildland fire and watershed health. Some partnerships are formalized through legal agreements. Agreements with the BLM and the Southwestern Region of the USDA FS enable the Division and BLM and USFS to collaboratively develop cross-jurisdictional, landscape scale forest and woodland restoration treatments for improving forest health and resilience and decreasing wildland fire threat to forests, woodlands and watersheds. In other cases, partnerships are formed to implement grant-funded activities that promote watershed health and water quality. The Division also partners with other state agencies to support common state objectives, such as managing the New Mexico Forest and Watershed Management Coordinating Group and documenting accomplishments in the New Mexico Shared Stewardship Portal (https://nmssp.org/#/).

Forest and Watershed Health Coordinating Group

In 2008, the Forestry Division created the Forest and Watershed Health Coordinating Group (FWHCG), an advisory body of partners engaged in restoration and management of forests and watersheds statewide. The FWHCG has now been meeting quarterly for over 16 years and plays a critical role in maintaining the New Mexico Forest Action Plan (FAP).

In 2024, the FWHCG convened to discuss progress made in the first five years of the 2020 FAP. The group identified successes and challenges across ten Forest Action Plan strategies, including significant progress toward the overall goal of treating 300,000 acres per year between all public and private organizations and across all land ownerships. Figure 5 presents data for all known treatments in the state between 2020 and 2024.

Figure 5



* Not all data has been reported for 2024.

The Forestry Division continues to engage in recovery efforts related to the unprecedented wildfire disasters in 2022 (Hermit's Peak-Calf Canyon) and 2024 (South Fork and Salt). This includes the removal of hundreds of acres of hazardous trees on Forest Service land in the Hermit's Peak and Calf Canyon burn scar area and initiating a $6M effort to remove hazard trees on private lands threatening roads and powerlines. In fall 2024, Forestry developed a plan for implementing $10M in appropriated funds to EMNRD to support wildfire recovery in the South Fork and Salt Fire area, with the majority of funds going to hazard tree and soil erosion mitigation on private lands in and around Ruidoso.

Forest and Watershed Restoration Act

The Forest and Watershed Restoration Act (FAWRA) was created by House Bill 266 and signed into law by Governor Michelle Lujan Grisham on March 15, 2019. FAWRA allocates $2 million annually to the Energy, Minerals and Natural Resources Department, Forestry Division with the purpose of restoring forests and watersheds in the state of New Mexico and establishes a Forest and Watershed Advisory Board to evaluate and recommend projects. The objectives of FAWRA are to prioritize and fund large-scale forest and watershed restoration projects on any lands in the state that:

- increase the adaptability and resilience to recurring drought and extreme weather events of the State's forests and watersheds;
- protect above and below ground water sources;
- reduce the risk of wildfire, including plans for watershed conservation;
- restore burned areas and thin forests;
- include related economic or workforce development projects or a wildlife conservation or a habitat improvement project.

Table 6. New Mexico Forestry Division Treatments in Priority NPS Watersheds.

Project Name	Location	Completed Acres	Watersheds	Treatment
Canjilon Watershed Improvement	SE of Cebolla	629	Montoya Canyon-Canjilon Creek	Thinning/ Fuelwood
Canjilon/Cebolla NFL	SE of Cebolla	37	Montoya Canyon-Canjilon Creek	Mastication
Canjilon/Cebolla NFL	SE of Cebolla	5	Montoya Canyon-Canjilon Creek	Fuel Break
Canjilon/Cebolla NFL	SE of Cebolla	14	Montoya Canyon-Canjilon Creek	Fuel Break
CWMA 2023-2024	NE of EL Vado	2	Rio Brazos-Rio Chama	Thinning/ Fuelwood
CWMA 2023-2024	NE of EL Vado	3	Rio Brazos-Rio Chama	Thinning/ Fuelwood
CWMA 2023-2024	NE of EL Vado	60	Rio Brazos-Rio Chama	Thinning/ Fuelwood
CWMA 2023-2024	NE of EL Vado		Rio Brazos-Rio Chama	Thinning/ Fuelwood

Project Name	Location	Completed Acres	Watersheds	Treatment
CWMA 2023-2024	NE of EL Vado	10	Rio Brazos-Rio Chama	Thinning/ Fuelwood
CWMA 2023-2024	NE of EL Vado	50	Rio Brazos-Rio Chama	Thinning/ Fuelwood
Elkridge FAWRA	SE of Angel Fire	13	Upper Coyote Creek	Thinning/ Fuelwood
HPCC Recovery	NW of Las Vegas	176	Arroyo Pecos-Gallinas River	Mastication
HPCC Recovery	NW of Las Vegas	539	Arroyo Pecos-Gallinas River	Cut, Skid and Deck
Los Vigiles HPCC Recovery	E of El Porvenir	92	Arroyo Pecos-Gallinas River	Cut, Skid and Deck
Los Vigiles Land Grant HPCC Hazard Tree Project	NW of Las Vegas	36	Arroyo Pecos-Gallinas River	Cut, Skid and Deck
Morphy Lake State Park HPCC Recovery	NW of Ledoux	20	Santiago Creek	Cut, Skid and Deck
N6S - Middle Rio Grande Albuquerque Stwrdshp Reach	E of ABQ Bio Park	195	West Mesa Airport-Rio Grande	Cut and Stump Herbicide
N6S - Sandia Pueblo Prescribed Grazing (Goats)	W of Sandia Pueblo	10	Sandia Wash-Rio Grande	Prescribed Grazing
N6S - Sandia Pueblo Prescribed Grazing (Goats)	W of Sandia Pueblo	3	Sandia Wash-Rio Grande	Prescribed Grazing
N6S - Sandia Pueblo Prescribed Grazing (Goats)	W of Sandia Pueblo	13	Sandia Wash-Rio Grande	Prescribed Grazing
N6S - Sandia Pueblo Prescribed Grazing (Goats)	W of Sandia Pueblo	6	Sandia Wash-Rio Grande	Prescribed Grazing
N6S - Sandia Pueblo Prescribed Grazing (Goats)	W of Sandia Pueblo	2	Sandia Wash-Rio Grande	Prescribed Grazing

Project Name	Location	Completed Acres	Watersheds	Treatment
N6S - Sandia Pueblo Prescribed Grazing (Goats)	W of Sandia Pueblo	3	Sandia Wash-Rio Grande	Prescribed Grazing
N6S- Bernalillo Jemez Mountains	NE of Seven Springs	64	Outlet San Antonio Creek	Cut, Skid and Deck
N6S- Bernalillo Jemez Mountains	NE of Seven Springs	51	Outlet San Antonio Creek	Cut, Skid and Deck
N6S- Bernalillo Jemez Mountains	NE of Seven Springs	11	Outlet San Antonio Creek	Thinning/ Fuelwood
N6S- Bernalillo Jemez Mountains	NE of Seven Springs	56	Outlet San Antonio Creek	Cut, Skid and Deck
N6S- Bernalillo Jemez Mountains	NE of Seven Springs	69	Outlet San Antonio Creek	Thinning/ Fuelwood
N6S_3698_ZG5067_10_04_23_COP_3698_01_1815 2	SE of Page	77	Headwaters-Cottonwood Creek	Thinning/ Fuelwood
N6S_3698_ZG5067_10_04_23_COP_3698_01_1815 2	SE of Page	44	Headwaters-Cottonwood Creek	Thinning/ Fuelwood
N6S_3698_ZG5067_10_04_23_COP_3698_01_1815 2	SE of Page	17	Headwaters-Cottonwood Creek	Thinning/ Fuelwood
N6S-East Mountain All Lands	SE of Tijeras	15	Upper Tijeras Arroyo	Mastication
N6S-East Mountain All Lands	SE of Tijeras	63	Upper Tijeras Arroyo	Thinning/ Fuelwood
N6S-East Mountain All Lands	SE of Tijeras	48	Upper Tijeras Arroyo	Mastication
N6S-East Mountain All Lands	SE of Tijeras	18	Upper Tijeras Arroyo	Thinning/ Fuelwood
N6S-East Mountain All Lands	SE of Tijeras	38	Upper Tijeras Arroyo	Thinning/ Fuelwood
N6S-East Mountain All Lands	SE of Tijeras	76	Upper Tijeras Arroyo	Thinning/ Fuelwood
Nogal WUI	S of Nogal	20	Nogal Creek	Mastication

Project Name	Location	Completed Acres	Watersheds	Treatment
PA_SONS_2023_18259	SE of Angel Fire	6	Upper Coyote Creek	Thinning/ Fuelwood
PA_SONS_2023_18259	SE of Angel Fire	2	Upper Coyote Creek	Thinning/ Fuelwood
Pease_GPS_20433	S of Nogal	7	Nogal Creek	Thinning/ Fuelwood
Rio Bonito WUI	SE of Angus	38	Middle Rio Bonita	Mastication
Rio Bonito WUI	SE of Angus	16	Middle Rio Bonita	Mastication
Rio Bonito WUI	SE of Angus	15	Middle Rio Bonita	Thinning/ Fuelwood
South_555_redraw_20579	S of Penitente Canyon	116	Headwaters Caliente Canyon	Thinning/ Fuelwood
Southern Sacramento Restoration Project	Chippewa y Park	9	Cox Canyon	Mastication
Tiffany Fire Rehabilitation	SE of San Marcial	100	Tiffany Canyon-Rio Grande	Mastication
Timberon BLM Planning	Timberon	11	Arkansas Canyon-Sacramento River	Mastication
Timberon BLM Planning	Timberon	121	Arkansas Canyon-Sacramento River	Mastication
Timberon BLM Planning	Timberon	4	Arkansas Canyon-Sacramento River	Mastication
Wakfield_Unit_only_22852	N of Glorieta	24	Glorieta Creek	Thinning/ Fuelwood
WillowCreek_NRA_Inspected_20566	SW of Clifton Hills	13	Willow Canyon	Thinning/ Fuelwood
Zuni Mountains CFLRP	SE of Page	665	Headwaters-Cottonwood Creek	Cut, Skid and Deck

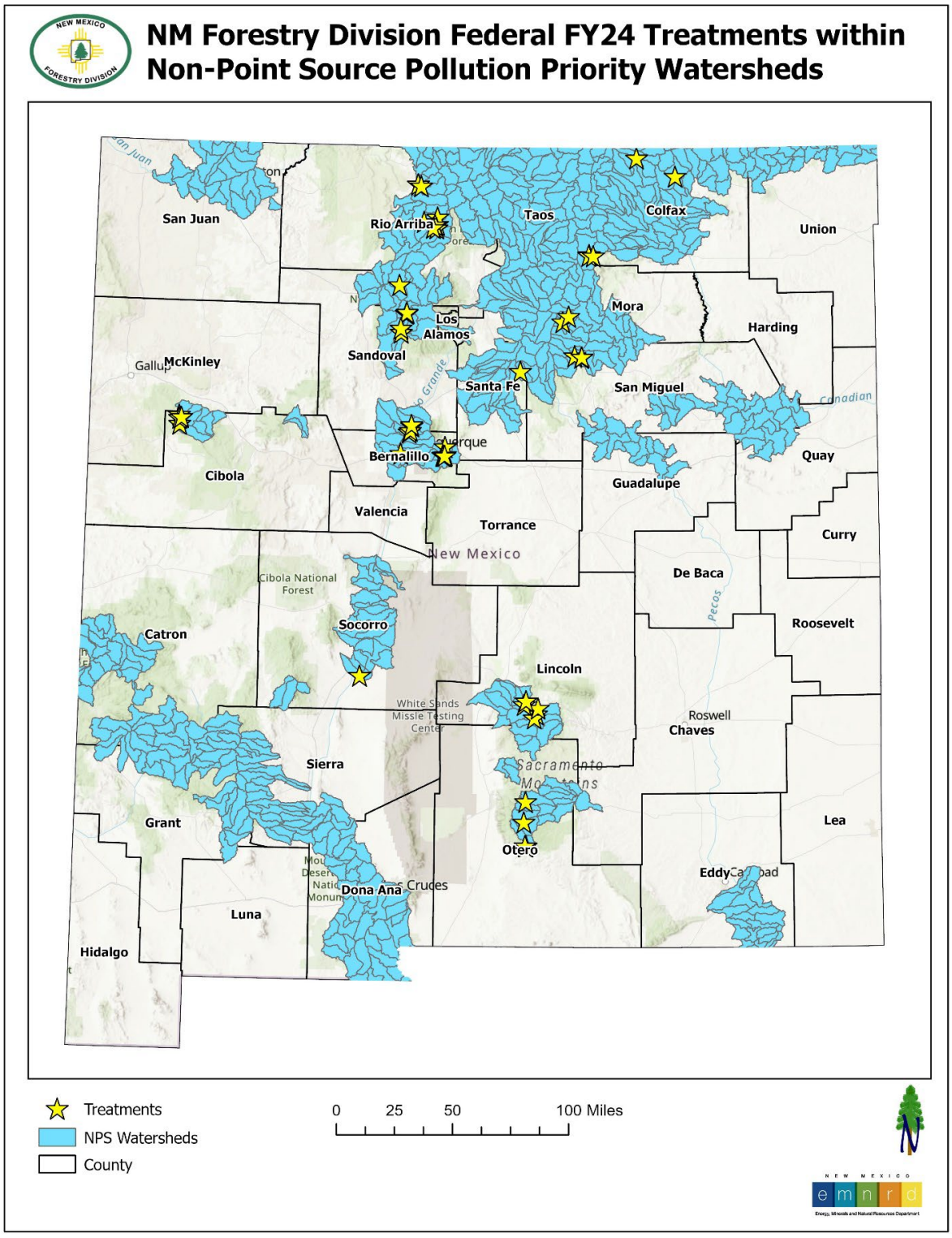


Figure 4. Watershed restoration projects in priority watersheds.

USDA Forest Service (USFS)

Carson National Forest

During fiscal year (FY) 2024, the Carson National Forest (CNF) implemented projects that made progress towards meeting and maintaining state water quality standards as well as activities that contributed to non-point source management. Some project implementation was initiated in FY24, but not completed until FY25.

Rio San Antonio Restoration Project

Canada Tio Grande-Rio San Antonio (130100050301)
In cooperation with TU and Watershed Artisans, restoration of stream and streamside wetland areas of Upper Rio San Antonio was implemented beginning in September and ending in October. Photo point monitoring of FY23's restoration project upstream of this year's work was also completed.

Constructed log jam point bars June, 2024 facing upstream just above the confluence with the Rio San Antonio.

Canjilon Creek Restoration Project

Montoya Canyon-Canjilon Creek (130201020901)
In cooperation with NMSU's WRRI and Keystone Restoration Ecology, implementation was initiated. Approximately 2 weeks of implementation work remains and is anticipated to be completed in May 2025. This is a RSP and Acequia Drought Resiliency project.

Midnight Meadows Wetland Stabilization/Bitter Creek Channel Reinstatement Project

Upper Red River (130201010301)
In cooperation with Amigos Bravos a volunteer work weekend was held to continue restoration of the Midnight Meadows wetlands area of upper Bitter Creek. This work is part of a Participating Agreement (20-PA-11030200-068) between Amigos Bravos, NM Office of Natural Resource Trustee, and the USDA Forest Service, Carson National Forest. The construction of a plug and spread project planned for FY 2022 was deferred to 2023 due to monsoon rain and localized flooding was completed in 2023. Work performed included repair and maintenance of existing wetland exclosures and construction of several hand- built log, rock and sod swales. Approximately 70 volunteers participated in this work weekend along with 3 Forest Service staff.

Planning Activities

During FY 2025 the Carson will complete planning under the Northern NM Riparian, Aquatic, and Wetland Restoration Environmental Analysis signed in April 2020.
These planning efforts included:

- Stewart Meadows Restoration along the lower reaches of Rio San Antonio, Tres Piedras RD.
- Headwaters El Rito Creek Watershed Restoration Action Plan Essential Projects on the El Rito RD. The action plan is nearing completion, and one checklist will be done for all essential projects in the plan.
- Cruces Basin Wetland Action Plan, Tres Piedras RD.

Covered under other NEPA decisions, aquatic organism passage projects are in the planning stage in the Valle Vidal Management Area of the Questa RD. Partners include New Mexico Department of Game and Fish and Trout Unlimited.

BMP Monitoring

Due to staffing and leadership priorities, one Forest Service national BMP monitoring protocol was completed for implementation and effectiveness on the McCrystal/Rock prescribed burn that was implemented in the fall of 2023. While the BMPs prescribed in the NEPA document were not included in the burn plan, they were implemented and effective. Fuels staff agreed that it was a simple matter to include BMPS in future burn plans to reduce the chance that BMPs are not implemented.

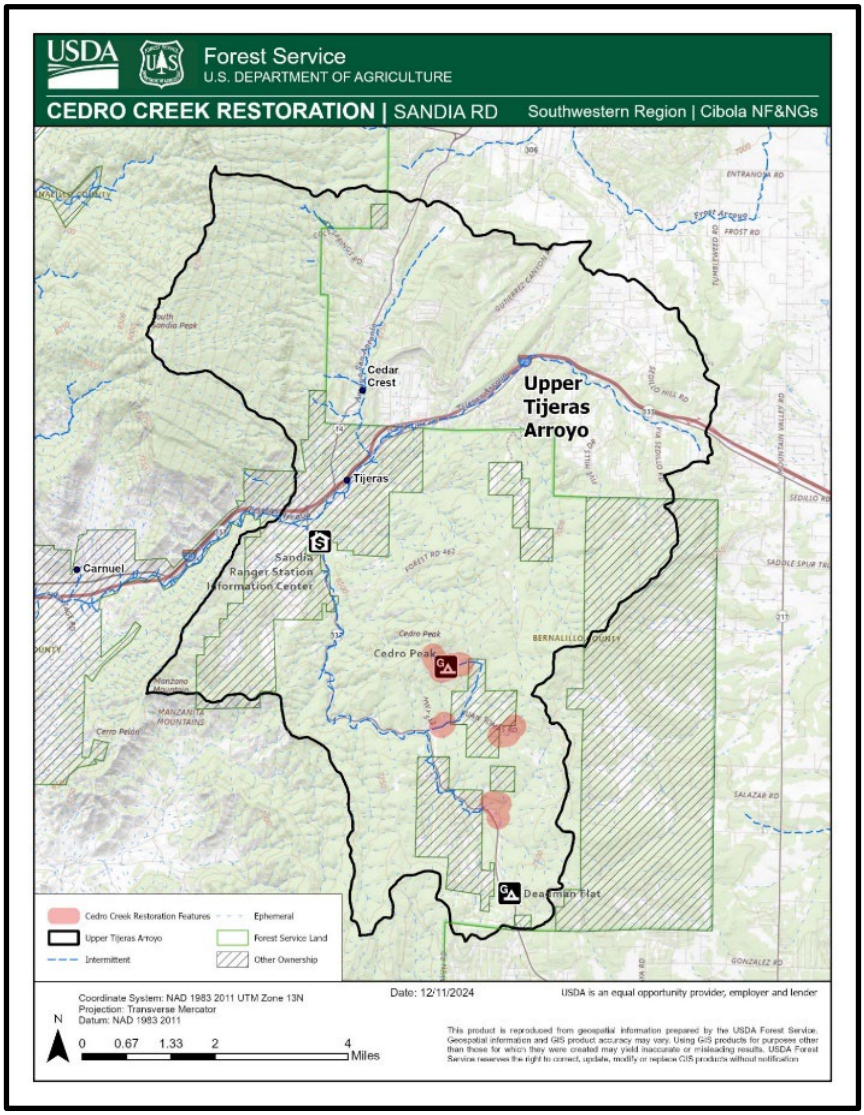
Cibola National Forest and National Grasslands

The Cibola National Forest and National Grasslands (Cibola NF&NGs) implemented several projects within New Mexico that improved nonpoint source pollution during 2024. These projects included riparian restoration, vegetation treatments such as prescribed burning and thinning, and continued work to control salt cedar and promote native revegetation along the Canadian River in Mills Canyon. Additionally, the Forest has implemented standards and guidelines from the recent Forest Plan Revision, leading to improved watershed management. Improved watershed conditions lead to reduced sediment movement and improved water quality. Photos from these areas, and other projects conducted on the Forest over the years, can be seen at this website, https://www.flickr.com/photos/cibola_nfg/.

Riparian Restoration – Cedro Creek

Subwatershed: Upper Tijeras Arroyo (HUC 130202030201)

Completed 121 separate features including erosion structures (one rock dams, Zuni bowls, etc.), culvert repair work, and the blocking of illegal road accesses.



Map of the Cedro Creek Restoration Project within the Upper Tijeras Arroyo watershed. Locations of the treatments are highlighted in red near the south side of the Upper Tijeras Arroyo.

Erosion Control implementation by Rocky Mountain Youth Corp and Stream Dynamics.

The project area is in the Sandia Mountains on the Sandia Rander District. Four areas were selected for restoration south of I-40 near Cedro Group Campground, two arroyos accessed via Juan Tomas Road, and several arroyos in the vicinity of Pine Flats day use area. The Cedro Creek and nearby riparian areas provide habitats for a variety of riparian vegetation that play an important role in nutrient recycling, trapping eroding soil, reducing temperatures, and filtering out polluting chemicals such as nitrates.

In 2024, the Forest Service and Stream Dynamics teamed up with Rocky Mountain Youth Corp (RYMC) to conduct restoration work out on the Cedro Creek area on the Sandia Ranger District. Treatments included erosion control structures, closure of unauthorized roads, and the repairing of culverts. Treatments helped to improve bank stabilization, handle surface runoff, soil loss, water pollution, and improve wildlife habitat. The closure of roads will help to limit future erosion and soil compaction caused by vehicle traffic. Stream Dynamics is interested in continuing to work with the Forest Service in the future to work on drainage issues on forest road 252 and more drainage issues near the campground.

Riparian Restoration: Shush Kin Fen

Subwatershed: Agua Medio – Bluewater Creek (HUC 130202070201)

Planning for continued riparian and stream restoration within Shush Kin Fen.

In FY 24, NMED, Cibola NF&NGs, and River Source continued to develop stream restoration treatments inside the fen to reduce concentrated flow patterns, rebuild the soils, and improve water holding capacity of the fen. Restoration treatments include structures such as one rock dams and brush drift fences among others. Preliminary designs developed by River Source can be found here https://arcg.is/qTf5a. This work is planned for implementation in 2025-2026.

Comparison of vegetation growth inside Shush Kin fence compared to outside.

Canadian River Riparian Restoration

Subwatershed: Canon Vercere-Canadian River (HUC 110800030505)

Continued maintenance of Salt Cedar Control and Replanting (part of the Canadian River Riparian Restoration Project (CRRRP).

In FY24, maintenance continued salt cedar treatments at Mills Canyon in partnership with the Canadian River Riparian Restoration Project. The Canadian River Riparian Restoration Project (CRRRP) is a collaboration of eight Soil and Water Conservation Districts in northeastern New Mexico (https://www.nmacd.org/programs). The CRRRP's goal is to restore the watershed of the Canadian River, both on the main stem and on its tributaries, to a healthy productive state that will provide native

habitat for a variety of wildlife and improve water for communities, agriculture, and recreation throughout the course of the watershed. Riparian and upland plantings were also monitored to assess the success of riparian plants and additional needs.

Willow recovery along Mills Canyon after treatment.

Vegetation Treatments (prescribed fire and vegetation treatments)

- Prescribed Fire: Durfee Bolander
  - Durfee Canyon (HUC 130202080103) – 1,496 acres
  - East Well (HUC 130202080301) – 261 acres
  - White Well (HUC 130202080303) – 1,154 acres
  - White Well (HUC 130202080302) – 546 acres
- Thinning: Hop Canyon Unit 1&2
  - Outlet Arroyo Gato (HUC 130202090605) – 290 acres
- Prescribed Fire: E. La Jara RX
  - Upper San Mateo Creek (HUC 130202070305) – 955 acres

- Thinning: Quaking Aspen
  - Milk Ranch Canyon (HUC 150200060103) – 40 acres
- Prescribed Fire: Sawyer RX
  - Agua Medio – Bluewater Creek (HUC 130202070201) – 656 acres
- Prescribed Fire: Capilla Broadcast
  - Upper Arroyo de Manzano (HUC 130500011002) – 97 acres
- Thinning: Cedro 4
  - Upper Tijeras Arroyo (HUC 130202030201) – 194 acres
- Thinning: North 10K Thinning
  - Outlet San Pedro Creek (HUC 130202010610) – 37 acres
- Thinning: Tree Springs Thinning
  - Headwaters San Pedro Creek (HUC 130202010501) – 48 acres
- Thinning: West 9 Mile Thinning
  - Las Huertas Creek (HUC 130202010610) – 83 acres
- Prescribed Fire: K-16 and K-79 RX
  - Lower Sand Draw (HUC 110901030303) – 1,882 acres
  - Gyp Arroyo (HUC 111001010309) – 943 acres

Vegetation treatments such as prescribed fire and thinning occurred across the Cibola NF&NG in FY24 as restoration activities continue to be planned and implemented. In areas where tree densities are out of the range of variability, these treatments reduce the risk of uncharacteristic fire with high intensity effects. High intensity fire effects include high sedimentation rates, turbidity, erosion, and streambank erosion. Vegetation treatments reduce the potential for these effects and improve overall watershed condition. In addition, prescribed fire was implemented to improve watershed conditions, increase resiliency to wildfire, and improve ground cover. These benefits are expected to lead to improvements in water quality by reducing sediment inputs over the long term and improving riparian condition. Watershed condition in affected watersheds is assessed using the Watershed Condition Framework, a method used by the USDA Forest Service (https://arcg.is/1LKDWv).

Prescribed Fire activity on the Cibola National Forest.

Gila National Forest

The Gila National Forest's watershed program had a busy year in FY2024. A total of 25 Watershed Restoration Action Plans (WRAPs) were completed, with the Gilita Creek WRAP being the first climate informed WRAP in the Region. The Black Fire WRAP has 24 subwatershed WRAPs in its portfolio detailing watershed restoration plans for years to come, also climate informed. One Aquatic Organism Passage (AOP) project was completed with another currently under contract. 30 miles of stream/aquatic habitat restoration were accomplished, all of which include benefits to riparian habitat and water quality. Erosion control structures, motorized and non-motorized trail improvements, vegetation projects, riparian fencing, noxious weed control, and other watershed improvement projects were key to this year's success. Partnerships were instrumental in our efforts with BCI, Wild Arizona, National Forest Foundation (NFF), Conservation Corps NM, TU, US Fish and Wildlife Service (USFWS), and Keystone Restoration Ecology remaining some of our key friends. Much of this year's work focused on the 3 priority watersheds of Dry Blue Creek, Headwaters Centerfire Creek, and Gilita Creek, as well as Black Fire recovery efforts. Inflation Reduction Act (IRA), Bipartisan Infrastructure Law (BIL), Disaster Recovery, and NM River Stewardship monies provided a large portion of the funding for this work.

Headwaters Centerfire Creek – Quemado Ranger District

This project was identified as an essential project in the Headwaters Centerfire Creek WRAP, part of the larger Escudilla Landscape WRAP. $215,000 of IRA funding was provided to Keystone Restoration Ecology under a Participating Agreement to complement work being funded under a $445,370 NM River Stewardship grant. This project is located on the Quemado Ranger District in the Spur Basin area approximately 10 miles north of Luna. The project focused on the construction of new erosion control structures and the maintenance of existing erosion control structures to prevent and control active headcutting in various drainages and swales. Work in Summer 2024 included the use of heavy machinery to clean out sediment structures in need of reconstruction. Bank stabilization techniques were employed across the intermittent reach of Spur Draw. Rangeland seeding was incorporated in the uplands within the 200 acres of the project area to facilitate recovery of herbaceous ground cover. Woody vegetation will be planted to facilitate riparian recovery and further stabilize the bank. Certified weed free seed will be used in areas requiring reconstruction. Additional work is planned in the fall of 2025 for stream and aquatic habitat restoration on a degraded reach of Centerfire Creek.

Completed erosion control structures in erosive Datil soils.

Dry Blue Creek Off-Highway Vehicle (OHV) Trail 61 – Quemado Ranger District

Located on the Quemado Ranger District on the Gila National Forest, the Dry Blue Creek WRAP has several restoration projects beginning as part of the larger, landscape-scale Escudilla Landscape WRAP. One of the essential projects outlined in the WRAP is to address Dry Blue Creek OHV Trail 61 and its impacts to designated critical habitat for the endangered loach minnow and occupied habitat for the threatened narrow-headed garter snake. This trail crosses the creek multiple times and is causing resource damage such as erosion and channel instability. In 2022, engineers and hydrologists from the National Stream and Aquatic Ecology Center and Enterprise came to assess this trail, and with the input of forest staff, designed a plan. Plans include re-routing sections of the trail to remove unnecessary creek crossings and trail in the stream/riparian corridor, with decommissioning also occurring. Some crossings are unavoidable, so they will be stabilized by hardening the approaches and creating new low-water crossings that will reduce bank instability and provide safe OHV travel across the creek. The contract was awarded in September with construction to begin in October 2024. $250,000 of funding has been provided for the project by U.S Fish and Wildlife Service to the Forest Service under the Bipartisan Infrastructure Law.

Creek crossing on Dry Blue Creek OHV Trail 61.

Stone Creek Stream Restoration – Quemado Ranger District

In July of 2024, with $294,174 from the NMED's RSP fund, BCI's Restoration Crew began an ambitious stream restoration effort on Stone Creek, an important tributary of the San Francisco River on the Quemado Ranger District. This project is one of many found in the Stone Creek-San Francisco River WRAP, part of the larger Escudilla Landscape WRAP. Stone Creek's headwaters arise on the slopes of Escudilla Mountain in Arizona, a mountain made famous by Aldo Leopold in A Sand County Almanac and where the last grizzly in Arizona was killed in 1936. Flowing through forest dominated by ponderosa pine, the creek flows for five miles before crossing into New Mexico, with the last two miles on the Quemado Ranger District, where the restoration efforts are focused. The watershed has been significantly altered by recent fires, historic long-term grazing, and roads that have contributed significant amounts of sediment into the system, resulting in denuded streamside vegetation, a destabilized stream channel, and increased water temperatures. This led the GNF to designate the Stone Creek-San Francisco 6-code watershed as "Functioning at Risk" and the State of New Mexico list the creek as "Impaired" due to excess stream temperatures.

The goals of the restoration effort are to improve stream bank stability and resiliency and reduce stream temperatures. During July's first work session, BCI's restoration team, led by stream restoration specialist Steve Carson of Rangeland hands, Inc. used an excavator and hand crews to treat more than half of the two-

dozen steep, eroding cutbanks with the construction of bankfull benches. These are constructed by reducing the slope of the cut bank and constructing a small rock and soil bench/flood plain at the toe of the eroding bank, then planting the slope and bench with locally harvested willows. This stabilizes the cut bank, reduces sediment delivery, and at high flows reduces shear pressure and downcutting on the bottom of the channel. The planted willows help to anchor the rock and soil and when mature, provide stream shading to reduce stream temperatures. The restoration crew also constructed more than two-dozen rock and log erosion control structures in the stream and adjacent gullies and arroyos to reduce sediment delivery and planted an additional 300 willows. The crew is looking forward to their fall and spring work sessions where they will finish treating the remaining eroded banks, restore an adjacent hillslope spring, and plant additional willows and cottonwoods.

Left: Devin Robbins (Bat Conservation International) standing beside a nearly complete Zuni bowl on Stone Creek to prevent headcutting through the off-channel spring. Right: A "Zuni Bowl", a rock erosion control structure developed by native Americans is used to abate erosion at the bottom of a gully formed below a hillslope spring that flows into Stone Creek.

NFSR 233/Tularosa River Aquatic Organism Passage and Floodplain/Wetland Restoration – Reserve Ranger District

Forest Road 233 lies on the Reserve Ranger District of the GNF and serves as a critical access road for the Forest, as it is the only road to access the Eagle Peak Lookout and is critical for fire operations on the north end of the forest. This road is also important to the public for hunting and recreation activities. In 2023 the Forest Service working with Federal Highways – Central Federal Lands reconstructed a new low water crossing on NFSR 233 on the Tularosa River. They also implemented additional restoration activities on the

floodplain below the new crossing that included the construction of a new channel with glides and riffles and the restoration of adjacent wetland areas on the Tularosa Creek floodplain. Construction activities were completed in October 2023. Funding sources included Federal Lands Transportation Program, USFWS, and USFS.

Prior to this work, the crossing was a barrier to upstream migration for several threatened and endangered aquatic species, including the federally threatened loach minnow, narrow-headed garter snake, and Chiricahua Leopard frog. Due to changes in the site conditions that had occurred post-design, insufficient fill material was available to fill two depressions on the floodplain. Both depressions have filled with water. To complete restoration of these two ponded areas the ponds will need to be drained, filled with a mixture of soil and rock and revegetated. In FY24 The Forest Service has secured an additional $200,000 for the purpose of filling the ponds and this contract is expected to be awarded in September 2024, with implementation scheduled in the first quarter of FY25 ($150,000 of CMJL and $50,000 provided by USFWS). The Forest Service will complete wetland revegetation activities following completion of the contract. While this project faced many challenges, it was ultimately successful in restoring 15 miles of upstream aquatic habitat for the loach minnow with the new low water crossing and prevented further degradation of the wetland by re-routing the channel away from the incised bank adjacent to the wetland. All three species of conservation concern (loach minnow, Chiricahua leopard frog, and the narrow-headed garter snake) were located at the project site, which was amazing in and of itself. Many partners participated in this restoration project including USFS Enterprise Team, FHWA – Central Federal Lands, US Fish and Wildlife Service, Whelcon Contractors, LLC, and engineering, fisheries and watershed specialists from both the Forest and Southwestern Regional Office.

Before - concrete slab crossing on NFSR 233/Tularosa River and after – showing articulated concrete crossing.

Willow Creek Stream Restoration (partners) – Reserve Ranger District

Our partners at NMDGF contributed close to $1,000,000 of Habitat Stamp funds and San Francisco SWCD secured $327,000 from New Mexico Water Trust Board to improve approximately 4.5 miles of stream habitat on Willow Creek that was severely impacted by the Whitewater-Baldy Fire and post fire flow events. Willow Creek is home to a population of threatened Gila trout. The restoration work involved placement of large

boulders, logs, and planting of thousands of willows to improve stream habitat by creating pools, habitat structure, and eventual shade over the stream to help maintain cold water conditions. Additionally, the San Francisco SWCD secured a $645,000 grant from the RSP, to complete similar stream restoration work along approximately 2 miles of Willow Creek within the private property boundaries located along Willow Creek. This work was identified in a WBP developed by NMED ($100,000) after the Whitewater-Baldy fire.

Willow Creek March 2024. Top left: New step pool structures and willow plantings along the bank, Top right: Zuni bowl construction at Ben Lilley campground, bottom center: overview of site during construction.

Willow Creek Stream Restoration (Forest Service) – Reserve Ranger District (Upper Reach Channel Restoration)

In 2024 the Forest Service contracted and implemented restoration activities on a 0.15-mile reach of Willow Creek just outside of the Gila Wilderness Area. The Willow Creek watershed was heavily impacted by the 2012 Whitewater Baldy Fire where a high percentage of the surrounding area burned at high severity. Subsequently, the watershed experienced a host of changes that resulted in stream impairment and a decline in the Gila trout population (a federally threatened species). The floods that followed the Whitewater-Baldy Fire degraded Gila trout habitat by filling pools and riffles with sediment and removing riparian vegetation that had been regulating water temperatures. The restoration of upper Willow Creek as completed by Grouse Mountain Environmental Consultants ($187K IRA funding). Activities included stabilizing active headcuts and meander segments, bank sloping, installation of J-Hook and cross vanes to restore pool habitat and control channel downcutting, and willow planting. The upper Willow Creek Restoration Project is one small piece of a much larger effort to restore all of Willow Creek. The greater Willow Creek restoration project is a multi-phased project involving a host of partners at the federal, state, and local level as well as multiple funding sources. Restoration efforts began in 2022 and will continue for the next several years. The goal is to return Willow Creek and its tributaries to its pre-fire condition with a healthy riparian area, diverse instream habitat, and a self-sustaining Gila trout population. Once completed, the area would be one of only a few road-accessible Gila trout fisheries in New Mexico.

Fish removal prior to construction activities in Willow Creek.

Willow Creek Gila trout.

Gila River Allotment pipe rail fence–Silver City Ranger District

In August 2024, staff of the Silver City Ranger District completed replacement of an old, barbed wire fence with a pipe rail and cable fence along the Gila River at Pancho Canyon. The purpose of the fence is to keep livestock out of a riparian exclosure along the Gila River. The Gila River is host to a multitude of threatened and endangered, and sensitive species. The new fence will be much more effective at keeping livestock out of areas where they don't belong and protecting this sensitive aquatic and riparian area. This project was paid for with Forest wildlife funds totaling approximately $16,250.

Lincoln National Forest

The Lincoln National Forest (LNF) implemented several non-point source specific projects in FY24 to improve watershed quality across the Forest. These projects included riparian restoration, in-stream and aquatic habitat improvements, vegetative planting, prescribed burning and thinning, post-fire rehabilitation, and educational outreach. The Forest has also worked extensively through partnerships and interagency collaboration to mitigate and restore quality and health of watersheds affected by the recent Blue 2, Salt, and South Fork Fires that burned 33,038 acres of forest on Mescalero Apache, City of Ruidoso, City of Alamogordo, and LNF lands.

Riparian and Wetland Restoration

Watersheds: Devils Canyon (HUC 130600080105), Upper Rio Bonita (HUC 130600080201), Nogal Creek (HUC 130500030502), Carrizo Creek (HUC 130600080101), Silver Springs Canyon (HUC 130600100101)

1. Completed riparian planting of forbs, shrubs, and trees within Phillips, Nogal, and Tanbark riparian enclosures: Phillips Planting (19.00 acres), Nogal Planting (15.25 acres), Tanbark Planting (2.72 acres):
Riparian vegetative planting continued within riparian enclosures of Phillips Canyon (Devils Canyon watershed), Nogal Canyon (Nogal Creek watershed), and Tanbark Canyon (Upper Rio Bonita watershed). The project areas are adjacent to the White Mountains of the Smokey Bear Ranger District. Planting within the riparian enclosures is part of a process to restore water quality and quantity to the localized canyons and drainages within each watershed. The riparian vegetation will play a crucial role in reducing streambank erosion, while improving wildlife habitat, nutrient cycling, and water quality.

Riparian Planting within Nogal Canyon enclosure.

2. Completed Grindstone Post and Pole fence around wetland on Grindstone Mesa:
Along the Grindstone Mesa Wetland within the Carrizo Creek watershed, a post and pole fence was installed around the sensitive wetland to protect the local flora and fauna from trampling by ungulates and/or recreation vehicles. Protection of the wetland area will enhance water filtration and holding capacity within the watershed as well as protect threatened and endangered species which depend on the wetland area for forage and shelter.

3. Completed riparian vegetation planting along Silver Springs Creek:
Planting of Cutleaf Coneflower (*Rudbeckia laciniata*) was completed along 0.75 miles of Silver Springs Creek on the Sacramento Ranger District. This was completed in partnership with the Institute of Applied Ecology. The forb planting along Silver Springs will have multiple benefits to the wet-meadows and wildlife along the riparian corridor that include forage for the endangered New Mexico Meadow Jumping Mouse and Sacramento Checkerspot Butterfly, flora diversity within the wet-meadow, and soil stability along the meadow and streambanks.

4. Updated and maintained ORDs, BDAs, and post assisted log structures (PALS) along Big Bear Creek and adjacent riparian corridors:
Big Bear Creek is a major tributary and headwaters to the Rio Bonito (stream) and Rio Bonita watershed. It is also listed as a non-point source priority stream within the Smokey Bear District. Structures were further constructed and improved along Big Bear Creek with the help of the Backcountry Hunters & Anglers non-profit. The construction and maintenance included conifer thinning around aspen stands along Big Bear Creek as well as riparian vegetation planting along the streambanks. The BDAs, ORDs, and PALS have been and will continue to benefit the creek and watershed by providing greater groundwater recharge in the area and increasing sinuosity within the stream channels. Work will continue into FY25 with the partnership of Rio Grande Return to install more BDAs along Big Bear Creek and adjoining tributaries.

BDA and PALS installation along Big Bear Creek.

5. Maintained, repaired, and replaced riparian and wildlife protection fences along non-point source priority streams and tributaries:
FY24 saw the continuation of riparian and wildlife protection fence maintenance, repair, and replacement within the Sacramento RD in partnership with AmeriCorps and New Mexico Youth Conservation Corps. A total of 485 acres of area along and adjacent to non-point source priority streams of the Agua Chiquita, Rio Peñasco, and Sacramento River were included in the projects. The riparian and wildlife fencing has continued to serve as effective means for restoration of sensitive riparian, wet-meadow, and spring systems across the Forest. Also, they have become keystone areas to preserve, and study threatened and endangered wildlife along their native ecosystems. Watersheds covered in these enclosures include the Arkansas Canyon-Sacramento River (HUC 130500040101), Headwaters Rio Peñasco (HUC 130600100302), Bear Creek-Rio Peñasco (HUC 130600100304), and Upper Agua Chiquita Creek (HUC 130600100201).

Aquatic Habitat Improvement: Eastern Brook Trout Removal & YY-Stocking

Assisted NMDGF with Eastern Brook Trout shocking and removal from 3.39 miles of stream along the Rio Bonito within the Rio Bonita watershed (HUC 130600080201). Eastern Brook Trout removal was followed by stocking the stretch of stream with YY-male Brook Trout to further thin the invasive brook trout population by naturally pushing trout reproduction to 100% male, preventing future reproduction and leading to eradication. Eradication of the invasive Eastern Brook Trout from the Rio Ruidoso and neighboring streams within the Smokey Bear District would allow for native species to thrive and allow for the ecosystem to flourish, leading to improved water quality and stream habitat supporting native flora/fauna that depend on the area.

Prescribed Fire and Thinning (Vegetative Treatments)

16 Springs Rx within Dry Canyon of the Sacramento

- Prescribed Fire: 16 Springs Rx and Pile Burn (3,145 ac.) / Burnt Canyon (HUC 130600100305)
- Prescribed Fire: Cedar Creek Rx and Pile Burn (92 ac.) / Upper Rio Ruidoso (HUC 130600080103)
- Prescribed Fire: Lewis Rx (40 ac.) / Headwaters Bluewater Creek (HUC 130600100402)
- Prescribed Fire: Mesa Barn Piles Rx (51 ac.) / Magado Canyon (HUC 130600080202)
- Prescribed Fire: Nogal Piles (10 ac.) / Nogal Creek (HUC 130500030502)
- Prescribed Fire: School House Rx (10 ac.) / Upper Rio Bonita (HUC 130600080201)
- Prescribed Fire: Ski Apache Rx (718 ac.) / Upper Rio Ruidoso (HUC 130600080103)
- Prescribed Fire: Skinner RCPP Pile Burn (109 ac.) / Magado Canyon (HUC 130600080202)
- Thinning: 16 Springs FAWRA (125 ac.) / Burnt Canyon (HUC 130600100305)
- Thinning: Cedar Creek Piles (24 ac.) / Upper Rio Ruidoso (HUC 130600080103)
- Thinning: Eagle Creek Contract Piling (320 ac.) / Devils Canyon (HUC 130600080105)
- Thinning: Ski Apache Thinning (718 ac.) / Upper Rio Ruidoso (HUC 130600080103)

Vegetative treatments such as prescribed fire (Rx), piling, and thinning were carried out across the LNF as a continued fire regime measure to improve watershed and forest health. Vegetative thinning was implemented in areas where future Rx is planned or in areas of wildland/urban interface where Rx use is not feasible or desired. Prescribed fire was applied to 4,175 acres in FY24 in areas where vegetative densities were out of range of natural variation and the risk of uncharacteristic wildfire was high. The Rx, piling, and thinning treatments reduce the potential of high intensity fire moving across the landscape as well as improve the watershed condition by improving groundcover, reducing vegetative strains on the groundwater system, and increasing the forest's resiliency to wildfire. These vegetative treatment benefits will holistically improve the watersheds by increasing the water quality and quantity within the riparian and aquifer systems across the Forest.

Post-Fire Rehabilitation

South Fork, Salt, and Blue 2 Fire Restoration: (33,038 ac.)
The South Fork, Salt, and Blue 2 fires burned a total of 9,387 acres on LNF land and 23,651 acres of neighboring land on Mescalero Apache Tribe, City of Ruidoso, and City of Alamogordo lands. Partnerships between the Forest, neighboring stakeholders, and New Mexico state agencies have been greatly emphasized with the large amount of high-severity burns that occurred and the landscape-scale of rehabilitation efforts needed. Aerial seeding and mulching of the burn scars have been completed in FY24 alongside implementation of essential projects such as roadwork, erosion control, and public outreach. Further burned area and watershed restoration efforts are currently being developed for FY25.

Educational Outreach

Outreach with the community is an important aspect of watershed and climate resilience within the LNF. As such, many annual and impromptu get-togethers, outreaches, and presentations occur throughout the year to connect with the public we serve. In FY24, several annual events, community hall meetings, and school visits included booths and educational presentations on the science of watersheds, post-wildfire effects, fish biology, climate resilience, and the marvels of our forests. These outreaches included:

- Smokey Bear's 80th Birthday Celebration – Educational Outreach: Booths in wildfire resilience and aquatic species habitat preservation.
- Presentation at Eastern New Mexico University with Alto Coalition for Environmental Preservation – Outreach and presentations with the local community about projects ongoing around the forest as well as answer questions about post-wildfire effects and current/future mitigation measures.
- Ruidoso High School: Riparian Vegetation Planting Field Trip – Trip with classes from Ruidoso High School within the Smokey Bear RD to explain the science and benefits of riparian vegetation, the benefit to stream systems, and to the Forest/local communities. Also, to get the students' hands dirty and plant a few willows while out there.
- Ruidoso High School: Fire Ecology, Watersheds, and Botany Presentations – Meeting with classes at the local high school to Smokey Bear RD to discuss the interconnectedness of fire, watersheds, and botany.

- 29th Annual Youth Fishing Day – Kids and parents were able to enjoy fishing and learn about aquatic habitats and their importance to our ecosystems and Forest.

29th Annual Youth Fishing Day at Grindstone Lake, Ruidoso, NM

Santa Fe National Forest

In fiscal year (FY) 2024, the Santa Fe National Forest (SFNF) continued to advance projects aimed at meeting and maintaining state water quality standards, while also supporting nonpoint source management efforts. These initiatives focused on improving water and soil quality, enhancing water availability, restoring riparian areas, and improving aquatic habitats. A selection of these projects is outlined below.

Best Management Practices Monitoring

The Forest Service employs BMPs to enhance accountability and safeguard water resources on National Forest System (NFS) lands. These BMPs are implemented through an adaptive management strategy, which involves applying, monitoring, and adjusting practices based on monitoring results. The National BMP Program supports the Forest Service in protecting the chemical, physical, and biological integrity of all water bodies on NFS lands, aligning its efforts with the CWA and state and tribal water quality programs.

BMPs are evaluated based on their implementation and effectiveness, with composite scores generated from these two categories. Notably, these evaluations are conducted by an Interdisciplinary Team (IDT). In FY 24 the Santa Fe National Forest watershed program monitored BMP application across several operational areas, including road maintenance, ground-based skidding and harvesting, and prescribed fire use.

BMP monitoring on NFSR 26.

Four roads (16JB, 26, 148A, and 645JAA) were randomly selected from the SFNF system roads with Operational Maintenance Levels (OML) ranging from 2 to 5. Portions of these roads were evaluated at waterbody crossings or sections within the Aquatic Management Zone (AMZ) of a waterbody. Among them, National Forest System Road (NFSR) 26 received a composite score of "Good." However, the other three roads scored "No Plan," as they lacked BMP implementation. Many roads in the SFNF were constructed before modern engineering standards or BMP application, contributing to these "No Plan" scores.

BMP monitoring at Cordova Timber Sale.

Two ground-based skidding and harvesting operations fit monitoring criteria and were evaluated. Forest thinning projects, such as these, are critical for restoring ecosystem structure and function while increasing resilience to large-scale disturbances like severe wildfires and insect outbreaks. The Cordova and Ojo Restoration Thinning and Prescribed Fire Projects, located in the Coyote Ranger District, covered 68 acres and 144 acres, respectively. Both received composite scores of "Good" for their success in controlling nonpoint source pollution within the thinning units.

Prescribed fire is one of the most effective tools for restoring fire-adapted ecosystems and reducing the risk of high-severity wildfires. These burns improve forest health, reduce hazardous fuels, enhance wildlife habitat, and protect communities and watersheds. In 2024, SFNF monitored two prescribed burns. The Golondrino Mesa Prescribed Fire on the Cuba Ranger District treated 1,638 acres and earned a composite score of "Excellent". The Rincon Broadcast Prescribed Burn on the Coyote Ranger District covered 2,227 acres and received a composite score of "Good".

Headwaters Rio Cebolla

The Headwaters Rio Cebolla Riparian Restoration Project, located on the Jemez Ranger District upstream of the Seven Springs State Fish Hatchery, began restoration efforts in 2023. These efforts were implemented by Rio Grande Return and funded by a National Fish and Wildlife Foundation (NFWF) grant, World Wildlife Fund Grant and the IRA. The project aims to reduce channel erosion and incision, improve aquatic habitat, promote native riparian vegetation, enhance streambank stability, and support healthy wetlands.

In 2023, large woody debris structures, BDAs, and PALS were constructed, with work continuing into 2024. These structures were built using locally sourced materials, including small diameter trees, conifer limbs, willow cuttings, rocks, duff, mud, and gravel. The BDA sites were strategically chosen to achieve multiple objectives: re-wetting abandoned channels, promoting overbank flow, increasing meander length, and enhancing flood attenuation. The PALS and large woody debris were placed to aid floodplain reconnection, facilitate meander lengthening and channel aggradation, improve flow complexity, and provide habitat for aquatic species. By the end of 2023, approximately 80 structures were completed along one stream mile. An additional 127 instream structures were constructed throughout 1.1 river miles in 2024.

In 2024, four exclosures were constructed in the lower portion of the project area to protect plantings and restoration efforts. Two methods were used to build these exclosures, half with four-strand fencing and half with elk fencing. These exclosures will protect roughly 36 acres and approximately 50,000 willow and 500 cottonwood plantings.

BDA on Rio Cebolla Riparian Restoration Project.

Rito Peñas Negras

The Rito Penas Negras Stream Restoration and Erosion Mitigation Project, located on the Cuba Ranger District, aims to stabilize a degraded stream and meadow system, restore wetland connectivity, and improve riparian functionality. The Project focuses on protecting and reestablishing riparian vegetation to enhance water quality, wildlife habitat and riparian ecosystem health. This is accomplished through the construction of structures like BDAs, PALS, Zuni Bowls, exclosures and plantings to encourage wood accumulation, reconnect the stream to its floodplain, and mimic beaver dams' hydrologic benefits, such as improved water storage, floodplain connectivity and aquatic habitat

The initial phases of the project focused on the installation of structures through an agreement with Rio Grande Return and funding from NFF, NFWF, Taos Ski Valley Foundation, and the IRA. In addition to the instream work, approximately 4,000 willows were planted to help stabilize the streambanks and provide much-needed riparian vegetation. A 26-acre exclosure was also constructed to protect newly planted vegetation from grazing pressures and to allow the riparian ecosystem to regenerate. More than five stream miles were treated, and over 350 in-stream structures were constructed by the end of 2023.

In 2024, an additional 106 in-stream and 18 erosion control structures were installed. These structures help to improve water quality, promote the growth of native plant species, enhance sediment deposition and water inundation, stabilize headcutting, and support healthy aquatic habitats.

Erosion control structures on Rito Peñas Negras Stream Restoration and Erosion Mitigation Project.

Chihuahueños Creek

The Chihuahueños Creek Headwaters Restoration Project, located on the Coyote Ranger District, began in the late fall of 2024. This multi-phase restoration effort is being implemented by Anabranch Solutions, in partnership with TU, and is expected to continue for several years. The project is funded through the NMED's RSP, Rio Chama Collaborative Forest Landscape Restoration Project and the Inflation Reduction Act. The initial phase of the project that will continue in 2025 encompasses approximately four valley miles and includes 30 strategically located restoration complexes. These complexes were identified using advanced inundation modeling completed by Anabranch Solutions, which identified areas most suitable for this type of restoration. The project will include a range of in-stream structures such as BDAs, PALS, and large woody debris, all designed to address multiple environmental concerns along the stream.

The primary goals of these structures are to reduce channel erosion and incision, enhance streambank stability, and promote the growth of native riparian vegetation. By stabilizing the streambanks and improving water quality, the project aims to improve overall aquatic habitat conditions, which are critical for the RGCT. Chihuahueños Creek is a vital habitat for a genetically pure strain of RGCT, making the restoration work especially important for preserving this species.

Instream Structures on Chihuahueños Stream Restoration Project.

At the upper reaches of the project area, efforts will focus on stabilizing headcuts—areas where water flow has eroded the streambed—and applying Assisted Log Structures (ALS) to spread out channelized water. This work will help reduce degradation of the surrounding fen, a sensitive wetland ecosystem, by improving water inundation, preventing further erosion, and enhancing habitat quality.

Los Alamos Canyon

The Los Alamos Canyon Restoration and Sediment Reduction Project, located on the Española Ranger District, began in fiscal year 2023 and was completed in fall 2024. The restoration project, in partnership with Los Alamos County and funded through NMED RSP, Los Alamos Department of Public Utilities, and Los Alamos County was implemented by Keystone Restoration Ecology, LLC.

The project encompassed a range of critical ecological restoration and infrastructure improvement activities within a canyon that has experienced extremely destabilized hillslopes with areas of deep gullying and erosion following wildfires and post fire flooding events. Key activities included road drainage upgrades to reduce stormwater capture, which helped prevent erosion and sediment deposition in the watershed. Additionally, relocating a section of the road outside the stream corridor minimized the risk of the road diverting the stream

and further reduced sediment transport, protecting downstream water quality. The project also involved dredging the reservoir to restore its capacity and stabilizing headcuts to prevent further channel erosion. Instream structures, such as Media Lunas, J-hooks, and log/rock vanes, were installed to stabilize channel gradients, limit sediment delivery, and improve stream resilience in fire-affected areas. These structural improvements were complemented by riparian plantings, which enhanced streambank stability and supported habitat restoration.

Keystone Restoration Ecology, LLC, building instream structures at Los Alamos Canyon Restoration and Sediment Reduction Project.

This holistic approach delivers long-term benefits for the Los Alamos Canyon ecosystem. By integrating road improvements, instream structures, reservoir dredging, and riparian plantings, the project has reduced sedimentation, enhanced water flow, restored water storage capacity, and mitigated wildfire impacts. These efforts collectively improve downstream water quality, bolster biodiversity, and strengthen the watershed's ecological resilience, providing lasting benefits for both the environment and surrounding communities.

Bureau of Land Management (BLM)

Carlsbad Field Office

Six Mile Dam Public Use Area

The Pecos River from 6 Mile Dam to the Black River is a NPS Priority Watershed in the Planning Phase. Six Mile Dam used to be known as a local dump site and unmanaged OHV recreation area. In Spring of 2023, the Center for Environmental Health Monitoring and Management (CEHMM) received a New Mexico Outdoor Recreation Trails+ grant for $99,363.44 from New Mexico Economic Development Department (EDD)'s Outdoor Recreation Division (ORD) to improve the Public Use Area around Six Mile Dam south of Carlsbad, NM. Six Mile Dam and the surrounding public use area is owned and managed by the BLM and City of Carlsbad, who partnered with CEHMM on the project, along with the Carlsbad Soil and Water Conservation District and many other industry partners including considerable work by 4 Elements Oilfield Services LLC.

Work began in August 2023 with initial construction and rerouting of the main road to reduce erosion issues on the existing path. The road was surfaced with recycled crushed concrete rather than caliche to reduce sediment runoff. During the construction phase, erosion control measures were implemented including rock and gravel armoring of shoreline and rock check dams in ephemeral drainages. A total of 130 tons of material were used to protect six features. Shade shelters, picnic tables, and trash cans were added to support recreation use by October 2023. Between January and February 2024, 100 acres of Mesquite were masticated, followed by hand spraying and reseeding with native grasses in March. Recycled pipe fences were installed in early summer 2024 to prevent OHV traffic and allow restoration of the landscape to native grassland.

In the coming year, CEHMM plans to continue working with the BLM and the City of Carlsbad to armor three more ephemeral drainages and maintain existing erosion control and brush management. In December 2024, construction on a flash flood resistant kayak launch will begin. This will reduce erosion along riverbanks at existing unmanaged kayak launch locations and make water recreation activities safer and more accessible.

Erosion Control Along the Black River

The Black River is a tributary to the Pecos River and the Pecos from the Black River to the Texas border is an NPS Priority Watershed in the Planning Phase. While the NPS pollution concerns along the Pecos are related to *E. Coli* and Dissolved Oxygen, the Black River is habitat for the Texas Hornshell Mussel, an endangered species, which is particularly impacted by sediment in streams. In the past year, 300 acres along drainages to the Black River have been treated using partial mastication of Skunkbush Sumac to reduce monoculture growth and promote landscape restoration at the watershed level. The BLM plans to continue treating regional brush overgrowth or encroachment initially with chemical or mechanical means and maintain reestablished habitat with controlled burns.

Additionally, in early September 2024, six acres of brush were masticated in the uplands of the Cottonwood Day Use Area, a popular recreation site. Following a brush fire in spring of 2021, portions of the wildlife viewing platform and approximately 150 acres of riparian habitat were damaged or destroyed. The BLM plans

to conduct additional brush treatments next year and reseed the area to restore the native grassland to reduce erosion and manage fire risk.

Rio Puerco Field Office

Table 7. Rio Puerco project report by HUC.

HUC-8 Watershed	Project Description	Water Quality Benefits
Rio Puerco 13020204 **(Outlet Arroyo Chijuilla 130202040104)** **North Plains 13020206** **(Headwaters Cebolla Creek 130202060502)**	Maintained 7 check dams within the Bottleneck Watershed and 4 check dams within Cebolla Canyon	Mitigate erosion through the moderation of peak flows. Prevent excessive sedimentation downstream Improve stream functioning and watershed health.
Rio Puerco 13020204 **(San Pablo Canyon 130202040105)**	Wildlife Exclosure Fence Maintenance	Mitigate grazing impacts and channel incision within the riparian area. Improve potential habitat for Southwestern Willow Flycatcher (SWFL). Serve as Protection for the Beaver Dam Analogs (BDAs) that will be installed at a later date.
Jemez River 13020202 **(Headwaters Rio Cebolla 130202020103)**	Constructed Beaver Dam Analogs (BDAs) and Post-Assisted Log Structures (PALS) on the Rio Cebolla while working with U.S. Forest Service and Rio Grande Return. (5 Structures)	Improve riparian and wetland habitat Improve wildlife habitat and encourage the establishment of beavers. Reduce channelization and maintain floodplain connectivity. Induce meandering of the channel to restore the original configuration of the stream system.

HUC-8 Watershed	Project Description	Water Quality Benefits
North Plains 13020206 **(Headwaters Cebolla Creek 130202060502)**	Foliar and Cut Stump Treatments of Tamarisk (75 acres) Reseeded Cebolla Spring with Riparian Plants (9 acres)	Improve wetland health and wildlife habitat. Increase the extent of native, wetland plants. Control the spread of noxious and invasive species
Rio Grande-Santa Fe 13020201 **(Arroyo Tonque 130202010506)**	Foliar and Cut Stump Treatments of Tamarisk at Bullfrog Springs (5 acres)	Control the spread of invasive species Improve riparian habitat
Rio San Jose 13020207 **(Reynold Draw-Bluewater Creek 130202070207)**	Weeds Program conducted mechanical treatment of Bull and Musk Thistle (45 acres)	Improve soil erosion rates and water quality. Improve habitat for native plants
Rio San Jose 13020207 **(Rinconada Creek 130202070605)**	Weeds Program Conducted a Bull Thistle Treatment (4 acres)	Reduce the impact that Bull Thistle has on native vegetation within the Rinconada Canyon Riparian Area.
North Plains 13020206 **(Headwaters Cebolla Creek 130202060502)**	Engaged in active planning with Albuquerque Wildlife Federation (AWF) to construct/ maintain erosion control structures within Cebolla Creek (6 structures) and replant vegetation just downstream from Cebolla Spring (60 acres). Project was completed 10/4-10/6 by AWF Volunteers	Mitigate head cut growth Disperse concentrated, overland flow Establish additional riparian plants Conduct outreach and improve collaboration between BLM and NGOs.

Rio Puerco Field Office - Tamarisk treatments at Cebolla Spring.

Rio Puerco Field Office - check dam maintenance at the Outlet of the Arroyo Chijuilla; also called the Bottleneck Watershed or Kinard Arroyo.