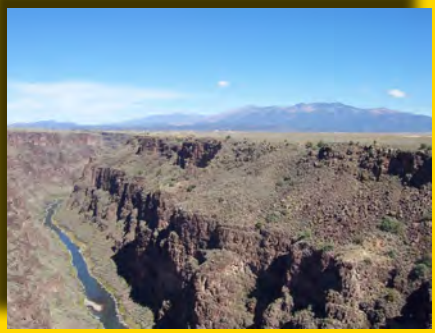
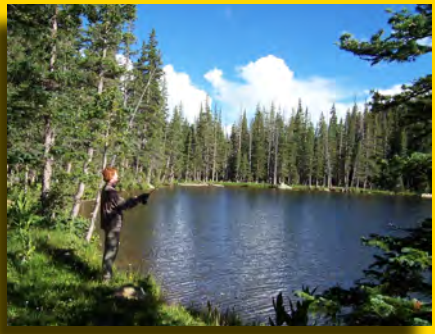
State of New Mexico
NONPOINT SOURCE MANAGEMENT PROGRAM






2015 Annual Report

New Mexico Environment Department
Surface Water Quality Bureau
Watershed Protection Section

State of New Mexico
Nonpoint Source Management Program

2015 Annual Report

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Copies of this and other reports are available on the Surface Water Quality Bureau website:

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January 29, 2016

William K. Honker
Director, Water Quality Protection Division
U.S. Environmental Protection Agency, Region 6
1445 Ross Ave., Suite 1200
Dallas, Texas 75202

Dear Mr. Honker,

I am pleased to submit New Mexico's 2015 Nonpoint Source Management Program Annual Report. In this report we document the progress made in meeting the program milestones set forth in our Nonpoint Source Management Program.

The Nonpoint Source Management Program has six core objectives and I would like to briefly highlight our accomplishments made during 2015 for each:

1. Under the **watershed-based planning** objective, local cooperators, with technical assistance from our staff, completed the Rio Nutrias Watershed-based Plan in 2015. The plan was reviewed by Region 6, and meets the planning elements in the *Nonpoint Source Program and Grants Guidelines for States and Territories*. We provided this plan, along with other plans and resources, on a new website that we hope will become a popular resource for others interested in water quality planning at the watershed scale in New Mexico.

2. We report the successful completion of five projects funded under Section 319 that **address water quality problems**. We are also glad to report that NMED is supporting twelve new water quality improvement and river habitat restoration projects beginning in 2015, under the state-funded River Stewardship Program.

3. To better **protect water quality**, New Mexico's Nonpoint Source Program staff issued conditional certification for 63 new Section 404 permits and reviewed many more projects potentially requiring Section 404 permit coverage. Nonpoint Source Program staff also carried out their responsibilities related to surface water quality protection under the New Mexico Mining Act.

4. Related to **education and outreach,** three issues of the newsletter *Clearing the Waters* were published in 2015. Additional publications, workshops, and field tours were included in projects completed in 2015. Of special note, we supported a workshop on

green infrastructure and low impact development in Las Cruces. The workshop was well-attended by an appropriate audience of drainage, zoning, and open space specialists from the City of Las Cruces and other local jurisdictions, and was the first major step towards implementing the Paso del Norte Watershed-Based Plan. Four day-long technical meetings were also conducted as part of Wetlands Program projects.

5. In the area of **groundwater quality protection,** the New Mexico Environment Department's Groundwater Quality Bureau conducted 12 water fairs where local residents could have well water tested, and issued 17 permits for large septic tank leachfield systems and surface disposal sites.

6. Finally, we document progress in addressing nonpoint source pollution reported to us by our agency partners and the most promising developments related to **interagency cooperation** and coordination. The Santa Fe National Forest implemented a large number of grazing and recreation management improvements in the Pecos and Jemez watersheds, under two Section 319 projects completed in 2015. The New Mexico Department of Transportation (NMDOT) reported their progress implementing an Advance Permittee-Responsible Mitigation Program, which is allowing NMDOT to conduct higher quality mitigation for unavoidable wetland impacts.

We thank you for your support of these efforts and look forward to working together to improve water quality and reduce nonpoint source pollution in New Mexico in the future. Should you have any questions about New Mexico's Nonpoint Source Management Program Annual Report please feel free to contact me (505-476-3671) or Abe Franklin of my staff (505-827-2793).

Sincerely,

James Hogan
Bureau Chief
Surface Water Quality Bureau

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Executive Summary

This report summarizes activities conducted in New Mexico in 2015 under the Nonpoint Source Management Program, as required by Section 319(h) of the Clean Water Act (CWA). Polluted runoff, or nonpoint source (NPS) pollution, is defined by the Environmental Protection Agency (EPA) as "caused by rainfall or snowmelt moving over and through the ground and carrying natural and human-made pollutants into lakes, rivers, streams, wetlands, estuaries, and other coastal waters and groundwater. Atmospheric deposition and hydrologic modification are also sources of nonpoint source pollution." Nonpoint source 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 activities such as: outreach and education, training, implementation of best management practices (BMPs), and monitoring to assess implementation efficac .

Milestones are an integral part of the NPS Management Program and a requirement under Section 319(b)(2)(c) of the CWA. The 2015 milestones for which a specific schedule is provided in the Nonpoint Source Management Program are reported on pages 5-7. Significant achievements include

- A new web page organizing watershed-based plans, alternative plans, wetlands action plans, and earlier watershed restoration action strategies was completed and is available at www.nmenv.state.nm.us/swqb/wps/WBP.
- The Rio Nutrias Watershed Based Plan was completed.
- Two Requests for Proposals are in progress, to develop new watershed-based planning projects and to implement existing watershed-based plans.
- A nomination for a 319 Success Story under PAM WQ-10 was accepted for Polvadera Creek.
- Five on-the-ground projects funded under Section 319 were completed.
- One new watershed-based planning project and two new on-the-ground Section 319 projects began in 2015.
- Twelve new river restoration projects under the state-funded River Stewardship Program began in 2015.
- Three new Wetlands Program projects were awarded funding by EPA Region 6.

In addition, five national forests, the Bureau of Land Management, the Natural Resources Conservation Service, four soil and water conservation districts, and New Mexico State Forestry provided information for the report on their activities related to NPS pollution control in 2015.

Introduction

This annual report to the United States Environmental Protection Agency (EPA) provides an overview of nonpoint source management related activities conducted in New Mexico in 2015 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 nonpoint source (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). The majority of funding to support the New Mexico Nonpoint Source Management Program was provided by 319(h) grants awarded to NMED by the EPA. Activities and projects reported are CWA 319 projects, and those implemented by the state-funded River Stewardship Program, the New Mexico Wetlands Program, CWA Section 401 activities, N.M. Mining Act activities, and NPS projects implemented by other natural resource agencies outside of NMED.

What is Nonpoint Source Pollution?

Polluted runoff, or NPS pollution, is defined by the EPA as "caused by rainfall or snowmelt moving over and through the ground and carrying natural and human-made pollutants into lakes, rivers, streams, wetlands, estuaries, and other coastal waters and groundwater. Atmospheric deposition and hydrologic modification are also sources of nonpoint source pollution."

A few examples of NPS pollution include: bacteria and nitrates from aging or out of compliance septic systems; sediment and ash from forest and rangeland fires; oil, grease and other hydrocarbons from parking lots and roads; sediments from poorly designed unpaved roads; fertilizers, nutrients and bacteria from agricultural practices; and bacteria from pet waste. Increased water temperature resulting from degraded streambanks, loss of streambank vegetation, and hydromodification is another example of NPS pollution. New Mexico's most common causes of NPS pollution are nutrients,

Soils eroding off denuded uplands add to the sediment load in Silver Creek seen at it's confluence with Mineral C eek.

Stakeholders at an outdoor meeting prior to taking a watershed tour in the Gallinas watershed.

bacteria, and temperature.

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, implementation of best management practices (BMPs), and monitoring to assess implementation efficac . At the heart of the Section 319 program in New Mexico is working with stakeholders to seek solutions through colloboration 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 states to develop a management program to control NPS pollution and improve water quality problems within the state.
- ◊ Creates a grant program to fund implementation of the management program for the assessment and control of NPS pollution.

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

Two sections of the CWA designed to manage both point sources and NPS 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 §303(d)/§305(b) Integrated Report*.

New Mexico's Nonpoint Source Management Program

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 current NPS Management Plan was approved in early 2015 and is available at: https://www.env.nm.gov/swqb/wps/Plan/.

Our ultimate goal is to manage a balanced program that addresses both existing impairments (as listed in the *State of New Mexico CWA §303(d)/§305(b) Integrated Report*) and prevents future impairments. The focus on existing impairments is directed at impaired waters in three different impairment categories. The large majority of these waters have one or more approved Total Maximum Daily Loads (TMDLs) that set quantitative goals for impairment parameters. The TMDL is the total amount of pollutant a waterbody can assimilate daily and still meet water quality standards. In calculating a TMDL for an impaired waterbody, a target value of pollutant load reduction is also provided. Most of these streams are within Category 4B in the *State of New Mexico CWA §303(d)/§305(b) Integrated Report*. A smaller number of priority streams are thought to be impaired by low flow conditions rather than excessive pollutants. Thirteen such streams are listed in the *2014-2016 State of New Mexico CWA §303(d)/§305(b) Integrated Report* under Category 4C. The remaining category (Category 4B) is for streams with sufficient planning completed that a TMDL is not required. New Mexico only has one such stream, Sandia Canyon, an ephemeral drainage on the Pajarito Plateau listed as impaired by excessive copper.

An important component of this process 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* (http://www.epa.gov/sites/production/files/2015-09/documents/319-guidelines-fy14.pdf) 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 statewide request for proposals, conducted approximately annually, and through technical support provided to partner agencies and stakeholder groups interested in water quality. To facilitate watershed -based planning efforts in New Mexico a webpage was created that contains EPA accepted WBPs and related documents includng resources for developing and submitting a WBP. The webpage can be found at: https://www.env.nm.gov/swqb/wps/WBP/index.html

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 ground water resources.*

NPS Management Program Milestones

NMED seeks to meet this long-term goal by taking specific actions described in the NPS Management Plan over approximately a five-year period. The NPS Management Plan includes at its core specific objectives aimed at reducing and preventing NPS pollution in New Mexico: Watershed-Based Planning, Addressing Water Quality Problems, Water Quality Protection, Education and Outreach, Protect Groundwater Resources, and Interagency Cooperation. Within each objective are specific activities and milestones to meet the objective. 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 following table lists each milestone identified in the NPS Management Plan which has a specific numeric goal and an established time frame, and its status

Objective number	Objective Short Name	Milestone (abbreviated)	Schedule	2015 Status
1	Watershed Based Planning	WBPs and related documents are available in an organized web page, which will also provide a WBP submittal process.	2014	Completed in 2015.
1	Watershed Based Planning	A small procurement process is developed to update existing watershed plans.	2015	None in 2015 but we did develop small procurements for WBP implementation.
1	Watershed Based Planning	New watershed plans meet all nine planning elements, or are accepted by EPA as alternative plans.	2014: 1 plan, 3 watersheds. 2015: 3 additional plans, 9 additional watersheds. 2016: 2 additional plans, 13 additional watersheds. 2018: 1 additional plan, 1 additional watershed.	This milestone was met in 2014 with one plan covering 37 priority watersheds, but in 2015 only one additional plan (for the Rio Nutrias) was accepted, covering four additional 12-digit watersheds.
1	Watershed Based Planning	Existing watershed-based plans are updated.	2016, 2017, and 2018: 2 plans each year are updated, one plan each year is accepted by EPA.	Not scheduled for 2015.

NPS Management Program Milestones (continued)

Objective number	Objective Short Name	Milestone (abbreviated)	Schedule	2015 Status
2	Addressing Water Quality Problems	Watershed restoration projects described in watershed-based plans or accepted alternative plans are initiated in two priority watersheds per year.	2 watersheds per year, 2014 through 2018.	This milestone was met. Two River Stewardship Program projects and two small Section 319 projects that implement WBPs were initiated in three priority watersheds in 2015.
2	Addressing Water Quality Problems	Wetlands Action Plans are implemented in at least one priority watershed per year.	1 watershed per year, 2014 through 2018.	This milestone was met. The Comanche Creek and Upper Gallinas River WAPs were implemented in 2015.
2	Addressing Water Quality Problems	Improve water quality in priority watersheds, meeting EPA performance measures. (Success Stories)	2 watersheds annually, 2014 through 2018.	This milestone was partially met. A Success Story was accepted for Polvadera Creek (1 12-digit HUC).
3	Water Quality Protection	NMED will fund post-fire actions that reduce sedimentation and protect aquatic habitat.	Any year in which a major and unnaturally intense wildfire occurs in the watershed of a cold or cool water stream.	No major wildfires occurred in 2015.
3	Water Quality Protection	The *CWA §303(d)/§305(b) Integrated Report* does not indicate an increase in the percentage of assessed stream miles designated as impaired.	The Integrated Report is scheduled for completion in 2014, 2016, and 2018.	This is scheduled for 2016.
4	Education and Outreach	*Clearing the Waters* is published quarterly.	Quarterly	Milestone was not met. Only three issues were published.
4	Education and Outreach	*Clearing the Waters* circulation increases to 2000 by 2018.	2018	Milestone on track. Circulation increased from 1,000 in 2014 to 1,326 in 2015.

NPS Management Program Milestones (continued)

Objective number	Objective Short Name	Milestone (abbreviated)	Schedule	2015 Status
4	Education and Outreach	The Forest and Watershed Health Program Virtual Library experiences an annual increase in internet hits of at least 10% between 2014 and 2018.	Annually	Milestone was met. The Virtual Library (www.allaboutwatersheds.org) had 93,347 hits in 2014 and 131,171 in hits in 2015 for a 41% increase in traffic.
6	Interagency Cooperation	NRCS reports that agricultural BMPs funded under NWQI or other conservation programs have been implemented, with sufficient details to enable WPS to estimate pollutant load reductions.	Annually	Milestone not met. NRCS reported that new implementation under NWQI did not occur in 2015.
6	Interagency Cooperation	The NPS Management Program Annual Report is submitted to EPA by January 31 and made available to the public in February.	Annually	Milestone was met. The NPS Annual Report was submitted in January 2015.
6	Interagency Cooperation	USACE approves a programmatic agreement with NMDOT to establish the framework for an APRM program.	2015	NMDOT reported that this milestone was met in 2014.
6	Interagency Cooperation	The MOU between NMED and USFS is renewed.	2017	Not scheduled for 2015.
6	Interagency Cooperation	The grant from DOE that supports the work of the DOE Oversight Bureau is re-issued.	2018	Not scheduled for 2015.
		A revised NPS Management Plan is		

NPS Management Program Objectives Completed in 2015

Most of the objectives outlined for 2015 in the 2014 NPS Annual Report were met, including:

- NMED submitted an application for a Section 319 grant to fund major aspects of the Nonpoint Source Management Program (and projects) in state fiscal years 2016 and 2017, consistent with the 2014 NPS Management Plan.

- Watershed-based plans, alternative plans, wetlands action plans, and earlier watershed restoration action strategies are now available in a new organized web page. An outline of the new web page, including a complete section with instructions for submitting plans, is available at www.nmenv.state.nm.us/swqb/wps/WBP.

- An RFP is in progress to select on-the-ground projects with the greatest potential of success under performance measures WQ-10 and WQ-SP12.N11 (called SP-12 in earlier guidance) in EPA's National Water Program Guidance for FY 2015. The RFP was released in May 2015, three project workplans were reviewed and approved by EPA in November 2015, and contracts are being developed in early 2016 to implement these projects. This RFP is limited to watersheds with EPA-accepted watershed-based plans.

- A second RFP to select projects that will develop or update watershed plans that include the nine elements in EPA's *Nonpoint Source Program and Grants Guidelines for States and Territories* was released in October 2015. Proposals were evaluated in early 2016.

- A nomination was completed for a 319 Success Story under PAM WQ-10 for Polvadera Creek, based on its delisting for temperature and sedimentation, coupled with information on the Polvadera Creek Riparian Project (319 Project 08-7/ULO) and other management changes implemented by the Santa Fe National Forest. The nomination was accepted by EPA and the Success Story "Riparian Restoration Efforts Reduce Temperature and Sedimentation, Improving Polvadera Creek" now appears on www.epa.gov/polluted-runoff-nonpoint-source-pollution/nonpoint-source-success-stories. A second stream for a Success Story nomination was not identified.

- Two Section 319 watershed-based planning projects (of five planned) were completed in 2015. These are the Mogollon Creek Watershed-Based Plan (Project 11-F) and Nutrias Watershed Based Plan (Project 12-I). The Nutrias Watershed Based Plan was accepted as a WBP by EPA and is available at www.nmenv.state.nm.us/swqb/wps/WBP. The Mogollon planning document characterizes the Mogollon Creek watershed well, and provides information supporting the possibility that the water quality standard for aluminum in that stream cannot be achieved. This outcome was identified as an acceptable possibility at the project's outset. The status of the other three projects is summarized under "NPS Management Program Problems and Concerns" below.

- NMED explored options for identifying and recruiting applicants for NWQI within the Gallinas water-

shed through a small contract developed in cooperation with NRCS. NRCS did not respond to NMED requests for comments on this concept, so NMED did not pursue development of the small contract.

- NMED developed a small contract to implement a portion of the monitoring described in the Updated Watershed Based Plan for the Upper Gallinas River. The resulting project is Upper Gallinas River Monitoring (Project 15-E) in the Grants Reporting and Tracking System (GRTS). This project meets EPA's request that the state water quality agency commit to water quality monitoring in one NWQI watershed. The project is being implemented through June 2018 in the Arroyo Pecos - Gallinas River watershed (HUC 130600010805).

- WPS continued to provide contract oversight and technical assistance for ongoing Section 319 projects. Five Section 319 implementation projects completed in 2015 are listed in the following table.

Project Number	Project Title	Project completion date	Streams included
10-D	Respect the Rio: Managing Uplands to Improve Water Quality	6/30/2015	Rio de las Vacas, Clear Creek, Rio Cebolla (above Fenton Lake), San Antonio Creek
10-E	Respect the Rio: Managing Recreation to Improve Water Quality	6/30/2015	Rio Guadalupe, Jemez River, East Fork Jemez River, San Antonio Creek, Rito Peñas Negras, Rio de las Vacas, Pecos River, Dalton Creek
11-G	Restoring Jaramillo Creek	9/30/2015	Jaramillo Creek
11-H	Reducing Temperature and Turbidity on San Antonio Creek by Restoring Slope Wetlands on Six Tributaries	6/30/2015	San Antonio Creek
12-G	On-The-Ground Improvement Projects for the Upper Gallinas River and Porvenir Creek	11/30/2015	Gallinas River, Porvenir Creek

Two other projects which NMED had intended to complete in 2015 were extended into 2016, and are included in the section NPS Management Program Objectives for 2016, below.

In early 2014, the New Mexico Legislature passed a budget that included $2.3 million for the River Stewardship Program. Twelve projects identified through a competitive Request for Proposals (RFP) began in April 2015. The projects are listed below and described in detail in GRTS, accessible at www.env.nm.gov/swqb/wps/GRTS. In early 2015, the Legislature passed a budget for FY 2016 that includes $1 million for the River Stewardship Program, and an RFP is underway to identify projects to be supported with those funds.

Two new on-the-ground Section 319 projects developed in 2014 actually began in 2015. Neither of these projects implements an accepted watershed-based plan, but both are considered to have adequately addressed the watershed-based planning elements in their project workplans, per the 2009 NPS Management Plan in effect while these projects were developed.

Two River Stewardship Program projects and two small Section 319 projects that began in 2015 do implement WBPs. These projects are:

- Section 319 project Upper Gallinas River Monitoring (Project 15-E) in the Arroyo Pecos - Gallinas River watershed (HUC 130600010805)

- River Stewardship Program project Gallinas Village River and Floodplain Restoration (Project 15-F) in the Arroyo Pecos - Gallinas River watershed (HUC 130600010805)

- River Stewardship Program project Pecos River In-stream and Riparian Restoration at the Dalton Day Use Area (Project 15-G) in the Dry Gulch - Pecos River watershed (HUC 130600010205)

- Section 319 project Las Cruces Workshop on Low Impact Development, Green Infrastructure, and Water Harvesting Techniques (Project 16-E) in the Alameda Arroyo - Rio Grande watershed (HUC 130301020608).

Three issues (of four planned) of the quarterly newsletter Clearing the Waters were published in 2015. These are available at www.env.nm.gov/swqb/Newsletters. Circulation (number of mailed copies plus number of emailed links to the newsletter) increased from 1,000 in 2014 to 1,326 in 2015. NMED is on track to meet the circulation goal of 2,000 copies by 2018.

The Hermit's Peak Watershed Alliance completed a Wetland Action Plan (WAP) for the Upper Gallinas River watershed in May 2015, with support from the New Mexico Wetlands Program. Although this WAP is a separate document from the WBP, it is to a degree integrated with the WBP. The WAP provides details and management priorities regarding wetlands in the Upper Gallinas River watershed to supplement the WBP. In combination with the WBP, these plans provide a more comprehensive approach to long-term water quality protection than the WBP alone. Both the WAP and the WBP are available at www.env.nm.gov/swqb/wps/WBP.

2015 was a relatively wet year in New Mexico, with no fires of significant size or intensity, and so no activities related to fire outlined in the NPS Management Program were warranted in 2015. The winter of 2015-2016 has also been relatively wet, with a wet spring predicted as well, so water quality in 2016 may be similarly unaffected by new wildfires.

Interagency Cooperation Highlights

The WPS continues to forge and maintain relationships to promote interagency cooperation. This is critical in New Mexico where over 30% of the land is managed by the U.S. Forest Service (USFS) and the Bureau of Land Management (BLM).

A coordination meeting was held with the USFS on November 15, 2015 between staff from four of the five National Forests in New Mexico and several SWQB programs. One major subject of discussion was the status of land and resource management planning (also known as forest planning) now underway in New Mexico. Forest plans set major goals for each national forest over an expected time frame of fifteen or more years. The current forest plans were all developed in the 1980s. The Cibola National Forest is furthest along in this process, having completed a forest plan revision for the Kiowa and Rita Blanca National Grasslands, a draft assessment of resources to be evaluated (Assessment Report), and preliminary statements of needs for changes in 2014 for the "mountain districts." The Carson and Santa Fe National Forests completed assessments and statements of needs for changes in 2015, and the Lincoln and Gila National Forests began the scoping process in 2015. Forest plan revision is expected to take up to four years, with the Cibola National Forest Land and Resource Management Plan expected to be complete first, in 2016. With the exception of the forest plan revision for the Kiowa and Rita Blanca National Grasslands, each of these forest plan revisions will comply with the USFS 2012 Planning Rule, which requires components for the maintenance and restoration of the ecological integrity of aquatic ecosystems and watersheds, water quality, and water resources in the plan area, including lakes, streams, wetlands, and sources of drinking water.

Other topics included in the November coordination meeting with USFS were status updates on wetland and riparian mapping projects being completed by NMED and USFS, and preliminary recommendations for management of Outstanding National Resource Waters made by NMED, resulting from a recently completed small Wetlands Program project.

Coordination with the Natural Resources Conservation Service (NRCS) also continued during 2015, mostly related to the National Water Quality Initiative (NWQI). With NMED support, NRCS successfully petitioned their regional office to add four priority watersheds in the lower Rio Grande valley in and north of Las Cruces (in addition to the three previously designated priority watersheds). The NWQI priority watersheds in New Mexico are now: Arroyo Pecos – Gallinas River (hydrologic unit code, or HUC, 130600010805), Mossman Arroyo (HUC 130301020801), Anthony Wash – Rio Grande (HUC 130301020803), Rincon Arroyo-Rio Grande (HUC 130301020404), Tonuco Draw-Rio Grande (HUC 130301020502), Alameda Arroyo-Rio Grande (HUC 130301020608), and Achenback Canyon-Rio Grande (HUC 130301020704).

NMED and NRCS staff met in two coordination meetings in 2015. The first, on February 6 in Truth or Consequences, focused on NWQI implementation in the priority watersheds within the lower Rio Grande valley. Both agencies agreed that implementation of any practices eligible under NWQI (conservation practices with a proven record of improving water quality), funded with NWQI funds in the priority watersheds, would count as progress and should be reported as such. The second meeting, on November 12 in Albuquerque, was convened by the EPA Region 6 Agriculture Liaison, and was attended by State Conservationist J. Xavier Montoya, representatives of the New Mexico Association of Conservation Districts (NMACD), and EPA Region 6 staff. This meeting focused generally on how NMED and NRCS can work together on NWQI, and how the Soil and Water Conservation Districts can assist NMED in implementing the Nonpoint Source Management Program. NMED committed to presenting program information, including information on accessing funds through competitive requests for proposals, at regional NMACD conferences in 2016. This second meeting did not produce any action items related to NWQI.

NRCS reported that $149,592 in NWQI funds were obligated in 2015, for 1,039 acres of forest stand

improvement and woody residue treatment in the Arroyo Pecos – Gallinas River watershed. This work will be carried out in 2016 and beyond, and will be consistent with NWQI because it will reduce the risk of unnaturally intense wildfire that seriously threatens water quality in the Gallinas watershed. NWQI did not fund any actual on-the-ground work in New Mexico in 2015.

Related to the possible role of NWQI in the Mossman Arroyo and Anthony Wash watersheds, The NRCS sister agency Rural Development began developing an Environmental Assessment in 2015 for the Mesquite Digester Facility. This facility would be key infrastructure that NWQI cannot fund, because it would serve more than one agricultural producer. The digester would facitate the development of a market for manure as a raw material for producing electricity, natural gas, and potentially compost. Completion of a digester may spur additional applicants to apply for on-farm facilities such as manure scraping lanes that NWQI can support. Such infrastructure would be consistent with NWQI because through diversion it would reduce incidentally spilled and windblown manure from reaching surface waters, as analyzed in the Paso del Norte Watershed-Based Plan. On-the-ground work has not begun on the manure scraping lanes because the dairies are waiting for ground to be broken on the manure digester facility.

Implementation of NWQI in the Arroyo Pecos – Gallinas River watershed appears to be limited by the small pool of potential applicants. These applicants do not have significant experience working with NRCS or NMED, although many have had contact with a watershed group (the Hermits Peak Watershed Alliance) which has introduced the concept of NWQI to them. The priority for this area is to work with small livestock producers on improved grazing management within the Gallinas River riparian area. Eligible practices (or categories of practices) may include fencing, bank stabilization, pasture management, and provision of alternative water sources for livestock. NMED continues to support NRCS in implementing practices to prevent potential future sediment impairment as well, through forest management activities to reduce the likelihood of a severe wildfire within the watershed.

In 2015, NMED explored options for identifying and recruiting applicants for NWQI within the Gallinas watershed through a small contract developed in cooperation with NRCS. One deliverable under the contract would be an objective analysis and critique of NWQI in the Gallinas watershed, with recommendations for future years. NMED drafted specifications for the small contract and provided them to the NRCS District Conservationist, who did not respond to requests for review or input. Because the contractor would work closely with NRCS, NMED will not pursue this project further unless NRCS supports it as well.

More detail on NWQI as reported by NRCS is found on page 85 in the Additional Management Practices by Non-NMED Agencies section of this report.

NMED and the BLM reviewed the 1992 Memorandum of Understanding (MOU) that outlines how the two agencies shall work together on water quality management. Several items were identified that are not being routinely implemented, but that should be. Neither agency identified obsolete or incorrect language that warrants a revision to the MOU. Both agencies committed to increasing their coordination and implementation of the MOU in 2016.

The New Mexico Department of Transportation (NMDOT) completed an agreement with the Federal Highways Administration and the U.S. Army Corps of Engineers to implement an Advance Permittee-Responsible Mitigation (APRM) Program in 2014. In 2015, NMDOT identified three sites for future mitigation of wetland impacts by NMDOT projects. These are along Coyote Creek in Mora County, along the Pecos

River north of Pecos in San Miguel County, and near the Rio Grande south of Belen in Valencia County. The site south of Belen is referred to as the Madrone Site, and as planned will comprise 30-45 acres of permanently protected, enhanced, and restored wetlands.

The NMED Construction Programs Bureau (CPB) reported that the Arroyo de los Montoyas project, expected to reduce *E. coli* loading to the Rio Grande, is 98% complete. CPB has not approved any other NPS pollution control projects since the Arroyo de los Montoyas project was approved, but CPB hopes that the project will serve as an example for other communities in the future.

NPS Management Program Objectives for 2016

The WPS has identified the following activities from the 2014 NPS Management Plan to meet program objectives in 2016.

- The RFP for comprehensive projects that will revise existing watershed-based plans or develop new watershed-based plans underway in early 2016 will be completed in 2016, with new projects planned to start in August, 2016.

- A small procurement for one or more short-term, non-comprehensive projects to supplement, update, or complete existing watershed plans will be completed in 2016.

- WPS will continue to provide contract oversight and technical assistance for ongoing watershed-based planning projects. Four watershed-based planning projects scheduled to be complete in 2016 are listed in the following table. Technical support will be especially critical for completion of the Black Canyon watershed-based plan.

Project Number	Project Title	Project completion date	Streams included	Number of priority watersheds in project area
12-C	Black Canyon Watershed-Based Plan	June 30, 2016	Black Canyon Creek	2
12-H	An Updated Watershed-Based Plan for the Lower Embudo Watershed	June 30, 2016	Embudo Creek	3
13-D	Watershed Based Plan for the Mora River – Upper Canadian Plateau	June 30, 2016	Mora River (USGS gage east of Shoemaker to Hwy 434), Sapello River (Mora River to Manuelitas Creek), Wolf Creek	12
14-F	Lower Animas Watershed Based Plan (State funded)	June 30, 2016	Animas River (portions in New Mexico)	6

- The Moreno Valley WAP will be completed in 2016 and the Comanche Creek WAP will be updated in 2016. The Moreno Valley WAP will be integrated with the Cimarron WBP. The Comanche Creek WAP may provide critical information for a future Comanche Creek WBP.

- The RFP for projects that will implement acceptable watershed-based plans, to be funded with Section 319 watershed project funds, will be completed in 2016, with new projects scheduled to begin in April 2016.

- WPS will continue to provide contract oversight and technical assistance for ongoing implementation projects. Five implementation projects scheduled to be complete in 2016 are listed in the following table

Project Number	Project Title	Project completion date	Streams included
12-F	Urban Green Infrastructure Retrofit Pilot Project in Albuquerque	6/30/2016	Rio Grande
13-E	Cow Creek Direct Implementation Pilot Project	6/30/2016	Cow Creek
14-C	Middle Rio de las Vacas Water Quality Improvement Project	12/31/2016	Rio de las Vacas
14-G	Bank Stabilization and Habitat Enhancement, a Red River Restoration Project (State funded)	6/30/2016	Red River
14-H	Selden Drain Restoration Program Phase II (State funded)	6/30/2016	Rio Grande

- State-funded watershed and riparian restoration projects will be developed and managed in 2016 with fi - teen projects already in progress. An RFP for River Stewardship Program projects was released in January 2016 with new projects scheduled to begin in July 2016. If the New Mexico Legislature passes funding for the River Stewardship Program during the 2016 legislative session, another RFP will be developed soon thereafter.

- At least one Success Story nomination will be submitted before July 1, 2016.

- NMED will invite NRCS to participate in two coordination meetings related to NWQI or other NRCS conservation programs in 2016.

- NMED will reevaluate its method of identifying and prioritizing key National Environmental Policy Act (NEPA) documents for federal consistency reviews, and begin providing reviews in a more organized, reportable manner.

- NMED will continue to carry out its responsibilities under Section 401 of the Clean Water Act, regarding dredge and fill permits. The US Army Corps of Engineers is developing new Nationwide Permits (NWPs) under Section 404 in 2016, with a target approval date in 2017. NMED will participate in the permit development process and communicate likely certification conditions to the Corps as the permits are developed.

- NMED will continue to carry out its duties under the New Mexico Mining Act. Surface Water Quality Bureau staff will conduct water quality reviews at active and proposed mining sites, review Mining Act permit applications, inspect mine sites, and ensure that mining activities will not violate surface water quality standards.

- NMED staff will present information on the NPS Management Program, including priorities for Section 319 and River Stewardship funding, to SWCDs at regional conferences of the NMACD.

NPS Management Program Problems and Concerns

The NPS Annual Report for 2014 included the statement, "At least one existing watershed plan will be supplemented, updated, or completed using a small procurement for a short-term, non-comprehensive planning project. The draft Rio Pueblo de Taos watershed-based plan has tentatively been selected for this effort in 2015." That effort was not pursued in 2015 mainly because of unanticipated delays with other key procurement processes. Contract development through RFPs, small procurement, and contract amendments were all challenging to complete in 2015. The main reasons for the challenges are staff turnover in NMED's Administrative Services Division (ASD) and SWQBs Financial Section, and an evolving standard for writing of these documents. Requirements for contract approval are also quite complex and change over time. Staff in different parts of NMED have been challenged to follow a process that changes frequently. In response to these problems, a contracts workgroup was formed in 2015 to develop and document standard operating procedures (SOPs) for conducting RFPs, developing contracts, and amending contracts. The SOPs are expected to be complete in 2016. ASD and SWQB's Financial Section are currently at or near full staffing levels.

Two watershed-based planning projects scheduled for completion in 2015 were not completed, and are now scheduled for completion in 2016. One of these, "An Updated Watershed-Based Plan for the Lower Embudo Watershed" (Project 12-H) was initially delayed for technical reasons, then delayed by procurement problems summarized in the paragraph above. The second project, "Black Canyon Watershed-Based Plan" (Project 12-C) was delayed by technical and organizational problems with the organization contracted to complete the project. The contract for this project terminated on December 31, 2015, with a draft WBP delivered to NMED. NMED plans to complete the WBP in-house in 2016 with assistance from local stakeholders and input from the multi-agency Gila Trout and Chihuahua Chub Recovery Team.

A third watershed-based planning project ("Watershed-Based Planning within the Upper Rio San Antonio Drainage Basin," Project 12-J) was completed in 2015, but the WBP is still in review by EPA. If the WBP does not meet the requirements of the Nonpoint Source Guidelines (i.e., does not fully satisfy all nine

required elements of WBPs), NMED and cooperators plan to complete this WBP in-house as well. Ideally, the WBP would have been completed earlier in the project term, to allow for EPA review and revision within the project term and with the support of contract funds. In 2016, NMED plans to revisit how the workplans for watershed-based planning projects are structured, to increase accountability of contractors and create clearer expectations for completion of project elements over time.

Experience with NWQI in 2015 was similar to that in the previous two years. NRCS is limited by their applicant pool, and also has limited ability to conduct targeted outreach to develop projects that address specific resource concerns. NRCS is unable to fund the specific management measures recommended in a watershed-based plan if an applicant does not request funds for those management measures. NRCS has indicated that a small pool of interested applicants in two NWQI watersheds in Doña Ana County will only apply for NWQI funding if they can piece together financing for other parts of a manure management system. In 2015, NRCS did not accept NMED's offer to assist with outreach for NWQI.

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 the Grants Reporting and Tracking System (GRTS) to implement this reporting requirement. Members of the public may access GRTS without a password at http://iaspub.epa.gov/apex/grts/f?p=110%3A199. Once on that page, click "find projects" on the left side of the page, then select a fiscal year (New Mexico's current projects are under 2012, 2014, and 2016), select EPA Region 6, select a state, and click "go" to generate a list of projects. A link for each project generates a project summary page. The project summary pages for on-the-ground projects include a section called "Drainage Area Pollutants" that list the pollutant load reductions reported by NMED. EPA sets a deadline for reporting these load reductions in mid-February following each calendar year.

Effectiveness Monitoring of NPS Pollution Controls

Effectiveness monitoring continued in 2015 to determine the efficacy of NPS pollution control projects on water quality. These projects are primarily funded under Section 319 grants, but also include projects under the CWA 104(b)(3) SWQB Wetlands Program and state-funded projects under the RERI Program. Stream temperature monitoring continued in 2015 on nine streams. Thermographs recorded hourly temperature on these streams upstream and downstream of project reaches, and other sites where tributary inputs could have significant effects. Multi-parameter water quality sondes were also deployed in Rio de las Vacas to collect data on long term water quality trends for additional water quality parameters including: DO, pH, specific conductance and turbidit .

Results from the data analysis indicate that the peak summer temperatures in many streams have improved but still exceed the standard of 20°C for High Quality Cold water Aquatic Life (HQCWAF) in many cases. However, the projects are expected to produce beneficial effects over time as vegetation grows and canopy increases. Data collection and analysis will continue into the future in order to account for the lag time. The effectiveness monitoring data collection efforts are summarized in the following table.

Waterbody	Start Date	2015 Comments
Comanche Creek	2009	Temperature monitoring extended upstream to cover new projects on upper reach and tributaries.
Rio de los Pinos	2009	Temperature monitoring continued to capture the effects of the unusually wet year.
Middle Ponil Creek	2009	Temperature and canopy monitoring primarily conducted by the Cimarron Watershed Alliance under the Ponil Creek Restoration Project, Phase II (FY14-D).
Bluewater Creek	2009	Temperature monitoring continued to document the effects of the very successful restoration of the riparian vegetation and increased beaver activity. It is a potential success story for 2016.
San Antonio Creek	2009	Continued temperature monitoring at all locations to confirm and expand the promising results from 2014.
Redondo Creek	2010	Flow returned and monitoring was expanded after being limited in 2014 due to the effects of wildfire.
Rito Peñas Negras	2010	Temperature monitoring continued on the upper and lower reaches by SWQB staff in conjunction with cooperators, who also continued geomorphic and vegetation monitoring.
Jaramillo Creek	2012	Monitoring was conducted in conjunction with project cooperators. Additional stations were added to account for new project activities by both Los Amigos de Valles Caldera and Wild Earth Guardians.
Rio de las Vacas	2012	Temperature monitoring continued on the Lower Rio de las Vacas. Sondes were also deployed to measure indicators of nutrient enrichment from September through October.
Cow Creek	2015	Initiated baseline temperature monitoring at 4 sites: upstream, downstream, and bracketing Bull Creek tributary.

EPA recognized Polvadera Creek as a Success Story during 2015 following a Section 319 funded project implemented by the Santa Fe National Forest. A report documenting this success can be found at: http://www.epa.gov/sites/production/files/2015-12/documents/nm_polvadera.pd .

Workshops on the analysis of covariance method using a spreadsheet were scheduled in the spring in both northern and southern New Mexico. A workshop held in Santa Fe was attended by a small group of cooperators but a second workshop scheduled for southern NM was postponed due to lack of available participants. Additional workshops are planned following the next upgrade of the spreadsheets to streamline the process using macros.

The Effectiveness Monitoring Program coordinator participated again this year on the Section 319 grant proposal evaluation committee to select projects for on-the-ground implementation. Additional highlights in 2015 include participating in a wetlands restoration workshop in the Mimbres basin, and a stream restoration workshop on the Valles Caldera, touring new project areas with visiting EPA staff, and participating in the revision of the spreadsheet template for analysis of long-term deployment data collected with temperature loggers (thermographs) and sondes. The recent data collected for effectiveness monitoring in the Jemez Mountains also was processed and analyzed for assessment against standards in the upcoming *2016-2018 State of New Mexico Clean Water Act 303(d)/305(b) Integrated Report.*

Summaries for 319(h) Projects Completed in 2015

Respect the Rio: Managing Uplands to Improve Water Quality (FY10-D)

Project Budget:	Federal 319(h): $163,958 Match: $109,710 Project Total: $273,668
Watershed:	Jemez (HUC 13020202)
Sub-watersheds:	Headwaters Rio de Las Vacas (HUC 130202020102) Headwaters Rio Cebolla (HUC 130202020103) Outlet Rio de Las Vacas (HUC 130202020105) Outlet San Antonio Creek (HUC 130202020204)
Impairments:	Rio de Las Vacas- Temperature, Nutrients, TOC Rio Cebolla- Stream Bottom Deposits, Temperature San Antonio Creek- Temperature, Turbidity, Arsenic

Project Summary:

The Rio Jemez is located in northern New Mexico and drains a multitude of deep, narrow canyons typical of the Southwest. All of the streams and uplands treated in this project are located on the Santa Fe National Forest. Piñon-Juniper and Ponderosa Pine-mixed conifer ecosystems are predominant as are sandy, well drained volcanic soils. Grazing allotments span the project area. The area is also frequented by ATV users. Both grazing and ATV use have contributed to sediment loading on the streams in these locations. Grazing within the streams and along the banks has eroded the banks and increased turbidity. ATV users have created stream crossings and erodible upland trails. It is believed that the absence of bank vegetation combined with increased turbidity has caused the water temperature to exceed state water quality standards. In some reaches, low flows, turbid conditions, and elevated nitrogen content from cattle waste has resulted in nutrient/eutrophication impairments.

The goals of this project were to create upland water sources for cows and wildlife through well installation and repair, and to revegetate stream banks with native plants and protect them with exclosures. Some ATV trails were closed and restored. A forest thinning project was implemented to reduce wildfire risk. The project was managed by the Cuba Ranger District of the Santa Fe National Forest. A combination of United States Forest Service (USFS) staff, grazing permittees, volunteers, and contractors carried out the work.

Project Outcome:

This project involved multiple tasks to reduce sediment loading on several tributaries to the Rio Jemez. This was accomplished by a cooperative effort between the USFS and multiple volunteers including the Wild Earth Guardians, the local Youth Conservation Corps (YCC) and grazing permitees. The following BMPs were implemented:

An exclosure containing newly planted native riparian plants on San Antonio Crrek, July 2015.

- Approximately 6.8 miles of new fence was built by YCC crews, permittees, and Forest Service range crews which reduced the impacts of cattle and ATVs within the riparian areas on the creeks listed above.
- As part of a complementary project, Wild Earth Guardians planted willow and cottonwood and built exclosures along Rio de las Vacas providing approximately 103.5 acres of riparian enhancement along 2.5 miles of stream.
- Permittees repaired fences cut by ATV riders.
- YCC crews installed water bars on user-created ATV routes and moved logs and rocks to deter further unauthorized use.
- Permittees repaired and maintained pipelines supporting upland watering sources and installed upland drinkers.
- Solar panels were installed to power a well which was repaired to provide water to a trick tank (combination rainwater catchment and watering tank) for cattle in the upland Calaveras pasture on the Rio Cebolla/ San Antonio Allotment.
- San Antonio well was re-drilled, deepened, and repaired and is now able to deliver adequate water to the upland drinkers, reducing the need and time that cattle are in the riparian pasture.
- The last two miles of FR 376N near San Antonio Hot Springs was closed to motor vehicle traffic. The road was obliterated and then ripped and seeded.
- Young (typically 12" and under) encroaching conifer were cut from 75 acres of open grassland edges to restore meadow habitat. Trees were cut, bucked, limbed, and piled. Burning did not occur.

The USFS policy is to monitor improvements every 3 years. Further inspections will be made annually to ensure cattle are not passing through any of the fencing erected as part of the project. As part of the terms of managing the grazing allotments vegetation monitoring will be done annually throughout the allotments using a nested frequency monitoring of plots and through the use of photopoints. Additionally, every 5 years, the physical process of riparian-wetland areas will be assessed using the USFS Proper Functioning Condition assessment protocol. Inspections will also be made annually to ensure that cattle are not getting into the exclosures.

Respect the Rio: Managing Recreation to Improve Water Quality (FY10-E)

Project Budget:	Federal 319(h): $399,662 Match: $300,146 Project Total: $699,808
Watersheds:	Pecos Headwaters (HUC 13060001), Jemez (HUC 13020202)
Sub-watersheds:	Panchuela Creek (HUC 130600010201) Rio Mora-Pecos River (HUC 130600010203) Indian Creek-Pecos River (HUC 130600010204 Dry Gulch-Pecos River (HUC 130600010205) Headwaters Rio de Las Vacas (HUC 130202020102) Headwaters Rio Cebolla (HUC 130202020103) Outlet Rio de Las Vacas (HUC 130202020105) Outlet San Antonio Creek (HUC 130202020204)
Impairments:	Temperature and Turbidity

Project Summary:

Respect the Rio was created in 2001 to address water quality issues in heavily used areas of the Santa Fe National Forest in north central New Mexico. The program which started in the Jemez Ranger District has now expanded to include the Pecos/Las Vegas Ranger District. Respect the Rio links environmental education, on-the-ground projects, and public involvement to empower local communities and forest users to participate in watershed restoration. The overall intent of the program is to improve watershed conditions in order to decrease stream temperatures and sediment delivery (turbidity and sedimentation/siltation). The project area was located in 8 small watersheds that receive high recreational use and supported the Santa Fe National Forest's efforts to implement BMPs in these high-use watersheds.

Project tasks included public contacts/education, enforcement of federal regulations, restoration of degraded riparian ecosystems, and the formation of long-term partnerships with the public. Community contact work included funding a Forest Protection Officer (public education about management objectives and to write warnings notices and citations as situations warrant along streams and riparian corridors) and Seasonal Contact Rangers (one-on-one contact with visitors and outreach presentations), as well as inventorying resource damage related to dispersed recreation. Funded restoration work included campground development (day-use restrictions, vehicle access restrictions, bank and near-stream stabilization/revegetation, and road drainage improvements.

Project Outcome:

A large component of the Respect the Rio Program is outreach to the public. The project supported numerous activities that educated the public on water quality issues that have developed from high recreational use. Education provides recreationists with an opportunity to be stewards of public lands and protects the investment of improving water quality and habitat.

Be a River-Friendly Camper

People seek scenic, peaceful places like this to get away from the noise and stress of their everyday lives. Whether you're here for the day or here to camp, you can help keep campsites clean and safe for everyone, including the plants and animals that call this home. By following a few simple guidelines, you will help to keep this a great place to visit.

Respect restoration sites. If you come across a road or campsite that is blocked off with logs, fences, and boulders, do not try to remove these barriers or access the area. Closures have been made to restore plants and habitats and to strengthen stream banks. Check with the local ranger station for updated information on closure location and read all posted signs.

Keep vehicles at least 100 feet from the water or park in designated areas. Vehicles driven and parked too close to a stream compact the soil, kill vegetation and erode banks, ruining the scenic quality and destroying aquatic habitat.

Choose an existing campsite. Don't disturb bushes, trees and flowers to create new campsites. Protect water quality and aquatic habitat by keeping campsites 100 feet away from streams, lakes and other wetlands.

Stay on established roads and trails. By avoiding unused areas and off-road travel, you preserve plant life and animal habitat.

Pack it out. Carry all your garbage, food scraps and packaging materials, including beverage containers. Aluminum cans and bottles don't burn, so pack them out.

Pretend you're a cat. If toilets are unavailable, dig a hole 6-8 inches deep, 200 feet or more away from water and campsites. Deposit human waste and cover it up with soil. Burn or pack out used toilet paper.

Dispose of RV and Camper/Trailer sewage and gray water properly. Utilize designated dump stations. It is illegal to dump waste water or gray water on the ground, in rented portable toilets, or in the stream.

Wash away from the water. Soap degrades water quality and harms fish and other aquatic life. Protect them by washing at least 200 feet from the water, using plain water or biodegradable soap.

Avoid spawning areas. The stream is home to a rare trout and several other types of fish. They build their nests, called redds, in the gravel in the shallow parts of streams. Young trout hide in the spaces between the gravel while they mature. Both the eggs and young fish are extremely fragile. You can help protect them by not walking on gravel, not building rock dams in the river, and not driving through streams.

Keep your fires small and bring your own firewood. Use existing stone fire rings. Gathering firewood, even downed wood, destroys habitat, especially in concentrated camping areas near water. Try gathering wood further from streams and lakes, or find other sources of wood, such as old slash piles or stores, or bring your own.

Observe fire restrictions. Please check at the local Ranger District for current fire restriction information.

Respect other campers. These are family camping areas for everyone; keep music and noise levels down.

Santa Fe National Forest

If you would like more information about the Respect the Rio program, please call the Education Coordinator at 505-829-3535.

The Be a River- Friendly Camper *handout distributed to the public by the Forest Contact Rangers.*

The following BMPs were implemented as part of an integrated outreach program:

- Thousands of one-on-one contacts between funded Respect the Rio staff and visitors.
- About a hundred outreach events, such as booths and special programs. Thousands of participants from schools and elsewhere in local communities.
- Visitor inventory information that was highly valued by the local Business Association, such as visitor's preferred recreational activities, length of stay, and home location.
- Hundreds of coordinated volunteer hours to build or repair BMPs.
- Dozens of citations and formal warning notices. Some citations resulted in mandated labor to build or repair BMPs.
- Facilitated other planning efforts, especially USFS recreation and roads.

On July 13, 2012 The Respect the Rio Outreach Team visited numerous campgrounds and talked about the Pecos River water quality issues, monitoring techniques, and what people can do to protect water quality in the region.

A primary focus of the project was implementation of BMPs in the Dalton Canyon - Rainy Day Use areas. These BMPs included both management strategies and on-the ground implementation of structural BMPs as listed below:

- Complete a closure order for motor vehicle use in the Rainy Day riparian area.
- Prevent vehicles from accessing the stream banks and the active floodplain through placement of boulders and fences at Rainy Day.
- Revegetate hardened camping areas using native species of plants at Rainy Day.
- Create a designated trail and an ADA-approved accessible fishing dock at Rainy Da .

- Place picnic tables and a kiosk at Rainy Day.
- Install a physical barrier (fence) and boulders to prohibit motor vehicle use and to reduce trampling and compaction of the streambank next to Dalton Creek.
- Bank stabilization where Dalton Creek is eroding into FR 123, re-shaping, and placing gravel to reduce sedimentation from streambank erosion into the FR 123 road prism.
- Place gravel and re-shaping FR 123 (including barrow-ditch modifications), which parallels Dalton Creek, at the Pecos River confluence and another location approximately 1.75 miles upstream
- Re-vegetate hardened camping areas at Dalton Canyon using native species of plants.
- Install a kiosk and signs at Dalton Canyon.

Additional BMPs were implemented at other high-use recreation areas:

- Modify campsites at various locations to maintain a quality recreational experience while pulling vehicles away from stream banks and the active floodplain
- Revegetate hardened camping areas at various locations using native species of plants.
- Install boulder barriers in various locations to remove motorized use/access to stream banks and active floodplains on State Route 63, Elk Mountain Road FR 646 (illow Creek), and Holy Ghost Canyon FR 122.

Mogollon Creek Watershed Based Plan. (FY11-F)

Project Budget:	Federal 319(h): $ 35,181	Match: $ 25,323	Project Total: $ 60,508
Watershed:	Upper Gila (HUC 15040001)		
Sub-watersheds:	Upper Mogollon Creek (HUC 150400010904)		
	Middle Mogollon Creek (HUC 150400010905)		
	Lower Mogollon Creek (HUC 150400010906)		
Impairments:	TMDL for Aluminum		

Project Summary:

Mogollon Creek is a tributary to the Gila River in southwest New Mexico primarily in the Gila National Forest. It has a relatively confined channel in a narrow canyon often times flowing over bedrock. Mogollon Creek has a designated use for high quality coldwater aquatic life, but is not meeting this designated use due to elevated levels of dissolved aluminum. Upper Mogollon Creek along with some tributaries have been identifi d by the USFWS as Gila Trout Recovery waters, for a native trout currently listed as threatened. This planning project sought to identify the sources of aluminum, test water quality on several tributaries, and identify projects that might be suitable for reducing aluminum loading within the creek.

In 2012, shortly after the project began, the state's largest wildfire, the Whitewater-Baldy Complex Fire, burned through much of the upper watershed, causing widespread destruction of the high elevation for-

est. Subsequent flooding and erosion have altered the watershed condition along with much of the aquatic life. In addition, the State's water quality standard for aluminum was changed from dissolved aluminum, to total recoverable aluminum. The WBP, as submitted to the EPA, found that much of the aluminum in the watershed was naturally occurring and recommended that the stream be re-assessed under the new total recoverable aluminum standard to determine if the stream is still impaired. Project partners included the Gila National Forest, the Upper Gila Watershed Association, Cynthia Wolf, and the SWQB.

Mogollon Creek following the Whitewater-Baldy Complex Fire. Newly deposited debris has changed the channel and altered the course of the stream.

Project Outcome:

Water Quality Testing:

Five tributary streams were tested at four different sampling times (September 2011, March 2012, September 2012 and December 2014). The early tests were analyzed only for dissolved aluminum, but samples in September 2012 and December 2014 included both total recoverable and dissolved aluminum analysis. The goal of the testing was to better understand which tributary may be contributing excess aluminum. Of the five tributary streams, four had aluminum concentrations exceeding the water quality standard during at least one sampling event. The West Fork of Mogollon Creek had elevated levels three out of four sampling events, while Rain Creek and Lookout Canyon both had aluminum exceedences on two of the four sampling events. Due to the remote location and wilderness status, all water quality testing was completed using a horse-packing contractor.

Source Determination:

Knowing that some tributaries appear to be contributing more aluminum, field investigations were undertaken to see if any there were anthropogenic sources of the aluminum that could be ameliorated through best management practices. The West Fork of Mogollon Creek had the greatest number of exceedences, and also the highest concentrations of aluminum, but a hiking trip up the entire length of the watershed did not reveal any obvious "smoking guns" for the excess aluminum. The West Fork Mogollon subwatershed is the largest in the drainage, and consequently has the greatest potential to contribute aluminum via natural weathering and erosion. The Whitewater-Baldy Complex Fire in May 2012, burned nearly 90% of the watershed, which undoubtedly contributed to the very high aluminum levels (430,000 ppb) observed during the September 2012 sampling event.

The whole Mogollon mountain range has a long history of mining and there are several small legacy mines in the watershed, but mining is no longer active or economically viable. The degree to which these abandoned mines are contributing to the water quality impairment is largely unknown. Rain Creek also had several aluminum exceedences during the water quality testing, and also contains the largest known mine workings—the Good Hope Mine near the confluence of Rain and Mogollon Creek. The mine was investi-

gated and contained several open adits and a small pile of waste rock above the floodplain of the creek. The vegetation and slopes around the mine had recovered to the point where erosion was not evident and did not appear to be contributing excess sediment to the creek. Mining activity was ruled out as a potential source of the aluminum impairment. Forays into other sub watersheds also revealed little, if any, human impact to the watershed which has been part of a designated wilderness since 1924.

Based on this field reconnaissance it appeared that the excess aluminum was largely the result of natural, ambient conditions in the watershed. A USGS soil mineralogy study from 2012 seems to corroborate this supposition. The USGS study sampled over 203 locations in New Mexico and over 4,857 nationwide to document soil minerology at 3 different depths. Five sampling locations occurred within the Gila Basin—those lands draining the Mogollon Mountains were in the upper 80th percentile for aluminum concentrations at all three soil depths. Indeed, most of southwest New Mexico is a "hot spot" for aluminum.

Watershed Based Plan Recommendations:

This project ended up offering more standards revision recommendations than solutions to the water quality impairment. Because the aluminum appears to be largely natural in origin and a by-product of the geology, few, if any, on-the-ground projects will effectively change the aluminum loading in the watershed. Given the wilderness status of the watershed, it seems clear that instead of trying to remove the aluminum to the point where it will meet the current water quality standard, perhaps the standard should be revisited. This project was initiated in 2011 and the State changed the water quality standard from dissolved aluminum to total recoverable aluminum in June 2013. Since that time, the SWQB Monitoring and Assessment section has not resurveyed the creek using the new assessment standard to determine if Mogollon Creek is still impaired. If the tributary sampling is any indication, there is a good chance that the aluminum level will still be too high—two of five tributaries exceeded the new aluminum standard at the chronic level during the December 2014 survey. The new standard is applicable to all waters across the state. Given the naturally high levels of aluminum in the watershed, it may be more appropriate to adopt a basin or watershed-specific aluminum criterion in those areas of the state known to have high ambient levels of aluminum or other metals. Despite the impacts from the Whitewater-Baldy Complex Fire, numerous Gila-Rainbow trout hybrids in the West Fork of Mogollon Creek survived the post fire impacts. Fish surveys in 2013 and 2014 in Mogollon Creek documented survival of reintroduced Gila Trout as well as young of the year demonstrating a replicating population in the wild. Mogollon Creek is considered one of the more important waters in the Gila Trout Recovery Program and contains one of the few stable populations of Gila Trout in the wild. This seems to provide empirical evidence that the stream may be impaired based on water quality testing, but is functioning well for the designated use of high quality coldwater aquatic life the aluminum criterion is intended to protect.

The WBP was submitted to the EPA for review in August 2015. In October 2015, the EPA responded with their review stating that the plan was important as a platform for revising the water quality standard, although it did not meet the requirements for a 9 element WBP.

Restoring Jaramillo Creek (FY11-G)

Project Budget:	Federal 319(h): $171,884 Match: $116,356 Project Total: $288,253
Watershed:	Jemez (HUC 13020202)
Sub-watersheds:	East Fork Jemez River (HUC 130202020203)
Impairments:	TMDL for Temperature and Turbidity, also listed for aluminum

Project Summary:

Jaramillo Creek is a tributary of the East Fork Jemez River, entirely within the Valles Caldera National Preserve (VCNP) in the Jemez Mountains. The stream flows through a series of meadows and short canyon sections before reaching the East Fork. A portion of Jaramillo Creek's watershed burned in the Thompson Ridge fire in 2013, increasing the size of flood events and the amount of sediment entering Jaramillo Creek. Even before the fire Jaramillo Creek was in a degraded condition. People with long history in the area such as Jack Crane, a key volunteer for the nonprofit Los Amigos de Valles Caldera, recall that Jaramillo Creek once held many trout of surprisingly large size for such a small creek. A fish survey in 2003 turned up just two trout about two years old (age class 2) within a cow exclosure, whereas similar sampling on the East Fork Jemez River turned up 279 fish of age classes 0-4

SWQB collected data in 2001 and 2002 leading to recognized water quality impairment for temperature, turbidity, and aluminum. At the outset of the project, sediment was reaching Jaramillo Creek from nearby poorly drained dirt roads and an old network of logging roads higher in the watershed. Excess sediment was evident as excessive silt in pools and in-channel bars. Adequate riparian and wetland vegetation was generally present to protect the banks, but in some areas the channel was evolving in response to the sediment load, producing localized bank erosion. Other reaches were incised, preventing flood flows from spreading out on the flood plain, increasing the erosiveness of flood flows. Flow was unsuitably turbid in any flood event. The somewhat unstable and exposed channel also left the water's surface exposed to the sun such that the water temperature standard was exceeded throughout much of the summer.

Los Amigos de Valles Caldera implemented the project under contract with NMED. The Valles Caldera Trust was the agency host for this project. The main BMP of the project was the use of pond-and-plug techniques to reduce incision, increase sinuosity, reroute flow over more of the historic floodplains, and promote the development of emergent wetlands. Some pond-and-plug structures higher in the watershed, where Jaramillo Creek does not always have surface flo , are intended to convert Jaramillo Creek from a single channel to a sheet flow wetland. One objective of such conversion is to store spring runoff to increase summer base flow downstream. The Albuquerque Wildlife Federation and Defenders of Wildlife provided volunteers for several workshops with a focus on building by hand small erosion control structures such as one-rock dams and Zuni bowls. Some of the volunteer work was detail work to strengthen machine-built pond-and-plug structures built by subcontractors Stream Dynamics and Keystone Restoration Ecology. This pond-and-plug work is somewhat experimental, and thus the project will serve as a useful demonstration and study site for others. A related wetlands project will produce a report with specifications and performance data for pond-and-plug structures.

Project Outcome:

An extensive amount of on-the-ground work was conducted and many structures were built. This includes; 25 pond-and-plug structures; 25 one-rock dams to raise the grade and encourage overbank flow; ten bank erosion treatments using sod; two Zuni bowls; seven rolling dips were installed on a low-standard dirt road parallel to Jaramillo Creek; and one elk exclosure was built and planted with willows. Unfortunately, many of the willows were washed out in a flood. Four volunteer work weekends (with a total of 119 attendees) and two professional workshops (with 27 attendees) were conducted to complete smaller structures and provide broader education about the watershed processes and practices employed.

The Thompson Ridge Fire in 2013 caused delays in project implementation that complicated monitoring efforts. As a result, most of the implementation occurred in Fall 2014, and post implementation monitoring was conducted in May 2015 while vegetation was still for the most part dormant. Long-term temperature monitoring by NMED should permit us to draw conclusions about the effectiveness of the project in 2016.

Water quality standards and assessment methods have changed since the initial impairment determinations were completed. Based on the requirements of aquatic life, SWQB now considers the duration of turbidity and temperature exceedence events in making standards attainment decisions. SWQB conducted a water quality survey including Jaramillo Creek in 2013 before most of this project was implemented. Preliminary analysis of those data indicate that Jaramillo Creek may no longer be impaired by temperature but is still impaired by turbidity and aluminum. Unfortunately it may also have a newly recognized impairment for excessive plant nutrients. A downstream section of the East Fork Jemez River will likely continue to be designated as impaired for temperature, and this project on a principal tributary of the East Fork may help address that.

Volunteers install one-rock dams and cobble run-downs to stabilize a recently built water spreading structure on the valley bottom of upper Jaramillo Creek (May, 2015).

Reducing Temperature and Turbidity on San Antonio Creek by Restoring Slope Wetlands on Six Tributaries (FY11-H)

Project Budget:	Federal 319(h): $165,391 Match: $123,201 Project Total: $288,592
Watershed:	Jemez (HUC 13020202)
Sub-watersheds:	Headwaters San Antonio Creek (HUC 130202020201)
Impairments:	TMDL for Arsenic, Temperature, and Turbidity. Also listed for DO and pH.

Project Summary:

San Antonio Creek meanders through two broad valleys (valles) in the Valles Caldera National Preserve (VCNP) before entering a steeper section and ultimately joining the East Fork Jemez River at Battleship Rock, where the two streams form the Jemez River. Portions of San Antonio Creek's watershed burned in the Las Conchas Fire (2011) and the Thompson Ridge Fire (2013).

The gentle slopes of the valles largely consist of slope wetlands. Existing and abandoned roads, a natural gas pipeline, overgrazing, livestock trailing, and poorly designed or poorly maintained stock ponds had all damaged slope wetlands that, were they in better condition, could remove fine sediment from runoff and support more base flow in San Antonio Creek. Berms, ditches, and gullies resulting from these and other activities had intercepted and concentrated shallow, dispersed surface runoff, causing channel incision and further inadvertent draining of the wetlands.

San Antonio Creek Tributary 1, May 2015. Flow is from left to right. The three pictured ponds prevent the gully from incising further, and spread flow onto the adjacent slope wetlands.

This project follows a series of other projects that generally focused on streambank stabilization and other restoration actions taken in the near-vicinity of San Antonio Creek. This project addressed what appeared to be the remaining major cause of water quality impairment in the upper San Antonio Creek watershed – degraded conditions within small tributary watersheds of the creek.

Like the Restoring Jaramillo Creek project described above, this project featured pond-and-plug techniques. These techniques involve strategically plugging an incised small channel at an upstream location to return the flow to the broader slope wetland, thus filtering suspended sediments and recharging shallow groundwater in hopes that base flow will increase during the summer months.

Like the Restoring Jaramillo Creek project, Los Amigos de Valles Caldera implemented this project, under contract to NMED and the Valles Caldera Trust was the agency host. The Albuquerque Wildlife Federation provided volunteers with a focus on building by hand small erosion control structures such as one-rock dams and Zuni bowls. Volunteers also had many opportunities to plug and spread surface flo , using small sod transplants and short worm ditches, to more fully transform the treated meadows into distributaries rather than tributaries of San Antonio Creek. Some of the volunteer work was detail work to strengthen machine-built pond-and-plug structures built by subcontractors Stream Dynamics and Keystone Restoration Ecology.

Project Outcome:

In total, 38 pond-and-plugs, eight contour ponds, six rolling dip road drains, five rock rundowns, three Zuni bowls, three wetland exclosures, and numerous sod plugs were built by the Los Amigos contractors and volunteers. The contour pond is a new type of structure created and tested during this project. This structure

appears very useful for spreading water that has been concentrated by trailing and gullies back across former wetland surfaces, and is cheap to implement by hand or machine.

The Thompson Ridge Fire in 2013 caused delays in project implementation that complicated monitoring efforts. Most of the implementation occurred in May 2014, and post implementation monitoring was conducted in May 2015 while vegetation was still for the most part dormant. Long-term temperature monitoring by NMED should permit us to draw conclusions about the effectiveness of the project in 2016.

SWQB conducted a water quality survey including San Antonio Creek in 2013, before most of this project was implemented. Preliminary analysis of those data, to be published in the *2016-2018 State of New Mexico Clean Water Act §303(d)/§305(b) Integrated Report,* confirm the sediment and nutrient-related impairments upstream of the VCNP boundary. Keystone Restoration Ecology, which conducted monitoring and water quality modeling for this project, estimated that the project resulted in a load reduction of 346.5 tons of sediment per year in San Antonio Creek, and a decrease in maximum temperature of about 0.4ºF, which should help address these impairments.

This project will serve as a useful demonstration and study site for others, with a report with specific - tions and performance data for pond-and-plug structures planned under a related wetlands program project. The new status of the project area as a unit of the National Park Service means that more visitors, including a substantial number of anglers, will benefit from this project and be able to observe the results over time.

On-The-Ground Improvement Projects for the Upper Gallinas River and Porvenir Creek (12-G)

Project Budget:	Federal 319(h): $ 234,900 Match: $243,392. Project Total: $478,292
Watershed:	Pecos Headwaters (HUC 13060001)
Sub-watersheds:	Porvenir Canyon (HUC 130600010801)
	Porvenir Canyon-Gallinas Creek (HUC 130600010802)
	Arroyo Pecos-Gallinas River (HUC 130600010805)
Impairments:	TMDL for temperature.

Project Summary:

The Upper Gallinas Watershed descends from 11,661' to 6,800' and is comprised of 92% forest, 6% rangeland, 2% barren and less than 1% agriculture and tundra. Land ownership is 52% USFS and 48% private and local government. The project area includes dispersed residential development with the highest density of population centering in the unincorporated village of Gallinas. The population size is estimated to be approximately 510 with a population density of 6.7 people per square mile.

The project implemented portions of the Updated Watershed Based Plan for the Upper Gallinas River (UWBPGR). This two-year project implemented improvements on approximately one quarter (2 miles) of the priority stream segments to serve as demonstrations and conducted an aggressive Education and Outreach effort. This On-the-Ground Improvement project was funded through Section 319 funds and was complemented by in-kind match of 61% of the total project budget, exceeding the required match by 21%.

Project Outcome:

The strategy for choosing projects for Phase 1 implementation was to select highly visible, easily achievable and likely effective improved management and restoration projects to serve as demonstrations in order to garner support from other landowners, land managers and funders for future work. Project partners were chosen that could implement multiple types of treatments (e.g. Guided Vegetation Management, Riparian Planting, Livestock Management, and Low Water Crossing) simultaneously in order to improve all conditions on one piece of property.

To address the water quality impairment in the Gallinas River and Porvenir Creek and to simultaneously improve overall watershed condition, land management that has compromised river and watershed health was addressed, restoration activities occurred in degraded areas, and administrative tools were pursued. The following types of projects were implemented:

Land Management Improvements
- Riparian Sensitive Grazing Plans,
- Guided Vegetation Management for Domestic and Recreational Areas,
- Relocate infrastructure out of riparian areas.

Watershed Health Restoration
- Riparian plantings,
- Stream channel enhancements,
- Road crossing modifications
- Upland erosion control projects.

Conservation, Planning, and Regulation
- Pursuit of a Conservation/Planning/Regulatory tool.

A water catchment system was built for a Gallinas landowner away from the stream to reduce soil compaction and erosion in the riparian area.

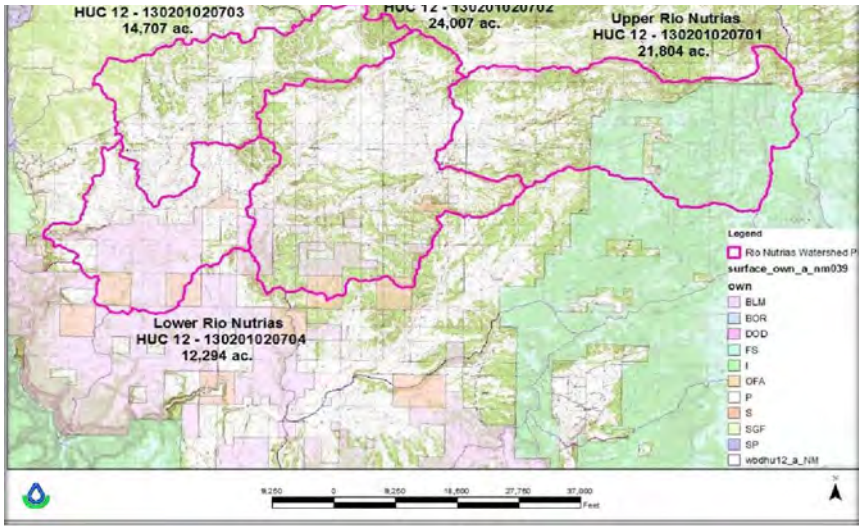
These BMP's and the targeted areas were outlined in the Management Measures section of the UWB-PGR. The project focused on prioritizing management measure implementation and engaging landowners of priority stream segments by conducting one-on-one discussions to pursue management or restoration projects. It also involved continued work with non-landowner stakeholders, primarily government agencies, to coordinate our work with related projects and ensure use of existing complementary programs. Fifteen private landowner partners worked with HPWA to implement twenty two watershed management improvement and restoration projects.

Rio Nutrias Watershed Based Plan (12-I)

Project Budget:	Federal 319(h): $87,113	Match: $58,075	Project Total: $145,188
Watershed:	Rio Nutrias (HUC 13020102)		
Sub-watersheds:	Rito de los Ojas (HUC 130201020703)		
	Middle Rio Nutrias (HUC 130201020702)		
	Upper Rio Nutrias (HUC 130201020701)		
	Lower Rio Nutrias (HUC 130201020704)		
Impairments:	TMDL for turbidity.		

Project Summary:

The Rio Nutrias is located in North Central New Mexico and is a tributary of the Rio Chama watershed. Out of 106 square miles in the Rio Nutrias watershed, there are 34.63 miles of impaired stream. The diverse ecosystems contained within the watershed range from lowland (6,700 ft) piñon/juniper and sage to highland (10,700 ft) mixed conifer woodlands. The primary land use of the area is ranching and livestock production, which has contributed to the turbidity impairment through bank destabilization and vegetation removal. The objective of this project was to create a WBP with participation of local community professionals. Cooperators include Jessica Johnston of Aguas Norteñas, the Esperanza Grazing Association, The Cebolla/Nutrias Watershed Group and the BLM.



Rio Nutrias Watershed Based Planning Area.

Project Outcome:

In 2015, a WBP for the Rio Nutrias was completed, local landowners were contacted and ArcGIS layers were created to analyze land use cover. The plan was accepted by EPA and is now ready for implementation.

Watershed-Based Planning within the Upper Rio San Antonio Drainage Basin (FY12-J)

Project Budget:	Federal 319(h): $155,380 Match: $115,025 Project Total: $270,405
Watershed:	Conejos (HUC 13010005)
Sub-watersheds:	Cañada Tio Grande - Rio San Antonio (HUC 130100050301)
Impairments:	Both the Cañada Tio Grande and Rio San Antonio are impaired for temperature and DO. The Rio San Antonio is also impaired for *E. coli*. The Rio San Antonio has a TMDL for temperature.

Project Summary:

The upper Rio San Antonio drains the northeast slopes of the Tusas Mountains, a rolling and undramatic but surprisingly high-elevation mountain range in north-central New Mexico. The Rio San Antonio within the project area is approximately 14 miles long and receives drainage from 34,408 acres. The stream and its watershed are primarily on land managed by the Tres Piedras Ranger District of the Carson National Forest, but several private inholdings are concentrated along the stream in the lower portion of the watershed. One large inholding, known as Stewart Meadows, moved into public ownership a few decades ago, and is the location of a large wetlands restoration project.

A water temperature problem was first recognized by the State of New Mexico in the *2004-2006 State of New Mexico §303(d)/ §305(b) Integrated Report,* and a TMDL for temperature was approved in late 2004. An *E. coli* impairment was recognized in 2012, with a TMDL approved during the term of this project. Also in 2012, temperature impairment (as yet uncharacterized with a TMDL) was recognized in the Cañada Tio Grande, a principal tributary of the Rio San Antonio known for its pure-strain population of Rio Grande Cutthroat Trout. Both the Rio San Antonio and Cañada Tio Grande also have impairments related to nutrient enrichment, as yet without nutrient TMDLs.

This project developed a WBP to implement the temperature TMDL. NMED contracted with the Chimayo Conservation Corps (CCC) to complete this project, with Rocky Mountain Ecology as the primary technical subcontractor and regular participation by Carson National Forest staff. CCC provided field crews for monitoring, and the Chama Peak Land Alliance assisted with outreach to private landowners and permittees.

Originally, the project was to produce an Environmental Assessment (EA) that would meet National Environmental Policy Act (NEPA) requirements and contain all of the WBP elements found in EPA's Nonpoint Source Guidelines at www.epa.gov/sites/production/files/2015-09/documents/319-guidelines-fy14.pdf)

Project Outcome:

The Carson National Forest chose not to develop an EA that describes work proposed on private land, so the project produced two documents instead. One is a draft WBP, and the other a Categorical Exclusion (CE) document in which the Carson National Forest completed the NEPA requirements for a significant portion of the work identified in the WBP.

The WBP presents field data to describe in some detail that portions of the Rio San Antonio and Cañada Tio Grande lack the shade-producing willows and alders that these streams are capable of supporting, due to a combination of grazing by cattle and elk. The WBP and CE propose a set of management measures to increase canopy cover and decrease width to depth ratios, such as strategic planting and fencing of riparian areas, creation of upland water sources, and structural improvement (bank stabilization and fish habitat improvement) using large woody debris and boulders. The WBP supplements the analysis with more quantitative information regarding estimated pollutant load reduction that would occur with implementation of management measures. The CE supplements the overall analysis with more careful documentation of the decision to implement, and opportunities for public involvement.

The draft WBP is in review by EPA. It will be made available at: www.env.nm.gov/swqb/wps/WBP/In-Development. The CE is available from the Carson National Forest or from the Grants Reporting and Tracking System (GRTS, see www.env.nm.gov/swqb/wps/GRTS for more information). A final project report is also available in GRTS.

A reach of the upper Rio San Antonio showing that this sizeable trout stream lacks shade and tends to be shallow and wide.

Wetlands Program

Wetlands Program Plan Update

In February, 2015, EPA approved the update of the New Mexico Wetlands Program Plan. The SWQB Wetlands Program and its partners have made substantial progress in the development of a robust program that focuses on measures that will restore and protect New Mexico wetlands. This updated Wetlands Program Plan describes the achievements made since this Plan was approved in 2010 by EPA and previously updated in 2012. It also lays out a pathway to continue program development for the next five years. Through this updated 5-year Wetlands Program Plan we hope to continue progress towards a comprehensive and sustainable Wetlands Program for New Mexico.

Funding Awarded to the Wetlands Program 2015

Three new Wetlands Program Development projects were awarded funding by EPA Region 6 in 2015. The federal grants for these project total $982,166 in federal assistance awarded through the FY15-16 EPA Wetlands Program Development Grant Program authorized by CWA Section 104(b)(3). These projects advance the development of our statewide wetlands program and is consistent with our approved 10-year Wetlands Assessment and Monitoring Strategy and 2015 Wetlands Program Plan.

"Rapid Assessment of Wetlands for Confined alleys, and USACE NMRAM Phase 2, New Mexico"

This 4-year project will further develop and validate our Rapid Assessment of New Mexico Wetlands (NMRAM), and increase its applicability to riverine wetlands in confined valleys of Upper Rio Grande and Canadian watersheds in North Central and Eastern New Mexico. This project will also continue refinement of a Regulatory Module NMRAM for the US Army Corps of Engineers (USACE). This project advances the development of our statewide wetlands program and is consistent with our approved 10-year Wetlands Assessment and Monitoring Strategy and 2015 Wetlands Program Plan. The main tasks for this project are to refine our subclass descriptions and regional models, complete data collection and analysis; publish a NMRAM Manual and Field Guide for confined riverine wetlands; test, refine and complete the NMRAM Regulatory module; continue statewide coordination of the NM Wetlands Agency, NGO and Southern Roundtables; conduct NMRAM trainings and outreach, and continue integration and improve functionality of the Surface Water Quality Integrated Database (SQUID) for wetlands data. The final products include 1) data, assessment and stressor identification for the confined riverine subclass of wetlands, 2) aerial extent of the subclass and cover classes for 40 reference wetland sites, 3) refined definitions for the subclass in the Rio Grande/Canadian Watersheds reference domain and validation/refinement of a core set of metrics, indices and protocols for wetlands assessment, 4) NMRAM User's Manual, Field Guide and electronic datasheets for confined Riverine wetlands and NMRAM Reg. 5) trained end-users that apply NMRAM and NMRAM Reg methods, 6) updated SQUID database for confined riverine NMRAM, 7) technical transfer through demonstrations, training, presentations and meetings.

"Mapping and Classification of etlands in the Middle Rio Grande Basin New Mexico"

This is also a 4-year project to map and classify wetlands in central New Mexico as part of our ef-

forts to complete updated mapping on all of New Mexico's wetlands. We will extend our current efforts to the central portion of the state and map the middle Rio Grande Basin. Project tasks include acquiring imagery and assembling a geodatabase; conducting a literature search; pre- and post-mapping field reviews; applying the landscape position, landform; waterflow path and waterbody type (LLWW) classification for the project area; assigning wetland functions to different wetland types; performing the wetland mapping; assigning wetland hydrogeomorphic (HGM) subclasses and outreach for technical transfer. A technical advisory committee (TAC) will be established for the project area. Transfer of technology will include presentations to watershed groups, agencies and consortiums, and copies of the final report and interactive maps posted on the NMED Wetlands Program website. Products will include wetlands mapping and classification covering approximately 7,000 square miles, (~116 quadrangles), preparation of reference materials, basemaps, functional correlation, and assemblage of information for the Middle Rio Grande including the Rio Puerco Watershed, an area of New Mexico where little wetlands information or mapping was previously available.

"Keyline Design for Restoration of Headwater Slope Wetlands in the Holman Creek Wetlands Complex"

This 4-year project will demonstrate "keyline design" restoration techniques to restore a minimum of 40 acres of headwater slope wetlands in the Holman Creek wetlands complex of the Comanche Creek watershed. The main objective of the project is to increase the quality and quantity of headwater slope wetlands by spreading out damaging concentrated runoff and increasing infiltration and sheet flo . Project tasks will include conducting planning and field reconnaissance to support design and installation; performing pre-and post-installation ecological monitoring to document project performance; constructing restoration structures; and transferring project results to landowners, land managers and the public. Products will include: 1) restoration of 40 acres of headwaters slope wetlands in a manner that increases resiliency to climate change; 2) results and interpretation of baseline and post-installation data; 3) a technical guide that describes the use and effectiveness of keyline design for headwater slope wetlands; 4) two volunteer work weekends to install the project and train volunteers; 5) a half-day conference workshop; and 6) dissemination of the technical guide to potential users.

Wetlands Roundtables

In 2015, the Wetlands Program hosted four Wetlands Roundtables, two in the spring and two in the fall. The Northern Wetlands Roundtable conducted in Albuquerque on March 26, 2015 was a celebration of the accomplishments of one of our key restoration contractors, Bill Zeedyk, in honor of his 80th Birthday. The one-day meeting was well attended by more than 120 participants. Wetland and stream projects that Bill Zeedyk designed and restoration methods that he pioneered were featured as presentations.

Lynda Saul, Montana Wetlands Program Coordinator, was invited to present the Montana perspective for managing and restoring wetlands at the fall Northern Wetlands Roundtable conducted on November 16, 2015 in Santa Fe. Her presentation excited participants to engage in more collaborative efforts to restore and protect wetlands.

The spring Southern Wetlands Roundtable conducted in Las Cruces on April 9, 2015 focused on healthy rivers and wetlands in both the Lower Rio Grande and the Gila Watersheds.

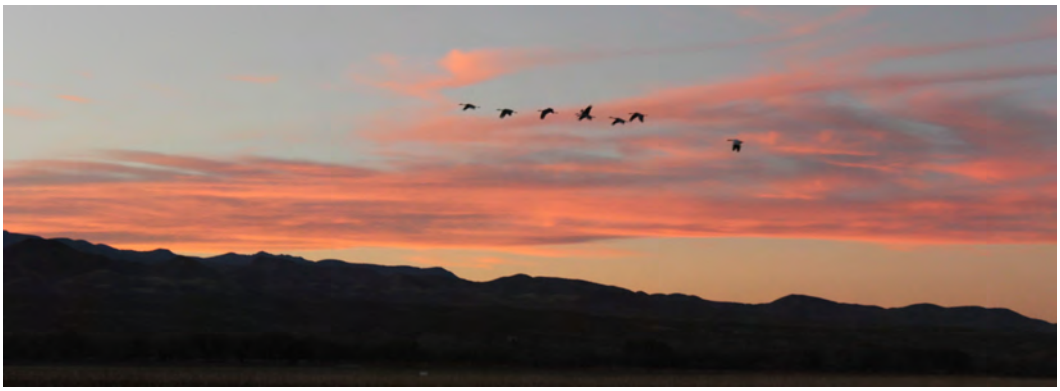
Springs ecology and restoration was highlighted at the November 9, 2015 Southern Wetlands Round-

Attendees at the Northern Wetlands Roundtable on March 26, 2015 at the Rotunda, Science and Technology Park UNM, Albuquerque, NM in recognition of Bill Zeedyk's pioneering work and contributions to wetland restoration and protection in New Mexico.

table conducted in Las Cruces. In addition, noted topics included a presentation and discussion of urban wetland restoration with rainwater harvesting in the face of a changing climate, and participation in the USFS Forest Plan revisions across the state.

Wetland Projects Completed in 2015.

Although many projects are nearing completion, no projects funded under CWA Section 104(b)(3) Wetlands Program Development Grants were completed in 2015.



Sunset on the Rio Grande at the at Bosque del Apache National Wildlife Refuge.

State Funded Restoration Activities- The River Stewardship Program

The goal of the River Stewardship Program is to fund projects that enhance the health of rivers by addressing the root causes of poor water quality and stream habitat. The 2014 New Mexico Legislature appropriated $2.3 million in capital outlay funds and the 2015 Special Session of the New Mexico Legislature appropriated $1.0 million to NMED for the River Stewardship Program. The River Stewardship Program builds on the success of past efforts with 319 CWA funding and prior state funding for watersheds, rivers and wetlands.

The objectives of the River Stewardship Program include:

- Enhancing the economic benefits of healthy river systems, such as improved opportunities to hunt, fish, float and view wildlife
- Restoring or maintaining the hydrology of streams and rivers to better handle overbank flows and reduce flooding downstream
- Providing match required to leverage federal Clean Water Act grants, ensuring that New Mexico continues to receive these funds.

River Stewardship Program projects are selected through a Request for Proposals (RFP) process that complies with state procurement rules. The RFP evaluation criteria ensure that projects are technically sound, community-based and stakeholder driven. The RFP evaluation criteria favor projects that improve water quality, enhance fish and wildlife habitat, support local economies, and that reduce downstream flood hazard. The RFP also identified statewide priority areas for the River Stewardship Program to include

1. Projects that address water quality and stream habitat impacts associated with fires in 2011, 2012, or 2013;
2. Projects that advance source water protection of public drinking water supplies that utilize surface water, and;
3. Projects that improve urban water quality and stream habitat.

For the 2014 funding appropriation, 12 projects with budgets totaling $2.3 million were selected through the RFP process. The projects described below are in progress and will be completed by June 30, 2018.

El Rito Creek Habitat Enhancement and Bank Stabilization Project

The City of Santa Rosa will improve in-stream fish habitat, stabilize creek banks, and remove invasive trees along a 0.35 mile stretch of El Rito Creek.

Gallinas Village River and Floodplain Restoration

The Hermit's Peak Watershed Alliance will implement this project, which entails significant instream restoration, creating side channel wetlands, rerouting floodwaters to a currently inaccessible floodplain, and building a flood water detention area

Aerial photo of the Gallinas Village floodplain and restoration site. Water from the Gallinas River (line of trees at center-left) will re-wet the large floodplain a ea on the lower right of photo.

Middle Jaramillo Creek Water Quality Improvement and Riparian Restoration Project

The WildEarth Guardians will improve water quality and riparian functionality in Jaramillo Creek, on the Valles Caldera National Preserve. Providing direct shade over the stream surface will moderate and reduce water temperatures, while constructed exclosures will protect the re-established and planted streambank vegetation from grazing by cattle and elk. This work should not only improve water quality but it will also

WildEarth Guardians and the Jemez Youth Conservation Corps crew planting willows on Middle Jaramillo Creek in the spring of 2014.

enhance fish habitat

Middle Percha Creek Silver Fire Rehabilitation Project

The Sierra SWCD will implement rehabilitation efforts on Middle Percha Creek within the burn scar of the Silver Fire of the summer of 2013.

Pecos River In-stream and Riparian Restoration

The Upper Pecos Watershed Association will perform stream geomorphology restoration to address post-Tres Lagunas Fire and flood impacts, increasing sinuosity and water depth, thereby reducing water temperature and improving fish habitat

Post-Fire Restoration of the Rito de los Frijoles at the Bandelier National Monument Visitors Center

Keystone Restoration Ecology will perform channel and floodplain restoration on the Rito de los Frijoles to improve stream function, stabilize the stream channel, create an accessible floodplain and increase habitat diversity with riparian plantings.

Red River Town Park Restoration Project

The Town of Red River will restore a half mile of the Red River in the heart of downtown. Objectives include measurably restoring the balance of erosion and sedimentation; improving the riparian corridor for terrestrial and avian species; increasing fish-holding capacity; and increasing recreational opportunities

Restoring Hydrologic Functioning to the Rito de los Indios, Valles Caldera National Preserve

Los Amigos de Valles Caldera will restore channel form and function, lower temperature, and reduce sediment on the Rito de los Indios and tributaries burned by the Las Conchas Fire in the Valles Caldera National Preserve.

Rio Grande Corridor at Buckman Phase II

Rio Grande Return will implement Phase II of the "Habitat Restoration and Specification Plan for the Rio Grande Corridor at Buckman." Eight acres of riparian area will be restored along 0.75 river miles.

San Juan River Restoration Project

The San Juan Soil and Water Conservation District (SWCD) will restore areas along the San Juan River below Navajo Dam by removing nonnative trees such as Russian olive and salt cedar, and restoring the river's riparian areas by planting willows, cottonwoods, and native grasses.

Track Fire Burn Area Perennial Stream Restoration Project

The City of Raton will rehabilitate Segerstrom Creek, a perennial stream located within the Track Fire Burn Area. The project goals are to restore the creek to its proper geomorphology and restore the floodplain while mitigating head cutting and the resulting adverse effects on the surrounding floodplain and to decrease sediment transport into Lake Maloya.

San Vicente Creek Urban Watershed Restoration Project

Stream Dynamics, Inc. will build water harvesting structures to treat and utilize stormwater runoff in Silver City.

Before (right) and after (left) photos of a completed stormwater harvesting basin at Noble Park in Silver City. Stormwater flows from the left through the curb cut into an infiltration basin. Excess water flows through the wall cut in the background to irrigate park vegetation.

Before and after photos of a completed stormwater harvesting basin at Noble Park in Silver City. Stormwater flows from the left through the curb cut into an infiltration basin. Excess water flows through the wall cut in the background to irrigate park vegetation.

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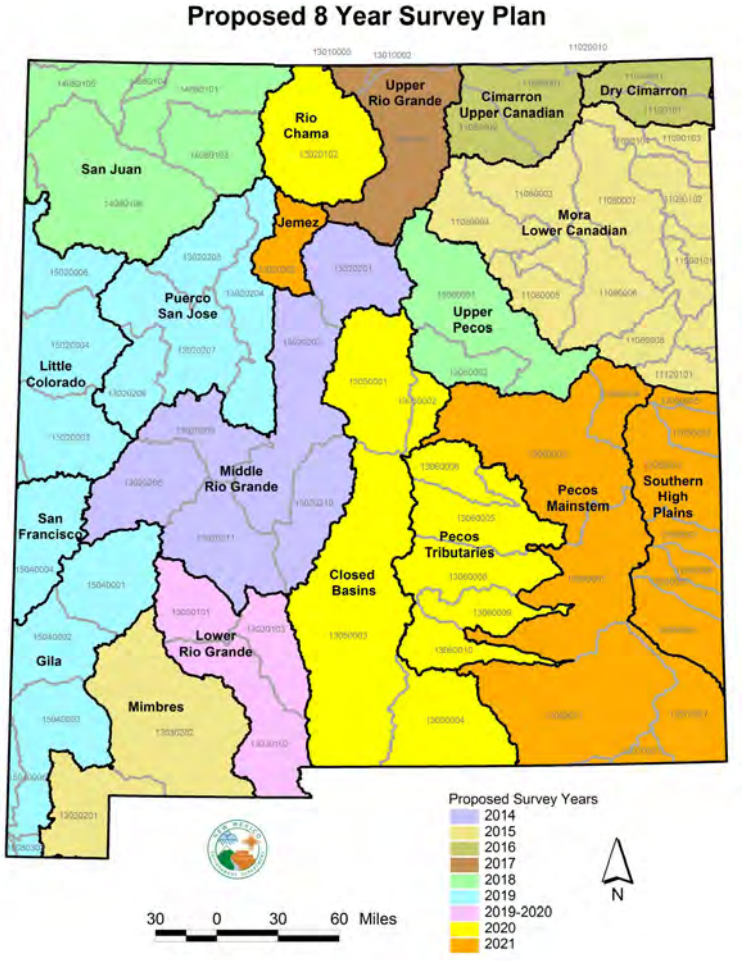
More information on the River Stewardship Program projects listed above (along with information on projects and activities supported with federal Section 319 funds) is available in the Grants Reporting and Tracking System (GRTS). Anyone can access much of the information in GRTS without a password by following instructions at: www.env.nm.gov/swqb/wps/GRTS. Look for projects with "RSP" in their titles. More general updates will be provided at: www.env.nm.gov/swqb/RiverStewards.

Other Water Quality Protection Programs

Monitoring, Assessment and Standards Program

Water Quality Surveys

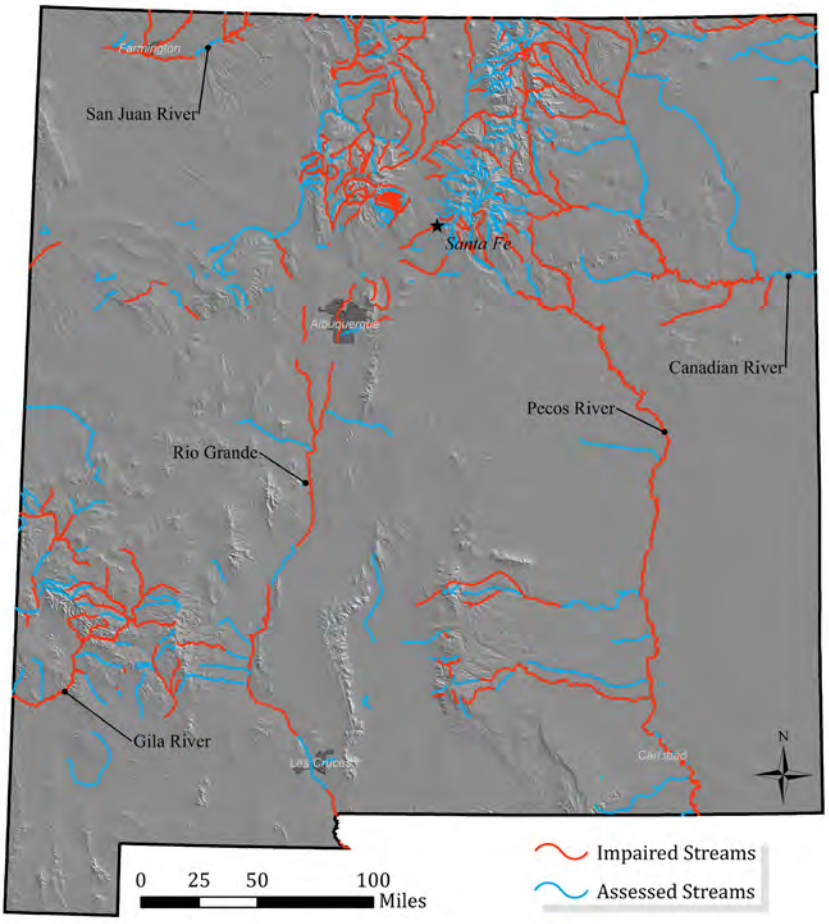
Similar to most states, the SWQB utilizes a targeted, rotational watershed approach to ambient water quality monitoring. Three primary water quality surveys and one supplemental survey were conducted in 2015 collecting water quality data from 127 monitoring locations within 82 stream assessment units and 10 lake assessment units covering 1,553 stream miles and 10,691 lake acres. The watersheds surveyed include the Dry Cimarron River (169 miles), the Cimarron and Upper Canadian (561 miles, 2,513 acres), the Mora and Lower Canadian (751 miles, 8,178 acres), and the Lower Rio Grande (72 river miles) as part of the Large Rivers supplemental investigation. These surveys are part of a multi-year effort, and the SWQB will continue to focus on these watersheds.



Clean Water Act §303(d)/§305(b) Integrated Report Update

As required by the CWA, every two years the state evaluates the data it has collected, as well as readily available water quality data, to determine if state water quality standards are met and associated designated uses are achieved. Those waters which exceed water quality standards are "impaired" for the associated use and are identified in th *State of New Mexico CWA §303(d)/§305(b) Integrated Report*.

According to the *State of New Mexico CWA §303(d)/§305(b) Integrated Report* (IR), nearly 4,170 out of 7,710 stream miles (54%) have identified impairments where water quality does not support the designated uses. Approximately 66,143 out of 94,415 (65%), categorized publically-owned lake, reservoir, or playa acres do not fully support designated uses. Using available data assessed against current designated, existing, or attainable uses utilizing established assessment protocols, the department has found that temperature, nutrient/eutrophication, and *E. coli* are the three most common causes of river and stream water quality impairments in New Mexico. The majority of surface water quality impairments identified in New Mexico are due to NPS pollution. Rangeland grazing, on-site treatment systems and loss of riparian habitat are the leading probable sources of impairment in New Mexico's rivers and streams. The three most common causes of water quality impairments in lakes and reservoirs are mercury in fish tissue, PCB in fish tissue, and temperature. The 2014-2016 IR and supporting documents are available at: https://www.env.nm.gov/swqb/303d-305b/2014-2016/index.html.



The state began the development of the 2016-2018 IR starting with the revision of SWQB's assessment protocols in May 2015 to improve designated use impairment determinations. The draft 2016-2018 IR is currently being written, and will be released for a 45-day public comment starting in February 2016. This IR focuses on data collected during the 2013 Jemez River, 2013 Lower Pecos River, and 2014 Middle Rio Grande (including tributaries) watershed water quality surveys.

Water Quality Standards Update -Triennial Review

The federal Clean Water Act (CWA) related regulations in 40 C.F.R. Part 131 and the provisions in the New Mexico Water Quality Act (Chapter 74, Article 6 NMSA 1978) require the State to develop, review, revise and adopt water quality standards (WQS) that protect public health or welfare, enhance the quality of water, and serve the purposes of the CWA. New Mexico's Standards for Interstate and Intrastate Surface Waters (20.6.4 NMAC) establish WQS that consist of designated uses for surface waters of the State, the water quality criteria necessary to protect the uses, and an antidegradation policy to protect the water quality.

While the WQS may be revised as needed, the CWA at 33 U.S.C. §1313(c)(1), and the water quality standards rules at 20.6.4.10(A) NMAC also require the State to initiate a comprehensive review and to update the WQS rules from time to time, or at least every three years, in a process known as the Triennial Review.

The SWQB began identifying priorities for the current Triennial Review in 2012 and initiated the 2013 Triennial Review with an informal scoping phase for public feedback during April and May of 2013 to identify priorities for potential changes to the WQS. Proposals for changes were developed into a discussion draft which was noticed for public review and comment during April and May of 2014.

Throughout the Triennial Review process, SWQB met and worked with groups when requested to discuss their concerns. The SWQB presented its 2013 Triennial Review proposals to the Water Quality Control Commission (WQCC) in public hearings held October 13-16, 2015 (Pleading Log Item 58). Approval of proposals by the WQCC is pending and the earliest date for a decision is anticipated in January 2016. Once approved by the WQCC, the proposals will be submitted to EPA for final approval under CWA Section 303(c). In accordance with federal regulations in 40 CFR 131.21, changes adopted by the WQCC for actions under the CWA, such as under CWA Sections 303(d), 305(b), 401, 402 or 404, shall not be implemented until EPA grants final approval

Proposals under consideration by the WQCC include:

- Segment-specific standards for aquatic life protections in the Mimbres and San Juan River basins
- A new temporary standards procedure in 20.6.4.10 NMAC.
- Updates to the piscicide provision in 20.6.4.16 NMAC for applications under the EPA permit program and for public input or hearing requests when applications are not covered under an EPA permit.
- Primary contact uses and criteria updates for nine segments based on CWA requirements and the most recent EPA recommendations.
- Listing of ephemeral waters under Section 20.6.4.97 NMAC pursuant to Subsection C of Section 20.6.4.15 NMAC.
- Clarifications of criteria applicability, segment identifications, updates to methods and corrections of grammatical errors.

During comment periods for both the scoping phase and public discussion draft, the SWQB received input from the U.S. Environmental Protection Agency (EPA), watershed/river conservation groups, municipalities, water districts, industrial/trade groups, private organizations and citizens. All timely comments received were compiled along with the SWQB's responses and filed as Exhibit 8 and Exhibit 9 in the Triennial

Review Pleading Log Item 20. The SWQB appreciates the public participation, comments and contributions received throughout the 2013 Triennial Review process.

Use Attainability Analyses and Aquatic Life Use Changes Proposed in the Triennial Review

The Use Attainability Analyses (UAA) is a regulatory tool established in the water quality standards (20.6.4.15 NMAC) in which a multi-faceted approach is used to evaluate the environmental and economic factors affecting the attainment of a use for a water body. The application of the UAA process is allowed under certain conditions as stipulated in the state's standards and in federal regulations (40 CFR 131.10(g)). The Bureau has subsequently developed another tool, the Hydrology Protocol (HP), a technical procedure in the SWQB's Water Quality Management Plan (WQMP) which is a required Clean Water Act document approved by the WQCC and by EPA. The HP may be used to distinguish between ephemeral, intermittent and perennial streams and rivers in New Mexico. It also generates documentation of the attainable aquatic life uses supported by those waters as a result of the flow regime. The UAA process alone or in combination with the HP has been applied to support aquatic life use refinements and revisions to the WQS. Such refinements as allowed for under the CWA and the WQS are important because they help assure that appropriate water quality standards are applied to a waterbody.

Several UAA proposals were developed during the 2013 Triennial Review and presented to the WQCC in the public hearings held October 13-16, 2015. Many of these were based on the HP and are the basis for listing ephemeral waters under Section 20.6.4.97 NMAC. The HP-based UAA proposals presented included five drainages on Chino Mines property and four ephemeral streams in southern New Mexico (Aqua Chiquita from Rio Peñasco to McEwan Canyon, Grindstone Canyon from Grindstone Reservoir to its headwaters, San Andres Canyon and San Vicente Arroyo from Mimbres River to Maude's Canyon. Additionally, 20 stream segments with similar characteristics in various locations across the state were proposed for adoption into the standards as ephemeral waters.

The SWQB also presented several non-HP UAA proposals to support changes to aquatic life uses and segment-specific temperature criteria for two segments on the Animas River and for three segments on the Mimbres River. All information about the Triennial Review including the UAA proposals and associated pleading log filings and exhibits are available online at
http://www.nmenv.state.nm.us/swqb/Standards/TR2013/

Other Standards Updates

Preliminary investigations of aquatic life uses and temperature criteria for UAAs in the Gila River and Mimbres closed basins initiated during the summer of 2013 are in progress. In addition to this ongoing UAA work, the SWQB Monitoring, Assessment and Standards Section records UAA suggestions in a tracking spreadsheet. This information is also considered during every CWA Section 305(b)/303(d) listing cycle. Data needs for standards changes and the availability of critical data are evaluated and if needed, more collections will be scheduled. The data for candidate UAA work is compiled and used in the development of documents to support recommended revisions. Priorities for standards revisions are subject to change, but documentation to support changes are being prepared for several water bodies over the next two years, primarily for Dog Canyon, Gila River, Navajo River, Tecolote Creek and Rio Penasco. Depending on the timing, petitions for

standards revisions based on UAAs are generally part of a Triennial Review. However, hearings for interim standards revisions (i.e., revisions between Triennial Reviews) are conducted as necessary, as determined by the SWQB.

Once the WQCC decides on the proposals submitted in the 2013 Triennial Review, the Standards, Planning and Reporting Team will be busy finalizin SWQB proposals, including 29 UAAs, for EPA's final approval under CWA Section 303 (c).

Visit the NMED Surface Water Quality Bureau Water Quality Standards website for updates at: http://www.nmenv.state.nm.us/swqb/Standards

TMDL Update

In 2015, the SWQB developed nine TMDLs for waterbodies in the Sacramento Mountains and the Mora River watersheds. The SWQB received WQCC approval of the Mora River nutrient TMDL update in June and EPA approval in July. Similarly, the SWQB received WQCC approval for the E.coli and turbidity Sacramento Mountains watershed TMDLs in August and from EPA in September. The SWQB developed TMDLs for the Rio Puerco watershed and for Bluewater Reservoir and will release both for public comment in early 2016. The SWQB plans to develop TMDL documents for the Jemez, Lower Pecos, and Santa Fe River watersheds in 2016 as well as to release the updated plant nutrient TMDLs for the Sacramento Mountains watershed. The TMDL program submitted the final draft of the Prioritization Framework and Long Term Vision to EPA in July.

View of the Rio Grande Gorge in the Rio Grande del Norte National Monument.

Ground Water Quality Bureau

Permitting and Compliance Assistance for Large Capacity Septic Tank/Leachfield

Under New Mexico's Nonpoint Source Management Plan (Objective 5 – Protect Groundwater Resources), the Ground Water Quality Bureau's (GWQB) is assigned to protect ground water quality from NPS pollution attributed to large capacity septic tank/leachfield systems (septage systems) and septage disposal facilities, sludge disposal facilities, and landfarms (surface disposal facilities). As of September 15, 2014, only facilities discharging greater than 5,000 gallons per day of domestic wastewater are required to have a Ground Water Discharge Permit (prior to that time it was 2,000 gallons per day). Additionally, facilities that surface apply septage, sludge, food related grease trap waste, grit trap waste, oil/water separator waste, or hydrocarbon contaminated soils for disposal or remediation are required to have a Ground Water Discharge Permit with the GWQB. Technical personnel of the GWQB review Discharge Permit applications, develop Ground Water Discharge Permits, perform compliance assistance activities, and enforce Discharge Permit requirements for large capacity septic tank/leachfield systems. Each discharge permit issued by the GWQB includes conditions and requirements intended preserve, protect, and improve New Mexico's groundwater quality for present and future generations.

Throughout the permitting and compliance assistance activities, GWQB staff provides outreach material, assistance forms and spreadsheets along with the Discharge Permits that are helpful to permitees who are required to complete and submit monitoring reports. In addition GWQB staff performs routine site inspections to inspect the septic tank/leachfield system(s) and offer face-to-face communication with the permittee. The GWQB permitting and compliance activities for large capacity septic systems and surface disposal facilities improve the protection of Ground Water from these non-point sources that discharge nitrogen compounds, metals, and organic compounds. The GWQB issued 17 permits in 2015 under the program, and includes new, renewed and modified discha ge permits..

New Mexico Water Fair and Water-Quality Outreach Program

Residents of New Mexico primarily rely on ground water as its drinking water supply 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 non-point source pollution, predominantly household septic tank/leachfield systems, cesspools and inappropriate agricultural practices. However, the extent and severity of potential contamination of drinking water supplies in rural communities of New Mexico is largely unknown. Most homeowners do not test their domestic well water for contaminants, because they are unaware of potential contamination or find the cost associated with water testing unmanageable.

To identify possible non-point source water quality problems in rural New Mexico communities, the GWQB conducts free testing of domestic wells ("water fairs") throughout the state for over 10 years. However, a more comprehensive Water Fair Program was needed to reach more domestic well owners and to educate them about water quality issues and how they can help preserve or improve water quality in their communities. During the last several years, these activities have been carried out as an EPA-funded Water Fair Program. The Water Fair Program reaches domestic well owners and educates them about water qual-

Demonstration of ground water simulator (ant farm), Pecos, September 30, 2015

ity issues and how they can help preserve or improve water quality in their communities. These activities have been carried out as an EPA-funded Water Fair Program. This program has proven to be very popular with the general public, providing a visible and highly appreciated service with valuable information on ground water quality in rural communities. NMED receives numerous requests for water fairs from community organizations, NMED Field Offices, other State, County and City agencies, and private citizens. The Water Fair Program continues to be an important tool for identifying possible non-point source water quality problems.

Water quality outreach events include the demonstration of a ground water model/stimulation (ant farm). The model is a hands-on visual aid that takes difficult ground water concepts and makes them understandable for all ages. Ground water demonstrations are often conducted in schools, community centers or state fair exhibits.

Many families in rural New Mexico have become more knowledgeable about water quality, potential for contamination, and pollution prevention due to the Water Fair Program. In 2015, the GWQB conducted 12 water fairs, receiving a total of 622 water samples. This is a 30 percent increase in water fairs and the number of water samples submitted under the 2014 program. The amount of water fairs conducted and the level of public participation in 2015 proved to be a success.

To learn more about the Water Fair Program visit : http://www.nmenv.state.nm.us/gwb/NMED-GWQB-WaterFairs.htm or to request a water fair in your community contact Kathryn Hayden at (505) 827-1046.

GWQB analyzing samples at the Clovis Water Fair, July 24, 2015

CWA Section 401 Certification Activities

Staff continue to process water quality certifications under Section 401 of the federal CWA.The purpose of the Section 401 water quality certification is to ensure that Section 404 "Discharge of Dredge or Fill" permits issued or authorized by the U.S. Army Corps of Engineers (the Corps) comply with state water quality standards.

On February 20, 2015, the Corps released for public notice the intent to issue a Letter of Permission (LOP) procedure to expedite Section 404 authorization for work within the state of New Mexico to conduct maintenance activities at certain existing structures and facilities owned by the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA), Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA), and Bernalillo County (BernCo). Through this public notice the Corps also made potential additional permittees who may qualify to use the LOP procedure aware of it. Prospective permittees who would like to use the LOP procedure must be a government or quasi-government organization with an operations and maintenance program for facilities or structures located in an urban area that they are responsible for or own. The purpose of this procedure is to expedite Section 404 authorization for maintenance activities at certain existing structures/facilities conducted by government organizations when they would not pose substantial adverse individual or cumulative impacts on the aquatic environment. The Corps issued the Final LOP on June 23, 2015.

Crossvanes and willows installed along the Santa Fe River under NWP 27 for Aquatic Habitat Restoration, Establishment, and Enhancement Activities.

CWA Section 401 Water Quality Certification Activities 2015	
Confirmations	
NWP Certifications Confirmed	63
Actions in Progress	22
Total	85
Other Actions	
Emergency RGP	2
Sediment & Debris Removal RGP	4
Letter of Permission RGP	1
Individual Permits Certified	1
Enforcement Actions	2
Total	11

Since April 2012, the SWQB has issued informal confirmation of NWP activities, and formal 401 certification is generally required only for 404 individual permits. The SWQB issued one certification of individual permits in 2015, after requesting and considering public comments.

Constructions Programs Bureau CWA (State Revolving Fund)

The New Mexico Clean Water State Revolving Fund (CWSRF) is a program created and funded through the Clean Water Act. The revolving loan fund assists New Mexico communities by providing low interest subsidized financing of wastewater and NPS pollution mitigation projects that protect or improve water quality. The CWSRF program is administered by NMED's Construction Programs Bureau (CPB).

In May 2013, CPB signed a CWSRF agreement with the Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA) for an innovative stormwater management project. The Lower Montoyas Water Quality Feature will help remove sediment which has historically increased the risk of flooding at the Corrales Road crossing of the Harvey Jones Channel and provide an attractive open space area for the local community. This project incorporates a number of "green build" and Low Impact Development (LID) concepts to provide a functional flood control facility that enhances the environment. The project will keep the arroyo channel in a natural state with minimal traditional hardened elements; this will allow natural infiltration of storm flows to assist in recharging the aquifer, promote the growth of local native vegetation and preserve habitat for local wildlife. Plants will also be added as an integral part of water quality and grade control structures to add a "living screen" to assist in removing debris from storm water before it enters the hard lined Harvey Jones Channel. These plants will be irrigated with reclaimed wastewater to ensure a robust plant colony is established and avoid the use of precious potable water. Finally, completion of this project will include the development of pedestrian trails within the property area outside of the arroyo to provide the local community with an open space amenity.

Clean Water
State Revolving Fund

The Arroyo de los Montoyas Water Quality Feature utilize's EPA green infrastructure standards by restoring hydrology and infiltration through the design and implementation of LID techniques including low-water species of plants and site grading to reduce velocity and enhance infiltration of storm water. One of the phytoremediation techniques uses the macro properties of the plants to capture and filter sediment, floatables and debris from stormwater and to facilitate infiltration into the permeable substrate. The project is also expected to reduce *E. coli* loading to the Rio Grande. There is also a robust colony of bank swallows within the project area and flow deflectors were installed to protect their nesting habitat. The project was in design in 2014, with construction planned for 2015. Although early summer monsoon rains originally delayed the start of project implementation, the project was 98% complete by the close of 2015.

Newly installed rocks and willows designed to filter sediment, and collect la ge debris to reduce pollutant loading to the Rio Grande.

New Mexico Mining Act Activities

The New Mexico Mining Act (19 NMAC 10) obligates 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 application or modificati ns 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 concur with proposed permit changes. Comment periods are typically twenty days from receipt of an application.

NMED has an informal Mining-Act team that includes representatives from SWQB, GWQB, and the Air Quality Bureau to review mining applications and otherwise support the work of the New Mexico Mining and Minerals Division (MMD) of EMNRD. This work involves reviewing applications, site inspections, hydrologic interpretations, and evaluating water quality standards againsmt proposed mining activities. The SWQB discusses Best Management Practices and other mitigation with the applicant in an effort to negotiate 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. Beyond permitting actions, the team also participates in meetings and review documents in support of the work the EMNRD, the USACE, federal land managers, and others.

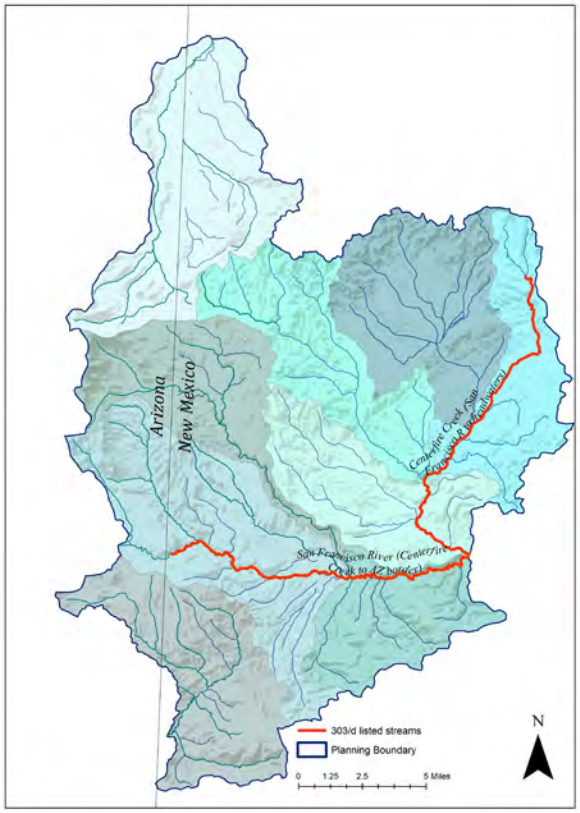
In 2015, staff from the SWQB reviewed numerous mining notices, applications, close-out plans, operations plans, monitoring plans, reclamation plans and requests for release of financial assurance or bonding money held by the state as a guarantee for mine-site reclamation. The SWQB also reviewed permit applications and associated documents for exploratory drilling programs, proposed new mining activities, and modification of existing mining activities. The following is a summary example of mining permit activites that occurred in 2015:

- Final review of the proposed haul road linking Cobre Mine to the Chino ore processing facility which will carry ore from Hanover Mountain to the Chino mill.
- Inspecting several mines in the historic Steeple Rock Mining District near Lordsburg for a proposed detention pond to confine pumped mine-water, an adjacent haul road, and post-reclamation close-out on the Center mine.
- Permitting several placer mining operations in both southern and northern New Mexico.
- Providing technical assistance to enforce federal environmental laws associated with mining activities.

The Escudilla East Planning Project

Partnerships for Watershed Based Planning

In 2015, the SWQB began an ambitious planning project with the USFS in southern New Mexico and eastern Arizona. The "Escudilla East" planning project is named for the 10,912 ft. Escudilla Mountain in eastern Arizona from which two major watersheds form—the South Fork of the Little Colorado and the San Francisco Rivers. The planning area encompasses 262,706 acres in two national forests—the Gila and Apache-Sitgreaves, two EPA regions—six and nine, and two states—Arizona and New Mexico. It also includes 16,764 acres of non-National Forest lands which are a combination of BLM, State and private lands. In New Mexico, several 303/d listed streams are included in the planning area.



The Escudilla East Project Planning Area in southwest New Mexico and eastern Arizona.

The San Francisco River is the major surface water draining the southern flank of Escudilla Mountain in Arizona and flowing east into New Mexico. In Arizona, but near the New Mexico border, the river is impounded by the Luna Reservoir for downstream irrigation. The state of Arizona has listed Luna Reservoir as impaired due to excess plant nutrients. In New Mexico, the river is impaired for both temperature and benthic macroinvertebrates from the Arizona border to its confluence with Centerfire Creek. Centerfire Creek is a relatively small perennial tributary with a High Quality Coldwater Aquatic Life designation. Six impairments are currently listed for Centerfire Creek including: temperature, nutrients, sediment/siltation, turbidity, specific conductance, and *E. coli*. The SWQB is partnering with the USFS to engage stakeholders, determine sources of impairments, develop projects to improve water quality and identify potential funding sources to complete the projects.

The Gila National Forest is taking the lead on the document, but SWQB staff in the Silver City field office will integrate EPA's 9 Watershed Based Planning elements into the Forest's *Escudilla East Watershed Restoration Action Plan*. By creating a hybrid plan that incorporates both agencies' needs there will be greater stakeholder outreach and involvement, NEPA clearance for planned projects will be already facilitated and both agencies will work together to develop water quality improvement projects that will be ready for funding and implementation. During 2016, the SWQB will be spending time in the field determining pollution sources on both Centerfire Creek and the San Francisco River, and assessing other perennial waters in the planning area that may be contributing to water quality impairments.

Additional Management Practices by Non-NMED Agencies

The following land management agencies implemented various projects and best managment 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 stability, excessive nutrients, and excessive water temperature.

Bureau of Land Management Projects (BLM)

Watershed/HUC No.	Project Description	Water Quality Benefits
Caballo (13030101) Percha Creek	Cattle Exclosure Fence Maintenance and Reconstruction	• Reduce impacts of cattle within the perennial stream and riparian area • Improve riparian vegetation • Improve aquatic and wildlife habitat
Tularosa Valley (13050003) Tularosa Creek	Installed 2 stream gradient stabilization structures	• Stabilize stream bed and banks and reduce channel incision • Reconnect stream flows with floodplain • Improve aquatic and riparian habitat
Upper San Juan (14080101) La Manga Watershed	Seed and lop/scatter 35 acres of pinyon/juniper encroachment	• Increase understory • Decrease erosion • Increase soil stability
Upper San Juan (14080101) Middle Mesa	520 acres of cheatgrass treatment	• Decrease invasives • Increase soil stability • Decrease erosion
Upper San Juan (14080101) San Juan River	100 acres of Russian olive/salt cedar treatment	• Decrease invasives • Increase soil stability Decrease erosion
Upper San Juan (14080101) Middle San Juan (14080105) Blanco Canyon (14080103)	4100 acres of aerial sagebrush treatment	• Promotes native perennial grasses • Decrease erosion • Increase soil stability
Rio Puerco (13020204)	Sagebrush control chemical treatment (2300 acres). Elk Springs ponderosa / juniper thinning (550 acres).	• Increase herbaceous ground cover. • Decrease erosion.

BLM (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Rio Bonito (13060008) 1(30600080205)	Prescribed burn on 314 acres pinyon-juniper and giant sacaton.	• Decrease risk of extreme wildfire and associated erosion. • Increase herbaceous ground cover
Rio Bonito (13060008) (130600080207)	Prescribed burn on 370 acres pinyon-juniper.	• Decrease risk of extreme wildfire and associated erosion. • Increase herbaceous ground cover
Rio Bonito (13060008) (130600080208)	Chemical treatment on 44 acres salt cedar, Russian Olive, and Siberian Elm trees.	• Protection and restoration of riparian vegetation to reduce erosion. • Increase shade to reduce stream temperature. • Stabilize stream banks to reduce erosion. • Increase bank storage. • Increase water yield • improvement of water quality • Increase herbaceous ground cover
Rio Bonito (13060008) (130600080208)	Replaced failing irrigation diversion head gate. Replaced 900 feet of open dirt irrigation ditch with buried pipeline. Bank stabilization with erosion control structures. Seeded 1 acre of surface disturbance.	• Stabilize stream to reduce erosion. • Increase herbaceous ground cover
Upper Rio Grande (13020101)	1.5 miles of fence construction in the Wismuth Crater.	• Increase herbaceous ground cover to reduce soil exposed to water erosion, increase water infiltration and reduce vegetation loss and soil damage from poor cattle distribution.
Upper Rio Grande (13020101)	300 acres thinned in piñon-juniper woodland (Guadalupe Mtn., East Cerro Montoso)	• Increase herbaceous ground cover to reduce soil exposed to water erosion and increase water infiltration.
Upper Rio Grande (13020101)	200 acres sagebrush removal (mechanical)	• Increase herbaceous ground cover to reduce soil exposed to water erosion and increase water infiltration.
Upper Rio Grande (13020101)	2 tire troughs (1300 gallons), total storage 2600 gallons	• Reduce vegetation loss and soil damage from poor cattle distribution.

BLM (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Upper Rio Grande (13020101)	Five sites on the Rio Grande and one site each in the Rio Pueblo de Taos, Rio Hondo, Red River, and the Rio Embudo were monitored for temperature, pH, turbidity, conductivity, total dissolved solids, dissolved oxygen, phosphorus, and salinity every other month.	• Monitor water quality is important to determine if there is an increase in non-point source pollution in our waterways.
Upper Rio Grande (13020101)	Themographs were deployment on the Agua Caliente, Rio Embudo and the Rio Grande at the state line, chiflo trail, John Dunn Bridge, Taos Junction gage station, and Embudo gage station.	• Thermographs provide important data every hour to monitor non-point pollution changes in our waterways
Upper Rio Grande (13020101)	Inundated playas and earthen tanks were monitored for temperature, pH, turbidity, conductivity, total dissolved solids, dissolved oxygen, phosphorus, and salinity. 16 playas and earthen tanks in the spring and 15 in the fall.	• Water quality measurements are important in determining aquatic health of the Taos Plateau.
Upper Rio Grande (13020101)	200 acres prescribed burn on North Cerro Montoso	• Increase herbaceous ground cover to reduce soil exposed to water erosion and increase water infiltration.
Upper Rio Grande (13020101)	805 acres burned (Perdida Fire)	• Increase herbaceous ground cover to reduce soil exposed to water erosion and increase water infiltration.
Upper Rio Grande (13020201)	La Puebla trailhead re-slope and re-contour 2 acres	• Minimize soil erosion and runoff.
Upper Rio Grande (13020101)	Overlook trail re-slope and re-contour 1 acre	• Minimize soil erosion and runoff.
Upper Rio Grande (Santa Cruz Lake) (13020101)	Santa Cruz Lake Reconstruction 11 acres	• Minimize soil erosion and runoff.
Rio Chama (13020102)	Conversion of two open pits to underground storage tanks and 1 tire trough.	• Increase herbaceous ground cover to reduce soil exposed to water erosion, and reduce vegetation loss and soil damage from poor cattle distribution.

BLM (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Rio Chama (13020102)	One thermograph was deployed at the USGS gage above Abiquiu lake and water quality parameters were collected during amphibian surveys at several sites along the Rio Chama.	• Monitor water quality is important to determine if there is an increase in non-point source pollution in our waterways. Thermographs provide important data every hour to monitor non-point pollution changes in our waterways
North Plains (13020206) Cebolla Creek	Ponderosa / juniper thinning (603 acres). Rock check dam construction (6 check dams).	• Increase herbaceous ground cover. • Decrease erosion. • Increase bank storage. • Stabilize stream banks to reduce erosion.

New Mexico State Forestry Division

Watershed	Project Description	Water Quality Benefits
Plains of St. Agustin; New Mexico (Durfee Canyon)	Timber Harvests (78 acres) Ponderosa pine. Waterbarring of access roads and skid trails, lop & scattering of slash and seeding of critical areas.	• Decrease erosion from road prism. • Increase herbaceous ground cover. • Increase water infiltration
Plains of St. Agustin; New Mexico (Nester Draw)	Timber Harvests (4,000 acres) Ponderosa pine and Mixed Conifer forests Waterbarring of access roads and skid trails, lop & scattering of slash and seeding of critical areas.	• Decrease erosion from road prism. • Increase herbaceous ground cover. • Increase water infiltration
Little Colorado Headwaters; New Mexico, Arizona (Coyote Creek)	Timber Harvests (336 acres) Ponderosa pine and Mixed Conifer forests Waterbarring of access roads and skid trails, lop & scattering of slash and seeding of critical areas.	• Decrease erosion from road prism. • Increase herbaceous ground cover. • Increase water infiltration
Cimarron; New Mexico (Rayado Creek)	Timber Harvests (140 acres) Ponderosa pine and Mixed Conifer forests Waterbarring of access roads and skid trails, lop & scattering of slash and seeding of critical areas.	• Decrease erosion from road prism. • Increase herbaceous ground cover. • Increase water infiltration

New Mexico State Forestry Division (continued)

Watershed	Project Description	Water Quality Benefits
Plains of St. Agustin; New Mexico (Durfee Canyon)	Timber Harvests (78 acres) Ponderosa pine. Waterbarring of access roads and skid trails, lop & scattering of slash and seeding of critical areas.	• Decrease erosion from road prism. • Increase herbaceous ground cover. • Increase water infiltration
Plains of St. Agustin; New Mexico (Nester Draw)	Timber Harvests (4,000 acres) Ponderosa pine and Mixed Conifer forests Waterbarring of access roads and skid trails, lop & scattering of slash and seeding of critical areas.	• Decrease erosion from road prism. • Increase herbaceous ground cover. • Increase water infiltration
Little Colorado Headwaters; New Mexico, Arizona (Coyote Creek)	Timber Harvests (336 acres) Ponderosa pine and Mixed Conifer forests Waterbarring of access roads and skid trails, lop & scattering of slash and seeding of critical areas.	• Decrease erosion from road prism. • Increase herbaceous ground cover. • Increase water infiltration
Cimarron; New Mexico (Rayado Creek)	Timber Harvests (140 acres) Ponderosa pine and Mixed Conifer forests Waterbarring of access roads and skid trails, lop & scattering of slash and seeding of critical areas.	• Decrease erosion from road prism. • Increase herbaceous ground cover. • Increase water infiltration
Rio Grande-Santa Fe (Santa Fe River)	Ponderosa, pinon and juniper thinning, piling (30 acres)	• Increase herbaceous ground cover. • Decrease erosion. • Decrease risk of high intensity wildfire. • Increase forest health and resiliency. • Increase water infiltration
Upper Rio Grande; CO-NM (Pojoaque Creek)	Ponderosa, mixed conifer, thinning, pile burning, mastication (41.8 acres)	• Increase herbaceous ground cover. • Decrease erosion. • Decrease risk of high intensity wildfire. • Increase forest health and resiliency. • Increase water infiltration

New Mexico State Forestry Division (continued)

Watershed	Project Description	Water Quality Benefits
Tularosa Valley (Tularosa Creek) (Sheet Camp Draw)	Ponderosa, pinon and juniper thinning, chipping (432.6 acres)	• Increase herbaceous ground cover. • Decrease erosion. • Decrease risk of high intensity wildfire. • Increase forest health and resiliency. • Increase water infiltration
Western Estancia (Arroyo de Manzano)	Ponderosa, pinon and juniper thinning, chipping, piling (29.8 acres)	• Increase herbaceous ground cover. • Decrease erosion. • Decrease risk of high intensity wildfire. • Increase forest health and resiliency. • Increase water infiltration
San Francisco; AZ-NM (Outlet Tularosa River)	Ponderosa pine thinning, mastication (624.9 acres)	• Increase herbaceous ground cover. • Decrease erosion. • Decrease risk of high intensity wildfire. • Increase forest health and resiliency. • Increase water infiltration
Animas; CO-NM (City of Farmington-Animas River) (Animas River)	Salt Cedar and Russian Olive removal (271.5 acres)	• Decrease sheet flow and erosion • Increase water yield • Increase herbaceous ground cover • Decrease risk of high intensity wildfire
Rio San Jose (Bluewater Creek)	Pinon and juniper thinning, mastication, lop and scatter (294.9 acres)	• Increase herbaceous ground cover. • Decrease erosion. • Decrease risk of high intensity wildfire. • Increase forest health and resiliency. • Increase water infiltration

New Mexico State Forestry Division (continued)

Watershed	Project Description	Water Quality Benefits
Plains of San Augustin (Patterson Lake)	Ponderosa, pinon and juniper Mastication(627.5 acres)	• Increase herbaceous ground cover. • Decrease erosion. • Decrease risk of high intensity wildfire. • Increase forest health and resiliency. • Increase water infiltration
Rio Puerco (La Canada de la Lena-Rio Puerco)	Ponderosa thinning, piling (240.6 acres)	• Increase herbaceous ground cover. • Decrease erosion. • Decrease risk of high intensity wildfire. • Increase forest health and resiliency. • Increase water infiltration
Rio Penasco (Upper Rio Penasco)	Pinon-juniper, mixed conifer thinning (20.8 acres)	• Increase herbaceous ground cover. • Decrease erosion. • Decrease risk of high intensity wildfire. • Increase forest health and resiliency. • Increase water infiltration
Mora (Coyote Creek)	Ponderosa pine thinning, piling (224.2 acres)	• Increase herbaceous ground cover. • Decrease erosion. • Decrease risk of high intensity wildfire. • Increase forest health and resiliency. • Increase water infiltration
Pecos Headwaters (Headwaters Gallinas River – Tecolote Creek)	Ponderosa pine thinning, chipping (128 acres)	• Increase herbaceous ground cover. • Decrease erosion. • Decrease risk of high intensity wildfire. • Increase forest health and resiliency. • Increase water infiltration

New Mexico State Forestry Division (continued)

Watershed	Project Description	Water Quality Benefits
Mimbres (Headwaters San Vincente Draw)	Pinon-juniper, ponderosa thinning, chipping (91.9 acres)	• Increase herbaceous ground cover. • Decrease erosion. • Decrease risk of high intensity wildfire. • Increase forest health and resiliency. • Increase water infiltration
Carrizo Wash; AZ-NM (Upper Largo Creek)	Pinon-juniper, ponderosa thinning, chipping (95 acres)	• Increase herbaceous ground cover. • Decrease erosion. • Decrease risk of high intensity wildfire. • Increase forest health and resiliency. • Increase water infiltration
Plains of St. Agustin-Carrizo Wash; AZ-NM (Nester Draw-Rito Creek)	Pinon-juniper, ponderosa thinning, chipping (126 acres)	• Increase herbaceous ground cover. • Decrease erosion. • Decrease risk of high intensity wildfire. • Increase forest health and resiliency. • Increase water infiltration
Plains of St. Agustin (Sugar Loaf Canyon)	Ponderosa pine thinning, piling, burning (312 acres)	• Increase herbaceous ground cover. • Decrease erosion. • Decrease risk of high intensity wildfire. • Increase forest health and resiliency. • Increase water infiltration
Rio Grande – Albuquerque (Arroyo del la Manzana – Rio Grande)	Salt Cedar and Russian Olive removal (32.4 acres)	• Decrease sheet flow and erosion • Increase water yield • Increase herbaceous ground cover • Decrease risk of high intensity wildfire
Rio Grande – Albuquerque (Canon Monte Largo – Rio Grande)	Salt Cedar and Russian Olive removal, chipping (20.9 acres)	• Decrease sheet flow and erosion • Increase water yield • Increase herbaceous ground cover • Decrease risk of high intensity wildfire

US Forest Service Projects

Carson National Forest

Watershed/HUC No.	Project Description	Water Quality Benefits
Rio Chama 13020102 (Outlet Rio Cebolla - 130201020503)	Canjilon FY 15 Chemical Sagebrush Treatment (245 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Ojito Canyon-Abiquiu Reservoir - 130201021002)	Canjilon FY 15 Chemical Sagebrush Treatment (100 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Cedar Grove Cemetary-Arroyo Blanco - 130201020501)	FY 15 US 84 Corridor Thinning/Lop & Scatter Contract (475 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Headwaters Rio Cebolla - 130201020502)	FY 15 US 84 Corridor Thinning/Lop & Scatter Contract (275 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Montoya Canyon-Canjilon Creek - 130201020901)	Canjilon WIP NMSF Unit 1 FY15 Mastication (59 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Montoya Canyon-Canjilon Creek – 130201020901)	Canjilon WUI M16 and M19 Thinning/Lop & Scatter Contract (233 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Lopez Canyon-Canjilon Creek - 130201020902)	Canjilon WIP NMSF Unit 2 FY15 Thinning/Piling (98 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Lopez Canyon-Canjilon Creek - 130201020902)	Canjilon WIP NMSF Unit 3 FY15 Thinning/Lop & Scatter (14 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.

Carson National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Rio Chama 13020102 (Lopez Canyon-Canjilon Creek - 130201020902)	RMYC SRS Thinning/Lop & Scatter FY15 (14 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Lopez Canyon-Canjilon Creek - 130201020902)	Cuchilla Big Game Enhancement Thinning/Lop & Scatter FY 15 (134 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Martinez Canyon-Canjilon Creek 130201020904)	Cuchilla Big Game Enhancement Thinning/Lop & Scatter FY15 (70 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Martinez Canyon-Canjilon Creek 130201020904)	Canjilon WUI LMJD18 Thinning/Lop & Scatter Contract (88 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Martinez Canyon-Canjilon Creek 130201020904)	CCC CFRP Thinning/Lop & Scatter FY15 (81 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Martinez Canyon-Canjilon Creek 130201020904)	La Alba CFRP Thinning/Piling FY15 (54 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Outlet El Rito - 130201021103)	El Rito/Lobato Mechanical Sagebrush Treatment FY15 (131 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Rio Tusas-Rio Vallecitos - 130201021404)	Capture/Removal of 19 Wild Horses from Jarita Wild Horse Territory	• Increase herbaceous ground cover • Decrease Soil Erosion • Improve plant species composition/productivity
Rio Chama 13020102 (Rio Tusas-Rio Vallecitos - 130201021404)	Alamosa Broadcast Prescribed Burn FY 15 (4,000 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.

Carson National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Rio Chama 13020102 (Rio Tusas-Rio Vallecitos - 130201021404)	Alamosa Prescribed Burn Unit Line Prep Thinning/Lop &Scatter FY15 (85 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Canada de Agua-Rio Vallecitos 130201021403)	Alamosa Broadcast Prescribed Burn FY 15 (546 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Canada de Agua-Rio Vallecitos - 130201021403)	Alamosa Prescribed Burn Unit Line Prep Thinning/Lop &Scatter FY15 (40 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Canada de Agua-Rio Vallecitos - 130201021403)	Caballos KV Thinning/Lop & Scatter Contract FY15 (140 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Canada de Agua-Rio Vallecitos - 130201021403)	Agua/Caballos Green Fuelwood Commercial Thinning FY15 (102 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Canada de Agua-Rio Vallecitos - 130201021403)	Alfonso Chacon CFRP FY15 Thinning/Lop & Scatter (25 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Canada Alamosa-Rio Vallecitos - 130201021402)	Alfonso Chacon CFRP FY15 Thinning/Lop & Scatter (60 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Canada Alamosa-Rio Vallecitos - 130201021402)	Ensenada RTRT Thinning/Lop & Scatter FY15 (60 Acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Canada del Agua-Rio Tusas - 130201021302)	Ensenada RTRT Thinning/Lop & Scatter FY15 (120 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.

Carson National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Upper San Juan 14080101 (Vaqueros Canyon-La Jara Creek - 140801010904)	Oil and Gas Drill pad reclamation (3) Road closure (1.1 miles)	• Decrease erosion • Improve road drainage
Upper San Juan 14080101	Road maintenance (130 miles)	• Decrease erosion • Improve road drainage
Blanco Canyon 14080103 (Martinez Canyon-Carrizo Canyon - 140801030405) (Ciruelas Canyon-Arroyo Companero - 140801030403)	Oil and Gas Drill pad reclamation (3) Road closure (0.1 miles) Sage brush mowing and reseeding (816 acres) Install sediment fences (3) Install Riparian fences (3) Install Sediment trap (1)	• Decrease erosion • Improve road drainage • Decrease erosion • Increase herbaceous ground cover • Stabilize stream banks to reduce erosion. • Stabilize stream banks to reduce erosion. • Improve riparian veg. to reduce erosion. • Decrease erosion
Blanco Canyon 14080103	Road maintenance (70 miles)	• Decrease erosion • Improve road drainage
Upper San Juan 14080101 (Vaqueros Canyon 140801010903)	Sage brush mowing and reseeding (300 acres)	• Decrease erosion • Increase herbaceous ground cover
Upper Rio Grande 13020101	TCLP pipeline (4 miles) maintenance	• Reduce sedimentation within adjoining channel • Reduce erosion
Rio Chama (13020102	Cerro Azul pipeline (2 mile) installation	• Reduce sedimentation within adjoining channel • Reduce erosion

Carson National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Conejos 13010005	Maintained 4.4 miles riparian exclosure fence,	• Improve riparian vegetation • Reduce sedimentation within channel • Improve stream bank shade to reduce stream temperature • Improve bank stabilization
Conejos 13010005	Road maintenance (20.3 miles); Emergency road reconstruction from flood damage (0.5 miles); culvert maintenance (1 each);	• Improve road drainage • Decrease erosion
Rio Chama 13020102	Road maintenance (31.9 miles); Emergency road reconstruction from flood damage (0.5 miles); culvert installation (3 each); culvert maintenance (1 each)	• Improve road drainage • Decrease erosion
Alamosa - Trinchera 13010002	Road maintenance (1.0 miles)	• Improve road drainage • Decrease erosion
Rio Chama 13020102 (Canada Biscara- Rio Tusas - 130201021301)	Willow Integrated Resource Timber Sale Contract Commercial Thinning FY15 (1,127 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Canada Biscara- Rio Tusas - 130201021301)	Maquinita Big Game Enhancement Thinning/Lop & Scatter (509 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Canada Biscara- Rio Tusas - 130201021301)	Maquinita Force Account Thinning/Lop & Scatter FY 15 (50 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Canada Biscara- Rio Tusas - 130201021301)	RMYC Maquinita CFRP FY15 Thinning/Lop & Scatter (65 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Chama 13020102 (Canada Biscara- Rio Tusas - 130201021301)	Kuykendall CFRP 2015 Thinning/Lop & Scatter (67 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Conejos 13010005 (Bighorn Creek - 130100050404)	RMYC Bighorn/Stateline Thinning/Lop & Scatter FY15 (58 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.

Carson National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Upper Rio Grande 13020101 (Carson Reservoir-Arroyo Aguaje - 130201010805)	Red Mesa Broadcast Prescribed Burn FY15 (90 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Upper Rio Grande 13020101 (Canon de Tio Gordito-Arroyo Aguaje – 130201010803)	Red Mesa Broadcast Prescribed Burn FY15 (50 acres)	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Santa Barbara – Rio Pueblo Watershed 13020101	Ardilla Green Fuelwood -Commercial thinning in ponderosa pine type (226 acres).	• Increase herbaceous ground cover. • Decrease erosion.
Rio Santa Barbara – Rio Pueblo Watershed 13020101	Borrego Mesa WO High Priority Rx -Broadcast Prescribed Burning in ponderosa pine type (190 acres).	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Rio Truchas – Rio Grande Watershed 13020101	La Leña Green Fuelwood. -Commercial thinning in ponderosa pine type (66 acres).	• Increase herbaceous ground cover. • Decrease erosion.
Rio Truchas – Rio Grande Watershed 13020101	Francisco Rx -Broadcast Prescribed Burning in ponderosa pine type (390 acres).	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Headwaters Rio Fernando del Taos Watershed 13020101	Baca Canyon WO High Priority Fuels Thinning -Thinning in ponderosa pine and dry Mixed conifer and lopping and scattering of activity created fuels (225 acres).	• Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion.
Headwaters Rio Fernando del Taos Watershed 13020101	Rested La Jara Pasture from Grazing -Grazing rested (1,049 acres). -Amigos Bravos recently funded to facilitate a watershed-based plan.	• Increase herbaceous ground cover. • Reduced point-source pollution (E.*coli*.)

Carson National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Upper Rio Grande 13020101 (Upper Red River - 130201010301)	**Bitter Creek:** Grazing Non-use/ Rest **Goose Creek:** Removed non-functional outhouse and replaced away from drainage Grazing Non-use/ Rest **Bobcat Creek:** Grazing Non-use/ Rest **Sawmill Creek:** Grazing Non-use/ Rest **Road Maintenance (FR 58, 58A):** Improved Road Conditions (2.2 miles)	• Increase herbaceous ground cover • Decrease erosion • Reduce nutrient impact • Improve riparian veg. to reduce erosion • Decrease erosion from road prism
Upper Rio Grande 13020101 (Lower Red River – 130201010304)	**Questa/Lama Thinning Treatments:** **Thinning**: Mechanical thinning with lop and scatter of slash (200 acres). **Lama Canyon:** Grazing Non-use/ Rest	• Increase herbaceous ground cover. • Decrease risk of stand replacement wildfire and reduce risk of post fire erosion in pinyon/juniper vegetation type
Upper Rio Grande 13020101 (Headwaters Arroyo Hondo - 130201010701)	Trail Maintenance Grazing Non-use/ Rest	• Increase herbaceous ground cover • Decrease erosion
Upper Rio Grande 13020101 (Arroyo Hondo-Rio Grande – 130201010703)	**San Cristobal Allotment:** Projects completed with NRCS EQUIP grant funding obtained by allotment Permittees. **Cattle Water Developments:** Reconstructed water catchment for cattle on the Upland away from erosion prone/sensitive areas. **Road Maintenance (FR 9):** Improved road conditions (2 miles	• Improve grazing distribution and watershed condition within pastures. • Maintain stability/integrity of existing water source structure • Improve road drainage. • Decrease erosion from road prism
Upper Rio Grande 13020101 (Outlet Arroyo Hondo - 130201010702)	**Lobo Creek**: Grazing Non-use/Rest	• Increase herbaceous ground cover • Decrease erosion

Carson National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Upper Rio Grande (13020101) Comanche Creek (130201010102)	Comanche Creek Wetland restoration (Valle Vidal Mgmt Unit): Work funded and performed in partnership with The Quivira Coalition NMED, SWQB – Wetlands and Rocky Mtn Youth Corps. <u>Grassy Ck:</u> Install 128 structures to arrest headcut migration in drainage channels (3 miles of stream). Removed 1 corrugated metal pipe and create hardened low water crossing on FR1905 (1.0 mi. stream habitat improved). <u>Springwagon Canyon</u>: Install 11 structures to arrest headcut migration in drainage channels (1.0 mile stream channel stabilized/restored. <u>Comanche Ck:</u> Dismantle and remove large elk/cattle exclosure. Construct new small elk/cattle exclosure to protect stream banks. <u>Road Maintenance (FR1950):</u> Improved road conditions (8 miles)	• Increase herbaceous ground cover. • Stabilize stream channel to reduce erosion. • Improve/stabilize wetlands. • Improve habitat for riparian dependent species. • Improve habitat and water quantity delivery to native trout streams. • Restore fen wetland function. • Improve road drainage.
Upper Rio Grande (13020101) Headwaters Arroyo Hondo (130201010701)	Wheeler Peak Wilderness Area: Work funded and performed in partnership with NM Dept. Game & Fish. <u>Bighorn Sheep Population Reduction:</u> Removal of Rocky Mtn bighorn sheep in effort to maintain good forage condition to maintain watershed health. (2,560 acres)	• Maintain alpine grassland habitat and forage production.
Upper Rio Grande (13020101) Cabresto Creek (130201010302)	<u>Road Maintenance (FR134):</u> Improved road conditions (14 miles)	• Improve road drainage.

Carson National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Cimarron 11080002 (North Ponil - 110800020203)	**Valle Vidal Mgmt. Unit:** Work funded and performed in partnership with Philmont Boy Scout Ranch. **Noxious weed treatment:** Mechanical treatment (hand tools/ **Bike Trail Design and Construction:** Designed sustainable bike trail with erosion mitigation measures **Road Maintenance (FR1950**): Improved road conditions (38.5 miles)	• Improve terrestrial species habitat. • Stabilize/restore vegetation species diversity. • Improve watershed condition. • Improve road and trail drainage and reduced erosion. • Decrease erosion from road prism
Upper Rio Grande 13020101 (Cabresto Creek - 130201010302)	**Lake Fork and Bull Creek:** Grazing Non-use/ Rest **Road Maintenance (134, 134 A):** Improved Road Conditions (9 miles)	• Increase herbaceous ground cover • Decrease erosion • Decrease erosion from road prism
Upper Rio Grande 13020101 (Middle Red River – 130201010303)	**Red River Trout Habitat Project Implementation):** Improve trout habitat conditions on the Red River and adjacent Eagle Rock Lake (0.4 mile) mile): Instream fish habitat/restoration structures, Increased meandering, Re-established flood plan connectivity, Planted willows/riparian vegetation, Restoration and Re-opening of Eagle Rock Lake **Columbine Creek:** Bridge construction Trail maintenance Grazing Non-use/ Rest **Pioneer Creek:** Grazing Non-use/ Rest **Road Maintenance (FR 597):** Improved Road Conditions (5.1 miles)	• Improve road drainage. • Improve cold water trout habitat, • Improve stream water quality. • Stabilize stream banks to reduce erosion • Increase shade to reduce stream temperature. • Public Outreach • Increase herbaceous ground cover. • Decrease risk of extreme wildfire and associated erosion in pinyon/juniper vegetation type • Improve riparian veg. to reduce erosion • Decrease erosion from road prism

Carson National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Upper Rio Grande 13020101 (Comanche Creek - 130201010102)	**Comanche Creek Wetland restoration (Valle Vidal Mgmt Unit):** Work funded and performed in partnership with The Quivira Coalition NMED, SWQB – Wetlands and Rocky Mtn Youth Corps. **Grassy Ck:** Developed hardened road crossing **Springwagon Canyon:** Instream restoration structures. Wetland restoration structures **Comanche Ck:** Instream restoration structures Wetland restoration structures Developed hardened road crossing Road Maintenance Grazing Non-use/ Rested Pastures **Foreman Ck** Developed hardened road crossing **Gold Creek**: Instream restoration structures Wetland restoration structures **Holman Creek and Fen:** Instream restoration structures Wetland restoration structures Removed non-functional culvert, Developed hardened road crossing Fen restoration and fencing **Road Maintenance (FR1950):** Improved road conditions (10 miles)	• Increase herbaceous ground cover. • Stabilize stream channel to reduce erosion. • Improve/stabilize wetlands. • Improve habitat for riparian dependent species. • Improve habitat and water quantity delivery to native trout streams. • Restore fen wetland function. • Decrease sheet flow and erosion • Increase water yield and storage • Reduce head cut migration • Decrease erosion from road prism.

Cibola National Forest

Watershed/HUC No.	Project Description	Water Quality Benefits
Agua Medio-Bluewater Creek (130202070201) Ojo Redondo-Bluewater Creek (130303070205)	Bluewater Ecosystem Restoration Project • Ponderosa and Piñon/Juniper thinning and prescribed fire • 4794 acres	• Increase herbaceous ground cover • Decrease erosion • Improve fire condition class

Cibola National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Headwaters San Pedro Creek (130202010501)	Sulphur Project •Ponderosa and Piñon/Juniper thinning and prescribed fire •321 acres	• Increase ground cover • Reduce erosion Improve fire condition class
Upper Hells Canyon Wash (130202030401)	David Canyon •Ponderosa and Piñon/Juniper thinning •210 acres Hondo Project • Ponderosa and Piñon/Juniper thinning and prescribed fire • 152 acres	• Increase ground cover • Reduce erosion • Improve fire condition class
Arroyo de Tajique (130500011102) Arroyo de Chilili (130500010402)	Isleta Project • Ponderosa and Piñon/Juniper thinning and prescribed fire • 1023 acres	• Increase ground cover • Reduce erosion • Improve fire condition class
Limestone Canyon – Alamosa Creek (130202110601)	Limestone Canyon Restoration • Porous rock dams installed • 1.5 acres San Mateo – Alamo CFRP • Ponderosa and Piñon/Juniper thinning • 900 acres	• Increase stream stability • Improve riparian conditions • Improve water quality • Increase ground cover • Reduce erosion • Improve fire condition class
Upper Arroyo de Manzano (130500011002)	Thunderbird Project • 155 acres	• Increase ground cover • Reduce erosion • Improve fire condition class
Canon Mesteno-Canadian River (110800030505)	Canadian River Restoration Project • Salt cedar eradication/control • 33 acres	• Restore natural vegetation • Improve riparian condition
Chicosa Lake (110800070501) Alamos Creek – Seneca Creek (111001010206)	Playa Restoration • Restore two pitted playas • 25.6 acres	• Restore playa function • Improve water retention

Gila National Forest

Watershed/HUC No.	Project Description	Water Quality Benefits
Palomas Creek-Rio Grande 1303010102 (North Fork Palomas Creek-130301010206) (South Fork Palomas Creek-130301010207) (Seco Creek-130301010403) (North Seco Creek-130301010401) (Mud Spring-130301010204) (Circle Seven Creek-130301010205)	Hermosa Allotment – entire allotment was kept in non-use for resource protection – approx. 44,000 acres	• Improve watershed condition and herbaceous ground cover due to resting of allotment from livestock grazing resulting in an increase of stabilized soils, reduction in runoff, erosion and sedimentation.
Percha Creek 1303010103 (South Percha Creek-130301010301)	Kingston Allotment – Sam Bass Spring exclosure – 2 acres; Kingston Allotment Fence reconstruction – approx. 2.25 mile;	• Protection of riparian vegetation and water quality from ungulate grazing activities • Increase herbaceous ground cover by improving watershed condition and stabilized soils, reduction in runoff, erosion and sedimentation.
Caballo Reservoir 1303010104 (Headwaters Las Animas-130301010406) (Cave Creek-130301010405)	Animas Allotment – entire allotment was kept in non-use for resource protection; Hermosa Allotment – entire allotment was kept in non-use for resource protection – approx. 19,012 acres; Kingston Allotment Fence reconstruction – approx. 2.5 mile	• Improve watershed condition and herbaceous ground cover due to resting of allotment from livestock grazing resulting in an increase of stabilized soils, reduction in runoff, erosion and sedimentation.
(Headwaters Tierra Blanca Creek 130301020203) Trujillo Canyon Creek 130301020201)	½ mile fence reconstruction on south rim Tierra Blanca Creek; upper Tierra Blanca spring excluded from grazing (2 acres) Trujillo Park Thinning Phase 1 – 155 acres	• Decrease risk of extreme wildfire and associated erosion. • Increase herbaceous ground cover. • Thin current pinion/juniper stand, improving grassland restoration. • Improve riparian function

Gila National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Corduroy Draw 1504000102 (Upper Corduroy Draw 150400010201) Lower Corduroy Draw 150400010204) South Water Canyon 150400010202)	North Wahoo Allotment - entire allotment was kept in non-use for resource protection; V+T Allotment – entire allotment was kept in non-use for resource;	• Improve watershed condition and herbaceous ground cover due to resting of allotment from livestock grazing resulting in an increase of stabilized soils, reduction in runoff, erosion and sedimentation.
Beaver Creek 1504000103 (Houghton Canyon 150400010304) Houghton Canyon-Beaver Creek 150400010305)	V+T Allotment – entire allotment was kept in non-use; 8 dirt tanks maintained	• Improve watershed condition and herbaceous ground cover due to resting of allotment from livestock grazing resulting in an increase of stabilized soils, reduction in runoff, erosion and sedimentation. • Reduction of sediment movement downstream
Headwaters East Fork Gila River 1504000104 (Headwaters Diamond Creek-150400010404) (Diamond Creek-East Fork Gila River 150400010407)	Drift fence construction on north rim of Diamond Creek to exclude livestock; Salt cedar removal – 400 acres	• Improve riparian vegetation to reduce erosion. • Reduce the spread of noxious weeds and improve watershed condition • Increase herbaceous vegetation
Outlet East Fork Gila River 1504000107 (Tom Moore Canyon 150400010701)	Moore Wildfire – managed for resource benefits (3,667 acres)	• Decrease risk of extreme wildfire and associated erosion.
Headwaters Alamosa Creek 1302021106 (Little Pigeon Canyon-Alamosa Creek 130202110603) (Wahoo Canyon-Alamosa Creek - 130202110606)	North Wahoo Allotment - entire allotment was kept in non-use for resource protection	• Improve watershed condition and herbaceous ground cover due to resting of allotment from livestock grazing resulting in an increase of stabilized soils, reduction in runoff, erosion and sedimentation.

Gila National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Railroad Canyon 1504000101 (Upper Railroad Canyon 150400010101) (Middle Railroad Canyon 150400010102) (Lower Railroad Canyon 150400010103)	V+T Allotment – entire allotment was kept in non-use	• Improve watershed condition and herbaceous ground cover due to resting of allotment from livestock grazing resulting in an increase of stabilized soils, reduction in runoff, erosion and sedimentation.
Rito Creek 150200030101 (Upper Mangas Creek 150200030101)	Slaughter Mesa – 535 acres prescribed burn	• Decrease risk of extreme wildfire and associated erosion
Upper Largo Creek 1502000302 (El Caso Spring Canyon 150200030201) (Sawmill Canyon-Largo Creek 150200030202)	Slaughter Mesa ~19 acres of thinning/encroaching tree removal Slaughter Mesa ~588 acres of thinning/encroaching tree removal	• Decrease risk of extreme wildfire and associated erosion. • Increase herbaceous ground cover.
Headwaters Tularosa River 1504000401 (Canon del Buey 150400040102)	Slaughter Mesa - 145 acres thinning/encroaching tree removal	• Decrease risk of extreme wildfire and associated erosion. • Increase herbaceous ground cover.
Lordsburg Draw 1504000304 (Gold Hill Canyon/Lordsburg Draw 150400030404) Outlet Thompson Canyon 15040030404	Blacktail Dirt tank cleanout Gold Gulch header reconstruction	• Cleaned out tank allowing for soil stabilization above the tank, and providing water for wildlife and cattle • Improvement of riparian area below header which will help to stabilize soils, reduce runoff, erosion, and sedimentation

Gila National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Gallinas Canyon-Mimbres River 1303020201 (Powderhorn Canyon-Mimbres River 130302020101) (Allie Canyon-Mimbres River 130202010102) (Gallinas Canyon-130302020106)	30 acres thinning; 25 acres pile burning – 3 Circles WUI McKnight pinyon juniper thinning – 50 acres Silver Creek heavy road maintenance	• Improve watershed condition • Decrease risk of wildfire • Improve road drainage following wildfire for water quality protection
Lampbright Draw-Mimbres River 1303020205 Carrizo Canyon/Gavilan Arroyo 130302020502	Carrizo Well reconstruction; Watson Well reconstruction	• Drinker and storage tank for year-long water supply for wildlife and to improve the management of cattle distribution resulting in an increase of stabilized soils, reduction in runoff, erosion and sedimentation
Mangas Creek 1504000203 (Willow Creek-Mangas Creek 150400020301)	Bar 6 Hand Thinning -60 acres; Bar 6 Prescribed Burn – 650 acres	• Reduce hazardous fuels and increase of herbaceous ground cover
Sapillo Creek 1504000108 Sheep Corral Canyon-Sapillo Creek 150400010805)	420 Acres Meekens prescribed burn; 11 acres Grassland Maintenance; North Star Mesa (Juniper Pulling); 2 acres grassland restoration (Gattons Park)	• Reduce coniferous hazardous fuels • Improve herbaceous ground cover • Improve watershed condition
Headwaters East Fork Gila River 1504000104 (Diamond Creek-East Fork Gila River 150400010407)	Salt Cedar removal: 400 acres	• Reduce the spread of noxious weeds and improve watershed condition

Gila National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Deep Creek-San Francisco River 1504000404 (Devil's Creek 150400040404) (Outlet Saliz Canyon 150400040402) (Deep Creek 150400040405)	 Deep Creek allotment entered non-use (resource protection) ~8,200 acres in this 6th code Deep Creek allotment entered non-use (resource protection) ~1,433 acres in this 6th code; Deep Creek allotment entered non-use (resource protection) ~17,844 acres in this 6th code	• Improve watershed condition due to resting of allotment from livestock grazing resulting in an increase in herbaceous ground cover, stabilized soils, and reduction in runoff, erosion and sedimentation.
Mule Creek-San Francisco River 1504000408 (Big Pine Canyon-San Francisco River 150400040807)	102 acres of salt cedar treatment	• Reduce the spread of noxious weeds and improve riparian condition
Y Canyon 1302020806 (La Jolla Canyon 130202080601)	Thinned 188 acres of encroaching trees in Moraga Canyon	• Improve watershed condition and herbaceous ground cover.
Sapillo Creek-Gila River (1504000109) (Middle Mogollon Creek 150400010905)	8.2 miles of trail maintenance (minor treadwork, cleaning of water control structures). Trail #189 Rain Creek	• Decreased erosion from the trail prism
Centerfire Creek-San Francisco River 1504000403 (Largo Canyon 150400040310) (Cienega Canyon-San Francisco River 150400040311)	Reconstruction Forest Road 49 (1/4 mile) due to washout (EFFO funding) 3.2 miles heavy trail maintenance (erosion control, water diversion). Trail #726 – Frisco Box; Black Bob riparian exclosure -220 acres	• Improve riparian vegetation for vegetation, wildlife, and water quality benefits • Improve road drainage for water quality benefits

Gila National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Pueblo Creek-San Francisco River 1504000406 (Mineral Creek 150400040605) (Vigil Canyon 150400040604)	Entire Deep Creek allotment entered non-use (resource protection) ~100 acres in this 6th code Hand thinning of 200 acres of PJ near Snare Mesa	• Improve watershed condition due to resting of allotment from livestock grazing resulting in an increase in herbaceous ground cover, stabilized soils, and reduction in runoff, erosion and sedimentation • Reduce risk of wildfire
Middle Fork Gila River 1504000105 (Gilita Creek 150400010502)	Deep Creek allotment entered non-use (resource protection) ~35 acres in this 6th code; Reconstruction Indian Creek/Forest Road 28 crossing with arch culvert; Reconstruction of hardened low water crossing to Willow Creek Campground	• Improve watershed condition due to resting of allotment from livestock grazing resulting in an increase in herbaceous ground cover, stabilized soils, and reduction in runoff, erosion and sedimentation. • Improve water quality through road drainage/crossing improvements

Lincoln National Forest

Watershed/HUC No.	Project Description	Water Quality Benefits
Lower Rio Ruidoso (130600080107) Middle Rio Ruidoso (130600080106) Water Hole Canyon (130600080104) Maverick Canyon (130600080301)	Turkey-Gavilan Tree Encroachment Control, Jackpot Burning; Thinning for Hazardous Fuels Reduction	Improve watershed condition and herbaceous ground cover resulting in an increase in stabilized soils, increased soil water holding capacity, reduction in runoff, erosion and sedimentation.
Aragon Creek (130600050301) Reventon Draw-Arroyo del Macho (130600050303)	West Mountain Prescribed Burn and Push Units	Improve watershed condition and herbaceous ground cover resulting in an increase in stabilized soils, increased soil water holding capacity, reduction in runoff, erosion and sedimentation.
Upper Rio Ruidoso (130600080103) Carrizo Creek (130600080101)	Perk Grindstone Hazardous Fuels Reduction Project, Sanitation Cut, and Compacting, Crushing of Fuels	Improve watershed condition and herbaceous ground cover resulting in an increase in stabilized soils, increased soil water holding capacity, reduction in runoff, erosion and sedimentation.

Lincoln National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Fresnal Canyon (130500031501) Cox Canyon (130600100301) Cox Canyon-Rio Penasco (130600100302) Alamo Canyon (130500031701)	Rio Penasco 2 Fuels Reduction Project	Improve watershed condition and herbaceous ground cover resulting in an increase in stabilized soils, increased soil water holding capacity, reduction in runoff, erosion and sedimentation.
Chimney Canyon-Cuevo Creek (130600100403)	North Bluewater Wildlife Openings and Trick Tank Project	Improve watershed conditions by dispersing wildlife and preventing their concentration in small areas
Silver Springs Canyon (130600100101) Sixteen Springs Canyon (130600100103) Burnt Canyon (130600100305)	16 Springs Thinning for Hazardous Fuels Reduction, Compacting/ Crushing of Fuels, and Group Selection Cuts	
Fresnal Canyon (130500031501) Dry Canyon (130500031601) Alamo Canyon (130500031701)	Two Goates Compacting/Crushing of Fuels	Improve watershed condition and herbaceous ground cover resulting in an increase in stabilized soils, increased soil water holding capacity, reduction in runoff, erosion and sedimentation.
Upper Last Chance Canyon (130600110801) Turkey Canyon (130600110901)	Guadalupe PJ Woodlands Wildlife Habitat Improvement Project	Improve watershed condition and herbaceous ground cover resulting in an increase in stabilized soils, increased soil water holding capacity, reduction in runoff, erosion and sedimentation.
Middle Last Chance Canyon (130600110802)	Last Chance Riparian Plantings	Increase bank stability; decrease bank erosion; increase stream water quality

Lincoln National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Cox Canyon (130600100301) Cox Canyon-Rio Penasco (130600100302)	Sacramento Range Allotment Grazing Strategy Changes	These changes have been implemented to protect the habitat for the New Mexico Meadow Jumping Mouse. This will also enhance riparian habitat along the streams
Upper Agua Chiquita (130600100201)	Agua Chiquita Allotment Grazing Strategy Changes	These changes have been implemented to protect the habitat for the New Mexico Meadow Jumping Mouse. This will also enhance riparian habitat along the streams
Cox Canyon-Rio Penasco (130600100302) Middle Last Chance Canyon (130600110802)	Site Visit With Otero County Cattle Growers	Interesting discussions occurred to talk about concerns with water availability and how the hydrologic system works and how maintaining a healthy riparian system increases water supply and decreases erosion and sediment input into streams (this does not indicate all points were well taken or understood)

Santa Fe National Forest

Watershed/HUC No.	Project Description	Water Quality Benefits
Jemez (13020202)/ Outlet Rio de Las Vacas (130202020105)	Diego FRP (35 acres). Joaquin FRP (15 acres). Maintain Vacas riparian exclosures. Mechanically treat 13 acres of musk thistle.	• Decrease risk of wildfire and associated erosion • Increase herbaceous ground cover • Improve riparian cover and bank stability and reduce stream temperature • Reduce the spread of noxious weeds.
Jemez (13020202)/ Outlet San Antonio Creek (130202020204)	Thompson Ridge FRP (69 acres). Construct upper San Antonio exclosure.	• Decrease risk of wildfire and associated erosion • Increase herbaceous ground cover • Improve riparian cover and bank stability and reduce stream temperature
Jemez (13020202)/ Rio Guadalupe (130202020107)	Joaquin FRP (418 acres). Rito la Cueva FRP (17 acres).	• Decrease risk of wildfire and associated erosion • Increase herbaceous ground cover

Santa Fe National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Jemez (13020202)/ Church Canyon-Jemez River (130202020205)	Los Griegos fuel reduction (624 acres) and Virgin Mesa fuel reduction (32 acres) projects. Install drinkers.	• Decrease risk of wildfire and associated erosion • Increase herbaceous ground cover • Improve cattle distribution and watering
Jemez (13020202)/ East Fork Jemez River (130202020203)	Cochiti Mesa Spring Development.	• Improve cattle distribution and watering
Jemez (13020202)/ Headwaters Rio Cebolla (130202020103)	Calaveras Well Project.	• Improve cattle distribution and watering
Jemez (13020202)/ Headwaters Rio de Las Vacas (130202020102)	Maintain Ojito Frio riparian pasture.	• Improve riparian cover and bank stability and reduce stream temperature
Jemez (13020202)/ Outlet Rio Cebolla (130202020104)	Install Cebolla and Fenton pasture riparian exclosures. Diego fuel reduction project (FRP-53 acres).	• Improve riparian cover and bank stability and reduce stream temperature
Jemez (13020202)/ Virgin Canyon (130202020106)	Virgin Mesa FRP (286 acres). Install drinkers.	• Decrease risk of wildfire and associated erosion • Increase herbaceous ground cover • Improve cattle distribution and watering
Mora (11080004)	Mora/San Miguel/Guadalupe RWP.	• Public outreach and involvement
Mora (11080004)/ Rio la Casa (110800040304) and Rio la Casa-Mora River (110800040305)	Mondragon Spring maintenance.	• Improve cattle distribution and watering
Pecos (13060001)	Active participant in Upper Pecos Watershed Group and Hermit's Peak Watershed Alliance.	• Public outreach and involvement

Santa Fe National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Mora (11080004) and Pecos (13060001)	Road maintenance using BMPs (83 miles). District trail maintenance to standard (110 miles).	• Reduce runoff, erosion and sedimentation • Improve road drainage • Reduce culvert blockage
Pecos (13060001)/ Apache Creek (130600010103)	Maintenance on two water tanks.	• Improve cattle distribution and watering
Pecos (13060001)/ Arroyo Leguino (130600010307)	Maintenance on Quintana drinker.	• Improve cattle distribution and watering
Pecos (13060001)/ Arroyo Pecos (130600010804)	Gallinas Prescribed Fire (Rx).	• Decrease risk of wildfire and associated erosion • Increase herbaceous ground cover
Pecos (13060001)/ Arroyo Pecos-Gallinas River (130600010805)	Mechanically treat 5 acres of bull thistle.	• Reduce the spread of noxious weeds. • Increase herbaceous ground cover
Pecos (13060001)/ Bull Creek (130600010102)	Nanaka II FRP (84 acres).	• Decrease risk of wildfire and associated erosion • Increase herbaceous ground cover
Pecos (13060001)/ Cabo Lucero Creek-Tecolote Creek (130600010301)	Mechanically treat 89 acres of bull thistle.	• Reduce the spread of noxious weeds. • Increase herbaceous ground cover
Pecos (13060001)/ El Rito (130600010401)	Maintenance on 5 stock tanks. Commissary managed fire (2524 acres).	• Improve cattle distribution and watering • Decrease risk of wildfire and associated erosion • Increase herbaceous ground cover
Pecos (13060001)/ Ojitos Frios Creek-Tecolote Creek (130600010303)	Maintenance on 2 stock tanks. Commissary managed fire (11 acres).	• Improve cattle distribution and watering • Decrease risk of wildfire and associated erosion • Increase herbaceous ground cover

Santa Fe National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Pecos (13060001)/ Porvenir Canyon-Gallinas Creek (130600010802)	Mechanically treat 8 acres of bull thistle. Nanaka II and III FRP.	• Reduce the spread of noxious weeds. • Increase herbaceous ground cover • Decrease risk of wildfire and associated erosion
Pecos (13060001)/ Valle Chimal (130600010503)	Maintenance on Ortiz drinker.	• Improve cattle distribution and watering
Rio Chama (13020102)/ Abiquiu Creek (130201021202) and Canada de Tio Alfonso-Rio Chama (130201021601) and El Rito-Rio Chama (130201021205)	Lobato Mesa new tank construction	• Improve cattle distribution and watering
Rio Chama (13020102)/ Canones Creek (130201021005)	Maintenance on Chihuahuenos riparian fence and La Jara Spring.	• Improve riparian cover and bank stability and reduce stream temperature • Improve cattle distribution and watering
Rio Chama (13020102)/ Coyote Creek (130201020802)	Maintenance on Coyote riparian fence and Rincon del Valle Tank.	• Improve riparian cover and bank stability and reduce stream temperature • Improve cattle distribution and watering
Rio Chama (13020102)/ Headwaters Rio Puerco (130201020803)	Maintenance on Jarosa and Upper Rio Puerco riparian fences.	• Improve riparian cover and bank stability and reduce stream temperature
Rio Chama (13020102)/ Huckbay Canyon-Rio Chama (130201020708)	Cedar Springs and Golondrino pile burns (103 acres).	• Decrease risk of wildfire and associated erosion • Increase herbaceous ground cover

Santa Fe National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Rio Chama (13020102)/ Lower Rio Gallina (130201020608)	Cedar Springs pile burn (37 acres)	• Decrease risk of wildfire and associated erosion • Increase herbaceous ground cover
Rio Chama (13020102)/ Outlet Arroyo del Puerco Chiquito (130201020706)	Cedar Springs and Golondrino pile burns (14 acres).	• Decrease risk of wildfire and associated erosion • Increase herbaceous ground cover
Rio Chama (13020102)/ Outlet Rio Puerco (130201020804)	Maintenance on La Jara Spring.	• Improve cattle distribution and watering
Rio Chama (13020102)/ Poleo Creek (130201020801)	Cordovas Commercial Thin (293 acres).	• Decrease risk of wildfire and associated erosion • Increase herbaceous ground cover • Improve stand conditions
Rio Chama (13020102)/ Polvadero Creek (130201021004)	Maintain Polvadero riparian exclosure.	• Improve riparian cover and bank stability and reduce stream temperature
Rio Chama (13020102)/ Rio Capulin (130201020601)	Maintain Cecilia riparian fence. Gallina WUI Rx (360 acres).	• Improve riparian cover and bank stability and reduce stream temperature • Decrease risk of wildfire and associated erosion • Increase herbaceous ground cover
Rio Chama (13020102)/ Upper Rio Gallina (130201020603)	Maintain Rio Gallina riparian fence. Gallina WUI Rx (183 acres).	• Improve riparian cover and bank stability and reduce stream temperature • Decrease risk of wildfire and associated erosion • Increase herbaceous ground cover
Rio Grande-Santa Fe (13020201)/ Rio Chiquito (130202010206)	Cochiti Mesa Spring Development.	• Improve cattle distribution and watering

Santa Fe National Forest (continued)

Watershed/HUC No.	Project Description	Water Quality Benefits
Rio Grande-Santa Fe (13020201)/ Headwaters Santa Fe River (130202010102)	Santa Fe Watershed FRP (120 acres). West Agua Sarca Rx (830 acres).	• Decrease risk of wildfire and associated erosion • Increase herbaceous ground cover • Improve stand conditions
Rio Puerco (13020204)/ Headwaters Arroyo San Jose (130202040101)	La Jara FRP (613 acres). Mechanically treat 4 acres of musk thistle.	• Decrease risk of wildfire and associated erosion • Increase herbaceous ground cover • Improve stand conditions • Reduce the spread of noxious weeds
Rio Puerco (13020204)/ San Pablo Canyon (130202040105)	Mechanically treat 13 acres of musk thistle.	• Reduce the spread of noxious weeds • Improve native cover.
Upper Rio Grande (13020101)/ Headwaters Tesuque Creek (130201011202)	Santa Fe Watershed FRP.	• Decrease risk of wildfire and associated erosion • Increase herbaceous ground cover • Improve stand conditions
Upper Rio Grande (13020101)/ Rio Medio (130201011002)	New trough construction on Borrego Mesa Spring	• Improve cattle distribution and watering
Upper Rio Grande (13020101)/ Rio Quemado (130201011003)	New trough construction on Borrego Mesa Spring. Borrego Mesa Campground FRP.	• Improve cattle distribution and watering • Decrease risk of wildfire and associated erosion • Increase herbaceous ground cover • Improve stand conditions

New Mexico Soil and Water Conservation District Projects

Watershed/HUC No.	Project Description	Water Quality Benefits
Rio Hondo (Upper Rio Ruidoso) (13060008)	Mixed Conifer (210 acres) Installed 51 Ft. Gabion Structures Installed 353 Mulch Wattles 650 Seedling Trees sold for Windbreaks. Installed 6 Livestock/Wildlife Drinking troughs. Installed 9 Rainwater Harvesting Tanks. Phreatophyte Treatments(250 acres)	• Increase herbaceous ground cover and decrease erosion. • Headcut stabilization. • Decrease sheet flow and erosion. • Reduce flooding • Increase water yield
Mimbres (13030202)	EMNRD Wildland Urban Interface Thinning Projects: Private landowners in Grant County thinned approximately 92 acres in 2015 in order to reduce fuels and improve forest health.	• Decrease risk of extreme wildfire and associated erosion
Headwaters Burro Cienaga Watershed (15040003)	Restore/improve ecological function within the Burro Cienaga Watershed: reconstructed earthen tanks in order to develop wetland/riparian habitat and constructed earthen grade stabilization structures with lead-out ditches to spread floodwater across the historic flood plain.	• Improve riparian vegetation • Increase wetland/riparian habitat • Encourage re-saturation of historic flood plain
Rio Penasco (13060010) Rio Hondo (13060008) Salt Basin (13050004) Tularosa Valley (13050003)	Southern Sacramento Mountains Hydrogeology Study- to identify the geologic controls on groundwater recharge, occurrence, and movement, and to identify hydrostratigraphic units contributing groundwater to springs, streams, and wells in the Southern Sacramento Mountains.	• Improve understanding of ground water-surface water connections to understand groundwater recharge, sources of surface water, and potential links to water quality.
Statewide	Partnerships between local SWCDs and BLM to implement the Restore New Mexico Program to remove invasive woody species and increase grasses and other herbaceous groundcover.	• Decrease runoff • Increase infiltration • Decrease erosion • Improve riparian vegetation • Improve water quality

Natural Resources Conservation Service:

The Natural Resources Conservation Service (NRCS) in New Mexico delivers voluntary programs, products and services that help local people protect and improve natural resources on non-federal lands. This includes addressing the resource concern of water quality. For more Information visit: http://www.nrcs.usda.gov/wps/portal/nrcs/site/nm/home/

NRCS Field Offices across New Mexico have assisted individuals and groups of land users to address water quality resource concerns in a number of ways that support the goals of the New Mexico Environment Department's NPS program goals.

In 2012, the NRCS launched the National Water Quality Initiative (NWQI), in collaboration with the EPA and state water quality agencies, to reduce nonpoint sources of nutrients, sediment, and pathogens related to agriculture in small high-priority watersheds in each state. These priority watersheds have been selected in New Mexico by NRCS State Conservationists in consultation with NMED to target priority watersheds that will deliver the greatest water quality benefits. NWQI provides a means to accelerate voluntary, private lands conservation investments to improve water quality with dedicated financial assistance through NRCS's Environmental Quality Incentives Program (EQIP) and Clean Water Act Section 319 or other funds to focus state water quality monitoring and assessment efforts where they are most needed to track change. A key part of the NWQI targeting effort includes the implementation of conservation systems that avoid, trap, and control run-off in these high-priority watersheds. In 2015, the NWQI Program in New Mexico focused on the Arroyo Pecos - Gallinas River Watershed. A total of $149,592 in funds were allocated and contracts put into place to begin work as outlined in the table below.

NWQI 2015 Contracts

Obligated	Current Year	Total Years	Payment	Status	Contract Acres
$149,592.00	1	3	$0.00	Active	1039

Practice	Units	Item	Code	Amount	Planned	Status	Obligation
Forest Stand Improvement	ac	1	666	20.0	2016	Planned	$23,936.00
Woody Residue Treatment	ac	2	384	20.0	2016	Planned	$2,080.00
Forest Stand Improvement	ac	3	666	20.0	2016	Planned	$23,936.00
Woody Residue Treatment	ac	4	384	20.0	2016	Planned	$2,080.00
Forest Stand Improvement	ac	5	666	20.0	2016	Planned	$23,936.00
Woody Residue Treatment	ac	6	384	20.0	2016	Planned	$2,080.00
Forest Stand Improvement	ac	7	666	20.0	2017	Planned	$23,936.00
Woody Residue Treatment	ac	8	384	20.0	2017	Planned	$2,080.00
Forest Stand Improvement	ac	9	666	20.0	2017	Planned	$23,936.00
Woody Residue Treatment	ac	10	384	20.0	2017	Planned	$2,080.00
Forest Stand Improvement	ac	11	666	15.0	2017	Planned	$17,952.00
Woody Residue Treatment	ac	12	384	15.0	2017	Planned	$1,560.00


NEW MEXICO
ENVIRONMENT DEPARTMENT