THE STATE OF NEW MEXICO NONPOINT SOURCE MANAGEMENT PROGRAM

2004 ANNUAL REPORT

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New Mexico Environment Department
Surface Water Quality Bureau Watershed Protection Section

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January 6, 2005

Brad Lamb
Regional Watershed/Nonpoint Source Program Coordinator
U.S. Environmental Protection Agency
Region 6 (6WQ-EW)
1445 Ross Ave.
Dallas, Texas 75202

Dear Mr. Lamb,

Attached please find the New Mexico Nonpoint Source (NPS) Management Program's 2004 Annual Report. During this past reporting year the Management Program successfully completed a number of projects that will assist in the effort to abate nonpoint source pollution. Approximately 21 parameters for specific stream reaches were removed from the New Mexico Impaired Waters List this report year as well.

The success of these projects and improving watershed health is due to continued partnerships and dedication of the many project participants. New watershed groups are being formed annually to strengthen our collaborative effort to abate NPS pollution. A list of these groups and organizations is provided in the Management Program's 2004 Annual Report.

In addition to highlighting successes, some projects provided us with the opportunity to evaluate project impediments. The 2004 report also describes these impediments and the lessons learned during project implementation.

All of the agencies and organizations in New Mexico who are cooperatively tackling the state's NPS issues appreciate the support of the Environmental Protection Agency in this effort and look forward to continuing success and cooperation in protecting the state's water quality.

Sincerely,

Marcy Leavitt, Chief
Surface Water Quality Bureau

New Mexico Nonpoint Source Management Program
2004 Annual Report

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EXECUTIVE SUMMARY

Nonpoint sources (NPS) of water pollution are recognized as major contributors to water pollution in New Mexico, as well as the nation. Principal sources of surface water NPS pollution in New Mexico include onsite liquid waste disposal, roads, recreation, urban storm water run-off, erosion from rangelands, agricultural activities, construction, silviculture, resource extraction and land disposal. Hydromodification may affect attainment of designated uses by diverting water out of stream channels, by impounding waters, and through channelizing and dredge-and-fill activities. Principal known sources of NPS ground water pollution in rural and suburban areas include household septic tanks, cesspools, hard rock mines, and agricultural activities.

The purpose of the New Mexico Nonpoint Source Management Program (Management Program) is to describe dynamic programs and progressive actions necessary to reduce pollutants from nonpoint sources entering surface water and ground water. Implementation of this program will help New Mexico succeed in attainment of surface water quality criteria that will fully protect designated uses as described in the State's water quality standards, meet the goals of the federal Clean Water Act (CWA) and ensure ground water quality for municipal, domestic, and agricultural uses.

The Management Program's Annual Report identifies projects and actions completed within the year that assist in abating nonpoint source pollution. Most projects are implemented with the use of incentives to encourage voluntary projects and restoration efforts including competitive grant funding through §319 (h) of thefederal CWA,and technical support and guidance through the Surface Water Quality Bureau. Other projects are created by various agencies in New Mexico. The Annual Report also describes how rivers are monitored and plans implemented to abate NPS pollution.

As a result of implementing this program, New Mexico will achieve measurable results such as reduced NPS pollutant loadings and successfully implemented Total Maximum Daily Loads and Watershed Restoration Action Strategies to reduce the number of impaired water bodies throughout the State.

MILESTONES

New Mexico's Nonpoint Source Management Program milestones have been developed to focus our direction, and implement our strategy for approaching and resolving NPS pollution problems throughout the state. Throughout the 2004 Annual Report milestones are exhibited through descriptions of CWA §319(h) projects, projects from other governmental agencies, and specifically below.

Milestones Achieved

In 2004, six projects that propose to restore water bodies to designated uses throughout the state were funded.

In 2004, the Watershed Protection Section (WPS) of SWQB began to participate in local NRCS workgroups. This agreement reinforces the Management Program's holistic approach to NPS pollution and formally working with local quasi-governments.

The GIS workstation located in SWQB provided information and maps to stakeholders by linking to New Mexico's water quality databases.

The Watershed Protection Section of SWQB published the "Clearing the Waters" quarterly newsletter. Each newsletter contains educational information regarding nonpoint source pollution and CWA §319(h) projects to inform stakeholders about the health of New Mexico's watersheds. (pic)

The SWQB participated in many educational activities, which included working with school-age children, attending community events, and conducting public meetings and workshops.

Four new watershed groups are in the process of forming for watersheds with Total Maximum Daily Loads. The Upper Rio Grande, Conejos, Mimbres, and the Rio Grande-Albuquerque watersheds are completing their projects, which includes Watershed Restoration Action Strategy (WRAS) formation and applying for future on-the-ground funds to abate NPS pollution.

Watershed Restoration Action Strategies are documents that list projects that holistically address NPS issues in specific drainages. Below is a list of completed plans in New Mexico.

Cimmaron River WRAS	Cordova Creek WRAS
Gila National Forest WRAS	Jemez WRAS
Maude's Canyon WRAS	Pueblo Canyon WRAS
Red River WRAS	Comanche Creek Watershed Implementation Plan
Rio Puerco WRAS	Rio Puerco de Chama Watershed Group WRAS
Santa Fe River WRAS	Spur Ranch Project WRAS

Upper Hondo Watershed WRAS / Includes Rio Ruidoso WRAS

MONITORING AND ASSESSMENT

The majority of the pollution found from monitoring New Mexico's surface waters is due to nonpoint source pollution. The Monitoring and Assessment Section (MAS) of SWQB administers the monitoring and assessment of the State's surface waters and develops Total Maximum Daily Load (TMDL) documents based on assessment. The mission of MAS is to ensure that current and reliable surface water quality data are available for decision-making based on sound scientific methodology. Water quality surveys of streams and lakes are conducted to determine whether New Mexico standards are met and whether the designated uses of the surface waters are supported.

In 2004, monitoring consisted of three-season physical (habitat surveys and geomorphology), chemical, and biological (fish and benthic macroinvertebrate) monitoring. A sampling frequency of eight, based on the application of attainment criteria and human and budget resource constraints, was used to determine if a stream segment was fully meeting its designated uses. Available, non-SWQB data that meets SWQB Quality Assurance requirements is incorporated into designated use attainment assessments. Site locations were determined by locating at least one site in each assessment unit, as defined in the 2004 CWA sections 303(d)/305(b) Integrated List of Impaired Surface Waters (hereafter referred to as Integrated List). Determination of location and parameters was also dependent upon water quality concerns researched by the SWQB staff or noted by stakeholders at public meetings in the 2004 targeted watersheds. The Rio Puerco, Tularosa Valley, Rio San Jose, Zuni, Caballo, and El Paso-Las Cruces 8-digit US Geological Survey hydrologic unit code watersheds were selected for monitoring in 2004. Within those watersheds, selected stream segments were monitored as well as Elephant Butte Lake, Ramah Lake, Quemado Lake, Bluewater Lake, and Caballo Lake.

SWQB develops, revises, and maintains the New Mexico Water Quality Control Commission's (WQCC) Standards for Interstate and Intrastate Streams (Standards). SWQB proposes revisions of the Standards to the WQCC during the February 2004 triennial review hearing based on survey data and other information.

The scientific basis for determining TMDLs is provided through monitoring and assessment. The TMDL process can be best described as determining and planning a watershed or basin-wide budget for pollutant influx to a watercourse. This process involves state and federal agencies, local water users and the public. A TMDL, in actuality, is a planning document. The TMDL Program under SWQB determines the adequacy and significance of water quality and other supporting data, reviews the effectiveness of existing water quality protection measures, and evaluates existing management strategies. The TMDL process leads to the development of new water quality management strategies through the completion of Watershed Restoration Action Strategies to address non-point source pollution, and though National Pollution Discharge Elimination System permit revisions based on TMDL waste load allocations for point sources. The TMDL program interactively uses the full resources of the bureau to develop and coordinate materials that support the Integrated List. The Integrated List is a comprehensive list of impaired streams in New Mexico. The goals of CWA §319(h) awarded projects are to eventually restore impaired streams to protect existing and designated uses.

Currently, twelve 8-digit HUC watersheds have completed TMDLs. The watersheds with TMDLs receive CWA §319(h) funding for "on-the-ground" restoration work, and those without TMDLs will be targeted for watershed group formation, leading to project implementation if and when a TMDL is developed for that watershed.

Completed TMDLs in 2004 and Current Delistings

Assessment unit	*8-digit HUC*	*TMDL parameter*
Rio de los Pinos (New Mexico reaches)	13010005/Conejos	Temperature
Rio San Antonio (Montoya Canyon to headwaters)	13010005/Conejos	Temperature
Comanche Creek (Costilla Creek to Little Costilla Creek)	13020101/URG	Temperature
Costilla Creek (diversion above Costilla to Comanche Creek)	13020101/URG	Temperature
Rio Fernando de Taos (Rio Pueblo de Taos to headwaters)	13020101/URG	Temperature
Rio Fernando de Taos (Rio Pueblo de Taos to headwaters)	13020101/URG	Conductivity
Rio Grande (Red River to New Mexico-Colorado border)	13020101/URG	Temperature
Rio Grande del Rancho (Rio Pueblo de Taos to Hwy 518)	13020101/URG	Conductivity
Rio Hondo (Rio Grande to US Forest Service boundary)	13020101/URG	Temperature
Rio Pueblo de Taos (Arroyo del Alamo to Rio Grande del Rancho)	13020101/URG	Temperature
Rio Pueblo de Taos (Arroyo del Alamo to Rio Grande del Rancho)	13020101/URG	SBD
Rio Pueblo de Taos (Rio Grande del Rancho to Taos Pueblo boundary)	13020101/URG	Temperature
Rio Pueblo de Taos (Rio Grande to Arroyo del Alamo)	13020101/URG	Temperature
Abiquiu Creek (Rio Chama to headwaters)	13020102/Rio Chama	DO
Cañones Creek (Abiquiu Reservoir to headwaters)	13020102/Rio Chama	Turbidity Al chronic Fecal Coliform
Poleo Creek (Rio Puerco de Chama to headwaters)	13020102/Rio Chama	Turbidity
Polvadera Creek (Cañones Creek to headwaters)	13020102/Rio Chama	Temperature
Rio Nutrias (Rio Chama to headwaters)	13020102/Rio Chama	Turbidity
Rio Vallecitos (Rio Tusas to headwaters)	13020102/Rio Chama	Al chronic Temperature Turbidity
Jemez River (Rio Guadalupe to HWY 4 nr Jemez Springs)	13020202/Jemez	Turbidity - REVISED

Streams with Pollutant Parameters Removed from the Impaired Waters List		
Assessment unit	***8-digit HUC***	***De-list***
Cieneguilla Creek (Eagle Nest Lake to headwaters)	Cimarron	temperature total phosphorus
Cimarron River (Cimarron to Turkey Creek)	Cimarron	Plant nutrients
Middle Ponil Creek (South Ponil to headwaters) **Moreno Creek (Eagle Nest Lake to headwaters)** **North Ponil Creek (South Ponil Creek to McCrystal Creek)**	Cimarron Cimarron Cimarron	total phosphorus Plant nutrients total phosphorus
Ponil Creek (Cimarron River to confl of North & South Ponil)	Cimarron	total phosphorus
Sixmile Creek (Eagle Nest Lake to headwaters)	Cimarron	Plant nutrients
Mora River (Canadian River to Shoemaker)	Mora	Plant nutrients
Cordova Creek (Costilla Creek to headwaters) **Abiquiu Creek (Rio Chama to headwaters)**	Upper Rio Grande Rio Chama	total phosphorus Plant nutrients SBD
Canjilon Creek (Abiquiu Reservoir to headwaters)	Rio Chama	Conductivity Turbidity DO
		Temperature
Chavez Creek (Rio Brazos to headwaters) **Chihuahuenos Creek (Cañones Creek to headwaters)**	Rio Chama Rio Chama	Plant nutrients SBD
Coyote Creek (Rio Puerco de Chama to headwaters)	Rio Chama	SBD
El Rito Creek (Perennial reaches above El Rito)	Rio Chama	Al chronic Plant nutrients
Polvadera Creek (Cañones Creek to headwaters)	Rio Chama	SBD
Assessment unit	***8-digit HUC***	***De-list***
Rio Cebolla (Rio Chama to headwaters)	Rio Chama	Conductivity
Rio Chama (San Juan Pueblo to Abiquiu Dam) **Rio Chamita (Rio Chama to CO border)** **Rio del Oso (Rio Chama to headwaters)**	Rio Chama Rio Chama Rio Chama	Al chronic total phosphorus SBD
Rio Ojo Caliente (Rio Chama to Rio Vallecitos)	Rio Chama	Temperature Turbidity Al chronic SBD
Rio Tusas (Rio Vallecitos to headwaters) **Santa Fe River (Cochiti Pueblo bnd to Santa Fe WWTP)**	Rio Chama Rio Grande-Santa Fe	SBD Plant nutrients
American Creek (Rio de las Palamas to headwaters)	Jemez	SBD
Jemez River (Rio Guadalupe to HWY 4 nr Jemez Springs)	Jemez	Turbidity Temperature

		Plant nutrients
Redondo Creek (Sulpher Creek to headwaters) phosphorus	Jemez	total
Rio Guadalupe (Jemez River to confl with Rio Cebolla)	Jemez	total
phosphorus **Vallecito Ck (Paliza campground to headwaters)**	Jemez	Temperature
Vallecito Ck (Perennial reaches above Jemez Pueblo bnd)	Jemez	Temperature
Gila River (Mogollon Creek to Gila Hot Springs)	Upper Gila	Turbidity SBD

WATERSHED PROTECTION

The Watershed Protection Section (WPS) within the NMED Surface Water Quality Bureau is responsible for organizing all CWA §319(h) related activities in watersheds with TMDLs or with assessed data. Ogranization includes outreach, facilitation, administration and oversight of CWA §319(h) projects.

More specifically, staff within WPS cooperatively work to educate others and implement best management practices to reduce nonpoint source pollutants from entering the surface and ground water resources of New Mexico. Workplans developed and funded under CWA §319(h) comprise a variety of efforts, including watershed association development, riparian area restoration, spill response, and treatment of abandoned mines.

New Mexico has a five-year plan to address NPS TMDLs within watersheds that have TMDLs completed or data assessed. Each year those priority watersheds are targeted for intensive education and outreach to assist in watershed group formation through §319(h) funds. This occurs one to two years prior to TMDL development. Watershed groups then have sufficient time to develop a WRAS to lower NPS pollutants. (If no associations are formed prior to TMDL development, associations can be formed during or post-TMDL development.) The following year, CWA §319(h) Request for Proposals (RFP) will be written to specifically target those watersheds that have a watershed group with a quasi-governmental fiscal agent, a watershed coordinator, and a completed WRAS. Award preference will be given to those projects that implement TMDLs. This strategy will ensure that CWA §319(h) monies are directed toward NPS TMDLs. The Management Program's ultimate goal is to manage a balanced program that addresses both existing impairments (those listed on Integrated Waters List) and prevents future impairments with WRAS implementation.

In 2004, targeted watersheds using CWA section 319(h) funds for the FY2005 RFPs for Watershed Group Formation were Upper Rio Grande, Pecos, and San Francisco watersheds. The FY2005 RFPs for On-the-Ground Surface Water Quality Improvement Projects were Cimarron, Conejos, Animas, Upper Rio Grande, Rio Chama, Rio Grande-Santa Fe, Rio Grande-Albuquerque, Jemez, Pecos Headwaters, Upper San Juan, Middle San Juan, Upper Gila, Upper Gila-Mangas watersheds.

Contracts that were developed for FY2004 CWA section 319(h) grant funds are:

- Development of a Stormwater Management Plan for Los Alamos County, NM, and Implementation Measures in the Pueblo Watershed
- Developing Collaborative Watershed Groups to Support TMDL Development in the Upper Rio Grande, Conejos, and Mimbres Watershed in New Mexico
- Taylor Creek, Upper Gila Watershed Restoration Project
- Comanche Creek Watershed Restoration Project—Restoring Habitat for the Rio Grande Cutthroat Trout, Part 2
- Rio Puerco de Chama Watershed Project
- NM 196/Cordova Creek Drainage and Alignment Improvement Project
- Rio Grande—Albuquerque Watershed Group Formation Project
- Collaborative Red River Restoration ORV Impact Remediation
- Rio Pueblo de Taos Watershed Stakeholders Action Initiative

Projects that were completed in 2004 are described in detail on the following pages.

Project Name: Valle Grande Grassbank Water Quality Improvement Project: a Composite of Projects in the Valle Grande Grassbank Program
Project Amount: $324,850 (Federal), $216,567(Match), $541,417 (Total)
Project Description: The Valle Grande Grassbank serves grazing allotment permittees and Forest Service resource managers on the Santa Fe and Carson National Forests. Management of the Grassbank is currently being transferred from The Conservation Fund to the Quivira Coalition. Additional cooperators included the Santa Fe and Carson National Forests and grazing allotment permittees. Six allotments in five watersheds have been served under this project. 2791 acres of piñon-juniper and ponderosa pine forest were thinned, 2130 acres were burned, six miles of fencing were constructed, and tens of thousands of rangeland acres were rested from grazing. The project supported several grazing management workshops, newsletters, and a well-attended grassbanking conference (all in 2001).

A thinned and burned area on Rowe Mesa, 2004. The area was burned in 2001 under the project.

A Watershed Restoration Action Strategy (WRAS) was completed for Rowe Mesa (the location of the grassbank), a large landscape area encompassing parts of the upper Pecos and Rio Grande – Santa Fe watersheds. The WRAS describes problems related to fire management, roads, noxious weeds, forest management, and grazing management, and recommends actions to take (or more detailed planning efforts) for each of these.
Despite some difficulties with turnover among Forest Service staff and wildfires (which made the project a challenge for the NMED project officer to manage and delayed or relocated some on the ground work), the project workplan was essentially implemented as planned. From a water quality perspective, the grassbank program can be of greater benefit in the future by enlisting participation from Forest Service allotments where cattle are clearly impacting 303(d) listed streams (or streams with appropriate nonpoint source TMDL's), or by working with private lands ranchers with impaired streams on their grazing lands.

Project Name: Upper Santa Fe Watershed Restoration Project
Project Amount: $419,248 (Federal), $367,200(Match), $786,448 (Total)
Project Description: This project was designed to protect water quality for forty percent of the water supply of the City of Santa Fe from the results of a large, intense wildfire, with a primary objective of reducing fuel loading in critical areas of the upper Santa Fe River watershed through carefully implemented and monitored thinning and prescribed burning. Without the project, a large, intense wildfire was expected to occur in the unnaturally dense forest that developed under past management. Of the 17,000 acres in the upper Santa Fe River watershed, 10,000 are not in designated Wilderness and are considered the project area. Approximately 4000 acres (of 4000-6000 acres planned) have been thinned, and over

A portion of the project area, showing tree densities after thinning. Unthinned forest in another watershed can be seen beyond the ridgeline.

2000 acres have been burned. This project, now primarily funded through Congressional earmarks, gathered momentum with support of the Section 319 program, and is probably the largest and best-monitored forest restoration project in New Mexico. Also through this project, the Santa Fe Watershed Association developed a Watershed Restoration Action Strategy for the greater Santa Fe River Watershed (from Lake Peak to the Rio Grande) with input from a Watershed Advisory Group representing many organizations and interests.

While the project is making significant headway at restoring the watershed's ponderosa pine forest, it does not address the threat to water quality posed by potential wildfire in the upper elevation forest within designated Wilderness. This area, though only comprising about 7000 acres, is the source of most of the Santa Fe River's flow, and is covered by forest types that naturally burn as infrequently as once in two or three hundred years at the highest elevations. While this project has worked towards restoring natural fire ecology (and thereby protecting water quality) at middle elevations, natural processes can still be expected to impact the Santa Fe River and drinking water infrastructure within the not-too-distant future.

Another key area that will determine the project's ultimate success is the degree to which the Santa Fe National Forest is able to utilize prescribed fire (or prescribed natural fire) to maintain the projects benefits. Without this management commitment, this approach to restoring ponderosa pine forest (over $900 per acre for the thinning conducted in this project) is probably not cost-effective.

Project Name: Rio Vallecitos Watershed Project

Project Amount: $47,775 (Federal), $19,110 (Match), $66,885 (Total)

Project Description: The headwaters of the Rio Vallecitos are located on the Hopewell Ridge in northcentral New Mexico in the Carson National Forest. The water quality problems associated in the Rio Vallecitos are siltation, turbidity, and heavy metals. The project was to prevent further water quality degradation of the Rio Vallecitos by restoring its natural hydrologic functions. This would be accomplished with streambank stabilization and re-establishment of riparian vegetation. The project also addressed compliance with water quality standards, which include reductions in peak water temperatures, turbidity levels, total suspended sediments, and reduction in heavy metal concentrations.

The biggest deterrent to finish this project in a timely manner was the high turn-around of Forest Service personnel from the El Rito Ranger District Office. The poroject officer had three different District Supervisors and two different Range Conservationists during the life of the project. There was miscommunication between the incoming and outgoing staff and the project timeline fell behind. The USFS staff and the project officer both learned a lesson in communication and planning.

Project Name: Esperanza Grazing Association

Project Amount: $122,000 (Federal) $85,283.46 (Match) $207,283.46 (Total)

Project Description: To improve water quality in the Rio Chama watershed and its tributaries including the Rio Nutrias and Lobo Canyon. The project will use a livestock and wildlife water distribution system,

Esperanza Sagebrush encroachment before treatment with Tebuthiuron.

riparian protection and enhancement, brush control to enhance grasses ability to hold soil, road improvements to reduce erosion, and soil erosion control structures. An educational effort will be completed involving the regions ranching communities and youth.

The water developments and change in grazing management which included herding and a strict rotational grazing strategy, have had a great impact on the range condition immediately, despite very droughty conditions in the early to mid-summer months.

The first education program on the 319 process was conducted in Cebolla for farmers and ranchers. The Esperanza Grazing Association conducted a second major educational event as a co-sponsor with El Sueno del Corrazon Ranch, Cooperative Extension Service and the U.S. Forest Service. Ninety-six youth from Abiquiu Elementary and Gallina High School FFA attended the daylong field day. The Tour taught by Forest Service personnel, Extension Specialists and Extension Agents covered the following subjects:

- Noxious Weeds Identification and Management
- Conservation of Rangeland Resources
- Conservation and Protection of Riparian Areas
- Maintaining Water Quality through Best Management Practices

Members of the grazing association also met with Chimayo Youth Conservation Corp Director to work on joint plans for education and work experience for its clientele.

Members of the Esperanza Grazing Association have joined the "Cebolla Working Group" an organization of NRCS cooperators formed to enact the Rio Cebolla Geographic Priority Area Plan. They are also members of the Upper Chama Soil and Water Conservation District. The Upper Chama Soil and Water Conservation District has agreed to co-sponsor educational events conducted at the Esperanza. They have also donated plant material for the riparian enhancement. They also will continue to use district funds to co-sponsor any youth or rancher educational events we conduct.

Willow planting along the Lobo Canyon riparian area was completed with help from the NRCS Chama office and the Soil Conservation District. End of season evaluation shows approximately 50% survival most others washed away due to a very heavy flooding event in the Lobo Canyon. Because the cattle herder was able to keep livestock out of Lobo Canyon, wetland plant species including rushes, bulrush, spikerush, and sedges have formed a thick mat in places stabilizing the valley floor. The condition of the Lobo Canyon floodplain and riparian area continues to remarkably improve through strict cattle management.

Lobo Canyon after grazing was eliminated from Canyon through the implementation of a new grazing strategy. Plants are dominated by rushes and sedges forming a thick, protective mat that is baffling sediment and beginning to stabilize canyon walls.

The work on the Esperanza project was delayed since they were not able to get BLM to obtain archeological clearances for the riparian fences, water line extension to Lobo Pasture or for electric power line extension to the Bosley well. The largest obstacle has been the uncompleted environmental assessment that was to be prepared by the Bureau of Land Management. A visit and negotiation from Federal Judge Lambreight occurred which helped to accelerate the Environmental Assessment process, which was still not completed until 2003. Since the EA was completed, road improvements and culverts have been installed, and cattle tanks repaired as match. The largest federal expense to complete the project was to apply tebuthiuron to sagebush for brush control in the fall or winter. It was completed in November, 2004.

The Gallinas River before (above) and after (below) stream reconstruction.

Project Name: Gallinas Watershed Stewardship Enhancement Project

Project Amount: $90,000 (Federal) $62,526 (Match) $152,526 (Total)

Project Description: This project goal was to improve water quality by reducing erosion and siltation through the use of Best Management Practices (BMPs) in the Gallinas River watershed. The Gallinas River is a tributary to the Pecos River and is an important cold water fishery on the east side of the Sangre de Cristo Mountains. It is also the primary source of water for the City of Las Vegas, New Mexico and contributes 90% of the water to Storrie Lake State Park. These site specific land management/treatment practices reduce erosion and siltation with a desired end result of at least 10% reduction in turbidity. The educational outreach served to provide a sense of ownership and stewardship of the watershed in 75% of the recipients. This is intended to create a greater sense of awareness improving river health and water quality through watershed management. The assistance that was provided to city and county governments helps to protect the watershed for future use and through the regulatory roles of local governments will strengthen the outlook for future generations. These practices were implemented on private and public lands throughout the Gallinas Watershed.

In December of 2003, Damian Lujan Sr., Damian Lujan Jr., David Lujan and Tierra Y Montes staff, built a 22 foot vane. This vane will minimize streambank erosion and provide stability for riparian vegetation to grow.

The project has worked with numerous land owners and as the successes become visible, neighbors request information and are participating in restoration activities.

One of the highlights of this project was to return the Gallinas River to the valley floor on private property. The landowner had contacted the project lead (Tierra Y Montes SWCD) because of downcutting occurring in the river. After site visit and observation, the conclusion was that the river had likely been captured by an

irrigation ditch. The remnant river still had shallow underground flow and riparian/wetland vegetation. After re-alignment of the river, and with the natural meandering an additional 275 feet was added to the river length. The stream slope decreased, so it will slow the water flow down allowing it to soak the river meadow and reduce erosion. The results include increased groundwater recharge, healthier riparian, stable banks and enhanced wet meadow habitat.

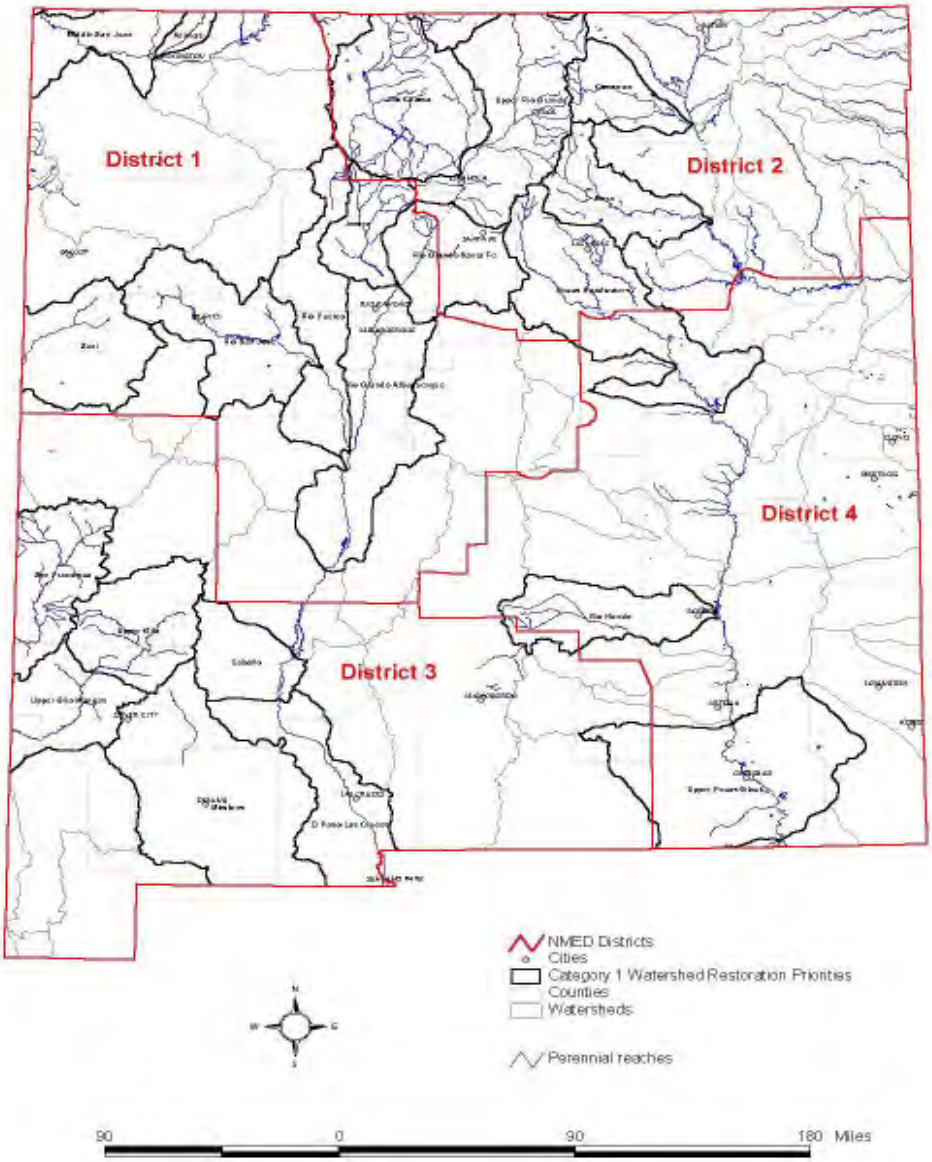
Project Name: Upper Rio Hondo Watershed Restoration Project-Phase I
Project Amount: $100,000 (Federal) $78,180 (Match) $178,180 (Total)
Project Description: This project is to improve water quality in the Rio Hondo Watershed through the implementation of a number of riparian and upland subprojects in key areas throughout the watershed. A secondary and requisite objective is to expand the very successful outreach and education effort of the Rio Ruidoso River Association, an already established inclusive watershed-wide coalition that has widespread public awareness, support, and participation.
This project took advantage of the Upper Hondo Watershed Coalition's established identity and resources to draft a comprehensive WRAS for the watershed, and 2) to complete several clearly defined projects in the watershed that demand immediate attention. A Watershed Restoration Action Strategy has been completed for the entire Upper Hondo Watershed. The Ruidoso River Association expanded its 10th annual Rio Ruidoso River Cleanup Party to include other waterways in the watershed. The annual event is now called the "Rivers of Ruidoso" Cleanup. Additional streams included in the 2003 cleanup were Eagle Creek, the Rio Bonito, Little Creek, and Gavilan Creek. This project generated in excess of $35,000 in match for this project.
Six restoration projects have been implemented that will greatly reduce sedimentation by creating conditions conducive to a restoration of native ground cover vegetation which will stabilize the soil, minimize surface erosion, improve infiltration, and reduce the potential of catastrophic wildfires and subsequent degradation of water quality. The Philadelphia Canyon project will also improve a significantly degraded riparian area along Philadelphia Creek where sensitive wildlife species exist.

Project Name: Implementation of NPS Pollution Control in the Santa Fe River
Project Amount: $144,650 (Federal) $155,750 (Match) $300,400 (Total)
Project Description: This project's goal was to improve the water quality conditions as documented in the Santa Fe River TMDL, by reducing sediment and temperature exceedances. This would be achieved by using successful practices such as an increase in streamside vegetation, re-establish floodplain and to promote educational opportunities. Initially the project set up fence exclosures on City of Santa Fe property to minimize grazing on riparian vegetation. Second, the Forest Guardians collected native woody vegetation. These efforts included planting thousands of willows and cottonwoods engaging local residents and

The Santa Fe River before (left) and after (right) restoration.

schoolchildren through the planting projects. These plants had an incredibly high survival rate and grass, sedges and other plants have taken hold, increasing the bank stability, providing shade and habitat.
This project experienced setbacks, with community members who disagreed with these practices, arguing that riparian uptake of water would lessen flow to downstream users, and increase flood damage if trees are uprooted. However, through many meetings and agency involvement, the project demonstrated that riparian ecosystems recharge the aquifer, and actually slow down flood waters, lessening any destructive impacts. Finally the project was completed by the removal of non-native vegetation in the two-mile project area. The project was able to involve and educate hundreds of people directly and indirectly, involving local schools and residents and members as was identified in the workplan, and indirectly through the media stories in local newspaper articles.

Project Name: New Mexico Water Fair and Water-Quality Outreach Program
Project Amount: $49,003.08 (Federal) $13,031.99 (Match) $62,035.07 (Total)
Project Description: The extent and severity of potential contamination of drinking water supplies in rural communities of New Mexico is largely unknown because most homeowners do not test their domestic well water for contaminants, either because of their unawareness of potential for contamination or because of costs associated with water testing.



In order to identify possible non-point source water quality problems in rural communities of New Mexico, NMED has conducted free testing of domestic wells ("Water Fairs") throughout the state for over 10 years. In 2002, the NMED Ground Water Quality Bureau (GWQB) received EPA funds, under Section 319(h) of the Clean Water Act, to carry out an extensive Water Fair program throughout the state in order to identify possible non-point source water quality problems. As a part of that program, the GWQB would conduct educational outreach activities targeted at do-

mestic well owners so they could make informed decisions regarding water quality issues in their communities.

Each Water Fair event included the following:

- free testing of water samples from private domestic wells and community wells for nitrate, iron, sulfate, fluoride, conductivity, pH, and organic vapor using portable analytical equipment, and
- educational outreach activities on water quality issues that were carried out through informative brochures, displays, interactive models, and individual contact with NMED staff.

Preference in scheduling Water Fairs was given to communities located in priority watersheds and/or had known or suspected ground water contamination. Water Fairs were conducted either in response to requests from citizens concerned about water quality in their community, or were initiated by the NMED in order to target communities that, based on NMED data, had existing or suspected ground water contamination. When advertising each event, local newspapers and radio stations were contacted about the upcoming Water Fair. In addition, notices about the event were posted at local post offices, churches, grocery stores, and other public places. Since many Water Fairs were conducted in cooperation with local watershed groups or other community organizations, their members were usually heavily involved in distributing flyers and other advertising activities. Sometimes, community members helped NMED staff with activities such as assisting well owners complete the Water Fair forms. Water Fairs were conducted in each of the four NMED districts: ten events in District 1, four in District 2, eight in District 3, and six in District 4. Only seven Water Fairs (25% of total) were not conducted within priority watersheds. Eight priority watersheds had at least one Water Fair conducted within their territories.

Project Name: Respect the Rio

Project Amount: $255,500 (Federal) $171,000(Match) $426,500(Total)

Project Description: The project "Respect the Rio" was designed after a similar project used by the US Forest Service in the Pacific northwest. It is a combination of environmental education, watershed restoration, public involvement and empowerment. Attaining these goals will result in improved water quality, recovered and improved fish and wildlife habitat, designate dispersed recreation sites (while encouraging low-impact recreation practices), rangeland restoration and improved grazing management.

One of the goals is to work with and educate forest users to respect their natural resources and still provide multi-use formats. The Contact Ranger Program is designed to communicate with the "users", one on one, and survey their wants, needs and desires. The staff talked to 1,870 dispersed campers these past two seasons. The results of the survey collected will be kept in a database and reported annually.

This project also reached about 3,000 additional people through the outreach programs (Water Festivals, classroom talks, group meetings, etc.).

Other innovative techniques to educate and entertain the public include instructional interpretive signs, movie

The Rio de Las Vacas during (above) restoration and after completion (below).

theater ad, and paper tents in restaurants. The Walatowa Visitor Center native fish aquarium display has been a successful educational tool and a great partnership with the Jemez Pueblo. A website was created to inform the public about the program. The web address is <www.fs.fed.us/rtr> .

Approximately eight miles (not contiguous) of buck and pole fence has been put in to protect vulnerable riparian growth from dispersed camping.

Fencing in partnership with permittees has improved grazing management. Approximately 14 miles of exclosures have been installed and special interest groups such as New Mexico Trout have been instrumental in the match for this as well as water improvement projects. Specifically, the Rio de las Vacas has undergone restoration to increase and improve habitat by decreasing stream width and temperature. This project if successful will help remove the TMDL from the stretch of river.

Project Name: Tularosa Creek Watershed Restoration Project

Project Amount: $146,056.98 (Federal) $ 114,150.16 (Match) $ 260,207.14 (Total)

Project Description: Approximately 183 acres of pinion/juniper were flat cut on the Mescalero Reservation along with 45 acres of Siberian elm using cut stump treatment with Garlon 4. The pinion/juniper treatment area will be rested from livestock indefinitely, while the elm treatment will be protected in perpetuity since this area is a special reserve along the school property. Willow, common reed and cottonwood trees were planted in place of the elms. On April 16, 2004 the project hosted a children's water festival at the Mescalero public schools with over 200 in attendance.

South-Central R,C&D inspects grass recovery following tebuthiuron treatment on public land.

Approximately 2480 acres of state trust land was treated with tebuthiuron for the control of Creosote bush. A baseline transect with photo points was established prior to treatment. The treatment area was rested from grazing one year prior to treatment and two years following treatment. A 95% control rate has been reported on state lands.

Approximately 54 acres of private land was treated with tebuthiuron for the control of Creosote bush in conjunction with state trust land. Downstream from the bush control, 665 feet of riparian corridor on private land was treated for salt cedar using a cut stump treatment with Garlon 4. Willows and cottonwoods were planted as replacement vegetation for bank stability. An additional 444 acres were treated for mesquite control with the assistance of the Natural Resource Conservation Service (NRCS). Velpar L herbicide was applied using an exact delivery handgun. Two monitoring plots using the NRCS rangeland health surveys were established with photo points.

The Bureau of Land Management, Las Cruces District treated approximately 206 acres with tebuthiuron for Creosote bush control in conjunction with state trust land and private land. The BLM also treated approximately 250 acres of state, private and federal land riparian corridor with Arsenal for the control of salt cedar. In addition, another 3.1 miles of riparian corridor was treated with Arsenal on BLM land to protect the vegetative integrity of Coyote Canyon. The project hosted another children's water festival for the Tularosa School District, approximately 437 participants were in attendance.

Project Name: Upper San Francisco Riparian Enhancement Project
Project Amount: $78,000 (Federal) $52,000 (Match) $130,000 (Total)
Project Description: The objectives of the project were to establish approximately eight miles of fence taking advantage of terrain, contours, and topography to create discrete riparian pastures for improved grazing management as well as placing trick tanks for better utilization of forage. By utilizing this technique, erosion may be reduced simply by effective management of the livestock movements. Various analyses, studies, and experiments have been designed and implemented historically based on forest protocol as well as overall management of discrete grazing plans for wildlife and domesticated animals. The goal was to establish a certain stubble height, density, vigor and health compatible with range conditions for this ecosystem and manage accordingly. This will reduce quantities of sediment being transported into the San Francisco River from erosion. The fences will take advantage of terrain such as steep ridges and deep valleys as well as topography. Allowable use guidelines will take into consideration riparian areas and wildlife utilization levels. Hunting permits for wildlife was issued accordingly along with and taking into consideration range condition. The project is complimenting a watershed project that includes management of approximately 1850 square miles.
Cooperators included the Gila National Forest, New Mexico Environment Department/Surface Water Quality Bureau, Rocky Mountain Elk Foundation, Grazing Permitees, Wild Turkey Foundation, New Mexico Game and Fish Department and the Environment Protection Agency.

Project Name: Gila National Forest Watershed Projects
Project Amount: $157,000 (Federal) $105,000 (Match $105,000) $262,000 (Total)
Project Description: This project was comprised of multiple projects submitted by individual ranger districts within the Gila National Forest. All projects are prescribed burns, water source protection, and fencing of recreational areas. Objectives as stated in the approved work plan were 1) restoring fire under controlled parameters to improve the quality of water coming from the project area, 2) recycling of nutrients by fire, 3) lowering of tree densities to improve growing conditions for herbaceous ground cover, and 4) reducing the risk of catastrophic wildfire. This increase in herbaceous vegetation will add ground cover to the project area improving rainfall infiltration rates and thereby reducing sediment-laden runoff. This reduction of nonpoint sources of water pollution results in an improvement of water quality for downstream users in the Gila Valley.

Pinyon/juniper control using prescribed fire in the Gila National Forest

Best Management Practices (BMPs) for Control of Major NPS Pollution Categories and Subcategories identified in the New Mexico NPS Pollution Water Quality Assessment (2002) and implemented under this project follow:
Fire suppression and fuels management

- fire and fuel management activities to reduce frequency, intensity and destructiveness of wildfires
- consideration of water quality in formulating fire prescriptions
- protection of water quality from prescribed burning effects

- minimizing watershed damage from fire suppression efforts
- repair or stabilization of fire suppression activities related to watershed damage
- emergency rehabilitation of watershed following fires

Watershed Management

- watershed restoration to reduce potential for NPS pollution
- tree density reduction combined with increase in native herbaceous ground cover

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Project Name: Maudes Canyon State Land Office
Project Amount: $30,315 (Federal) $33,332 (Match In-Kind) $63,647 (Total)
Project Description: This project is proposed to improve channel stability, decrease sediment loading and improve water quality along a reach of Maudes Canyon, a tributary of the Mimbres River. The project will be aimed at reducing non-point source pollution loading into the Mimbres River watershed. The principal pollutants contributed from the subject source area are sediments and any associated bonded contaminants. Accordingly, the methodology of the project will center on the control of sediment transport from the point of detachment. The New Mexico State Land Office administered the project in close cooperation with the Department of Biology at Western New Mexico University and the Gila Chapter of the Native Plant Society of New Mexico.

Dan Claypool and David Menzie of the SWQB inspect brush control on Maude's Creek

The approach for site treatment and management will be centered on controlling sediment at the point of detachment. Accordingly, emphasis will be given to the re-establishment of a climax plant community. The Land Office initiated a brush control strategy along with planting of native grasses to combat this process, re-establish under story species and raise the water table along the floodplain. The NRCS has developed a method that creates sediment fences in erodible gullies followed by planting of grasses along the ensuing formed terraces. Treatment also included invasive weed management, utilizing the recommended herbicide and application rate for the region along with the most ecologically sensitive application method. Follow-up treatment consisted of identifying and digging up seedlings at least four times annually.

The project also included a road erosion control strategy to manage an unpaved road by rock mulching a 1000 feet section of the road. The Land Office installed breakaway fencing at two locations in the channel to act as a barrier to all-terrain vehicles, which frequently enter the site. These off-road vehicles pose a serious threat to the future success of any non-point source pollution control program and their access to the site must be controlled.

Project Name: Mangas Water Quality Project
Project Amount: $116,991 (Federal) $229,812 (Match) $346,803 (Total)
Project Description: This stream is identified on the New Mexico Impaired Waters List as partially supported for plant nutrients and stream bottom deposits. Impairments of Mangas Creek are the result of an unhealthy watershed. Health problems of the Mangas watershed have a 100-year history of land managers and property owners doing what was thought to be correct at the time but now understood to be short sighted.

Grant SWCD, EPA and NMED/SWQB inspect grass recovery following 2003 prescribed burn

The Mangas Water Quality Project will return fire to the ecosystem of the Burro Mountains. As a result, over time, the tree and shrub component of the plant community will be reduced and herbaceous vegetation will increase. Sheet type soil erosion will be reduced. Six areas are identified to stop gully and head-cut erosion. This project will be conducted preliminary to the construction of erosion control structures planned for the deeply incised channel of Mangas Creek. More than just stopping and storing soil currently transported down erosion gullies, the erosion structures are intended to stop the head-cut itself. These structures will be built in the upper most reaches of the gully. The middle and lower reaches of these erosion channels will require different approaches and should not be attempted until the health of the watershed improves. An average structure will be built in a gully of about four percent slope. Over 100 gully plugs were installed during the length of this project.

Project Name: Continental Divide National Scenic Trail/Aldo Leopold Wilderness
Project Amount: $123,000 (Federal) $127,040 (Match) $250,040 (Total)
Project Description: Reconstruct the Continental Divide Trail adhering to accepted trail practices taking advantage of topography, contours and other techniques while the forest regenerates from past burns.
Ultimately, the most influential component of trail maintenance is the original trail design/alignment. A well-designed trail will be easier to maintain, will deteriorate more slowly and will be more pleasurable to utilize. New trail construction and reconstruction is occurring not only at grades less than 10%, but also with the implementation of a variety of Best Management Practices (BMPs) that are designed to protect and improve water quality. These include water bars, check dams, grade dips, lead out drains, terracing, switch backing, among others. All of these practices, combined with lower gradients, will allow the trail to successfully slow down surface runoff, trap sediment, and maintain the integrity of soil. These effects will ultimately lead to a reduction in onsite soil loss, thus reducing the amount of non-point source negative effects to drainage bottoms. The most permanent water bars are made from native rock obtained on-site. When rock of a suitable size is not available, water bars can be made from 4 x 6 redwood timber, or native logs. There are many options about the proper installation of water bars. Rock or crib retaining walls are used when a sturdy wall is needed to contain compacted fill or to hold an excavation wall in place. Rock retaining walls are also called dry masonry because no mortar is used between the stones. Rock, when available on site, is preferred over logs. Approximately 12.5 miles of trail has been reconstructed or improved during the length of this project.

Project Name: Santa Fe Botanical Garden & Las Golondrinas
Project Amount: Federal ($100,000.00) Match ($76,473.25) Total ($176,473.25)
Project Description: The wetland above the pond is fed by numerous springs, which serve as the primary source of water. Excessive nutrients tend to be problematic. Five monitoring wells have been installed to support periodic monitoring to study water level, pH and temperature as well as testing for presence of nutrients. The pond was dredged in June, 2002 by Earthworks International, Inc. Dredging removed accumulated sediment and organic debris and returned the pond to open water. Before dredging the depth of the pond was estimated at 2 feet maximum and exibited low species diversity. After dredging the depth of the pond had increased in a number of areas to about 10 feet. Disturbed terrain was contoured to reduce future silt runoff into the pond. The dredged material was deposited in an adobe pit and was allowed to dry. Spoils were eventually reseeded with a dry land native grass seed. The pond dredging project has had a marvelous impact on the both the Santa Fe Botanical Garden and the El Rancho de las Golandrinas. We have observed much macro-invertebrate life in the pond and sightings of diverse bird species, musctrats and beaver indicating a healthy ecosystem. The pond perimeter is vegetated with diverse wetland plant species. Our public programs for both adults and children have been well attended. This has been very rewarding for our staff and volunteers.

At the Leonora Curtin Wetland Perserve (LCWP) three redwood boardwalks (500 feet total), two bridges and a floating dock have been constructed to allow visitors to view the pond and stream areas without compromising the integrity of the fragile wetland landscape. Access to the site is so much improved while the habitat is protected. At the El Rancho de las Golandrinas sediment detention ponds were created to contain storm water runoff from the upper mesa and agricultural fields. Prior to the addition of the retention ponds, sediment flowed directly into a perennial creek.

The noxious species identified at the LCWP are Russian olive, lactuca, non-native thistle, Russian knapweed and kochia. The application of an herbicide in July, 2003 reduced the quantity of Russian knapweed at LCWP. In August, 2003 large patches of lactuca were mowed. Activities to control the spread of these species have been accomplished largely through volunteer efforts that have not always timed for maximum effectiveness. Knapweed has reappeared in a few small patches this summer indicating the need for a second herbicide application. It does appear, however, that with attention, the spread of this invasive weed is under control. A weed management plan is needed for long term maintenance of the site.

The Santa Fe Botanial Gardens (SFBG) incorporated most of our revegetation planting activities at the LCWP into educational programs for 5th through 11th grade students from Santa Fe schools. 97 students learned about the value of native plants and their use to control erosion. 900 plants were planted in spring, 2004. Species included black willow, peach leaf willow, Rio Grande cottonwood, hackberry, New Mexico locust, apache plume, four- wing saltbush, golden current, New Mexican privet, winterfat and buffalo berry. The 2004 planting proved to be quite successful. Thanks to our volunteer efforts to hand water until summer rains began, we estimate that approximately 70% of the plants are successfully started. An earlier planting project of Rio Grande cottonwood poles was less successful due to poles infected with cryptosporidium.

In 2002 the SFBG and the ERDLG, along with neighboring landowners, formed the La Cienega Watershed Alliance. The objective of this alliance is to coordinate activities to promote the health of the La Cienega watershed and improve water quality and wetlands resources. In the fall of 2003 the SFBG initiated a pilot program to bring elementary school children and their teachers to LCWP for hands-on activities at the pond. Approximately 200 children have had the opportunity to look at macro invertebrates and other pond life and to examine plants that flourish in the wetland. The program was very successful and has been expanded in the 2004/2005 school year to include a second session with the children in the spring.

CWA Section 401 - Dredge and Fill Program

During 2004, the Surface Water Quality Bureau continued to review dredge and fill projects for Water Quality Certification under Section 401 of the federal Clean Water Act. The purpose of the Water Quality Certification Program is to ensure that Section 404 Dredge and Fill permits issued by the US Army Corps of Engineers comply with state water quality standards. For this purpose, the state has previously been divided into northern and southern jurisdictions. The Silver City office handles the southern region which includes all activities occurring south of the town of Socorro while the Santa Fe office has traditionally handled all points north. In May of this year a third region, the northeast quadrant, was delineated and duties have been assigned to staff in the Las Vegas Office.

DREDGE AND FILL ACTIVITY	CERTIFICATIONS
MAINTENANCE	21
SCIENTIFIC MEASUREMENT DEVICES	5
OUTFALL STRUCTURES	6
UTILITY LINE DISCHARGES	17
BANK STABILIZATION	8
LINEAR TRANSPORTATION CROSSINGS	29
MINOR DISCHARGES	6
STREAM AND WETLAND RESTORATION ACTIVITIES	7
TEMPORARY CONSTRUCTION, ACCESS AND DEWATERING	11
BOAT RAMPS	1
RESIDENTIAL, COMMERCIAL, AND INSTITUTIONAL DEVELOPMENTS	6
STORMWATER MANAGEMENT	8
FISH AND WILDLIFE HARVESTING ACTIVITIES	1
SURVEY ACTIVITIES	6
RESHAPING EXISTING DRAINAGE DITCHES	3

Other Authorizations and Actions

DREDGE AND FILL ACTIVITY	CERTIFICATIONS
INDIVIDUAL PERMITS	15
SWANCC	4
EXEMPTION	7
TULLOCH	6
VIOLATIONS	16

Total CWA Section 404/401 Water Quality Certifications: 183

New Mexico Mining Act

The WPS staff working under the New Mexico Mining Act (NMMA) are responsible for review and comment on proposed mining activities as they will affect surface water standards as presented in the State of New Mexico Standards for Interstate and Intrastate Surface Waters (20.6.4 NMAC), the Water Quality Act (WQA Chapter 74, Article 6 New Mexico Statutes Annotated – NMSA – 1978), the Water Quality Control Commission Regulations (WQCC 20.6.2 NMAC), and the SWQB's standing policies. Staff review and comment on exploration and mine permit applications, mine site closure/closeout plans and mine site discharge permits to insure that surface waters of the state are not adversely impacted by mining activities. Staff represents the SWQB in public meetings and hearings concerning the NMMA and WQA as necessary. Staff also will participate in site inspections and perform other fieldwork to support permitting and operational requirements. Accomplishment of these objectives requires coordination between WPS and other sections within the Surface Water Quality Bureau, Ground Water Quality Bureau, Air Quality Bureau, NMEMNRD Mining and Minerals Division, NM Department of Game and Fish, USEPA, NM State Historic Preservation Office, US Forest Service, US Bureau of Land Management and the mine operators and their consultants.

Staff provide oversight for the following mine site water quality investigations; Terrero Mine Administrative Order of Consent (AOC), Molycorp Mine AOC, St. Anthony Mine Phase I Abatement Plan and Northeast Church Rock Mine Phase I Abatement Plan. Staff continues to also provide oversight at the Molycorp Mine for the US Geologic Survey investigation of baseline and pre-mining ground water quality and the Stability Review Board investigations. Staff has also been involved in the Tyrone Mine reclamation activities.

Fiscal Year 2004 NMMA Staff Activities

Mine Applications		
	Minimal Impact Mines	4
	Exploration Projects	10
Closure/Closeout Plans		
	Closeout Plans	2
	Documents (Supporting Closeout)	23
Mine Site Investigations/Inspections		37
Public Hearings		1
Public Meetings		8

Wetlands program

In 2003, the Surface Water Quality Bureau (SWQB) Watershed Protection Section initiated the SWQB Wetlands Program to protect and enhance New Mexico's remaining wetlands and riparian areas by increasing self-sustaining and naturally functioning wetlands. This program also integrates wetlands as a prevention of water quality impairments, promotes wetlands as goals of watershed groups through development of wetlands action plans, and supports efforts to increase wetland acreage through wetland creation projects and wetland education.

Three new federal grants totaling more than $375,000 in federal assistance have been approved for further funding consideration through the FY04 EPA Wetlands Protection Development Grant Program authorized by CWA Section 104(b)(3). Funding will be awarded to the Surface Water Quality Bureau Watershed Protection Section Wetlands Program this September. SWQB has been actively pursuing the development of wetlands projects throughout the State.

The project funds are for "El Restauro Phase 1 Project-Wetland/Riparian Restoration on The Upper Rio Grande, Pilar To San Juan Pueblo," "Planning for Wetlands in the Galisteo Watershed," and "Restoring Wetlands and Training Restoration Specialists on Cedro Creek" projects. All of these projects will be conducted with multiple community and agency partnerships.

"El Restauro Phase 1 Project" focuses on a 25-mile section of the Rio Grande in northern New Mexico from Pilar to San Juan Pueblo. This project will coordinate efforts to restore wetlands, wildlife habitat (particularly for endangered species), acequias and agricultural lands, and improve water quality along this reach of the Upper Rio Grande. Our intent is to involve the local community in planning the enhancement of the river environment in the context of traditional cultural values that have connected people to the land and its precious water resources for centuries. Wetlands and riparian improvements will be constructed on 35 acres of bosque as demonstration projects using traditional irrigation techniques to enhance wetland function

Projects focused on water quality improvements in the Galisteo Watershed near Santa Fe have been ongoing successfully for several years. The Galisteo Watershed Association will now incorporate wetland issues into their planning initiative for the watershed by developing wetland creation, restoration and protection plans for seven high priority areas for the "Planning for Wetlands in the Galisteo Watershed" project. These initiatives will culminate in the construction of two wetlands projects in areas determined to be the highest priority for immediate action.

"Restoring Wetlands and Training Restoration Specialists on Cedro Creek" focuses on recreating streamside "fringe" wetlands on degraded stream channels by forcing stream channel evolution to a more stable state using low-cost low-tech solutions. Through a series of seminars and restoration projects on Cedro Creek, more than 25 restoration specialists will be trained in stream morphology restoration techniques. Over two miles of Cedro Creek and its tributaries, located on the east side of the Manzano Mountains in central New Mexico, will be the focus of restoration work.

The following report is a list of the projects carried out on Cibola National Forest lands that either directly or indirectly affect water quality and watershed health in the central portions of New Mexico. Since the Cibola National Forest manages many of the headwaters of watercourses in the central part of the state, projects undertaken on Forest lands have the potential to affect water quality throughout that region. The main affect to water quality from Forest lands is sedimentation. The causes of sedimentation vary with vegetation management, soils, precipitation intensity and other variables, the projects listed below are intended to decrease the rate of erosion and therefore sediments entering watercourses in the short and long term. Short-term projects include road reroutes away from riparian areas and improving road drainage. Long-term projects include forest thinning which decreases the likelihood of catastrophic wildfires that subsequently expose soils to erosion from overland runoff. A variety of projects are listed by Forest District below.

MOUNT TAYLOR RANGER DISTRICT

Project Name: Antelope Flats Thinning
Location: Township 13N, Range 5W, Section 11, 14, and 15
Project Objectives: Reduce Piñon/Juniper seedling invasion and make more available precipitation for watershed improvement.
Acres Affected: 800

Project Name: Cubero Allotment
Location: Township 12N, Range 7W, Section 27 - 34
Project Objectives: Increase production of herbaceous species to improve ground cover of meadow and riparian area.
Acres Affected: 3200

Project Name: Sedgwick Fire Burn Area Emergency Restoration (BAER)
Location: Township 11N, Range 12W
Project Objectives: To determine if emergency resource or human health and safety conditions exist. To alleviate emergency conditions following wildfire to help stabilize soil; to control water, sediment, and debris movement; to prevent permanent impairment of ecosystem structure and function; and to mitigate significant threats to health, safety, life, property, or downstream values. To monitor

the implementation and effectiveness of prescribed emergency treatments. The Forest Service has completed seeding of 200 acres of high intensity burn and 1400 acres of moderate to high intensity burn. Numerous road projects have been completed as well (i.e. Culvert over sizing and removal of old culverts).
Acres Affected: 8600
Lessons Learned: Sediment transport has been significant through the lower reaches of Bluewater Creek. Located one mile upstream from forest road 178 crossing. High flows have also been documented in Limekiln Canyon, Pole Canyon, and Diener Canyon.

MAGDELENA RANGER DISTRICT

Project Name: Davenport Thin and Pile
Location: Township 1N, Range 10W, Section 29 SW1/4 NW1/4
Project Objectives: Fuels Reduction. Thinned Ponderosa Woodland, Piñon-Juniper, and mixed conifer forests. Scheduled to burn piles this calander year if prescription window allows.
Acres Affected: 34

Project Name: Hop Canyon Pile Burning
Location: Township 3S, Range 4W, Section 14
Project Objectives: Fuels Reduction. Treateed Ponderosa Woodland, Piñon -Juniper, and mixed conifer forests.
Acres Affected: 50

MOUNTAINAIR RANGER DISTRICT

Project Name: Lookout Burn Browse seeding for wildlife
Location: Township 1N, Range 12E, Section 29, 30, 31 and 32
Project Objectives: Seed browse species beneficial to wildlife (winter fat and mountain mahogany) on the Lookout wildfire.
Acres Affected: 3,000

Project Name: Thunderbird Roost Tree Enhancement
Location: Township 4N, Range 5E, Section 11
Project Objectives: Thin small diameter trees from below larger diameter ponderosa pine to protect remaining large trees from wildfire, disease, and drought. Reduce competition for water and nutrients to move structural stage to mature stand characteristics. Project funded by New Mexico Habitat Stamp, part of Thunderbird Ecosystem Restoration Project.
Acres Affected: 90

Project Name: Apache Canyon, Ojo Terrero Canyon and Troncon Negro Canyon PFC Assessment
Location: Township 7N, Range 6E, Section 29,30, and 32

Project Objectives: Conduct a Proper Fuctioning Condition assessment on three drainages in the Tajique Watershed Restoration Project area. Apache Canyon survey was from 1/4 mile upstream from Apache Spring downstream to private land boundary; Ojo Terrero Survey was from Ojo Terrero spring near FR 321 downstream to confluence with Troncon Negro. Troncon Negro survey was upstream from confluence with Ojo Terrero to private land. All areas were determined to be functioning but at risk with influences from livestock grazing, roads and densely stocked forests and woodlands in the upper watershed contributing to unsatisfactory conditions.
Miles Affected: 4

Project Name: Anderson Burn
Location: Township 5N, Range 5E, Section 2-5, 8-12, and 23-26
Project Objectives: Fuels reduction of Piñon –Juniper Woodland and wildlife habitat improvement. This project was part of the Thunderbird Ecosystem Restoration Project.
Acres Affected: 50

Project Name: Cattleguard Thin, Pile, and Burn
Location: Township 5N, Range 5E, Section 2-5, 8-12, and 23-26
Project Objectives: Fuels reduction of Piñon –Juniper Woodland and wildlife habitat improvement. This project was part of the Thunderbird Ecosystem Restoration Project.
Acres Affected: 19

Project Name: Thunderbird 253, 275, and 422 Thin, Pile, and Burn
Location: Township 5N, Range 5E, Section 2-5, 8-12, and 23-26
Project Objectives: Fuels reduction of Piñon –Juniper Woodland and wildlife habitat improvement. This project was part of the Thunderbird Ecosystem Restoration Project.
Acres Affected: 556

Project Name: Lookout Fire Burn Area Emergency Restoration (BAER)
Location: Township 2N, Range 10E
Project Objectives: To determine if emergency resource or human health and safety conditions exist. To alleviate emergency conditions following wildfi re to help stabilize soil; to control water, sediment, and debris movement; to prevent permanent impairment of ecosystem structure and function; and to mitigate significant threats to health, safety, life, property, or downstream values. To monitor the implementation and effectiveness of prescribed emergency treatments. The Forest Service has seeded 5400 acres of high intensity burn and removed culverts and installed oversized culverts or low water crossings. Heavy flows have been documented.
Acres Affected: 5400

KIOWA/RITA BLANCA NATIONAL GRASSLANDS

Project Name: Prescribed Burn to Improve Habitat for the Lesser Prairie-Chicken

Location: Township 35E, Range 25N, Section 11 and12
Project Objectives: The prescribed burn project was implemented to remove old decadent plant material and release nitrogen into the soil, promoting rejuvenation of the existing sand sage shrubs and grasses such as big bluestem, little bluestem, and switch grass for enhancement of lesser prairie-chicken nesting and foraging habitat.
Acres Affected: 590

Project Name: Mechanical thinning of piñon and juniper trees on K-91W

Location: Township 21N, Range 24E, Section 21, 27, 28, 34, and 35
Project Objectives: To reduce piñon and juniper tree encroachment onto the short grass prairie within the Canadian River Watershed. To improve the density and diversity of both under story vegetation and mid-story vegetation, including grasses, forbs, and shrubs. To improve wildlife habitat conditions including hiding cover, nesting cover, thermal cover, and foraging habitat. To reduce soil erosion and improve soil condition.
Acres Affected: 300

Project Name: Reduction of livestock numbers authorized to graze on the Kiowa National Grassland due to drought conditions and concerns

Location: Harding and Union Counties
Project Objectives: The severity of the drought across the area from 2001 to the summer of 2004 resulted in significant reductions in livestock numbers, shortened seasons of use, and in some cases total livestock removal. During the height of the drought approximately 60% of permitted livestock were removed from the Kiowa National Grassland.
Acres Affected: 136,562

Project Name: Mechanical thinning and fuel wood harvest of piñon and juniper trees on K-84

Location: Township 21N, Range 24E, Section 1 and 2
Project Objectives: The objectives of this project was to reduce Piñon and juniper tree encroachment onto the short grass prairie within the Canadian River Watershed; to improve the density and diversity of both under story vegetation and mid-story vegetation, including grasses, forbs, and shrubs; to improve wildlife habitat conditions including hiding cover, nesting cover, thermal cover, and foraging habitat; and to reduce soil erosion and improve soil condition.
Acres Affected: 300

Project Name: Riparian Condition Assessment of the Forest Service Administered portion of the Canadian River

Location: Township 20N to 22N, Range 24E, Section Various
Project Objectives: Riparian inventory and study of the Tarzwell Substrate, and stream health indicators to provide a stream health assessment for the reach of the Canadian River that flows through the Kiowa National Grasslands. The data collection was completed in preparation of an analysis for a Canadian River Tamarisk Treatment Project
Miles Affected: 13

USDA-Forest Service
Coronado National Forest

Project Name: Mechanical thinning and fuel wood harvest of piñon and juniper trees on K-90
Location: Township 21N, Range 24E, Section 11, 12, and 14
Project Objectives: To reduce piñon and juniper tree encroachment onto the short grass prairie within the Canadian River Watershed. To improve the density and diversity of both under story vegetation and mid-story vegetation, including grasses, forbs, and shrubs. To improve wildlife habitat conditions including hiding cover, nesting cover, thermal cover, and foraging habitat. To reduce soil erosion and improve soil condition.
Acres Affected: 230

The Coronado National Forest has put a great deal of effort into monitoring range management allotments and erosion control projects. In addition, Best Management Practices (BMPs) have been implemented on erosion control projects, allotment management plans (AMPs), fuelwood sales, recreation planning, and road reconstruction. The following paragraphs provide some details.

Douglas Ranger District
Monitoring Accomplishments

Watershed Name	10 digit HUCs	Allotments Monitored for BMPs	Improvements and Other Monitoring
San Bernardino Valley- Silver Creek	1508030202	Geronimo, Maverick, Pedragosa	
Animas Creek	1504000304	Walnut Canyon	Flow data, Ground cover, and vegetation data collected
Black Draw	1508030210	Outlaw	
Cloverdale	1508030303	Robertson	Soil Condition Assessment

Management
Annual Operating Instructions (AOIs) that included water quality as an objective were developed for all 9 allotments located in New Mexico.

Gila National Forest

SILVER CITY RANGER DISTRICT

Watershed improvement projects
Watershed Improvement dollars (NFVW) on the Silver City Ranger District were used primarily to plan and coordinate all of the watershed activities on the District, which facilitated the completion of the following projects.

The implementations of the following projects were primarily funded by 319 grant dollars:

- Ignition was done on 4000 acres of the Bullard Peak Burn. Approximately 500 acres actually burned. (Mangas Valley, 1504002040)

- Ignition was done on 13,000 acres of the Cherokee Burn. Approximately 6000 acres were actually burned. (Corral Canyon, 15040002030)

The implementation of the following project was primarily funded with fuels reduction dollars:

- Thinned and then lopped and scattered the slash on approximately 80 acres in the Little Walnut Wildland Urban Interface area. (Silver City Watershed, 13030202040)

The following project was funded by Watershed Improvement dollars:

- Constructed two rock erosion control structures at Fort Bayard as a Silver High School class project. This included an in-classroom presentation dealing with the cause and effects of soil erosion. (Silver City Watershed, 13030202040)

Wildlife Projects
The following wildlife projects on the Silver City Ranger District that accomplished non-point source goals were primarily funded by Sikes Act and New Mexico Game & Fish funds:

- Construction of three small rock headers in Keese Canyon in the Burro Mountains.

- Install a solar pump and trough in an abandoned well in Whitetail Canyon on the White Signal Allotment. This project will supply water to both wildlife and livestock and will reduce livestock use on degraded watershed areas. (Thompson Canyon, 15040003060)

- Install a solar pump, storage, two troughs, and a special wildlife drinker at an abandoned well in Bear Canyon on the Allie/Avalanche Allotment. This project will supply water to both wildlife and livestock and will reduce livestock use on degraded watershed areas. Approximately 100 yards of bank stabilization berm was constructed to protect this well that will aid in reducing sediments entering Bear Canyon. (Upper Mimbres River, 13030202010)

Range Projects
The following range project on the Silver City Ranger District that served to accomplish water quality improvement goals was primarily funded by Range Betterment funds:

- Install a solar pump and rebuild the trough at the Silverdale Well on the Mangas/Silverdale Allotment. This project will supply water to both wildlife and livestock and will reduce livestock use on degraded watershed areas. Approximately 50 yards of bank stabilization berm was reconstructed to protect this well and will aid in reducing sediments entering Silverdale Canyon. (Mangas Valley, 15040002040)

The Silver City Ranger District continues to maintain its Memorandum of Understanding (MOU) for work to be completed in the Mangas Valley watershed. Cooperators on this MOU include the Grant Soil and Water Conservation District (GSWCD), Bureau of Land Management (BLM), State Land Office, NRCS and the Forest Service. Additional priority watersheds are being considered for watershed enhancement projects under the existing MOU with the GSWCD.

QUEMADO RANGER DISTRICT

The following projects were completed and reported in fiscal year 2004 for the Watershed Program on the Quemado Ranger District:

Acres of Watershed

Improvements conducted this year were associated with the implementation of the Centerfire Allotment EA and DN/FONSI (Upper San Francisco River, 15040004010). Projects that were implemented to enhance watershed conditions included:

Project	Funding Source	Purpose	Acres (est.)
MR Spring Fence	NFWF	Protect Riparian	4
SA Riparian Fence Cienega Springs	NFWF	Protect Riparian	8
exclosure Funderburg Spring	NFVW	Protect Riparian	1
Exclosure	NFVW	Protect Riparian	1
Bastion Fence	NFVW	Protect Watershed Condition	1200
Funderburg Fence	NFVW	Protect Watershed Condition	800
Centerfire Permit	NFRG	Reduction of numbers to improve watershed conditions	21,715

Acres of Watershed/ Partnerships

The Agua Fria Pinyon/Juniper thinning project was completed on the Agua Fria Allotment within the floodplain of Largo Creek in 2003. This project consisted of working with the private landowner/ grazing permittee to reduce pinyon/juniper encroachment within the Largo Creek floodplain. This project was in conjunction with the Quivera Coalition's efforts to restore Largo Creek. Accomplishments to date have been approximately 500 acres of private land thinned (accomplished by the private landowner/grazing permittee) and 50 acres of National Forest System lands completed by the Quemado Ranger District in 2003. Post treatment of the 50 acres thinned in 2003 was conducted by prescribed fire to eliminate fuel loads associated with the thinning project in 2003. (Largo Creek, 15020003060)

ADDITIONAL PROJECTS THAT WERE FUNDED OUTSIDE OF WATERSHED MONIES THAT CONTRIBUTE TO IMPROVING WATERSHED CONDITIONS

In addition to projects completed with watershed funding, the Quemado Ranger District completed the following projects that promote watershed improvement:

Acres of Watershed/ Partnerships
The East Sand Flat Allotment Permittee and District cost shared on the Cooper's Seep project. This project consisted of excluding a high elevation meadow associated with a spring to protect area from livestock disturbance. Total acres consisted of approximately 3 acres.
(Tularosa River, 15040004020)

Acres of Watershed/ Partnerships
The Mangitas well project was completed on the Mangitas allotment in conjunction with the livestock grazing permittee. This project will provide a reliable water source and aid in the distribution of livestock and other large ungulates within the Mangitas Flat area. The water source will aid in distribution away from a historical use area and improve watershed condition in this area. (Agua Fria Creek, 15020003050)

Monitoring Accomplishments
Monitoring and analysis also occurred on 89,931 acres on the El Caso and San Antone Allotments. These included collecting permanent transect data to establish trends for soil and vegetation condition. (Largo Creek, 15020003060; Mangas Creek, 15020003070; Aqua Fria Creek, 15020003050; Tularosa River, 15040004020)

Additionally, the District completed Proper Functioning Condition monitoring on 9 springs, Patterson Canyon, Sand Flat Canyon and Indio Canyon on the Canyon del Buey and East Sand Flat allotments. (Largo Creek, 15020003060; Tularosa River, 15040004020; Alamocito Canyon, 13020208040; Mangas Creek, 15020003070)

Acres of Watershed
At Quemado Lake, 25 acres of noxious weeds were eradicated. (Largo Creek, 15020003060)

In summary, the Quemado Ranger District has had a productive year and has continued its tradition in improving the basics in watershed management through its integrated program and boundary-less behavior with neighbors, both public and private.

WILDERNESS RANGER DISTRICT

Watershed improvement projects on the District were funded by 319 grant dollars, Sikes Act dollars, and Forest funds. These included the following projects:

- Elk trick tank maintenance — 640 acres
- Mechanical treatment of juniper in the Upper Mimbres River watershed — 55 acres

(13030202010)

- Divide Well maintenance — 640 acres

- Vegetation Transect reading on Sheppard Allotment — 17,000+ acres (Upper Mimbres River, 13030101010)

- Permit and AMP completed for Cold/Hot Springs Allotment (Upper Mimbres River, 13030202010; Hot/Cold Springs, 13030202020)

- Allotment Management Plans completed for XSX Allotment and Shingle Canyon Allotment (Middle Fork Gila River, 15040001030; Wall Lake, 15040001040; West Fork Gila River, Upper Mimbres River, 13030202010)

- Livestock Impoundment, Diamond Bar Allotment — 143,000 acres (Wall Lake, 15040001040)

- East Canyon Allotment running at 1/3 permitted numbers (50 vs. 175) (Upper Mimbres River, 13030202010)

- Indian Creek Allotment running less than permitted numbers for resource protection. (Middle Gila River, 15040001030)

- Canyon Creek Allotment held in non-use for resource protection. (Middle Fork Gila River, 15040001030)

- Sheppard Allotment — vacant (Upper Mimbres River, 13030202010)

- Water Canyon/Little McKnight Rx Burn — approximately 3,800 acres. (Upper Mimbres River, 13030202010)

- Powderhorn well maintained — 640+ acres

- Purple Loosestrife treated at Lake Roberts — 3 acres (Sapillo Creek, 15040001070)

BLACK RANGE RANGER DISTRICT

Watershed improvement projects on the District were funded by 319 grant dollars and Forest funds. These included the following projects:

- Monitored North Palomas Allotment — Cows were removed due to exceeding allowable use and poor forage production. They will be allowed to return in dormant season. (Palomas Creek, 13030101020; Cuchillo-Negro Creek, 13030101010)

- Hidden Spring Reconstruction wildlife habitat improvement project (640 acres).

- Cleaned out 4 dirt tanks on the V+T allotment.
  (Corduroy, 15040001020; O Bar O Canyon, 15040001010)

- Cleaned out sediment behind the Potholes Rockheaders on the Turkey Run allotment. This was completed by an Eagle Scout candidate as his Eagle Scout project. (640 acres)
  (Corduroy Canyon, 150400010200)

- Fire Use for Resource Benefit Fires: Continental Fire (40 acres)

- Indian Peaks Burn — 28,000 acres of ignited burn. This project is part of the 319 Gila Watershed Improvement Project with watershed dollars contributed for planning.
  (O Bar O Canyon, 15040001010, Corduroy Canyon, 15040001020)

- Poverty Creek and Kingston fuel break pile burning (75 acres).
  (Cuchillo-Negro Creek, 13030101010; Percha Creek, 13030101040)

- Replaced two non-functional water troughs servicing 1,280 acres of habitat enhancement on the North Palomas allotment.

- Collected baseline data on the Black Range Allotment (41,731 acres) and the Silver Creek Allotment (15,488 acres) for upcoming range analyses. (Corduroy Canyon, 15040001020; Cuchillo-Negro Creek, 13030101010; Wahoo Canyon, 13020211020)

- Completed Black Mountain Allotment EA (43,061). (Corduroy Canyon, 15040001020; Middle Fork Gila River, 15040001030; O Bar O Canyon, 15040001010)

- Continued work on the Continental Divide National Scenic Trail/Aldo Leopold Wilderness Section Project (funded by 319 dollars). Completed approximately 3/4 mile of trail relocation to reduce trail slope and avoid the Diamond Peak Spring.
  (Palomas Creek, 13030101020; Wall Lake, 15040001040)

- Completed approximately 45 miles of trail maintenance including water bar maintenance.

RESERVE RANGER DISTRICT

- All allotments were monitored at least once.

- The District accomplished its 2004 monitoring plan, and is in the process of updating it for 2005.

- All range improvements have been inventoried and recorded in INFRA database.

- All allotments and pastures are identified and entered into INFRA database.

- The Negrito and Yeguas Allotments have been analyzed, and the environmental assessment has been drafted. It is still waiting formal consultation because of the presence of the leopard frog. Section 7 Consultation for on-going grazing was completed by Joe Anderson and Ted McArthur for the Negrito/Yeguas allotment in 2004.
  (Middle San Francisco River, 15040004050; Negrito Creek, 15040004060)

- All active allotments were administered to standard; this was done throughout the year.

- Deep Canyon/Govina/McCarty Allotment management plans completed. (Upper San Francisco River, 15040004010; Negrito Creek, 15040004060; Alamocito Canyon, 13020208040; Tularosa River, 15040004020)

- Apache Canyon well was repaired and retrofitted with a solar pump. The District provided the materials and the permittee installed the pump by June 12, 2004.

- A non-functional drinker was repaired on the Black Bob allotment.

- Noxious weed treatment consisted of 15 acres of knapweed treatment on and around the Negrito Fire Base. Individual plants were pulled when the soil was moist in order to retrieve as much of the root as possible; then, plant residue was burned.
  (Negrito Creek, 15040004060)

- Repaired two non-functional water developments on the Black Bob allotment. The new water developments are made of sturdy tires that have been cut in half and concrete poured in the middle of them.

- 180 acres of salt cedar treatment were accomplished along the San Francisco River. The work done in 2004 was on the Glenwood District from Lewis Kelly's place near Gut Ache Mesa to the Reserve Ranger District boundary. This was a cooperative project where Glenwood and Reserve Districts shared the costs for an increased benefit. The treatment process included cutting the salt cedars, then treating the stump with a mixture of 25% Garlon 4 and 75% improved JLB oil.
  (Upper San Francisco River, 15040004010)

- Fifteen permanent transects on the T-Bar Allotment were completed and data for production and utilization was collected for the allotment.
  (Middle Fork Gila River, 15040001030; Negrito Creek, 15040004060)

GLENWOOD RANGER DISTRICT

- The Glenwood Ranger District monitored all but two grazing allotments.

- Completed a survey of the Parker Three-Step clusters on the Pueblo Creek allotment. (Blue Creek, 15040004030, Middle San Francisco River, 15040004050)

- One water lot around a stock tank was constructed within the Alma allotment.

- One mile of fence was constructed within the Blue Creek allotment.

- Constructed 2 electric fence livestock exclosures within the Indian Creek pasture of the Copper Creek allotment. These exclosures are the result of consultation with the U.S. Fish and Wildlife Service. (Middle Fork Gila River, 15040001030)

- Constructed one pipeline, one water lot around a stock tank, and one fence on the Kelly allotment.

- Constructed one mile of fence on the Pine Cienega allotment.

- Piled and chipped 100 acres in Pine Cienega.
  (Lower San Francisco River, 15040007080)

- Thinned 49 acres for wildlife habitat improvement at Black Mountain, Pine Cienega, and Glenwood Brushy using Habitat Stamp Program funds.

- A handful of allotments were held in non-use for resource benefit and personal preference.

- Sale of commercial fuelwood in the Kelly Gut Ache area.

- Majority of allotments stocked at less than 90 percent of permitted numbers; many were stocked at less than 50 percent, which is continuing through 2004.

- Burned 3,000 acres in Devil's Park (Middle San Francisco River, 15040004050)

FOREST WIDE

Roads

On the Reserve Ranger District, approximately 33 miles of Level 3 roads were surfaced in 2004. This included aggregate surfacing on National Forest System Roads (NFSR) 28, 30 and 94, which will aid in the reduction of sediment migration and erosion off of the roadways.

On NFSR 28, an existing old bridge was bypassed with a culvert. In doing so, the Forest constructed a new 700-foot realignment and decommissioned the old alignment. Some negative short-term effects are anticipated due to new ground disturbance, but these will be alleviated as soon as ground cover has returned. Best Management Practices were followed, as outlined by the US Army Corp of Engineers under a Nationwide 404 permit, to mitigate short-term effects. (Middle Fork Gila River, 15040001030)

Fire Activity

The Forest continues to utilize fire as a tool to improve watershed condition. Implementation of the National Fire Plan has provided resources to conduct more managed fire and mechanical fuel

treatments. The purpose of these treatments is fuel reduction, fireproofing, watershed improvement and forest health improvement. Very dry conditions persisted this year; however, conditions were not as severe as in years immediately prior. Some prescribed burns were implemented due to amenable conditions.

Acres treated by category for 2004 on the Gila National Forest are as follows:

Type of project	**WUI**	**Non-WUI**
Fuels reduction projects (Hazardous Fuels funded)	4,925 acres	36,892 acres
Fuels reduction projects (other funding, including non-FS sources)	1,852 acres	5,366 acres
Confinement Fires		5 acres
Wildland Fires		300 acres
Wildland Fire Use Fires	550 acres	8,937 acres
319-Funded Prescribed Fires		1,153 acres
Total Acres	7,327 acres	52,653 acres
Grand Total Acres	**59,980 acres**	

Numerous other projects are in the planning stages, which include NEPA and Section 7 Consultation with the Fish and Wildlife Service.

Smoke continues to be the major environmental concern associated with this activity. We continue to work with the New Mexico Air Quality Bureau and concerned publics. A small vocal public continues to oppose this activity.

Livestock Management Activities

The Forest made decisions on three allotments as a result of analysis conducted the last few years. Analysis on approximately five more allotments was initiated in 2003 with decisions expected in 2004. All decisions involving livestock grazing on the Gila National Forest have been appealed and many have entered into litigation. The Forest continues to expend a major amount of resources towards bringing livestock grazing into compliance with Federal law. This activity can be characterized as a sea of conflict and controversy both externally and internally. Data was collected for future analysis on several allotments. Many allotments, forest-wide, were held in non-use status, rested, or had a reduced season of use to protect resource integrity. Monitoring livestock grazing allotments for permit compliance continues to be a priority.

At the present time, there is no permitted livestock on Gila National Forest System Lands on the Gila and San Francisco Rivers and major tributaries. There continues to be significant impacts associated with unsatisfactory upland watershed condition, roads, and other land use impacts on public and private lands. Stream improvement/stability will continue with improved management.

Monitoring/Inventory Accomplishments
The New Mexico Terrestrial Ecosystem Survey (TES) crew continues to work on the Gila National Forest. Approximately 125,000 acres were inventoried in 2004. This effort will continue until all of the 3.34 million acres of the Forest have been surveyed.

The Final Report for the Biotic Condition Index (BCI) sampling on the East Fork of the Gila River was completed in April of 2004. This sampling has since been reinitiated for one additional year (June 2004 - February 2005) to determine effects caused by unauthorized livestock use on the Diamond Bar Allotment. This information will be summarized in an addendum to the Final BCI Report. The information will be shared with the Silver City office of the New Mexico Environment Department, Watershed Protection Group.

Partnerships
The Forest has a significant number and variety of partnerships. We will continue to nurture and develop these partnerships on behalf of the resource. The Forest has developed and maintained several partnership projects that benefit watershed health.

The local office of the New Mexico Environment Department, Surface Water Quality Bureau, continues to be heavily involved in monitoring that is associated with the effort to write Total Maximum Daily Loads (TMDL). The 2004 - 2006 303(d) list contains a total of 22 listed water bodies located within the Gila National Forest boundaries. The Forest is committed to efforts to aid in delisting these water bodies if possible and providing assistance on any TMDL work that may be needed by our local office.

LINCOLN NATIONAL FOREST

D2- Water shed treatment - 1000 acres Pinyon-Juniper watershed treatment in Pinon Draw. HUC – 1305000403 Pinon Creek)

D2- 5 NEPA decisions on allotments:

Bell (HUC 13060010030 – Elk Canyon watershed)
Cridebring (HUC 1306001002 - Agua Chiquita watershed)
Sacramento (HUC 1305000401 – Sacramento watershed)
Dry (HUC 1305000316 La Luz Creek)
Davis (HUC 1306001001 Upper Rio Penasco watershed)
Aqua Chiquita (HUC 1306001004 Bluewater watershed),
Burnt Canyon (HUC 13060010030 – Elk Canyon watershed) and
North Cox (HUC 1306001003 - Elk Canyon and HUC 1306001004) Aqua Chiquita watersheds)

Hazardous Fuels reduction (mitigation measures against catastrophic wildfires, while improving watershed functionalities at the same time). The FY04 was focused heavily on improving watershed conditions via fuels reduction.

Administration

District	HUC	Project	Acres
D1	(HUC 1306000803 Rio Ruidoso)	D1 Perk Grindstone 2nd Phase	1
	(HUC 1306000803 Rio Ruidoso)	D1 Turkey Gavilan	1
	(HUC 1306000803 Rio Ruidoso)	D1 Turkey-Gavilan	1
Administration Total			3

Fire

District	HUC	Project	Acres
D1	(HUC 1306000802 Eagle Creek)	D1 Eagle	284
	n/a	D1 NON WUI BURNING	1579
	(HUC 1306000803 Rio Ruidoso)	D1 Perk Grindstone 2nd Phase	150
	Fire Total		2013

Mechanical

District	HUC	Project	Acres
D1	(HUC 1305000304 Tortolita)	D1 Brennum P/J Control	250
	(HUC 1306000802 Eagle Creek)	D1 Buck P/J Control	350
	(HUC 1305000304 Tortolita)	D1 Carrizo Pinyon/ Juniper	695
	(HUC 1306000505 Arroyo Seco)	D1 Copeland P/J Control	82
	(HUC 1306000802 Eagle Creek)	D1 Eagle	244
	(HUC 1306000802 Rio Ruidoso)	D1 Lucas Canyon Vegetation Treatment	502
	(HUC 1306000803 Rio Ruidoso)	D1 Titsworth P/J Control	145
	(HUC 1306000803 Rio Ruidoso)	D1 Turkey Gavilan	546
	Mechanical Total		2814

Planning

District	HUC	Project	Acres
D1		Perk Grindstone 2nd Phase	1
		D1 Turkey Gavilan	2
	Planning Total		3

District 1 Total **4833 acres**

Administration

District	HUC	Project	Acres
D2	(HUC 1305000316 La Luz Creek)	D2 La Luz Rio P Wildlife Openings	1
		D2 Unit 34 Vegetation Maintenance	0
	Administration Total		1

Fire

District	HUC	Project	Acres
D2	(HUC 1305000401 Sacramento)	D2 Lick Ridge	5500
	(HUC 1306001001 Upper Rio Penasco)	D2 Penasco 1	669
	Fire Total		6169

Mechanical

District	HUC	Project	Acres
D2	(HUC 1305000316 La Luz)	D2 La Luz Rio P Wildlife Openings	800
	(HUC 1306001001 Upper Rio Penasco)	D2 Penasco 1	25
	(HUC 1305000403 Pinon Creek)	D2 Pinon Draw P/J Project	1000
	(HUC 1306001001 Upper Rio Penasco)	D2 Rio Penasco 2	3635
	Mechanical Total		5460

Other

District	Project	Acres
D2	D2 Unit 34 Vegetation Maintenance	500
	Other Total	500

Planning

District	Project	Acres
D2	D2 16 Springs	2
	D2 Rio Penasco 2	2
	Planning Total	4

District 2 Total **12134 acres**

Fire

District	HUC	Project	Acres
D3	(HUC 1306001113 Dark Canyon)	D3 Dark Canyon	40
	(HUC 1306001113 Dark Canyon)	D3 Pickett Rx	3600
	(HUC 1306001113 Dark Canyon)	D3 White Oak Rx	3100
	Fire Total		6740

Mechanical

District	HUC	Project	Acres
D3	(HUC 1306001113 Dark Canyon)	D3 Pickett Rx	40
	(HUC 1306001113 Dark Canyon)	D3 Robinson Draw Vegetation Management	500
	Mechanical Total		540

District 3 Total **7280 acres**

Mechanical

District	Project	Acres
SO	CFRP01 Otero SWCD	385
	CFRP01 Ruidoso Municipal School Distr	2
	CFRP01 Village of Ruidoso Thinning	231
	CFRP02 South Central Mtn RC&D	310
	CFRP04 South Central Mtn RC&D	249
	Mechanical Total	1177

SO Total **1177 acres**

Lincoln National Forest Grand Total **25424 acres**

Santa Fe National Forest

The Santa Fe National Forest accomplished the following nonpoint source reduction activities in 2004.

New Mexico Trout members working on the Upper Cebolla Fence.

Development of upland waters for improved Grazing distribution

- **Coyote Ranger District**

Gallina: Two Earthen Dams and one trick tank constructed – intended to decrease grazing pressure within riparian areas.
Salitral: two earthen dam water developments
French Mesa: four earthen dam water developments

Riparian Improvements

- **Jemez Ranger District**

Multiple fence projects were completed this year with the objective being cattle management away from riparian areas and into upland areas.

- Cuba Mesa Fence Project – Five miles of fence
- Senorito Divide Fence Project
- Miller Fence Project – 1.5 miles
- Naranjo Fence Project – 2.5 miles
- San Miguel Fence Project
- Schoolhouse Fence Project
- Upper Cebolla Fence Project

Rio Gallinas riparian fencing.

- **Coyote Ranger District**
  - 4.5 miles riparian fence along Rio Gallinas , riparian enclosure - 200 acres.

- **Pecos/Las Vegas Ranger District**
  - Road closure implementation: 3 miles combined total for the purpose of watershed improvement within the Gallinas and Cow Creek WS
  - Riparian Exclosure fencing: Osha /Cow Creek /Agua Fria/ Capulin total 25 Acres protected
  - 20 acres riparian thinning

Vegetation Treatments to restore groundwater water table or water yield

- **Coyote Ranger District**
  - WUI: Mesa Polleo Phase I – 2361 project acres, treated acres – 288 (04), proposed treatment – 300 acres (05).
  - Ojitos sage brush mowing: 400 acres treated
  - Pinabetosa, Jarosa and Rat Healthy forest Initiative: 200 acres have been thinned
  - Fuertes Forest Health and Wildlife Habitat Improvement Project (Thinning): 562 total project acres have been treated.

- Camino/Corral Forest Health and Wildlife Habitat Improvement Project (Thinning): 4,000 project acres will be treated with prescribed fire and chainsaw/mechanized equipment. To date, ten 25-acre units have been awarded through individual contracts and will be completed by the end of this month. 200 acres have been awarded through a contract and will be completed by the end of this month.

Stand conditions within the El Porvenir Unit prior to thinning.

- **Espanola Ranger District**
  - Santa Fe municipal watershed: 100 acres PJ removal Caja del Rio

- **Pecos/LasVegas Ranger District**
  - Gallinas Watershed/Porvenir 319 grant coniferous thinning and Burn of 100 acres, including El Porvenir riparian thinning: 20 acres

Thinning accomplished within the El Porvenir Unit during 2004.

Recreation improvements affecting riparian areas/water quality

- **Jemez Ranger District**
  - Campground reconstruction/drainage: Paliza Group and Family CG's were reconstructed and trees were thinned. At Paliza CG, LWD was locally felled across the perenial stream channel, and a culvert was placed to re-route the stream away from a road crossing.

Example of buck and pole riparian fencing along Rio Cebolla.

  - Recreation site road/access improvements: Multiple areas between FR 376 and Rio Guadalupe were blocked off from motorized traffic by the use of buck and pole fencing. The fencing design allows for vehicles to pull safely off the road providing pedestrians access to the water. Pedestrian type openings were created in each stretch of fencing to allow for easy access and to carry through camping supplies if desired. Similar fencing was established along areas of Rio Cebolla including a wet meadow exclosure.

Watershed Assessments

- **Pecos Ranger District**
  - Upper Pecos 5th code watershed completed.

-

WRAS's (Watershed Based Plans)

- **Las Vegas Ranger District**
  - Gallinas WRAS completed

- **Jemez Ranger District**

- Jemez/Rio Guadalupe WRAS's submitted

- **Coyote RD**
  - Accepted and funded.

Road Analysis Plans

- **Coyote RD**
  - Completed in Coyote RD with an environmental analysis almost completed .

- **Cuba RD**
  - Completed.

Ecosystem Management Demonstration Projects

- **Cuba Ranger District**

- Rio de las Vacas Restoration Project: After the completion of a stream inventory on the Rio de las Vacas in 2001, it was apparent that the stream was not properly functioning and was a good candidate for a stream restoration project. The Rio de las Vacas Stream and Riparian Restoration Plan and Recommendations was compiled in 2002, and the implementation took place during July – August, 2004. Structures were placed in 10,000 feet of stream using approximately 225 pieces of large woody debris (LWD); 20 pools were constructed or enhanced. Two of the three ford crossings accessing a closed potion of an old road were closed and repaired. The third ford (the middle ford) is closed to the public, but was left in place so that the power company could access their line that runs parallel to the Vacas. The goals met by this project were to increase LWD and pool habitat, close ford crossings, and reduce width to depth ratios in order to decrease stream temperature and promote shady cover. Monitoring will determine if longer-term goals such as temperature reductions and sediment control have been achieved. This project was made possible by contributions from New Mexico Game and Fish – Habitat Stamp Program, Trout Unlimited, National Fish and Wildlife Foundation – Bring Back the Natives (Sikes Act), and American Forest Products.

Before picture of the lower ford. Excavator was just staging the rock on the bank.

The Lower ford after reonstruction, showing that channel width was reduced by 2/3 at this location.

Allotment Management Plans

- **Pecos/Las Vegas Ranger District**
  - Revisions on 5 allotments: Macho, Soldier Creek, Cow Creek, Osha and Bull Creek

- **Espanola Ranger District**
  - French Mesa new plan.

New Wetland Construction

- **Pecos/Las Vegas Ranger District**
  - Two acres wetland/spring development Venada/Agua Fria Springs

Monitoring Accomplishments

Burn Area Emergency Restoration (BAER) monitoring

- **Jemez Ranger District**
  - Virgin Fire, Lake Fire

- **Espanola Ranger District**
  - Molina Complex

- **Pecos/Las Vegas Ranger District**
  - Total Suspended Solids monitoring on Gallinas and Cow Creek watersheds
  - Twelve miles Proper Functioning Conditioning on Pecos River

Forest Stream Temperature Monitoring

As the drought continued to persist across New Mexico, the fish program entered its fourth year of intensive forest-wide monitoring of stream temperatures. Temperature monitoring equipment, called a Stowaway Tidbit, is the size of a quarter and can stay in the stream year-round. 18 Tidbits were deployed in **7 streams** across the Forest, measuring temperature for **78 miles** of stream every four hours from the beginning of June until October. Early analysis indicated a wide variation of effects related to localized conditions from stream drying to maintaining tolerable temperatures for trout survival. Sarah Eddy championed this program and has authored the extensive Forest-wide monitoring summary report, which is due out this winter.

- **Cuba Ranger District**
  - San Pedro Parks Wilderness Monitoring: After its inaugural beginning in 2001, an elaborate report was completed and follow-up monitoring began. A week-long intensive effort was conducted this year by the fisheries and watershed program, covering nearly **7,000 feet** of riparian area in Rio de las Vacas and Rio Puerco Watersheds within the 40,000-acre San Pedro Parks Wilderness. The team focused on habitat, water chemistry and snorkel monitoring, assessing conditions on stream habitat, water quality and Rio Grande cutthroat trout populations. Non-native German brown trout were observed in Rio de las Vacas. Fecal coliform counts were noted as high in Rio Puerco. Arizona willow, a regional sensitive species, were checked for vigor and it was found that exclosures protecting the species are dilapidated and are in need of repair. This effort will continue on an annual basis, assisting range and recreation with the implementation of their programs.

Education, Technology Transfer

- **Jemez/Cuba Ranger Districts**

- Contact Ranger Program:_From May - September, 2004, Education Coordinator Kimberly Kelly and Student Conservation Association (SCA) interns, Sarah Martiny and Alex Kirkpatrick contacted 1, 870 campers through the Contact Ranger program.

Sarah Martiny giving an interpretive program on wildfires at the Jemez Falls Campground amphitheater.

All social survey data from the Contact Ranger program has been entered into the database. Kimberly Kelly and Kavita Krishna (Biological Technician) will analyze the data and write the annual report.

- Campfire (Interpretive) Programs: During July 2 – August 7, 2004, Sarah Martiny and Alex Kirkpatrick facilitated sixteen interpretive programs at the Jemez Falls Campground Amphitheater to 475 people (266 adults & 209 childrenTopics included beavers, being bear aware, pine bark beetles, wildfires, back country hiking ethics, and archaeology (with the help of guest speakers Mike Bremer, Christopher Toya, and Jennifer Boyd). At the beginning of each presentation, the goals and reasons for the Respect the Rio Program is discussed.

- Kids Fishing Day: Kimberly Kelly, Alex Kirkpatrick, other Forest Service employees, staff from New Mexico Game & Fish, volunteers from New Mexico Trout, local businesses, and public volunteers hosted the 14th annual Santa Fe National Forest's Kids' Fishing Day at Seven Springs Fish Hatchery. There were 145 participants, ages 4-11 years. Each participant received a RtR tattoo and a "Be a River-Friendly Camper" flier along with other materials in their goody bag. Kirkpatrick facilitated the Rio Grande cutthroat trout life cycle game, and Kelly showed participants how trash impacts our land and water. Dylan Hoffman and Jeff Nelson took turns wearing RtR mascot costumes (Carlos Cutthroat and Perl Stonefly).

- Sign Series: Eleven Respect the Rio Signs were designed and posted throughout the Guadalupe Watershed. Topics for the signs include information on non-native fish, beavers, archeology, respecting fences, staying on designated trails, suckers and chubs, arid environment awareness, willow replanting areas, campsite care, proper disposal of human waste, tree damage, and vehicle damage to streams.

- **Pecos/Las Vegas Ranger District**
  - New Mexico Highlands University Natural Resource Department/SFNF Pecos Las Vegas Ranger District 1st Annual Cowles Fish Fiesta
  - Proper Functioning Condition: Las Vegas NM, Tierra Y Montes SWCD Annual Outdoor Classroom

Clean-up Projects (Hazardous Materials)

- **Coyote Ranger District**
  - Hydraulic oil spill clean-up (off FS RD 103). 2.5 cu/yd.

- **Cuba Ranger District**
  - Meth lab clean up 2 acres.
- **Espanola Ranger District**
  - Sixty acres osf trash on "Erosion" Allotment.

Innovative Processes/ Partnerships

New BMP's/ Techniques for Improving Water Quality

- **Jemez Ranger District**
  - Wet meadow road improvements: Rio Cebolla, Valles Caldera
  - Engineering has implemented a varying-elevation culvert placement (in coordination with Bill Zeedyk) to drain roads through meadows

- **Pecos/Las Vegas Ranger Districts**
  - Partnerships: SFNF/Pecos/Las Vegas Ranger District. Pecos Watershed Landscape AssessmentPartnership with NM Highlands on Monitoring within Gallinas and Pecos WSPartnership with NM State Univ on Monitoring within Mora River WSPecos/Las Vegas RD / Forest Trust and Tierra Y Montes SWCD – riparian restoration and noxious weed treatment

Carson National Forest

CANJILON RANGER DISTRICT

Range NEPA analysis and permit re-issuance:

- Completed environmental analysis for the Mogotito grazing allotment.

Range Administration:

- Completed Allotment Management Plan for the English Allotment.
- Range readiness and forage utilization monitoring was conducted in all 12 allotments.
- Rested the Canjilon Creek sheep allotment for the entire grazing season.
- Adjustments in entry dates and permitted cattle numbers were made in 6 allotments due to vegetative conditions, management objectives and drought conditions: Canjilon (23 percent), Cebolla (15 percent), Nutrias (27 percent), Jarosa (35 percent), Mogote (14 percent), and Mogotito (9 percent). District-wide cattle grazing was reduced 16 percent and sheep grazing reduced 86 percent.

Range Management and Improvements:

- Type converted 620 acres of sagebrush by brush-chopping and seeded 500 of the treated area with native grasses in the Huckaby pasture of the Cebolla Allotment.

- Cleaned out and reconstructed two earthen stock tanks in the Cebolla Allotment to increase capacity for water and silt and aid in better livestock distribution.
- Allotment boundary fences were inspected prior to cattle entry to facilitate adherence to scheduled grazing rotations.
- Constructed livestock handling corral in Madera pasture of the Mogote allotment. This improvement allows the District to eliminate use of the Lorenzo Stock Tank water lot as a handling corral.
- Constructed 3 ½ miles of new pasture fence and installed 2 cattle guards in the English Allotment. This increased the number of pastures within the allotment from 4 to 5 in accordance with the Allotment Management Plan for the English Allotment and permit re-issuance NEPA conducted in 2003.

Road Maintenance:

- Performed road maintenance on 7 miles of road district wide (FR 137 and 724).
- Cleaned out four cattle guards district wide.

Burned Area Emergency Rehabilitation and National Fire Plan Restoration:

- Inventoried the Montoya burned area for invasive weeds.
- Removed invasive weeds (by hand) on 15 acres within Montoya burned area.

Recreation Management and Improvements:

- Installed 1 Rom Tech vault toilet at Trout Lakes Campground and 5 Rom Tech vault toilets at Canjilon Lakes Campground.

Fuel Reduction Activities:

- Prescribed burned 450 acres in the Ponderosa pine vegetation type in the Huckaby Pasture of the Cebolla Allotment for fuel reduction and wildlife habitat improvement.
- Mechanically thinned a total of 267 acres (170 acres of pinyon-juniper in Daggett fuel wood area, 70 acres in Marcos fuel wood area and 27 acres in Mesita fuel wood area).

Wildlife Improvements:

- Performed heavy maintenance on 10 wildlife drinkers district wide.

Education/Technology Transfer:

- Hosted the annual Fishing Fiesta at Canjilon Lakes. This is a cooperative effort with the BLM, NM Game and Fish Department, Forest Service and many other sponsors. The target audience is children ages 3 and up. The objective is to provide the opportunity for kids to be exposed to environmental issues and learn about fisheries, macro invertebrates, and aquatic habitats. Approximately 170 children and their parents participated.

EL RITO RANGER DISTRICT

Range NEPA analysis and permit re-issuance:

- Continued the Environmental Analysis on the San Gabriel Allotment
- Initiated theBegan Environmental Analysis on the Cano Allotment

Range Administration:

- Adjustments in entry dates and permitted cattle numbers we made in the following allotments due to vegetative condition, management objectives and drought conditions: Cano (10 percent), Comanche Sheep (42 percent), El Rito Lobato East (73 percent), El Rito Lobato West (60 percent), San Gabriel (4 percent), Jarita Mesa (35 percent), Alamosa (35 percent), and Salvador Complex (52 percent). District-wide cattle grazing was reduced 41 percent and sheep grazing reduced 60 percent.

- Gathered 20 wild horses from the Jarita Mesa Wild Horse territory during March 2004. 19 were adopted by the general public and 1 horse was retained by the El Rito Ranger District.

Road Maintenance:

- Performed road maintenance on 20 miles of road district wide (FR 121, 559 and 137).
- Decommissioned 11.3 miles of forest roads district wide in the El Rito Creek watershed (337G1, 337G4, 337G5, 337G6, 337G7, 337G8, 337G10 and 337G11).

Watershed Improvement:

- Treated approximately 600 acres of sagebrush in the Ancones Flats area of the Alamosa grazing allotment with a brushhog. This treatment was done with a 319 grant from NMED. Re-constructed 1.5 miles of allotment boundary fence between the Jarosita and Salvador Complex Allotments. Re-constructed 1.5 miles of allotment boundary fence between the Cano and Salvador Complex Allotments.

Prescribed Fire/Fuel Management:

- Performed pre-commercial thinning on 281 acres for fuels reduction and forest health. Pre-commercial thinned 20 acres in the Alamosa area, 40 acres in the Spring Creek area, and 221 acres in the Petaca/Las Tablas area and lop and scattered 27 acres in the Spring Creek area.

Vegetation Management:

- District-wide Dead and Down Fuelwood Sale - Includes personal use fuelwood cutting and gathering across the district. Only dead standing piñon or down trees of all species are taken under this sale.

- Free-Use Pinon Pine Permits – Issued free-use personal use fuelwood permits for 5 cords per household of standing or down dead pinon pine. Designated area was the Southwestern portion of the El Rito Ranger District.
- Pine Angel Personal Fuelwood Sale - Approximately 30 acres. This activity was a personal fuelwood cutting and gathering area for designated green ponderosa pine trees.
- Ojito Viga Sale - Approximately 20 acres. This activity was a commercial viga product sale, cutting and gathering area for designated green ponderosa pine trees (viga material).
- Accomplished 338 acres of pre-commercial thinning to improve forest health in the Felipito contract. This includes 52 acres from Kiowa Prospects Timber Sale, 141 Acres in the Felipito TSI area, and 145 acres in the One-Ten TSI area.
- Completed the Environmental Analysis for the Ensenada Forest Health Project. Project is to include 1781 acres of mechanical treatment including pre-commercial and commercial thinning, 1770 acres of broadcast burning, 75 acres of pile burning, and the closure of 7.5 miles of road.

Monitoring:

- Range Readiness and forage utilization monitoring was conducted on all of the El Rito Ranger Districts 10 grazing allotments
- Adjustments in permitted livestock numbers were made in 8 allotments due to drought conditions

Education/Technology Transfer:

- Several Forest Service personnel at the El Rito Ranger District assisted in the annual fish fiesta at Canjilon Lakes on the Canjilon Ranger District. We had several booths focusing on environmental education.

JICARILLA RANGER DISTRICT

Range NEPA for permit re-issuance:

- Completed the Jicarilla Territory Wild Horse and Burro Environmental Analysis. This analysis will allow for management of wild horses and burros at population levels that can be sustained by the grazing resources within the territory.
- Initiated the Wild Horse and Burro gather in early November, 2004. We anticipate gathering 30 horses for removal and adoption by December 31, 2004.

Range Administration:

- Did not allow grazing of permitted livestock on the Carracas and Bancos allotments in 2004.
- The Cabresto allotment was stocked at 20% of permitted numbers for 30 days.
- The Vaqueros allotment was stocked at 8% of permitted numbers for the entire grazing season.

- The Laguna Seca allotment was stocked at 80% of permitted numbers for the entire grazing season.
- The Valencia allotment was stocked at the full permitted numbers, but entry onto the allotment was delayed by 2 weeks to allow for range readiness objectives to be met.
- District-wide cattle grazing was reduced 70 percent.

Road Improvements:

- Placed sandstone road surfacing on approximately 2.8 miles of forest roads to reduce erosion (FR 218, 309, 310, 311, 312) and 2.8 miles of access roads for oil and gas development (Rosa 287, Rosa 284, Rosa 283, Rosa 297, Rosa 309, Rosa 375, Rosa 372 and Shalk 32).
- Installed 27 culverts district-wide to improve road drainage. This improvement was made through the on-going partnership with the Jicarilla Roads Committee and oil and gas lease holders.
- Constructed 9 sediment retention basins in conjunction with new road development to access well pad locations.

Watershed Improvements:

- Constructed 9 sediment traps in American Canyon, resulting in improvement of 1 mile of stream course by retention of sediment.
- Constructed one (1) sediment trap in association with new gas well on well pad 70N (T27N,R4W,S4)
- Completed road location and condition inventory of all roads on the District. Performed a Road Analysis Process (RAP) to inform travel management decisions related to district needs for the Bancos, La Jara, Cereza Canyon, Carracas and Tapicito watersheds.

Riparian Improvements:

- Re-established cottonwoods and willows by planting and building protective exclosure fences on 3 acres in La Jara Canyon.

Burned Area Emergency Response:

- Aerial seeding of 40 acres on the Orcones fire for the purpose of for erosion control.

Fire Restoration:

- Prescribed burn of 5 acres of thinning slash for meadow maintenance and wildlife habitat improvement at Cabresto Mesa.

Fuel Reduction and Management:

- Thinned 120 acres at Anselmo Bench to reduce hazardous fuel levels.
- Thinned 17 acres at the Carracas Mesa Administrative Site.
- Thinned and hand piled 32 acres around Cedar Springs Campground.

- Thinned 114 acres at Manuel Canyon.

Recreational Improvements:

- Made needed improvements and repairs to existing sanitary facilities at Cedar Springs Campground and Buzzard Park Campground.

Partnerships:

- Approximately 120 miles of road maintenance was performed through our continued partnership with the oil and gas companies via the Jicarilla RD Roads Committee. In addition, about 150 miles of lease roads are maintained at least once a year. The purpose is to provide needed road maintenance on a timely basis to access gas well locations and minimize resource impacts from road use.
- Worked with the San Juan Basin Oil and Gas Subcommittee, continuing discussions for alternative discharge procedures for treating produced water and discharge. Collaborative process with BLM, NMOCD, NMED, State Engineers Office, and oil and gas companies.
- Working with the San Juan Basin Oil and Gas Subcommittee, established pilot test plots for re-vegetation of gas well locations and pipelines, in a collaborative process with BLM, NMSU Extension Service, and oil and gas companies. Monitoring these test plots continues.
- The Farmington Field Office of the BLM and the Jicarilla Ranger District continued their Interagency Agreement for Fire Suppression and Fuels Management. The two agencies work jointly on all fuels and fire suppression activities following the guidance of the surface management guidelines.

Education/Technology Transfer:

- Participated in the 2-day water fair sponsored by the San Juan Water Commission. Program content focused on water developments for natural resource management needs. Their intended audience was approximately 250 elementary school children (grades 5-6) in the Four Corners area schools.
- District Wildlife Biologist attended 2 day workshop in revegetation techniques: High Altitude Revegetation Summer Tour.

Clean Up Projects:

- Implemented the Gas Buggy Clean up project in partnership with Department of Energy. Diesel contaminated production mud was removed and replaced with un-contaminated soil. Approximately 1000 cubic yards of contaminated soil material was removed and land farmed at Enviro-tech. This activity was permitted through the NPDES permit process by DOE.
- Cleaned up one (1) condensate spill on Patina Champlain #1 by excavating contaminated soil and land farming material to allow volitization of the contaminants.
- Cleaned up one (1) XTO condensate spill at Valencia Canyon Unit #14 by excavating contaminated soil and land farming material to allow volitization of the contaminants.

Innovative Processes:

- Implemented best management practices at well pad locations by placing logs and slash created by the development in a crosswise pattern below roads and well pads to provide protective cover and minimize and contain sediment.
- Amended Conditions of Approval for oil and gas well development to encourage using native vegetation for erosion control on gas well locations.

Oil and Gas Development Administration:

- The Minerals Technician holds pre-work construction meetings and conducts construction monitoring to ensure BMP's are incorporated and followed for various APD's as stated in the Conditions of Approval.
- District Staff are conducting periodic inspections of oil and gas developments (well pads, pipelines and associated infrastructure) to ensure Conditions of Approval are being implemented.

CAMINO REAL RANGER DISTRICT

Range NEPA for permit re-issuance:

- Continued the Rio Pueblo NEPA analysis for permit re-issuance. We anticipate a decision by December 31, 2004.

Range Administration:

- Range readiness and forage utilization monitoring was conducted on all 15 allotments. This monitoring resulted in a deferred entry of one allotment.
- Adjustments in entry dates and permitted cattle numbers we made in the following allotments due to vegetative condition, management objectives and drought conditions: Black Lake (60 percent), Capulin (29 percent), Luna-Chacon (49 percent), Rio Chiquito (36 percent), Rio Pueblo (61 percent), Santa Barbara (40 percent), Trampas (35 percent), and Tienditas (33 percent). District-wide cattle grazing was reduced 39 percent and bull grazing reduced 43 percent.
- Several allotments were stocked voluntarily at percentages under allowed capacity due to drought conditions and lack of available forage and water.
- Grazing utilization standards of 40% use in key forage areas and 4-6" stubble height in the riparian zones continued to be used in all 15 grazing allotments.

Road Management and Improvements:

- Maintained 38.5 miles of road district-wide (FR 116, 714, 156, 697, 76, 437, 10 and 703).

Watershed Improvements:

- Continued the implementation of Turkey Park, Entranas 2002, Canada Maria, Ruedas, Ojito, West Entranas, Entranas 2000, Llano Abeyta, Pot Creek/Vallecitos, Bear Mountain, Arellano, El Valle, Tienditas, Zapato, Ojos Ryan, Escarrodio, Cejita Mesa, La Joya and Shadybrook thinning projects. These projects seek to improve watershed conditions through thinning of overcrowded stands, increasing herbaceous vegetation, using prescribed fire to reduce fuel loadings and reduce the risk of a running crown fire, and obliterating un-needed roads and trails. These projects will improve watershed condition on approximately 2100 acres.

Burned Area Emergency Rehabilitation:

- Monitored the effectiveness of dozer line and safety zone rehabilitation that occurred on NFS lands.
- Participated as interagency members of the Encebado Burned Area Emergency Response team. Provided an update to the incoming Tribal government on the status of burn rehabilitation activities to date and discussed further rehab needs with members of the War Chief's Office.

Prescribed Fire/Fuel Management Treatments:

- Accomplished 855 acres of prescribed burning and 59 acres of pile burning on the District
- Accomplished 507 acres of pre-commercial thinning.
  The objective of these treatments was to reduce hazardous fuel loading and improve and enhance watershed conditions and wildlife habitat. Some slash was scattered which will allow for native plant regeneration.
- Completed the environmental analysis for the Angel Fire Wildland Urban Interface Project. This analysis will guide fuel reduction treatments on xxx acres adjacent to the community of Angel Fire.
- Completed the environmental analysis for the Borrego Mesa Fuel Reduction Project. This analysis will guide fuel reduction treatments on 450 acres adjacent to the communities of Penasco, Vadito and Pot Creek.

Recreation Improvements:

- Resurfaced parking areas and trailheads with road base at La Junta Canyon Trailhead, Osha Fisherman Parking Area, Amole Canyon Day Use Area, and Elliott Barker Trailhead.
- Ten percent trail projects were completed by Rocky Mountain Youth Corps on the Comales Trail, Elliot Barker Trail, and South Boundary Trail (10 weeks of labor). Approximately 15 miles of trail improvements were made.
- OHV closure on Trail 19A, approximately 1.75 miles, for erosion and safety concerns.
- Trail maintenance (erosion control maintenance) and OHV closure on Trail 30.
- Trail sign installation to designate motorized and non-motorized use on approximately 50 miles of trail district-wide.

Education/Technology Transfer:

- District personnel visited school children ages K-6 in Penasco, Taos, and Vadito. The purpose of the visit was to educate youth about fire prevention, the dangers of wildfires and how fire can be used as a management tool. Nine schools were visited and approximately 600 students participated in the program.

Monitoring:

- Post treatment monitoring of fuel reduction activities at La Joya WUI was initiated by installing permanent plots and photo points. Silvicultural and fuel reduction objectives were monitored by monitoring leave trees and desired basal area on approximately 288 acres.

Watershed Assessments:

- Completed the watershed assessment of the Taos Canyon (Rio Fernando de Taos) area. This assessment covers a 6th code watershed (approximately 43,486 acres) within the Rio Grande del Rancho 5th code watershed area. This assessment will be used to guide future management of this area with regard to fuel reduction activities, silvicultural treatments, watershed improvements, grazing management, road and access management and wildlife habitat improvements. It will also serve as a baseline to effects analysis.

TRES PIEDRAS RANGER DISTRICT

Range NEPA for permit re-issuance:

- Completed environmental analysis for the Spring Creek Allotment.
- Continued environmental analysis for the Tusas and Tio Grande Allotments. These analyses have been deferred due to funding shortages.

Range Management and Improvements:

- Constructed 0.75 miles of pasture fence in the San Antone allotment.
- Constructed 1.25 miles of pasture fence in the Spring Creek Allotment.
- Constructed 2.0 miles of pasture fence in the Apache Allotment.

Range Administration:

- Monitored forage utilization and livestock distribution on 8 of 17 grazing allotments.
- Adjustments in entry dates and permitted cattle numbers we made in the following allotments due to vegetative condition, management objectives and drought conditions: Apache (25 percent), Sublette (21 percent), Lagunitas (15 percent), San Antone (18 percent), Tio Grande (13 percent), Tusas (25 percent), and Spring Creek (15 percent). District-wide cattle grazing was reduced 31 percent and sheep grazing reduced 29 percent.

- Coordinated range monitoring and administration activities on the West Side of the Carson NF (El Rito. Canjilon and Tres Piedras RD's) to best meet administration and management needs due to staffing shortages and increased workload. Focus for administrative activities in FY 2004 was at the El Rito RD.
- Delayed entry of livestock on 2 grazing allotments (Tusas Allotment 5 day delay and Spring Creek 6 day delay).

Road Improvements:

- Maintained 30.5 miles of road district-wide (FR 712, 1893, 421 and 87).

Watershed Improvements/Wetland Management and Protection:

- Implemented water diversion at Stewart Meadows as part of the waterfowl habitat improvements and wetland restoration.
- Completed Boreal Toad survey in Lagunitas grazing allotment.
- Completed 2 miles of top rail fence maintenance along Stewart Meadows Wildlife viewing area

Prescribed Fire/Fuel Management:

- Implemented the following fuel reduction projects: Elmo/Gravel – thinned and piled 200 acres, Red Mesa – thinned and piled 45 and Dry Lakes I – broadcast burned 1,285 acres.

- Conducted planning and environmental analysis for the following projects: Dry Lakes II Ecological Restoration – 3,823 acres, Maquinitas Vegetation Management Project – 8,150 acres (planning effort deferred to 2005 but continued with fuels data gathering and monitoring).

Recreation Improvements:

- Performed maintenance and installed signs on trails across the District, including the Cruces Basin, Tony Marquez, Maquinitas and Hopewell trails
- Completed the construction of the Hopewell Lake Campground.
- Issued 56 letters of authorization for recreation prospecting at Placer Creek.
- Hosted a forest work day to implement signing and construction of a portion of the Continental Divide Trail. This work was permitted under NPDES for construction activities.

Partnerships:

- Implemented planned activities under the Collaborative Forest Restoration and Community Development grant for the community of Tres Piedras. Major accomplishments were fuel reduction activities on 375 acres (brush piling) and thinning of 200 acres.
- Partnered with the NM Environment Department to develop a wetland restoration grant proposal for the Stewart Meadows area. Met with representatives from NMED-SWQB and

the Upper Rio Grande and Conjeos Watershed Groups to plan public meetings to discuss this project and watershed group formation opportunities.

Education/Technology Transfer:

- Habitat protection signs were placed in several areas of the District, including the Stewart Meadows.
- The District participated in presentations for Game Management Unit 52 to the Town of Taos, Village of Chama and Tres Piedras. This is one of three pilot studies statewide designed to identify and address the elk-livestock issues. The public meetings were used to provide recommendations for changes to the 2004-2006 hunt season dates.

QUESTA RANGER DISTRICT

Range NEPA for permit re-issuance:

- Completed environmental analysis on the Columbine and Deer Creek Allotments.

Range Administration:

- Range readiness and forage utilization monitoring was conducted in all 16 allotments – stocked and non-stocked.
- Adjustments in entry dates and permitted cattle numbers we made in the following allotments due to vegetative condition, management objectives and drought conditions: Arroyo Hondo (17 percent), Deer Creek (50 percent), San Cristobal (57 percent), La Lama (80 percent), Midnite-Mallete (50 percent), Rito Secundo (25 percent) and Valle Vidal (20 percent). District-wide cattle grazing was reduced 40 percent and sheep grazing reduced 100 percent.
- The following grazing allotments had non-use in 2004 (Black Copper, Red River, Columbine, Goose Creek, Sawmill Park, La Cal Basin, Lake Fork/Baldy, Main Fork).

Road Improvements/Management:

- Maintained 52.7 miles of road district-wide (FR 1950 and 134).
- Collaborated with the Town of Red River to secure a State TEA-21 grant for recreational road improvements in the Goose Creek and Pioneer Canyon areas. Planning, engineering survey and design of improvements underway for Goose Lake and Pioneer Roads. Implementation to start during the spring of 2005.
- Temporarily closed Middle Fork Road to allow for much needed heavy road maintenance and drainage improvements. Initiated the reconstruction of Middle Fork parking lot, which will improve drainage and improve lot surface. Diverted spring out-flow that was currently running 500' down Middle Fork road directly into Middle Fork Creek via a culvert.
- Increased barrier installation, law enforcement activities and signing to address ORV use and resulting resource damage from this activity. Completed a comprehensive inventory and programmatic OHV plan for the Red River watershed. Increased administration, education and enforcement efforts which resulted in a notable decrease in OHV impacts this past year.

- Worked closely with Amigos Bravos to secure a 319 Grant that will fund an OHV enforcement officer and fund many future OHV management activities including on-the-ground improvements and restoration of OHV damaged areas.
- Worked closely with Quivira Coalition on their 319 Grant to identify road/run-off issues on the Valle Vidal. Implemented approximately 4 miles of road obliteration in the Chuck Wagon and Little Costilla drainages and improvement of drainage structures on remaining administrative access roads.
- Completed inventory and geo-positioning of roads on the Questa Ranger District. Road location and condition surveys were entered into the Forest INFRA data base.

Erosion Control/Mitigation:

- Constructed several riparian vegetation enclosures along Comanche Creek involving NM Trout, Trout Unlimited, under Quivira Coalition's 319 Grant and the Rocky Mountain Youth Corp. This involved several hundred hours of volunteer time.
- Hosted three riparian and environmental education workshops/training sessions on the Valle Vidal.
- Coordinated with Taos Ski Valley and Red River Ski Area to implement on-going watershed improvements at the ski areas.
- Coordinated with the Philmont Scout Ranch to repair several watershed improvements installed after the Ponil Fire on the Valle Vidal.

Recreation Improvements:

- Constructed 5 new corrals to minimize watershed impact resulting from horse use in Cimmaron Campground.
- Placed surfacing material at campsites in Cimmaron Campground to minimize impacts from use.
- Completed heavy maintenance on 0.5 mile of hiking trail to and reconstructed a foot bridge that crosses the Red River at the confluence of the Rio Grande.
- Conducted trail maintenance on approximately 10 miles of wilderness trails. Cleaning and maintenance of existing drainage structures, re-construction of water bars, and trail clearing were the primary improvements made.
- Completed installation of new toilets at Cabresto Lake, Middle Fork parking area, and at Taos Ski Valley campground. Most all of the replacement toilets are in the area of streams or lakes.

Vegetation Management/Wildland Urban Interface/Wild Fire:

- Completed NEPA analysis on approximately 8,000 acres of wildland urban interface projects in the Questa and Lama areas. Implemented a portion of the proposed action over 150 acres to thin forest stands to provide for defensible areas near communities. This action will minimize the potential for stand replacement wildfires, subsequent property loss and watershed damage.
- Awarded contract for 100 acres of mechanical thinning, slash piling and chipping on the Upper Red River Wildland Urban Interface Project.

- Entered partnership with Rocky Mountain Youth Corp to complete thinning and removal of dead pinon trees along a 7 mile stretch of State Highway 522. This project reduces fuel loading on approximately 550 acres.
- Initiated the NEPA process for the Pioneer Canyon and Red River Ski Area WUI. Analysis to be completed in the first quarter of FY 2005.

Burned Area Emergency Rehabilitation/National Fire Plan Restoration:

- Re-constructed the protection fence at Ring Town cemetery in Seally Canyon. This structure was destroyed by the Ponil Fire in 2002. Replacement of this structure will prevent impacts to the historical site by preventing trampling and other damage to grave sites and markers.
- Continued the monitoring of rock and erosion cloth channel structures in Hart Canyon. These structures were constructed to provide for channel stability, sediment deposition and to minimize new erosion resulting from the effects of wildfire.
- Monitored the condition and function of large sediment control structures in Seally, Hart and Bonito Canyons.
- Maintained and re-constructed numerous rock and cloth erosion control structures in Seally Canyon and tributary drainages to provide for continued function.
- Conducted an inventory of invasive weeds within the burned area. This inventory was conducted with geo-positioning to allow for input into the Forest GIS database.

Clean Up Projects – Petroleum

- Performed shallow groundwater monitoring of diesel-contaminated soil at Shuree Ponds, in accordance with a multi-year remediation process.

Partnerships:

- Continued our interaction with numerous State and Federal agencies and MolyCorp Inc. on activities related to the mine closeout plan, proposal for SuperFund listing of the facility and investigative studies related to these actions.
- Continued our coordination with USGS personnel conducting a groundwater investigation and monitoring in the upper Red River watershed.
- Worked closely with the Quivira Coalition, NMED-SWQB, Valle Vidal Grazing Association and other partners on a Watershed Restoration Action Strategy and implementation of riparian improvement, road obliteration and road drainage projects in the Comanche watershed under a 319(h) grant.
- Coordinated and cooperated with the Town of Red River in securing a NM Parks and Trails Grants for maintenance on several of our high clearance roads.
- Village of Questa secured a Forest Restoration Grant for approximately $$300,000 to implement fuel reduction (WUI) treatments authorized by the Questa/Lama Fuel Reduction Project. Grant monies will be used to implement treatments on the Forest lands adjacent to the community.
- Continued our participation in the Red River Watershed Group. Participated in meetings and input and review of the Watershed Restoration Action Strategy (WRAS).

Abandoned Mine Reclamation:

- The Questa RD supported efforts by Regional Office staff to develop the Engineering Evaluation and Cost Assessment (EE/CA) for future clean-up of abandoned and in-active mines in Bitter Creek, Pioneer Canyon, Placer Creek, Marlette and Upper Watershed. A preliminary report outlining remedial actions has been developed and reviewed by District and Forest Staff to develop a range of treatment alternatives and recommend a proposed action for each mine site, most of which have historical and cultural significance. The EE/CA builds upon the previous three seasons of sampling at these mine sites, laboratory analysis and interpretation of that data.

Facilities:

- Began construction of a new District Office complex. This project was permitted under NPDES for construction activities. Best Management Practices are in place to control storm runoff and drainage within the compound site.

Education/Technology Transfer:

- Hosted the NM Riparian Council field tour of the Valle Vidal. Many of the structural and non-structural treatments implemented in the Ponil burned area rehabilitation and other stream and wetland restoration projects were reviewed. Forest Staff participated and acted as tour guides for the group.

SUPERVISORS OFFICE

Burned Area Emergency Rehabilitation/National Fire Plan Restoration:

- Supported the Regional BAER effort by assisting the Lincoln NF with damage assessment and rehab plan preparation for the Peppin Fire.

Planning:

- Supported the plan revision and Forest Land Management and Resource Plan amendment for the Valle Vidal, in response to a request for oil and gas leasing activities. Developed Statements of Work for surface water, riparian and groundwater investigation needs with assistance from the Regional Office and U.S. Geological Survey.
- Forest Staff supported the watershed assessment of the Taos Canyon (Rio Fernando de Taos) area (see Camino Real RD accomplishments for detail).
- Supported the State of New Mexico Regional Water Planning efforts as a member of the Taos County Regional Water Planning Steering Committee in cooperation with Taos County and other stakeholders.
- Hosted staff from the NM Environment Department at a Forest Leadership Team meeting. The purpose of the briefing was to inform forest leadership of recent changes in NPDES permitting requirements.

- Coordinated a meeting with NM Environment Department Staff and Jicarilla RD staff to discuss future oil and gas leasing, environmental analysis (NEPA) and NPDES issues.
- Continued analysis and development of the Invasive Plants EIS in cooperation with the Santa Fe NF. A decision is anticipated in early FY 2005.

Road Management and Inventory:

- Continued inventory of forest roads and development of INFRA roads database. In 2004, approximately 660 miles of road was geo-positioned in the Canjilon Creek and Rio Nutrias-Rio Chama 5th code watersheds. This brings the aggregate total of geo-positioned road inventory to 2,891 miles in 16 5th code watersheds across the forest since 2001.
- Maintained approximately 143 miles of forest roads (see Ranger District accomplishments for specific road segments maintained).

The New Mexico Department of Transportation (NMDOT)/New Mexico Environment Department Task Force was created to provide better communication between both departments regarding environmental concerns. Maryann McGraw of the NMED SWQB Watershed Protection Section is the NMED liaison for the Task Force and reported that the Task Force met April 20, July 17 and October 14, 2003. A meeting scheduled for November 23, 2004 was cancelled due to weather. Listed below are some accomplishments of the past year's meetings.

Task Force Mission Revisited

Maryann McGraw SWQB and Colleen Vaughn NMDOT led a discussion to revisit the effectiveness of the Task Force. The discussion was whether the individual agency representatives getting together rather than having an open discussion during Task Force meetings would better resolve certain issues. Problems: Some regulatory issues are being resolved as violations with penalties before they can be brought to the table and resolved through non-confrontational dialogue between the two agencies. Certain regulated issues and violations have a tendency to recur. Task Force attendees reiterated the positive aspects of Task Force meetings including the fact that the two agencies can consistently work together and are out there for the same thing – its all about health and safety. The Task Force is also a way of putting faces with the voices on the telephone. The Task force has the capability of stopping violations and resolving contentious issues. The Task Force is being used for training by inviting speakers on issues such as NPDES, mosquito control, ground water and air quality issues.

NPDES Regulations

NMDOT and NMED partnered on a special session of the Task Force in October dedicated to NPDES issues. Everett Spencer (EPA Region 6 Enforcement Officer) attended and gave a presentation and fielded questions from the audience. NPDES Phase II regulations as they apply to the NMDOT were the main topic of discussion at the Special Task Force Meeting. Everett showed a 20-minute movie developed for Caltrans that showed the correct way to place BMP's at NMDOT construction projects and provided additional information on types of BMP's that can be utilized during construction. Additionally, he mentioned that EPA had a Public outreach section and that he, also, was willing to come back to New Mexico to visit the different districts in the state to discuss measures being taken to comply with NPDES.
Representatives from Kristar Enterprises gave a presentation at this meeting on products that the company has developed as BMPs' to prevent stormwater pollution. They also showed samples of some of the products.

Joint 401/NPDES Position

The pursuit to jointly fund a "Water" position by NMED/SWQB and NMDOT is finally coming to fruition. A JPA was developed and the position is in the process of being created by NMED Surface Water Quality Bureau. The joint employee will primarily work with NMDOT to comply with CWA 401 Certification regulations. Another subtask would be NPDES implementation. Support for the position includes the large volume of CWA 401 Certifications that have to be done in 60 days and that NMDOT predicts a tidal wave of projects in the next State fiscal year. The SWQB has also added a CWA 401 position in the Las Vegas District Office that should assist in the NE part of the state.

NMED Green Zia Recognition Program
Michelle Vattano (NMED) handed out packets of information about pollution prevention and about NMED's Green Zia Environmental Excellence Program. Green Zia supports and assists organizations to achieve environmental excellence through effective energy management, water conservation and other resource management. The program emphasizes pollution prevention by businesses and other organizations through management practices. Awards are given annually to organizations that successfully participate in the program. Recognition is for waste reduction and pollution prevention. Applications for 2004 were due by April 30, and Michelle encouraged the NMDOT to apply.

Implementation issues, Phase II NPDES Program training in the Districts and City of Las Cruces, Reza Afaghpour NMDOT, Rae Van Hoven NMDOT, Rich Powell SWQB conducted NPDES Phase II training to Maintenance personnel in NMDOT Districts. Items discussed at training include how to fill out SWPPP, complete inspection forms, complete yearly reports. The training is so Maintenance forces know what the permit looks like and provides them with the knowledge of knowing when a permit is required. Rich Powell gave a presentation to the City of Las Cruces regarding NPDES. He is also working with Bernalillo County and City of Albuquerque to have public outreach for NPDES, MS-4. This will include TV ads, radio.

Report on award for NMDOT tire bale project.
Toni Duggan (SWB) and Filiberto Castorena (NMDOT) describe the tire bale bank stabilization project that was constructed near Winston by District 1 maintenance crews. The project won an Honorable Mention for Excellence in Engineering Design. Pictures of the project were handed out at the meeting. The district is looking into purchasing a tire bailer. Richard Powell commented that the tire bailing facility would need an NPDES industrial permit. Toni also handed out a list of tire recycling facilities.

CWA Section 319(h) Grant awarded to NMDOT District Five.
District Five was awarded a CWA Section 319 Grant to work on NM 169 on Cordova Creek in the Rio Costilla watershed. The project will be designed to abate the sedimentation problem on Cordova Creek and will work on returning the stream to a high quality cold water fishery. The project expects to be a model for teamwork between the two Departments to address road issues and restore water quality.

Prevention of Mosquito Breeding in Highway Retention Ponds
NMDOH continues to work with NMDOT regarding management of mosquitoes in stormwater treatment devices. Stormwater detention pond configurations should not allow water to stand for more than 72 hours so that mosquitoes could not successfully breed. Detention basins should drain adequately to avoid leaving standing water; they should be maintained so that vegetation will not clog systems. Systems should remain accessible to mosquito predators. Surface water area should be reduced so that there is a reduction in favorable mosquito habitat. If covers are used they should seal completely so that female mosquitoes cannot enter small openings. Workers should use mosquito repellent during routine stormwater detention pond maintenance where standing water is present.

NMDOT Recycling Program
NMDOT reported on their recycling program. Some of the recycling initiatives NMDOT is taking that help watershed restoration include using compost for revegetation. Tire Bales have been used for erosion control projects.

FHWA New Mexico Workshop on Streamlining Environmental Process

The Improving Transportation Project Development and Environmental Reviews Through collaborative Problem solving facilitated workshop was held at NMDOT this fall. The purpose of the meeting was to work on issues that hinder successful environmental reviews, permitting approvals, and environmentally sound development of transportation projects. The workshop focused on talking about the issues and learning ways to resolve them.

Several state and federal agency representatives participated including NMED Surface Water Quality Bureau.

Las Huertas Creek Watershed

Members of the Las Placitas Association Huertas Creek Watershed Group and representatives of NMDOT toured the portion of Highway 165 that is situated in the floodplain of Las Huertas Creek. Opportunities were discussed on how to slow storm water drainage off the unpaved mountain road and redirect it away from the creek and into ditches and meadows. It was agreed that the ditches need to be cleaned out. Cobble one-rock dams could be put in place as needed. When spring grading is done, berms or swales (side-drainages) could be constructed to divert some of the water flowing directly off the road into the stream. Where possible, pullouts could be narrowed or eliminated. Culverts could be cleaned out and rock dams and filter cloth installed. A future pilot project to divert water from the road onto a meadow where sediments could be filtered out was discussed. A site was selected and Bill Zeedyk will be consulted regarding a design. Before any major work is considered, a drainage study affecting the creek will be conducted. Possible funding might be a NMED 319 On-the-Ground grant for 2005.

Project Name: South Long Canyon Flood/Erosion Control
Hydrologic Unit: Upper Rio Peñasco Watershed, Hydrologic Unit Code 13060010

Junipers pushed into gully at South Long Canyon, summer 2004

Cooperators: David and Norma Brennand, adjoining private land owners, provided some funding and did the earth moving work. The Artesia office of the National Resources Conservation Service provided the design criteria and partial funding for the work. The Carlsbad Field Office of the Bureau of Land Management provided archeological and biological surveys and input into the design and placement of the structures.

Grasses coming up through lop and scatter juniper reduction, project completed January 2003

Project Description: The primary purpose of this project is to reduce flood impacts to a residence and earthen reservoir located immediately downstream and to improve water quality delivered to the reservoir and to the Rio Peñasco watershed. Headcuts were reshaped and two small catch basins were installed. In addition, several large junipers were pushed into the gully just below these structures. The disturbed area was reseeded with native grasses. The project covers a watershed area of approximately 80 acres. Slower runoff velocities should reduce erosion potential and reduce sediment yield.

Lessons learned: Based on reports from Brennands, the summer rains yielded slower runoff rates, longer flow periods, and cleaner water. Through the first summer, the project appears to be functioning as designed. In addition, the juniper thinning project from 2003 has produced more ground cover. This cover appears to have lessoned rain drop impact, reduced the length of flow patterns, and slowed runoff by causing it to meander.

Sediment retention fence at Big Hackberry, designed to slow flow and trap sediment. Completed June 2004

Project Name: Big Hackberry Sediment Retention fences

Cooperators: Lisa Ogden, grazing permittee, provided some funding and did the installation work. The Carlsbad office of the National Resources Conservation Service provided the design criteria and partial funding for the work. The Carlsbad Field Office of the Bureau of Land Management provided archeological and biological surveys and input into the design and placement of the structures.

Hydrologic Unit: Mid Black River Watershed - Hydrologic Unit Code 13060011

Project Description: The project consisted of placing a series of low net-wire fences across the upper part of Flume Draw. Metal t-posts were driven into the ground, about three feet apart, with about 24 inches left above ground. Net wire was tied on the upstream side of the posts, with about 18 inches placed vertically and 10 inches placed horizontally as an apron. The objective is to trap sediment, slow and spread runoff, stabilize soils in order to allow the reestablishment of herbaceous vegetation, and reduce sediment yield into the Black River. The project covers a watershed of approximately 300 acres. Slower runoff velocities should reduce erosion potential, allow native grasses to become established, and reduce sediment yield to the Black River.

Lessons learned: Some sediment was trapped by these fences during summer rains. They appear to be functioning, additional fences may be needed.

Project Name: Northeast Pasture Brush Control

Cooperators: The Carlsbad Field Office of the Bureau of Land Management funded and completed the spray project.

Pre-treatment (left picture) and post-treatment (right picture) of mesquite.

Hydrologic Unit: Upper Brushy Draw Watershed - Hydrologic Unit Code 13070001
Project Description: Aerially spray the pasture with a Remedy/Reclaim tank mix to reduce/eliminate mesquite and increase native grasses. Buffer areas around playas, earthen reservoirs, and drinking troughs were not treated. The objective was to increase ground cover, reduce bare ground between the low mesquite dunes, increase infiltration, and reduce runoff. The project encompassed approximately 6,000 acres, all on public land. More grass cover and less bare ground between mesquite dunes should reduce raindrop impacts, slow runoff, and allow precipitation to soak into the soil instead of running off. This should reduce erosion and sedimentation, improve water quality, and restore watershed health. After one growing season, grass composition has gone from 14% to 55%, while shrubs (mesquite) have gone from 84% to 28%.
Lessons learned: Based on the first year of monitoring, it appears the treatment was a success. Perennial grass canopy cover has increased, mesquite has been almost completely removed from vegetative composition, flow pattern length has been shortened, and sediment transport is less apparent. The objectives are being achieved.

Project Name: Chatfield Erosion Control
Hydrologic Unit: 13030102
Project Description: The objective of the project is to stabilize an area currently showing active headcutting and formation of gullies. Headcuts were reshaped and gully plugs installed to promote soil stabilization and herbaceous vegetative growth. Approximately 3000 acres were treated in 2003 and approximately 2000 additional acres were treated in 2004.

Project Name: Valiente Peak Erosion Control
Hydrologic Unit: 13030201
Project Description: The project consisted of reshaping headcuts and construction of small earthen structures (gully plugs) in deteriorating “tobosa draw” sites southwest of the town of Deming. The objective is to prevent further downcutting of the gullies and stabilize soils in order to allow the reestablishment of herbaceous vegetation. The project encompassed approximately 2300 acres in 2003 and an additional 800 acres in 2004.

Project Name: Black and Delaware River Brush Control
Cooperators: The Carlsbad Field Office of the Bureau of Land Management funded and completed the project.
Hydrologic Unit: Upper Black River Watershed - 13060011; Upper Delaware River Watershed - 13070002
Project Description: The project consists of the mechanical and chemical treatments to remove salt cedar and Russian olive. Larger plants were removed using a backhoe, while smaller plants were cut using a chain saw and the stumps were sprayed with Arsenal. Slash was burned on the Delaware River and put through a chipper on the Black River to provide mulch. Both areas had cottonwood poles planted to replace the salt cedar and Russian olive that was removed.
Benefits: Removal of invasive plants in the riparian zone, more ground cover where these invasive plants were, less sediment into the streams, overall increase in proper functioning of the riparian zone.

Lessons learned: While the backhoe could cover more area in a given amount of time, there tended to be more resprouts in the areas where the backhoe worked. These were then hand cut and the stumps sprayed. The biggest lesson learned was that maintenance work was needed to keep the area free of invasive brush.

Project Name: Tularosa Salt Cedar Treatments
Hydrologic Unit: 13050003

Pre- (above) and post- (below) treatment of Russian olive removal.

Project Description: The project consists of the chemical treatment of approximately 250 acres of salt cedar in the Tularosa/3-Rivers area. Numerous perennial springs occur throughout the area, however salt cedar has invaded most of the riparian habitat areas. Objectives of the project include treating the salt cedars in order to re-establish more desirable native riparian species.

Project Name: Prescribed fire and tree thinning
Hydrologic Unit: 14080103 & 14080101

Project Description: Approximately 2,700 acres pinyon-juniper encroachment were thinned and burned to maintain and/or improve shrub, grass, and forb components for wildlife habitat and improve watershed function. In the early 1970's pinyon-juniper dominated land was chained to improve the vegetative community. The pinyon-juniper trees have become re-established because of the lack of natural fire to suppress the tree encroachment. Juniper trees eight inches in diameter at the base and pinyon trees four inches in diameter at the base were felled using chainsaws. The trees were allowed to dry for approximately one year. Some of the downed trees were placed in gullies to serve as sediment traps, reduce erosion and promote healing. Prescribed fire was applied in mid April 2004, followed with reseeding in the ash of the burned slash in the fall of 2004 in those areas of inadequate residual vegetation.
Lessons Learned: This project removes vegetative competition allowing for an increase in herbaceous vegetative growth that improves the watershed, forage values for livestock and wildlife and improves water quality by reducing erosion and sediment transport. Monitoring for success to improvement watershed

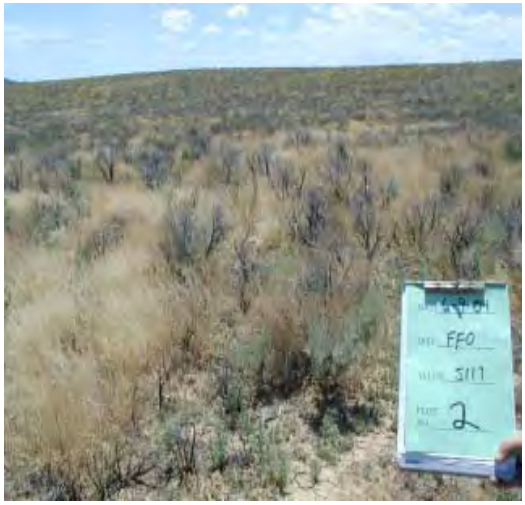
and revegetation enhancement will be evaluated. If evaluations indicate improved watershed and vegetation values, the practice will continue to be utilized in areas that are good candidates for this type of management treatment.

Project Name: Cherokee/Cliff Prescribed Burn
Hydrologic Unit: 15040002
Project Description: The project consisted of reintroduction of fire to an ecosystem where juniper has increased and herbaceous species have decreased. Objectives are to decrease the amount of woody vegetation in the area to allow for an increase in herbaceous grasses and forbs which will provide for an increase in groundcover and watershed conditions in the area. The project encompassed approximately 2500 acres.

Project Name: Prescribed Fire and Thinning
Hydrologic Unit: 13030202, 13030103, 15040002, 13050004
Project Description: The fuel reduction projects consisted of hand thinning and control burns of brush and other woody vegetation primarily for safety reasons and protection of sites from the danger of wildfires. The projects encompassed approximately 32 acres near Pinos Altos, 25 acres in the Caballo Mountains, 40 acres on Brushy Mountain near Cliff, and 292 acres near Timberon.

Project Name: Northern New Mexico Watershed Restoration
Hydrologic Unit: 14080104, 14080101 , & 14080103
Project Description: Approximately, 8,700 acres of sagebrush dominated land were treated with Tebuthiuron to improve grass cover and reduce soil erosion and sedimentation. The Tebuthiuron was applied at a rate of 0.3 pounds of active ingredient per acres. This application rate thins the sage, thus leaving some sage for those species that are sage obligates. Buffer strips (fifty foot or more) are left along tree lines to provide additional sage for deer browse and other wildlife use.

Tebuthiruon treatment results.



Lessons Learned from Project (Positive and Negative): Tebuthiuron has been proven over the years to be an effective tool for improving watershed function. It selectively thins sagebrush allowing herbaceous vegetation to respond to the reduction in competition for nutrients and water. In previous applications, the responses to healing watersheds that exhibit excessive erosion and sedimentation have been overwhelming. Rate of application has been adjusted over the years from 0.5 to 0.3 active ingredient per acre (ai/ac). Application rate of 0.3 ai/ac have been effective in promoting desirable herbaceous growth while still providing some sage for sage obligate species. Tebuthiuron initially was used in the early 1980's to eliminate sagebrush and to increase production of forage for domestic livestock. Since then our goals have changed to thinning the sagebrush to achieve a more ecologically sound vegetative community. Thinning of the sage increases forage produced (primarily grasses), improves biodiversity, and wildlife potential. Over the years we have learned that it substantially improves the watershed thus a greater focus has been toward watershed restoration and improvements to water quality through reduced erosion and sedimentation.

Project Name: Carrizo Sediment Retention Fence
Hydrologic Unit: 14080103
Project Description: Largo Canyon was once a healthy and vibrant riparian area but over time has gradually become a non-functional riparian zone. In an effort to help restore and move this drainage toward a functioning riparian system, sediment retention fences were constructed in the bottom of Carrizo Wash over 25 acres. These structures are constructed using recycled oil and gas production pipe. The pipe, cut into 15-foot long sections was buried 8 to 10 feet deep at spacing of 10 feet apart for 100 feet in length and placed at an angle of approximately 25 degrees downstream. Heavy gage woven wire reinforced by steel cable on the top and bottom was strung along the pipe on the upstream side. Floodwater will drop out the sediment on the backside (downstream) and create a suitable seedbed for cottonwood and willow establishment. In addition to the establishment of the riparian vegetation these structures help to protect stream bank from erosion. Labor was conducted using a YCC crew this year. Their hard work has proved successful in protecting stream banks and riparian vegetation.

Recently installed sediment fence demonstrating protection of eroding stream banks and riparian vegetation.

Lessons Learned: Previous attempts to improve riparian areas thru the planting of whips or poles have resulted in very poor success. Planting would seem to do well the first year then would die back with very few (less than 5 percent) survivors the following year. Observations of similar structures showed promising results for riparian regeneration and growth. Existing natural seed sources existed but suitable growing habitat (seedbed) were limiting for the natural regeneration of desirable riparian vegetation. It was also learned that livestock grazing must be controlled in the riparian areas during the growing season to protect establishment and recruitment of riparian species. After completion of projects in adjacent drainages, the establishment of cottonwood seedlings and other riparian vegetation were observed the following year.

Project Name: Tank Mountain Hydromowing Project
Hydrologic Unit: 14080104

Timber Axe creating protective mulch that aids in prior reseeding success.

Project Description: The Tank Mountain area was quickly becoming encroached and overgrown by pinyon-juniper and sagebrush which was impacting watershed function and wildlife forage habitat. A Timber Axe was used to mechanically and selective thin pinyon-juniper trees and dense sagebrush encroachment areas. Approximately, 250 acres was treated. Prior to using the Timber Axe the area was broadcast seeding. The mulch created from the operation of the Timber Axe provides a protective cover that traps moisture, adds organic matter, and protects the seeds from birds and rodent.

Lessons Learned: Several projects employing different techniques to control encroaching pinyon-juniper and

sagebrush have met with mixed success as far as desirable vegetation enhancement is concerned. This particular technique appears to show promise when seeding is done prior to project startup. The mulch created using the Timber Axe provides a protective barrier and micro-environment for seed germination and establishment. Initial results appear to be promising.

Project Name: Transportation and Roads
Hydrologic Unit: 14080104 & 14080101
Project Description: The safety roads in the San Juan Basin have been a concern for several years. The Arkansas Loop route is a major right of way road providing public access to a vast area of public land between the Animas River and Pump Canyon. It contains several major gas gathering lines that were exposed due to poor road design, maintenance and erosion. Several miles of this access route have already seen major road re-construction and an additional 2.5 miles were completely reconstructed and surfaced this year. Crushed sandstone, which is readily available in the area was used as the surfacing material. Incorporated in the reconstruction were road design features that facilitate proper drainage and

Before (left) and after (right) road improvement.

minimize erosion. Reseeding of the roadside cut banks was also conducted and has successfully germinated to aid in the stabilization of the road.
Lessons Learned : Public concerns about road safety, access and excessive erosion are Issues that require immediate attention. Using readily available materials (sandstone) problem roads can be properly reconstructed and maintained to serve the public for a variety uses and needs.

Project Name: Northern New Mexico Weed Program
Hydrologic Unit: 14080104, 14080101, & 14080103
Project Description: The invasive weed management program focuses on the inventory of existing infestations, prevention of noxious weed invasion, monitoring revegetation efforts for invasive weeds, and assessment of the success of weed control efforts. Chemical treatments were applied to weeds in various locations totaling approximately 55 acres. Inventory for invasive weeds was conducted on approximately 14,500 acres and 15 acres have been evaluated for control success.

Chemical treatment using four-wheeler.

Lessons Learned: An invasive weed has, or will have, a negative impact on the environment or the economy. These invasive plants can dominate and often cause permanent damage to natural plant communities. These invasive plants can dominate and often cause permanent damage to natural plant communities. If not eradicated or controlled, noxious weeds will jeopardize the health of the public lands and the myriad of activities that occur on them.

Project Name: Lower Pecos River Watershed Restoration Project on BLM Public Land located in the Roswell Field Office
Hydrologic Unit: 13060003, 13060005, 13060007, & 13060008
Cooperators: Roswell Field Office BLM
Project Description: Eradicate exotic, invasive plant species and restore riparian habitat with native species. This will reduce streamflow losses to the phreatic exotics and help improve water quality in the Pecos River and nearby Springs. Remove, cut and treat invasive thickets of saltcedar on approximately 900 acres of Public Land and replace them with native species.
This project is managed by the Roswell office-BLM. The historic lower Pecos River riparian corridor was once made up of native species including cottonwoods and willows occupying the bank areas of the river. The flood plain along the river banks were either flood irrigated fields supporting the local riparian vegetation or alkali sacaton grass flats sub-irrigated fields supporting the local riparian vegetation or alkali sacaton grass flats sub-irrigated by sporadic flooding flows of the Pecos River and its tributaries. This project will improve stream bank conditions in the Lower Pecos River Watershed by cutting and treating invasive thickets of saltcedar (Tamarix sp.) and replacing with native riparian species within the treated areas. This land treatment is expected to reduce salinity of the local soils, reduce sedimentation in the Pecos River, and reduce additional infestation and invasion by saltcedar downstream. Additional improvement should be found in water retention, stream bank morphology, and significant enhancement of the riparian area in general.
The methods employed were extraction of existing salt cedar and cutting down existing salt cedar and then follow up spraying and stump treatment with herbicide. To date approximately 900 acres of salt cedar have been removed by extraction or cut down on the Pecos River and nearby Springs. The salt cedar stumps will be stump treated with herbicide (Habitat). New growth of salt cedar in areas of previous salt cedar extraction will be spray treated with herbicide (Habitat). The area will be monitored by foot patrol to see if retreatment is necessary. The RFO BLM plans to plant either willow poles or native trees such as cottonwoods and native grasses and shrubs in treated areas.
Lessons Learned: The desired results of reduced sedimentation in the Pecos River, and reduction in additional infestation and invasion by salt cedar downstream has been successful. The RFO continues to monitor the Pecos River for new infestation of salt cedar on public land. The removal and cutting of salt cedar has increased the diversity of native grass species and the vegetation has increased. The combination of the reintroduction of native grasses and shrubs have increased water retentention, stream bank morphology, and significant enhancement of riparian area in general.

NRCS Natural Resources Conservation Service

Comprehensive Nutrient Management Plans

A certification program is underway and a training course was provided on Comprehensive Nutrient Management Planning in December 1-3, 2003 and December 13-16, 2004 for NRCS and CES employees, other agencies, private consultants, and producers. These participants will be developing comprehensive nutrient management plans for animal feeding operations in state in order to prevent runoff and leaching of animal manure into surface and ground water. Thus far, 51 Technical Service Providers and 23 NRCS employees have attended the training courses since 2000. There are 14 NRCS and 11 Technical Service Provider Certified Conservation Planners for Camps. Comprehensive Nutrient Management Plans were developed by the NRCS field offices in Bernalillo (1), Chaves (7), Curry (6), Eddy (1), Lea (2), Sierra (1), Union (1), and Valencia (1) counties. Funding is continuing to be available for manure management through the Farm Bill.

Conservation Buffers

Conservation buffers reduce sediment losses and runoff. Riparian forest buffers (195 ac), streambank protection (566 ft), and windbreaks/shelterbelts (75,398 ft) were applied in New Mexico, chiefly in Catron, Curry, Grant, Harding, Quay, Roosevelt, Santa Fe, and Union counties.

Irrigation Water Management

Irrigation water management practices applied, which reduce runoff and leaching, included acres applied in the following counties: Bernalillo (4), Chaves (185), Cibola (15), Curry (3,470), Dona Ana (24), Eddy (169), Hidalgo (215), Lea (5,629), Luna (2,007), McKinley (19), Otero (117), Quay (128), Rio Arriba (30), Roosevelt (3,566), Sandoval (40), Santa Fe (101), Sierra (6), Socorro (83), Taos (79), Torrance (115), Union (1,235), and Valencia (64).

Nutrient Management

A certification program has been established and a training course provided on Nutrient and Pest Management Considerations in Conservation Planning for NRCS and CES employees, other agencies, private consultants, and producers. Approximately 90 participants have been trained since 2001. These participants develop nutrient and pest management plans for farmers and ranchers to prevent runoff and leaching of nutrients and pesticides into surface and ground water. Nutrient management practices (in acres) were applied to utilize resources efficiently and reduce nutrient runoff and leaching from cropland in Bernalillo (4), Curry (843), Dona Ana (11), Eddy (502), Hidalgo (215), Lea (348), Luna (1,874), Rio Arriba (1,186), Sandoval (570), Sierra (21), Socorro (4), Union (90), and Valencia (13) counties.

Pest Management

Pest management systems (in acres) were applied on cropland, pasture and/or rangeland to utilize resources efficiently and reduce pesticide runoff and leaching in the following counties: Bernalillo (8), Chaves (58), Colfax (3,060), Curry (1,681), Dona Ana (11), Eddy (139), Harding (346), Hidalgo (215), Luna (1,863), Rio Arriba (1,186), Sandoval (570), Sierra (21), Socorro (4), Union (90) and Valencia (18).

Grazing Land Practices

Grazing practices (in acres) were applied on rangeland in the following counties: Bernalillo (9,338), Catron (82,096), Chaves (101,956), Cibola (89,196), Colfax (34,977), Curry (2,152), De Baca (95,005), Dona Ana (16,099), Eddy (26,143), Grant (7,824), Guadalupe (180,057), Harding (45,052), Hidalgo (49,659), Lea (17,766), Lincoln (93,789), Luna (97,937), McKinley (22,944), Mora (8,755), Otero (135,303), Quay (64,487), Rio Arriba (26,644), Roosevelt (19,625), San Juan (10,997), San Miguel (16,767), Sandoval (27,854), Santa Fe (3,307), Sierra (130,325), Socorro (78,665), Taos (5,944), Torrance (73,758), Union (64,287), and Valencia (4,867).

Residue Management

Residue management practices (in acres) were applied to cropland to reduce sediment losses and runoff and utilize resources efficiently in the following counties: Bernalillo (4), Curry (9,500), Dona Ana (11), Eddy (110), Hidalgo (143), Lea (4,132), Luna (335), Quay (550), Roosevelt (23,229), Santa Fe (17), Torrance (115), Union (90), and Valencia (30).

Waste Management

Waste storage facilities were installed in Chaves (4) County. Forty-five pumping plants and 6 manure transfer practices were installed for waste management systems in the state.

New Mexico State Land Office

Project Name: Nonpoint Source Pollution Prevention Project on Maudes Canyon

Location: Grant County, New Mexico

Project Description: The Maudes Canyon tributary meanders through approximately three quarter (¾) miles of New Mexico state trust land. Water quality from Maudes Canyon to the Mimbres River is expected to improve through the use of restoration techniques implemented at the this site. These techniques include willow and cottonwood pole plantings for increased soil stabilization, the removal of non-native species such as Tamarix sp. and Elaeagnus sp. to help reduce water loss, the installation of fencing to prevent degradation from off road vehicle use, the collection and monitoring of baseline data for immediate and future use, brush control, planting of native grasses, and construction of an interpretive trail to benefit educators in addition to other outreach and education initiatives.

In addition to the tasks mentioned above, a Watershed Restoration Action Strategy (WRAS) was developed. The WRAS was based on fundamentals of watershed management with the primary goals of non-point source pollution control and access for education and community involvement. Several unique opportunities for educational initiatives occurred in the Silver City area during the course of this project. The 2004 WERC Environmental Academy was implemented in July 2004. In the context of watershed health issues, the Maudes Canyon site was highlighted.

Before (above) and after (below) brush control treatment.

Lessons Learned: The Maudes Canyon project had many successes. With the funds provided by the EPA for surveying, fencing, brushwork, noxious weed management, seeding and education, an excellent cornerstone for future management practices has been established. Successes include:

- The development of a WRAS contributing to the successful designation of an acceptable riparian buffer in an areas surrounded by development
- Successful partnerships among cooperators
- The collection of baseline data assisting in continued research and education at the site
- The installation of an estimated 3,000 feet of fencing, protecting about 88 acres of property helping to decrease unauthorized access

- The implementation of brush control work on approximately 30 acres removing about 2,900 cubic feet of debris opening areas from encroachment
- Approximately 16 locations of invasive species infestation were targeted for treatment
- Visibly increased bird and small mammal habitat use by piling slash for cover
- The broadcast seeding, although spotty, of an estimated 15 acres which is expected to help with reduced erosion and benefit aquifer recharge
- The installation of gully plugs in at least 30 sites makes up about three quarters of the project area and has begun to show signs of sediment dams helping reduce sediment loading for improved water quality.
- Hands-on educational experiences by approximately 67 students and sixteen 16 teachers at the Maudes Canyon Site.

The primary obstacles in implementing this project were due to personnel changes. The lead agency (NMSLO) and the administering agency (NMED) experienced staff changes that contributed to lost data, new learning curves and changes in the proposed work plan. Lack of necessary manpower and tools was also an obstacle in reaching project goals. Initial willow and poplar pole plantings were not as successful as anticipated. Future plantings will include plantings with root systems to increase survival.

ORGANIZATIONS WORKING IN WATERSHEDS

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