

FOREST PLAN MONITORING AND EVALUATION REPORT

Santa Fe National Forest

Fiscal Year 2003

Contents

Forest Supervisor's Certification

Forest Plan Background & Amendments

Forest Plan Revision Schedule

Inventories & Assessments

Table Of Monitoring Activities

Evaluation Of Monitoring Results

- 1. Lessons Learned From Monitoring**
- 2. Monitoring Process Strengths & Improvements**
- 3. Monitoring Process Weaknesses or Barriers**
- 4. Progress Toward Desired Conditions**
- 5. Public Involvement In Monitoring**

Appendix

Management Indicator Species Assessment & Monitoring Report, March 2003

Forest Supervisor's Certification

I certify that the Santa Fe National Forest Plan (Forest Plan) as amended is sufficient to guide management of the Forest over the next year.

This Monitoring and Evaluation Report meets regulatory requirements for completing an annual report (36 CFR 219).

Gilbert Zepeda

GILBERT ZEPEDA

Forest Supervisor

June 3, 2004

Date

Forest Plan Background & Amendments

The Forest Plan and associated EIS were first published as drafts in 1982, as finals in 1983, then were withdrawn in order to address appeal issues regarding timber harvesting and wild and scenic rivers. Once appeal issues were resolved, these documents were approved and published in final form in July of 1987.

Preliminary Forest staff recommendations for updating the Forest Plan were developed in 1996-98 and are contained in the fiscal year 1999 Monitoring & Evaluation Report. Those recommendations are still valid, although we recognize that additional changes should be made such as incorporating new direction from National Fire Plan and associated policies for managing fire use.

The following amendments were made to the 1987 Forest Plan:

- Amendment #1- Changed timber sale schedule (8/88)
- Amendment #2- Added management direction for recommended Wild and Scenic Rivers (1/89)
- Amendment #3- Changed timber sale schedule (5/89)
- Amendment #4- Added Pajarito Peak electronic site (2/90)
- Amendment #5- Adjusted management area boundaries between area "C" and "Q" (10/92)
- Amendment #6- Incorporated Region-wide amendment for managing Mexican spotted owl habitat, northern goshawk habitat, old growth and livestock grazing (5/96)
- Amendment #7- Allowed deviation from visual quality requirements for El Cajate Mine (12/96)
- Amendment #8- Modified Management Area J direction for Gallinas Municipal Watershed (10/97)
- Amendment #9*- Added new management area and associated direction for managing the East Fork of the Jemez Wild and Scenic River corridor (08/02)
- Amendment #10*- Added new management area and associated direction for managing the Jemez National Recreation Area (01/03)
- Amendment #11*- Pecos Wild and Scenic River: new standards and guidelines + Management Plan (07/03)

* Replacement pages for these amendments have not yet been added to the Forest Plan

Forest Plan Revision Schedule

Revision of the Forest Plan was originally scheduled for 1999 (Five-Year Forest Plan Review and Monitoring Report, USFS, 1993). However, the Southwestern Region modified the Forest Plan revision schedule while forest planning regulations (36 CFR 219) were being updated. The updated regulations are still being finalized. The Santa Fe National Forest is currently scheduled to begin Forest Plan revision in 2007.

Status of Inventories & Assessments

During fiscal year 2003, we continued to build the Santa Fe National Forest's Geographic Information System (GIS) database for environmental planning analysis work. GIS data such as roads, streams, water bodies, existing vegetation, range allotments, terrestrial ecosystem units, special management areas, and goshawk and Mexican spotted owl habitats were still being worked on by the Tennessee Valley Authority contractor. The work includes checking for errors and ensuring standardization between other Forests in the Region. The Santa Fe National Forest reviewed check plots of each layer for accuracy which were then returned to Tennessee Valley Authority contractor for updating. The Data Services Group (GIS/Infrastructure database/Natural Resource Information System) installed the new ArcGIS software, plus Natural Resource Information System (NRIS) and Infrastructure database (INFRA) applications on dozens of computers on the Santa Fe National Forest and offered or informed users of available training. Using GIS, we provided data, created maps, and ran analyses for numerous inventories and assessment projects including the Santa Fe Municipal Watershed, oil and gas leasing, and a weeds environmental impact statements. We also participated in the national Inventory and Monitoring Program Plan (IMPP) by using tools to assess the status of our GIS data and related databases towards national standardization. We continue to update the INFRA database including buildings, water systems, recreation sites, administrative sites, wastewater systems, dams, and range structures. Inventory continued on deferred maintenance inspections and costs for those items listed in the previous sentence plus roads, trails, bridges, major culverts, and archaeological sites. The Santa Fe National Forest was chosen as a pilot forest for the Mobile Range Application which incorporates GIS, GPS, INFRA, and NRIS applications into a mobile pocket computer that could be taken into the field. Data could be collected in the field and then uploaded into databases back at the office. Each District was given a unit and training was done. The Roads Analysis Process also continued on the Forest.

Assessments work focused on roads analysis and hydrologic condition assessment activities. Fiscal year 2003 accomplishments are as follows:

- Forest-wide Roads Analysis Process (RAP): completed most steps; systematically assessed road management objectives, values (access needs) and risks (resource impacts) associated with maintenance level 3, 4 and 5 roads (higher level roads designed to accommodate passenger car travel).
- Watershed-scale RAP: completed 80% of the RAP for level 1 and 2 roads on Coyote and Cuba Ranger Districts and 50% on Espanola Ranger District (portions of approx. 23 5th-code watersheds).
- Hydrologic Condition Assessment (HCA): completed 5th-code Rio Guadalupe watershed, which overlaps the Jemez and Cuba Ranger Districts, and Rio Puerco de Chama, Rio Gallina, and Canjilon Creek (Rio Chama de Abiquiu) on the Coyote Ranger District.
- National Visitor Use Monitoring: conducted 246 surveys throughout the Forest and fiscal year. This is part of a Nation-wide effort to collect information on National Forests and Grasslands about visitor satisfaction and use.
- Final Report for Cerro Grande Monitoring: report is pending.

Table of Monitoring Activities

The following table summarizes monitoring activities performed. The four columns consist of:

1. The resource being monitored.
2. The type of monitoring action accomplished.
3. The location of monitoring documentation.
4. The district where the monitoring occurred.

List of acronyms used:

BAER - Burned Area Emergency Response
 BLM – Bureau of Land Management
 GIS – Geographic Information System
 GPS – Global Positioning System
 INFRA – Infrastructure database
 NEPA – National Environmental Policy Act
 NRIS – Natural Resource Information System
 RD – Ranger District
 RO – Regional Office
 SHPO – State Historic Preservation Officer
 SO – Supervisor’s Office

Forestwide

RESOURCE	MONITORING ACCOMPLISHED	RECORD LOCATION	AREA
Facilities	Condition monitoring inspections at lookouts, cabins, compounds, office and field buildings	SO-INFRA database and RD files	Forestwide
Fire, climate	Climate monitoring at 8 Remote Automated Weather Stations	SO-Fire Fire Weather Information Management System weather archives	Forestwide
Fire, climate	Drought effects to vegetation/fuels in different elevations/life zones, on selected project areas. Collected live fuel moisture samples.	SO-Fire files	Forestwide
Fisheries/Water Quality	Stream habitat condition monitoring: Cañones Creek, Rio de las Vacas (wilderness portion) – 10 miles total	RD-Fisheries files	Forestwide
Fisheries/Water Quality	High Lakes Inventory monitoring for water quality, human use and impacts, effects of air pollution, and to determine survivability of an introduced fisheries: Stewart Lake, Stewart Pothole, Lake Katherine, Lower Katherine Lake, Spirit Lake, Lake Johnson – 22.3 acres across 6 lakes	RD-Fisheries files	Forestwide
Stream Temperature	Stream temperature monitoring for 110 miles in 13 streams	RD-Fisheries files	Forestwide
Minerals	Permit compliance/surface effects monitoring active mines and wells. 45 wells and 7 mines	Cuba RD – Minerals file	Forestwide
Minerals	Surface inspection of recently closed mines.	Cuba RD – Minerals file	Forestwide

RESOURCE	MONITORING ACCOMPLISHED	RECORD LOCATION	AREA
Pest Management	Insect/disease activity monitoring (aerial survey, map and report). Done annually by RO	SO Forestry files	Forestwide
Recreation, use	National Visitor Use Monitoring surveys completed.	Data is being analyzed and a report should be in the SO later this fiscal year.	Forestwide
Water Quality	Drinking water quality (nitrate) monitoring of wells and other FS drinking water supplies	SO Facilities files & NM Environmental Department	Forestwide

Pecos – Las Vegas Resource Area

RESOURCE	MONITORING ACCOMPLISHED	RECORD LOCATION	DISTRICT
Fire	Effectiveness monitoring on prescribed burns (North Rim, Hartman, Hartman II, Capulin)	RD files – burn plan file	Pecos-Las Vegas
Fire	Implementation monitoring for Brazel and Road 18 prescribed burns. 46 transects put in for monitoring fuel loading before and after fire.	RD – burn plan file	Pecos-Las Vegas
Fire, prevention	Fire hazard condition/defensible space monitoring of residences in wildland urban interfaces at: Gallinas, Evergreen Valley, Macho, Dalton, Holy Ghost, Grass Mountain, Pecos, Windsor, Cowles	RD-Fire and Recreation Residence files	Pecos-Las Vegas
Fire, wildfire	Smoke and fire behavior monitored on the Apache Confinement Wildfire	RD-Fire files	Pecos-Las Vegas
Heritage Resources	Heritage resource site condition monitoring of Glorieta Baldy Lookout National Register site	RD/SO-Heritage Resource files	Pecos-Las Vegas
Heritage Resources	Heritage resource site condition monitoring of Hacienda, Glorieta Mesa Rock Art & La Cueva Rock Shelter, by Site Stewards	RD/SO-Heritage Resource files	Pecos-Las Vegas
Heritage Resources	Historical data recording/monitoring and stabilization of the Anton Chico Hacienda, by Passport-in-Time volunteers	SO/RD-Heritage Resource files	Pecos-Las Vegas
Heritage Resources	Fire effects monitoring on 10 sites in the Viveash wildfire area	RD/SO-Heritage Resource files	Pecos-Las Vegas
Heritage Resources	Fire effects monitoring for 9 sites in the Gallinas Watershed (319[h] Grant areas)	RD/SO-Heritage Resource files	Pecos-Las Vegas
Heritage Resources	Site condition monitoring of 2 sites within the Northwest Pasture Vegetation Treatment Project area	RD/SO-Heritage Resource files	Pecos-Las Vegas
Heritage Resources	Road and corral construction effects monitoring for 1 site in the Tres Lagunas Pasture area	RD/SO-Heritage Resource files	Pecos-Las Vegas
Heritage Resources	Thinning effects monitoring for 2 sites, and fire effects monitoring for 1 site in the Road 18 Timber Sale and Habitat Improvement area	RD/SO-Heritage Resource files	Pecos-Las Vegas

RESOURCE	MONITORING ACCOMPLISHED	RECORD LOCATION	DISTRICT
Heritage Resources	Pre-treatment monitoring to insure sites were properly marked for 5 sites in the Viveash Fire Salvage Sale area	RD/SO-Heritage Resource files	Pecos-Las Vegas
Heritage Resources	Fire effects monitoring for 6 sites in the Maestas Diversity Unit area	RD/SO-Heritage Resource files	Pecos-Las Vegas
Heritage Resources	Site condition monitoring of 2 sites in the Brazel Prescribed Burn area	RD/SO/SO-Heritage Resource files	Pecos-Las Vegas
Heritage Resources	Site condition monitoring of 7 sites in the North Rim Prescribed Burn area	RD/SO-Heritage Resource files	Pecos-Las Vegas
Hydrology / Water Quality, fish	Proper functioning condition monitoring of streams within the Osha, Bull Creek, Cow Creek, Soldier Creek and Macho Range Allotments	RD Hydrology files	Pecos-Las Vegas
Noxious Weeds	Weed population/spread monitoring on 18 of the Districts 26 allotments	RD-Range files	Pecos-Las Vegas
Non-Recreation Special Uses	Permit compliance and effects monitoring for powerline special use permits.	RD-Special Uses files	Pecos-Las Vegas
Non-Recreation Special Uses	Permit compliance and effects monitoring for electronic sites (structures) leases. Inspected two–Glorieta Mesa and the Las Vegas area	RD-Special Uses files	Pecos-Las Vegas
Range	Range utilization & condition monitoring on Valle Grande “Grassbank” by New Mexico State University Extension Service and on 19 allotments by FS personnel	RD-Range files Monitoring information from Grassbank not turned in to District yet.	Pecos-Las Vegas
Range	Range condition & use monitoring on Padre Springs, Barbero, El Pueblo, Valle Grande	RD-Range files SO-Range files	Pecos-Las Vegas
Range	Range improvement monitoring on 5 allotments: Macho, Bull Creek, Soldier Creek, Cow Creek, and Valle de la Osha in preparation for NEPA.	RD-Range files	Pecos-Las Vegas
Recreation, developed sites	Hazard trees monitoring	No records	Pecos-Las Vegas
Recreation, special uses	5-outfitter/guide permit compliance monitoring.	SO-Recreation files	Pecos-Las Vegas
Recreation, trails	Trail inventory for inclusion in GIS trails layer, approximately 30 miles	RD-Recreation files (Forest GIS database)	Pecos-Las Vegas
Recreation, trails	Trail condition & use monitoring for maintenance needs - 50 miles	RD-Recreation files	Pecos-Las Vegas
Recreation, trails	Wilderness trail visitor use monitoring, using trail registration boxes at trailhead	RD-Recreation files	Pecos-Las Vegas
Recreation, wilderness	Pecos Wilderness area closures (Lake basins, Beatty’s, Pecos Falls) monitored.	SO-Recreation files	Pecos-Las Vegas
Recreation, wilderness	Visitor use monitoring as part of the National Visitor Use Monitoring – Pecos Wilderness supplement.	RD-Recreation files	Pecos-Las Vegas
Roads	Road condition monitored on all Maintenance Level 3 roads (SO) and about 60 miles of Maintenance Level 2 roads (District) by Force account	SO-Engineering files	Pecos-Las Vegas

RESOURCE	MONITORING ACCOMPLISHED	RECORD LOCATION	DISTRICT
Vegetation	Vegetation/fuels condition inventory & monitoring; 100 acres pf stand exams in Johnson Mesa	RD-Forestry	Pecos-Las Vegas
Vegetation, planting	Contract operations were monitored for planting seedlings in the Viveash fire area	RD-Forestry	Pecos-Las Vegas
Vegetation	Contract operations were monitored for the thinning contracts: Road 18 fuels reduction project and Maestas diversity unit fuels reduction project.	RD-Forestry files and Fire files	Pecos-Las Vegas
Vegetation, endangered plants	Mitigation measure effectiveness and site protection monitoring for Holy Ghost Ipomopsis (Holy Ghost Canyon)	RD files State Forestry – Sivinski (botanist)	Pecos-Las Vegas
Water Quality	Water quality monitoring of Gallinas municipal water supply, by City	City of Las Vegas and New Mexico Environmental Department	Pecos-Las Vegas
Watershed, vegetation	Water quality monitoring in the Viveash fire area by New Mexico Highlands University.	RD files	Pecos-Las Vegas
Wildlife	Mexican spotted owl occupancy monitoring in Gallinas Municipal Watershed and Glorieta areas for fuels and range projects	RD Wildlife files	Pecos-Las Vegas
Wildlife	Northern goshawk occupancy monitoring in Gallinas, Rio De la Casa and Glorieta.	RD Wildlife files	Pecos-Las Vegas

Cuba – Jemez Resource Area

RESOURCE	MONITORING ACCOMPLISHED	RECORD LOCATION	DISTRICT
Air Quality	Air quality monitoring in the San Pedro Parks Wilderness.	UC Berkeley at Davis	Cuba
Fire, fuels	Community meetings with State, County and Tribal Officials on National Fire Plan.	No Records	Cuba
Fire, fuels	On site information/educational meetings with 1 local wildland urban interface community-at-risk (Deer Lake Estates) to discuss potential actions to reduce the threat of wildland fire to life and property.	RD-Fire files	Cuba
Fire, fuels	Contract operations were monitored/inspected (thinning, piling, lopping) for O'Neill project.	RD-Contract files	Cuba
Fire, fuels	Implementation of effects and effectiveness monitoring of the Chaparral thin and burn project (mechanical treatment of ladder fuels on 600 acres).	RD-Fire files	Cuba
Fire, fuels	Established (surveyed and marked) permanent plots to monitor effects of thinning and prescribed burning in the Chaparral Project.	Rocky Mountain Research Station-Flagstaff Carl Edminster	Cuba
Fire, fuels, vegetation	Fuel loading monitored by comparing free use firewood cutting and fuel loading in the Ojitos fuelwood areas (1500 acres)	No records	Cuba, Jemez
Fire, prescribed	Site weather records hourly, fire behavior, smoke, and first order fire effects monitored for the Mud Springs, and North Chaparral projects.	RD-Fire files	Cuba
Heritage Resources	Site condition monitoring for heritage sites on State Road 126.	Jemez RD/SO-Heritage Resource files	Cuba
Heritage Resources	Site condition monitoring for campground reconstruction at Clear Creek Campground	Jemez RD/SO-Heritage Resource files	Cuba
Heritage Resources	Heritage site condition monitoring by Passport in Time volunteers: Gallina sites in the Llaves area	Jemez RD/SO-Heritage Resource files	Cuba
Heritage Resources	Condition monitoring of 20 National Register sites	RD/SO-Heritage Resource files	Jemez
Heritage Resources	Site condition monitoring of Astialakwa and Patokwa sites, with University of Pennsylvania	RD-Heritage Resource files	Jemez
Heritage Resources	Site condition monitoring for 7 Heritage Priority Assets with Sierra Club	RD-Heritage Resource files	Jemez
Heritage Resources	Site condition monitoring for 19 heritage sites in the Virgin Fire area	RD-Heritage Resource files	Jemez
Heritage Resources	Site condition monitoring of 2 heritage sites near installation of 2 arched bottomless culverts on Forest Road 376	RD/SO-Heritage Resource files	Jemez
Heritage Resources	Site condition monitoring 20 sites: San Juan and Borrego Mesas, Eagle Point, and Llaves Valley by Site Stewards	RD/SO-Heritage Resource files	Cuba, Jemez

RESOURCE	MONITORING ACCOMPLISHED	RECORD LOCATION	DISTRICT
Heritage Resources	Post-Lakes fire effects monitoring of heritage site conditions on 2.5 miles of Forest Road 376	RD/SO-Heritage Resource files	Jemez
Noxious Weeds	Noxious weeds were mapped and inventoried	RD – Ranges files GIS database	Cuba, Jemez
Partnership Volunteers	Volunteer and partnership work-time monitoring: Youth Conservation Corps, environmental education Cuba and Jemez schools, Passport In Time Projects, Seeking Common Ground, Continental Divide Trail Alliance Group, Forestry Camp, San Pedro Parks permittees, Job Corps, Forest Trust, Cuba Village Volunteer Fire Department, Rio Puerco Watershed Planning, Cuba Soil and Water Conservation, CREDO, RPMC, Rocky Mountain Elk, New Mexico Cross Country /Ski Club, Backcountry Horseman, New Mexico Environmental Department, Senior Citizen Employment Program, Sierra Club, livestock permittees	RD-Recreation, Heritage Resource, Grants and Agreement, or Vegetation files	Cuba, Jemez
Range	Trespass livestock monitored on 7 allotments	RD-Range files	Cuba
Range	Compliance monitoring of 43 grazing permits and annual operating instructions	RD – Range files INFRA	Cuba
Range	Stock tank condition monitoring: 30 stock tanks	RD – Range files INFRA	Cuba
Range	Range fences monitored and inventoried: 23 miles	RD – Range INFRA	Cuba
Range	Livestock grazing standard compliance monitoring in the Jemez Natural Recreation Area	RD-Range files	Jemez
Range	Annual Operating Instructions for permitted use adjusted due to drought conditions	RD-Range files AOI INFRA	Jemez
Range	Allotment Management Plan implementation monitored on 2 allotments	RD-Range files RD-NEPA files (EIS)	Jemez
Range, analysis	Watershed/soil/range condition, forage production/ utilization, ecological status, wildlife habitat, and invasive plants monitored & inventoried: 6 allotments undergoing NEPA analysis	RD – Range files	Cuba, Jemez
Range, condition	Mexican spotted owl key use area monitoring: 2 allotments	RD-Range files	Cuba
Range, condition readiness	Range readiness for cattle entry monitoring: 29 allotments (10 on Jemez & 19 on Cuba RD)	RD-Range files	Cuba, Jemez
Range, condition use	Grazing use in key areas, range condition and permit compliance monitoring: 29 allotments (10 on Jemez RD and 19 on Cuba RD).	RD-Range files	Cuba, Jemez
Recreation, developed sites	Closure effectiveness monitoring. Campgrounds closed this year for reconstruction.	RD/SO-Recreation files	Cuba

RESOURCE	MONITORING ACCOMPLISHED	RECORD LOCATION	DISTRICT
Recreation, developed sites	Weekly recreation site use and facilities condition monitoring, including hazard trees: 2 on Cuba RD and 5 campgrounds, 2 group areas, 2 picnic areas, and 5 fishing access sites on Jemez RD	RD/SO-Recreation + INFRA	Cuba, Jemez
Recreation, developed sites	All developed sites and facilities within sites, monitoring and detailed inventory	RD/SO-Recreation+ INFRA	Cuba, Jemez
Recreation, dispersed sites	Dispersed sites monitoring, inventory and GPS locations: Rio Guadalupe watershed (field-checked)	RD-Recreation files	Jemez
Recreation Outfitters /Guides	Vegetative recovery, resource conditions, and permit compliance monitoring: outfitter/guide campsites for 20 permits on Cuba RD, and motorcycle trials, family reunions, road easements, utility easements on Jemez RD	RD-Permit files	Cuba, Jemez
Recreation, trails	Trail 137 and trail to Spence and San Antonio Hot Springs, including culverts, water bars, bridges, etc., monitored	SO-INFRA database	Jemez
Recreation, visitor satisfaction	Letters from visitors Visitor satisfaction informal monitoring related to change in management for San Antonio Hot Springs to a day use area in summer of 2002. Collected information both in 2002 and 2003 (summer)	RD-Recreation files	Jemez
Roads	Road sign monitoring and inventory, and comparison with road conditions	RD-Roads files	Cuba
Roads	Effectiveness monitoring of past road decommissioning and decommissioned spurs off of FR 376 and 488	RD-Roads files	Cuba, Jemez
Roads	Effectiveness monitoring of cattle guards	No Records	Cuba, Jemez
Deferred Maintenance	FR 95 deferred maintenance project implementation monitoring	RD-Roads Files	Cuba
Soils	Off-road vehicle use and soil resource condition monitoring	RD-Project files+ GIS and photos	Cuba
Soils, mine reclamation	Mine reclamation effectiveness and water quality monitoring: Nacimiento and Las Conchas mines	RD-Minerals files	Cuba, Jemez
Vegetation, forest products	Permit compliance monitoring- Christmas tree, firewood, boughs, vigas, latillas, posts permits	SO-Forestry files, TIMS, TSA	Cuba, Jemez
Vegetation	Collaborative Forestry Restoration projects implementation monitoring for both fuel reduction and Hogan materials.	RD – Forestry and Grants and Agreements files	Cuba
Water	Nacimiento ditch condition monitoring	RD/SO Hydrology files	Cuba
Water, mine reclamation	Water quality monitoring at Nacimiento Mine, effectiveness monitoring of reclamation, by RO.	SO-Hazmat files	Cuba
Water Quality	Road 539 rehabilitation effectiveness monitoring	SO-Hydrology files	Cuba
Water Quality	Watershed restoration effectiveness monitoring: Rio Puerco (BLM lead)	BLM Albuquerque	Cuba

RESOURCE	MONITORING ACCOMPLISHED	RECORD LOCATION	DISTRICT
Water Quality	Domestic water sources permit compliance monitoring: Clear Creek, Rio de las Vacas, Horseshoe Springs, Cuba, La Jara, & Regina water supply	RD-Hydrology files Cities of La Jara & Regina	Cuba
Weather	Precipitation monitoring	Natural Resource Conservation Service files	Cuba
Wildlife	Mexican spotted owl monitoring: Forest Road 103 vegetation/fuels project area (1000 acres).	RD – Wildlife files	Cuba
Wildlife	Peregrine falcon monitoring on 500 acres BMG salvage sales	Jemez RD-Wildlife files	Cuba
Wildlife	Black bear monitoring near recreation sites, by New Mexico Department of Game and Fish	RD-Wildlife files	Cuba
Wildlife	Elk/deer population monitoring, by New Mexico Department of Game and Fish	RD-Wildlife files	Cuba/Jemez
Wildlife	Deer population and effectiveness of predator control program monitoring, by New Mexico Department of Game and Fish	RD-Wildlife files	Cuba
Wildlife Species & Habitat	Mexican spotted owl monitoring in 6 protected activity centers (4000 ac.)	RD-Wildlife files	Jemez
Wildlife Species & Habitat	Mexican spotted owl breeding activity monitoring in Mexican spotted owl protected activity center post-Lakes fire	RD-Wildlife files	Jemez
Wildlife Species & Habitat	Breeding bird monitoring: post-Lakes fire -- 64 acres	RD-Wildlife files	Jemez
Wildlife Species & Habitat	Monitored 1 goshawk nesting site (15 acres)	RD-Wildlife files	Jemez
Wildlife Species & Habitat	Monitored 2 peregrine falcon suitable breeding habitat sites	RD-Wildlife files	Jemez
Wildlife Species & Habitat	Elk hunt effectiveness monitoring; reducing elk numbers in Dome Wilderness/Bandelier National Monument, by New Mexico Department of Game and Fish	RD-Wildlife files	Jemez
Wildlife Species & Habitat	Peregrine falcon breeding success monitoring, by New Mexico Department of Game and Fish	RD-Wildlife files	Jemez
Wildlife Species & Habitat	Wildlife use and water tank effectiveness monitoring at 12 stock tanks	RD-Wildlife files	Jemez
Wildlife Species & Habitat	Dead and downed woody debris monitoring in Jemez Mountain Salamander occupied sites: post-Lakes fire	RD-Wildlife files	Jemez

Coyote – Espanola Resource Area

RESOURCE	MONITORING ACCOMPLISHED	RECORD LOCATION	DISTRICT
Facilities	Inspected permit compliance for powerlines and electronic sites. 2 sites inspected: Tesuque Radio Company and State.	RD-Special Use permit files	Espanola
Fire	Fuel break implementation monitoring: Gallina Wildland-Urban Interface Phase 1 field trip	RD – No records	Coyote
Fire, closures	Fire closure effectiveness monitoring including Cerro Grande, Borrego, and Molina fire areas	RD – site forms in Fire files	Espanola
Fuels	Implementation monitoring for Gallina Wildland-Urban Interface Phase 1 project. 575 acres of fuels treatment done by contract and force account	RD – Contract files	Coyote
Heritage Resources	Mitigation effectiveness & site protection monitoring for: Forest Road 103h, Forest Road 107, Forest Road 107e, Forest Road 27, and Forest Road 103 maintenance improvement projects, monitored 15 heritage sites, and La Presa Allotment Forest Road maintenance Project, monitored 11 heritage sites	RD -Heritage Resource files	Coyote, Espanola
Heritage Resources	Mitigation effectiveness & site protection monitoring for: Gallina Wildland-Urban Interface Phase 1, Mesa Poleo Wildland-Urban Interface Project, and the Gallina Wildland-Urban Interface Addendum, monitored 47 heritage sites	RD -Heritage Resource files	Coyote
Heritage Resources	Mitigation effectiveness & site protection monitoring for: Sacra Fuelwood Project, monitored 2 heritage sites	RD -Heritage Resource files	Coyote
Heritage Resources	Mitigation effectiveness & site protection monitoring for: Gallina Riparian Fence Project, monitored 2 heritage sites	RD -Heritage Resource files	Coyote
Heritage Resources	Site condition monitoring for Mesa Alta Allotment, monitored 6 heritage sites	RD -Heritage Resource files	Coyote
Heritage Resources	Site condition/disturbance monitoring and erosion control effectiveness monitoring: 20 National Register eligible sites, and 1 National Register listed site (Guaje Ridge ruins) in Cerro Grande fire area	RD -Heritage Resource files	Espanola
Heritage Resources	Mitigation effectiveness & site protection monitoring for: Caja Thinning Project, Santa Fe Municipal Watershed hand thinning project, post-Borrego hydro-ax project and post-salvage survey project, Valle II fuels reduction project, monitored 9 heritage sites	RD -Heritage Resource files	Espanola
Heritage Resources	Site condition monitoring of 10 sites on monthly basis of sites in the Caja del Rio and the Polvadera Mesa area and Garcia Canyon, by Site Stewards	RD -Heritage Resource files	Espanola
Heritage Resources	Site condition monitoring for Caja headquarters well prior to SHPO visit	RD -Heritage Resource files	Espanola

RESOURCE	MONITORING ACCOMPLISHED	RECORD LOCATION	DISTRICT
Heritage Resources	Mitigation effectiveness & site protection monitoring for FR 416 from Santa Clara salvage (permit to use Forest Service roads), monitored 4 heritage sites	RD -Heritage Resource files	Española
Heritage Resources	Archaeological Resources Protection Act investigation on 2 heritage sites west of Poshuouinge	RD -Heritage Resource files	Española
Heritage Resources	Site protection monitoring of Agua Sarca historic cabin by fire personnel during Molina complex fire	RD -Heritage Resource files	Española
Lands, special use permits	Riparian stream stabilization monitoring after disturbance on Arroyo de los Frijoles (Barranca)/ Vallecitos creeks	Law Enforcement files and RD files	Española
Law Enforcement Legal	Illegal trash dumping, poaching and other illegal activities monitoring (5 dump sites, etc.)	Law Enforcement files	Española
Minerals	Permit compliance monitoring for Scoria Mine on La Caja	RD-Minerals files, Cuba RD files (Larry Gore) New Mexico Environmental Department	Española
Noxious Weeds	Noxious weed occurrence and spread monitoring and mapping, including 5,000 acres in the Cerro Grande fire area	SO-GIS RD-Range files	Coyote, Española
Partnership Volunteers	Maintain data on hours worked by volunteers and partners, locations, and work done, - annual report goes to Heritage Resources in SO Rocky Mountain Youth Corps with heritage site treatment Another annual report done by personnel.	RD-Recreation and Heritage Resources files, Volunteer report and inspection, SO-Heritage Resources files	Coyote, Española
Range	Ojitos Sagebrush mowing implementation and effectiveness monitoring (400 acres)	RD – No Records WFRP report for 2003	Coyote
Range	Grazing permit compliance monitoring	SO-INFRA Database, with GIS link	Coyote, Española
Range	Key use areas, and range conditions utilization monitoring for 9 allotments with 60 permittees.	RD-Range files	Española
Range	Range improvements and conditions monitoring on 20 allotments (11 on Coyote and 9 on Española)	SO-INFRA Database, with GIS link	Coyote, Española
Range	Site condition and effectiveness monitoring for 16 riparian enclosures, pipeline, and two water tanks (Coyote) and one 25-mile pipeline, and 10 water tanks (Española)	RD-Range files	Coyote
Range	Range structures condition and effectiveness monitoring for 20 allotments (11 on Coyote and 9 on Española)	SO-INFRA database with GIS link	Coyote

RESOURCE	MONITORING ACCOMPLISHED	RECORD LOCATION	DISTRICT
Range	Range condition readiness monitoring by Range Improvement Task Force for Youngsville Allotment.	RD-Range files	Coyote
Range	Elk use on allotments monitoring with New Mexico Department of Game and Fish and State Extension Office	RD- INFRA database Range website	Coyote
Range	Elk salting locations (6 sites) effectiveness monitoring in elk distribution	RD-Range files New Mexico Department of Game and Fish	Española
Range	Riparian exclosure of Lower Santa Fe River effectiveness monitoring	RD-Range files	Española
Range, condition readiness	Inspected range conditions to determine readiness for cattle entry for 20 allotments (11 on Coyote and 9 on Española)	RD-Range files	Coyote, Española
Recreation	Bulletin board messages to forest visitors effectiveness monitoring	Informal – no records	Coyote
Recreation	Trails, roads, and developed recreation site and facilities monitoring, including hazard trees	RD-Recreation files	Coyote, Española
Recreation	Visitor use and campsite condition monitoring with BLM for the Wild and Scenic portion of the Rio Chama.	BLM – Taos Field Office RD – Recreation files	Coyote
Recreation	Visitor use monitoring for the day sites at take out on the Rio Chama and at Resumidero and Rio Puerco Campgrounds	RD – Recreation files	Coyote
Recreation	Fee Demo compliance monitoring	RD-Recreation files	Española
Recreation, developed sites	Visitor use days monitored for developed sites including Black Canyon Campground (Fee Demo site).	RD-Recreation files	Española
Recreation, special use permits	Outfitter/guides permit compliance and resource condition monitoring	SO - Recreation files	Coyote, Española
Recreation, special use permits	Permit compliance monitoring for the Santa Fe ski area including parking lot, lift line, and fence constructions projects	RD-Special Use Permit files	Española
Recreation, trails	Trail condition, including culverts, water bars, retaining walls, and drainage ditches inventoried on 22 miles of trails throughout the district	SO-INFRA database	Coyote
Recreation, trails	Trails rehabilitation effectiveness monitoring on trails impacted by the Molina fire. Burn impacts monitored to trails in the Cerro Grande, Molina, and Borrego wildfires	RD-Recreation files SO-INFRA database Cerro Grande info in RD files	Española
Recreation, wilderness	Monitored visitor use and campsite conditions in wilderness areas	RD-Recreation files	Coyote, Española
Recreation, wilderness	GIS trail layer for trails in the Pecos Wilderness verification monitoring	RD-Recreation files	Española
Recreation, wilderness	Impacts in the wilderness monitored for Big Horn Sheep transplants	RD-Recreation files	Española
Recreation,	Illegal off-road vehicles use in wilderness	RD-Recreation files	Española

RESOURCE	MONITORING ACCOMPLISHED	RECORD LOCATION	DISTRICT
wilderness	monitoring		
Roads	Road condition monitoring on major Maintenance Level 3 roads, and a portion of FR 100 where the road is a Maintenance Level 2.	SO-Engineering files	Coyote
Roads	Road maintenance effectiveness monitoring	SO-Engineering files	Coyote
Roads	Road conditions monitoring on Los Alamos Canyon Road and Road 306.	Los Alamos Office files	Española
Small Products/ Personal Use	Vigas, Christmas trees, latillas, cedar posts, wildlings, fuelwood, surface rock permit compliance and implementation monitoring	RD-Special Use Permit files RD-Timber/small sale files SO-TIMS	Coyote, Española
Special Use Permits	Los Alamos water tank construction/permit monitoring	RD-Special Use Permit files	Española
Soils	Cerro Grande fire area plots for monitoring soil loss and erosion	RD-Soils files and published thesis	Española
Timber	Kettle Timber Sale implementation and effectiveness monitoring	RD-Forestry files	Coyote
Vegetation	Fuertes Meadow Restoration effectiveness monitoring – photos	RD – Planning files	Coyote
Vegetation	Seeding effectiveness monitoring on the Molina fire and the Borrego fire	RD-files	Española
Vegetation, soil	Sagebrush Flats and Twin Hills mechanical treatment areas effectiveness monitoring of thin/burn treatments in 2 areas	RD files	Española
Water Quality	Wells, water use, and Coyote administrative site monitoring	RD – Business Management file SO – S. Baker	Coyote
Water Quality	Test wells monitoring Santa Fe Municipal Watershed, Buckman well field, and on Lower Santa Fe River to look for uranium particles contaminants	RD-Hydrology files, City of Santa Fe Santa Fe River, Santa Fe Municipal Watershed	Española
Water Rights	Water use monitoring: Pine Springs, Santa Fe ski area water rights special use permit	SO-Hydrology files RD-Special Use Permit files	Española
Water Yield	Flow stations runoff and storage effectiveness monitoring: Whole Rio Grande and Chama river. Effects monitoring on riparian vegetation (Coyote station)	Army Corps of Engineers files	Coyote, Española
Weather	Snow course precipitation data monitoring on a monthly basis from January through April.	Natural Resource Conservation Service files	Coyote, Española
Wildlife	Mexican spotted owl monitoring in the San Pedro Mountain Landscape Area – second year survey	Jemez RD – Wildlife files	Coyote, Cuba
Wildlife	Pre- and post-vegetation treatment monitoring of small mammals and birds by Rocky Mountain Research Station in the Santa Fe Watershed	Rocky Mountain Research Station files RD-Wildlife files	Española

RESOURCE	MONITORING ACCOMPLISHED	RECORD LOCATION	DISTRICT
Wildlife	Elk movement monitoring from the Caldera through Cerro Grande fire Los Alamos National Laboratory and BLM. Elk GPS collars activated	Los Alamos National Laboratory – James Biggs	Española
Wildlife	Bean Field tank function monitoring	Wildlife, Fish, and Rare Plants Report	Española
Wildlife	Jemez Mountains salamander food plot surveys by New Mexico Department of Game and Fish and Los Alamos National Laboratory	New Mexico Department of Game and Fish, and Los Alamos National Laboratory	Española
Wildlife, vegetation	Exclosures on Cerro Grande fire effectiveness monitoring of the vegetation inside the exclosure and the elk use of vegetation outside the exclosure	RD-Project files	Española

EVALUATION OF MONITORING RESULTS

1. Lessons Learned From Monitoring

“We learned that...”

Recreation

- Determining trail locations and conditions of user created trails lead to finding trails creating resource damage. These user created trails will be obliterated.
- Monitoring at San Antonio Hot springs shows that visitors are using the designated trail. Fewer user created trails are being created and then obliterated.
- We need a faster response to trails that have been burned to protect them.
- Monitoring and mapping dispersed campsites led to planning for designated dispersed camping sites in FY2002. The district designated some dispersed sites, blocked off others, and this monitoring, assessing, redistributing people and blocking campsites will continue.
- Emphasizing outfitter guide compliance to reduce riparian impacts works.
- Eliminating some campsites too close to the river corridor on the Rio Chama and placing barriers to keep vehicles out of river worked to protect the resource.
- Areas in Rio Chama that are becoming impacted from off road parking needed to be closed off.
- The public is overusing portions of the developed campground and we added barriers to redirect use.
- The campers say that the Campground Host program is effective and well liked. The Campground Host creates a sense of security.
- The Redondo Campground water system needed to be upgraded. The water supply was shut down and the upgrade will be done by spring 2004.
- More enforcement of off highway vehicle restriction in wilderness is needed.
- Special Use Permits are not administered consistently throughout the Forest. Meeting in fiscal year 2004 to become consistent in some categories
- More monitoring and enforcement of area closures is needed near Beatty's and Pecos Falls
- More Wilderness Rangers are needed to rehabilitate campsites
- We need to do a lot of trail maintenance

Mechanical Treatments

- Contracted timber sales and vegetation treatments are viable and effective tools for managing the hazardous fuels conditions and disease control.
- There is a need for a more cost effective public and industrial use of smaller products (trees under 9 inch diameter).
- Small diameter mixed conifer now have a market.
- Better utilization of mechanical mulching treatment eliminates the need to burn piles. Air quality issues are reduced as is cost per acre for fuel reduction.
- The growing backlog of timber stand improvement work is leading to more hazardous fuel and forest health conditions.
- Given the amount of free use firewood available, people don't buy the high quality firewood for sale.
- Better use of advertising could make fuelwood easier to sell.

- Embedded contracts eliminate the need for follow up burning and reduced costs to the district.
- The use of contracts instead of force account is much more cost and time efficient.
- Silviculture prescriptions need to specify what needs to be removed, what needs to occur, what the final product will look like.
- At higher elevations, snow can help compress thinning slash that was left on the ground, reducing the cost and need for lopping the slash during thinning operations.
- Having a tree size limit on salvage sale required more sale prep time to implement. Distinguishing large diameter white fir and Douglas-fir that are completely burned is difficult.
- The rate of spread of bark beetles in the piñon in the last few years was very rapid and does not allow time to implement landscape preventive treatments. This scenario could repeat with the ponderosa pine forest due to drought conditions and high density of susceptible trees.
- Using stewardship contracting to do thinning contracts in the Jemez campgrounds was doable (interested contractors are available that can comprehend performance based contracting).
- Sprayed for bark beetles in the Paliza Campgrounds may be an effective treatment.
- Personal use piñon-juniper fuelwood on Cuba Mesa did not attract a lot of interest. High mortality due to bark beetles and fire-killed trees may have kept the fuelwood gathers closer to the Albuquerque area.

Prescribed Fire

- Drought effects are still present resulting in lower than average seasonal live fuel moistures, and in the low fuel moistures in large dead fuels.
- Chipping of slash from thinning can reduce the smoke particulates released during prescribed burning projects.
- In wildland urban interface areas, hand piling slash and burning those piles appear to be easier to consistently control than broadcast burns.
- Prescribed burns are meeting objectives of reduction of dead/down fuels as well as killing some of the smaller standing overstocked trees, thus reducing the overall trees per acre.
- Prescribed burning increases the distance from the ground to lower branches through pruning the lower branches, thereby reducing the risk of crown fires.
- Prescribed burning is not as precise a tool for protecting overstory trees when compared with hand thinning or mechanical thinning. Need to make allowances in our prescriptions and timing to allow overstory protection.
- Effectiveness of prescribed burns was determined by post-implementation monitoring.
- Posting a fire prevention person at visible location to monitor smoke over roads and inform public has increased acceptance of prescribed burning.
- On forestry small product sales with a prescribed burn follow-up, we need work closer with the Forester in setting up the prescribed burn to make sure forestry objectives are met.
- Drought is still affecting fire behavior. Prescribed burns are planned for implementation right after the monsoon season when the burn can be implemented within prescriptions.

Wildfire

- Seeding should be done in high severity burn areas (Lakes fire).
- State highways should be considered a higher priority value resource during the Burned Area Emergency Response assessments.
- We need to assess and treat fire effects to known heritage sites as soon as possible. Burned Area Emergency Response money should be requested.

Fisheries

- Native fish distribution is primarily limited by exotic species introduction. Continue to remove exotics while developing a larger plan and partnership with New Mexico Department of Game and Fish and public.

Roads

- Road closure methods are ineffective. Road closures need to be better designed, signed, and specific closure order for that road prepared. Improve on our law enforcement presence.
- Road closure gates are effective.
- Road closure methods are ineffective. More monitoring, enforcement, and education of public are needed.
- The public doesn't respect motorized-use road closures as they are currently done.
- More permanent type closures such as buried boulders, log/cattle barriers and guardrail barricades where more frequent access is needed are recommended.
- In many cases, light gauge gates do not work. They are easily vandalized. Road closures are violated. Light gauge gates are being phased out.
- Signing of maintenance level 2 roads on the ground does not correspond with what we have on the GIS layer and the Visitor Use Map. Information is wrong on map.
- Annual district list of road maintenance needs exceed the time and availability of archaeologist to survey and write reports. Fewer roads are maintained and the backlog gets bigger.

Range

- Poor range condition due to drought resulted in livestock reductions.
- Drought related decrease in forage resulted in adjustments to numbers and season of use.
- Range readiness monitoring showed that we should delay cattle entry on some allotments by up to one month. Cattle entry was delayed.
- Based on post grazing monitoring in 2003, cattle entry needs to be delayed in 2004.
- As a result of monitoring results from previous year, current year, and site-specific negotiation with permittees the Annual Operating Instructions needed to be modified.
- Overall, range permittee cooperation has been good.
- Monitoring in Jemez National Recreation Area led to moving livestock from Cebolla pasture earlier than planned.
- Unauthorized livestock are causing over-utilization in areas where the excess livestock congregate. Working with neighboring allotments to resolve problem. Unauthorized use is increasing.
- Some range fences have reached their life expectancy and need to be replaced.
- Field monitoring identified range structures (earth tanks, springs, etc.) that have not been transferred from old maps or from people's memory to the range INFRA database. Therefore,

many of those during inventory were added to INFRA. 60% of our range structures are not on the INFRA database.

- The time required to administer permits increased significantly as a result of additional workload due to administrative appeals caused by delaying livestock entry.
- As a result of administrative appeals, we needed to refine our monitoring effectiveness.
- Monitoring of yearlong allotments allowed us to make specific decisions on stocking levels and seasons of use on four allotments. Based on monitoring we lowered stocking levels to allow for plant rest during and after the drought.

Heritage Resources

- As a result of impacts to heritage sites, we needed to step up monitoring.
- Beetle killed trees are starting to impact our high value heritage priority assets.
- There is significant old (prior) vandalism at high value heritage priority.
- Rehabilitation of Guaje Ridge heritage sites during Cerro Grande fire was effective in preventing soil loss and loss of archaeological (cultural) materials.
- Treatment of heritage sites affected by Cerro Grande is effective. Heritage sites not treated during Burned Area Emergency Response, showed herbaceous ground cover recovery due to aerial seeding.
- Heritage sites in Borrego Fire area were not as impacted by fire as expected.
- Fire personnel, when appropriately instructed; provide good protection of heritage sites.
- Two previously identified heritage sites didn't meet Region 3 definition of heritage sites.
- Adopting different flagging strategies to improve protection of heritage sites during project implementation is effective.
- Providing clear expectations to heritage site survey contractor resulted in more thorough documentation.
- Current monitoring is not gathering specific information about cattle related impacts to heritage sites. Increased monitoring as a consequence.
- Heritage site mitigation methods for prescribed burning were often inappropriate – providing too much or too little site protection. Provided more site-specific mitigation measures in heritage clearance reports.
- Implementing mitigation measures simultaneous with prescribed burn implementation was not always effective. Some mitigation measures are easier to implement and are more effective if done a few days before the burn. Other mitigation measures (i.e. wetting site) needs to be done during the burn.

Wildlife

- We need to make a more concerted effort to track what we are monitoring, and take more pictures.
- Earthen tanks needed to be located farther away from the road access. Need to use more bentonite to prevent leakage.
- Mexican spotted owls still successfully fledged young in a Mexican spotted owl protected area center that had its vegetation burnt up in a wildfire.
- We needed to get more dead and down woody debris to benefit the salamanders, Mexican spotted owls, reduce soil temperatures, and help prevent soil erosion.

2. Monitoring Strengths & Improvements Made

- We are moving away from qualitative analysis to more quantitative analysis in range decision.
- We are using Mobile Range to collect data. Mobile Range is a hand held field data recorder, which includes GPS. The data collected is then downloaded in the office directly into the database.
- We are involving and coordinating with other agencies to conduct range monitoring.
- Livestock use monitoring has strictly gone to stubble height as a measure. No longer use percent of utilization.
- Española Ranger District livestock permittees have been more involved in range monitoring.
- Districts have changed their Annual Operating Plans and are continuously changing them based on monitoring during the field season by both permittees and district employees. This change has kept allotments in better condition. Based on range readiness inspections last year, some permittees rested their allotments and did not turn out their cattle.
- Districts are changing grazing utilization levels based on monitoring. They are adjusting the stubble height to a standardized R3 criterion that has been communicated to academia (Range Improvement Task Force).
- We designed a monitoring form for wildlife monitoring.
- Site condition assessment monitoring is used for every heritage site (newly recorded or revisited).
- A separate form is used to record the monitoring for the heritage priority assets and is entered into INFRA.
- Site steward monitoring is effective in locating trespass and vandalism situations and now we have more site stewards.
- Monitoring for Mexican spotted owl protected activity centers is a higher priority.
- Windshield surveys for elk did not provide enough detailed information. High tech GPS elk-collars for monitoring has a high up front investment but will provide long range information for better planning decision.
- Interdisciplinary team approach improved making road assessments and closure decisions because more information was supplied.
- During inventory and pre-burn monitoring, we are collecting more site-specific fuel loading on/near heritage resource sites.
- We increased the frequency of monitoring where we suspected possible cattle impacts to heritage sites.

3. Monitoring Weaknesses or Barriers

- Realistic monitoring plans are not being developed in the analysis process. Monitoring needs to be more project-specific and feasible.
- The Forest Leadership Team does not emphasize inventory and monitoring as a priority, and as such, sufficient funding and direction in to provided to the districts.
- Upper and middle management's selection of Star Projects do not correlate with work needed on the ground. Monitoring needs to be elevated as a priority.

- All monitoring needs, personnel and funding, should be identified on the Project Work Plans. Monitoring needs to be a hard target for it to get done.
- More money, time, and coordination need to be allotted for monitoring.
- Receiving the annual budget so late in fiscal year affects our ability to plan and accomplish monitoring.
- Protocols for INFRA is poorly designed, and needs to be improved, for example the link between INFRA and GIS is not working.
- Training is now needed for how to do meaningful monitoring for different resources, i.e. fuels, fire.
- Data collected in the field is taking a long time to get into the appropriate database (INFRA, NRIS, GIS).
- 1039 appointments are not long enough to complete data entry and interpretation for data collected during the field season.
- Walk in business affects our ability to do monitoring.
- Any project fire and our regular program of work make it challenging to accomplish necessary monitoring as required by project recommendations.
- Wilderness/Trails: lack of funding and lack recognition of program as important related to regional and district priorities

4. Progress Toward Desired Conditions

- We are continuing to make significant progress moving toward desired conditions in the key national resource emphasis areas: forest health, watershed/riparian, recreation and partnerships. For example, we are:
 - Continuing to reduce fuel loads and create fuel breaks to protect wildland urban-interface areas and watershed values
 - Continuing to decommission or improve roads to reduce water quality and soil erosion problems
 - Continuing to update and revise allotment management plans that are designed to reduce soil, water and riparian impacts from cattle grazing
 - Upgrading recreation sites to improve riparian conditions, aesthetics, safety and accessibility
 - Continuing to build collaborative partnerships with numerous groups outside the Forest Service.
- Environmental analysis completed to date account for about 70% of all allotments.
- Increasing the distribution of water sources across the forest for wildlife in upland area and that then decreases riparian use by cattle.
- Gallina Wildland-Urban Interface Phase 1 fuels reduction project is nearly complete.
- The meadow restoration on Fuertes had water this year for the first time due to thinning trees adjacent to it.
- Continued coordination between engineering and heritage staff for prioritizing road maintenance
- Started making changes in Rio Guadalupe watershed to improve water quality, soils, vegetation, and heritage sites.

- More integrated resource teams not only in planning but now also in the implementation of projects especially Wildland Urban Interface projects.
- Completed the planning and marking of the campgrounds on the Jemez Ranger District to decrease susceptibility to insect infestation.
- Moved approximately 1,000 cattle off four grazing allotments (3- Rowe Mesa and 1-El Pueblo) to protect rangeland from overgrazing in drought conditions.
- Through the Notice of Impoundment, now able to round up and impound trespass cattle.
- Removal of cabins as lease expires to decrease encumbrances in the Cowles area.
- Accomplished a lot of resource protection via trail maintenance and reconstruction in wilderness.

5. Public Involvement In Monitoring/Evaluation

- Monitoring by state agencies and universities helped increase our database.
- Permittee monitoring of range resources helps reduce workload and protects resources.
- Monitoring by NMSU, Range Improvement Taskforce, permittees, and NMDGF
- Created a partnership with Rocky Mountain Research Station and created new partnerships with colleges and universities on several projects. The partnerships are working well.
- Partnership involvement in planning and monitoring Santa Fe Municipal Watershed project continued.
- Campground hosts are effective in monitoring use and compliance of recreation sites.
- Thinning/logging contractors that provided input to the efficiency of equipment use resulted in achieving desired conditions on the ground.
- Heritage resource volunteers in the Passport-In-Time program helped achieve monitoring through the Site Steward and on individual projects
- Public involvement in evaluating of mitigation measures a traditional cultural property