Carson National Forest
Southwestern Region

Carson Forest Plan Monitoring and Evaluation Report

Fiscal Year 2003

Forest Supervisor Certification of Forest Plan Sufficiency

The Carson Forest Plan is sufficient to guide management of the Forest over the next year. There are improvements that can be made as outlined in the recommendations section and will be scheduled as funding and personnel are available in future years.

MARTIN D. CHAVEZ, JR.
Forest Supervisor

September 29, 2004
Date

Monitoring Activities and Evaluation

Program Area	Summary of Monitoring Conducted and Evaluation
Biological Environment	
Wildlife & Fish	**Goals:** To manage for healthy ecosystems, provide goods and services in an environmentally sound fashion, use new knowledge, develop an integrated inventory, cooperate with other agencies, and promote awareness and appreciation of species. ▪ **Maintain habitat for viable populations** of all wildlife and fish species found on the Forest and improve habitat for selected species. This will be accomplished indirectly through intensive habitat management. ▪ **Support New Mexico Game and Fish Department** in meeting its objectives of the New Mexico Comprehensive Wildlife Plan and in the reintroduction of native wildlife and fish species. Favor native species over new exotic species in stocking and introductions whenever possible. ▪ **Maintain and/or improve habitat for presently listed threatened or endangered species** of animals and other species as they are classified as threatened or endangered. Work toward the eventual recovery and delisting of species. *Threatened and endangered species* populations and habitat will be protected and improved as necessary to aid in the recovery of the species. **Monitoring:** A summary of status and habitat trends for 11 **management indicator species** (MIS) identified in the Carson Forest Plan (including all listed threatened, endangered and sensitive species thought to occur on the Forest by the US Fish and Wildlife Service) was initiated in FY 1999. Biologists on the Forest pooled their resources, providing MIS information from each district. Additional resources, literature and databases are being used to compile this initial assessment, which was completed in May 2003. Its purpose is to provide an overall status of MIS populations and their habitats on the Carson National Forest. MIS species are Rocky Mountain Elk, Bighorn sheep, Merriams's Turkey, Abert's Squirrel, Red Squirrel, Hairy Woodpecker, Ptarmigan, Juniper (Plain) Titmouse, Brewer's Sparrow, Resident Trout, and Aquatic Macroinvertebrates. Monitoring data collected during 2003 is being used to update the MIS assessment. The MIS assessment with the collected information is expected to be available in FY 2004. **Threatened, endangered and sensitive (TE&S) species** are surveyed for project and program monitoring requirements (e.g., 1996 region-wide Amendment for Forest Plans), as well as to provide planning information during project analysis. Monitoring

Program Area

Summary of Monitoring Conducted and Evaluation

is ongoing for TE&S species on the Forest. The primary species inventoried and monitored (if found) on the Carson are southwestern willow flycatcher, northern goshawk, American peregrine falcon, bald eagle, Mexican spotted owl and Rio Grande cutthroat trout. This type of inventory and monitoring provide the biologists information on the occurrence of TE&S species on the Forest, as well as, whether management activities (e.g., grazing, recreation, tree cutting, etc.) are a threat to a species' habitat or existence. Supporting documentation is located at each of the ranger stations.

In addition to conducting **Mexican spotted owl** (MSO) inventories (38,027 acres in FY 2003) for project proposals, the MSO recovery plan requires microhabitat monitoring to demonstrate that habitat across the range is stable or increasing. A protocol for implementation monitoring of MSO microhabitat was established and is being followed by the Carson NF. According to protocol, 20 pretreatment plots were established and monitored in FY 2003. These plots were mostly located in areas where fuelwood and precommercial thinning would be implemented to improve forest health by reducing tree density. Supporting documentation is located at the Camino Real, El Rito, Tres Piedras and Questa ranger stations. No post treatment readings were made in 2002.

In FY 2003, 15,739 acres were surveyed on the Carson National Forest for **northern goshawk**. The survey found no active goshawk nests and one unoccupied nest.

Inventory and monitoring of known goshawk nesting areas in FY 2003 produced the following information:

District	Comments
Jicarilla	3 visits to nest stands used since 1993 by nesting pair. Found one old nest, no active nest, and no goshawks observed. Last confirmed nesting was in 2001. Wild horses heavily use the area. Per the wildlife biologist on Jicarilla Ranger District the nesting stands are marginal, drought effects, and wild horse contributed to the lack of use of these stands in 2003.
Camino Real	Visited four known sites with no active nests located. There were four incidental sightings of goshawks for the District.
Tres Piedras	Two visits to nest stand used for the previous six years by a nesting pair. No goshawks were observed or detected during the visits. No active nests were located.

Evaluation of the monitoring could indicate 1) use of other nesting areas, 2) drought reduced prey base to low levels, 3) possible natural disturbances. The continued drought likely resulted in reduced prey base species which in turn indicates the movement of goshawks to other areas of the forest. These other nesting areas were not located in FY 2003. The visits to known nest stands are not indicative of any population changes.

Program Area	Summary of Monitoring Conducted and Evaluation
	Annual counts of the recently (1994) reintroduced **Rock Mountain bighorn sheep** population in the Wheeler Peak Wilderness Area are conducted. This monitoring is performed in cooperation with the New Mexico Department of Game and Fish (NMGF) to determine the herd's reproductive and adaptive success. In 2002, there were in excess of 200 sheep in the Wheeler Peak or Columbine/Hondo areas. This is an increase of about 50 sheep over the previous year. They have been successfully reproducing for the past six years. Evaluation as to whether some of the population should be transplanted to another location is still in the future. The target population for these two areas is between 125 and 150 animals. Supporting documentation is located at the Questa ranger station. The Wheeler Peak and Columbine/Hondo areas were not surveyed for population numbers in 2003.
	A count of the recently reintroduced **Rock Mountain bighorn sheep** population, transplanted in 2001 in the Latir Wilderness Area was conducted. This monitoring is performed in cooperation with the New Mexico Department of Game and Fish (NMGF) to determine the herd's reproductive and adaptive success. In 2002, there were an estimated of 80 sheep in the Latir area. This is an increase of about 25 sheep over the past year. In 2003, there were an estimated of 116 sheep in the Latir area. This is an increase of about 40 sheep over the past year. The initial indication is successful reproduction in the Latir sheep herd. The herd has doubled in size in the last two years.
	The Pecos wilderness area encompasses portions of the Carson and Santa Fe National Forests. The Bighorn sheep population was determined to be 350 animals (sheep) in 2003.
	Annual counts are made of the **elk** herds in the San Antonio Mountain area and Jicarilla Ranger District. In cooperation with the New Mexico Department of Game and Fish, approximately 111,000 acres were aerially inventoried in FY 2002 to determine reproductive and adaptive success. Supporting documentation for elk aerial monitoring is located at the New Mexico Department of Game and Fish State Office in Santa Fe, New Mexico.
	Forest-wide counts are made of **mule deer** populations. In cooperation with the New Mexico Department of Game and Fish, approximately 51,100 acres were aerially inventoried in FY 2002 to determine reproductive and adaptive success. Supporting documentation for deer aerial monitoring is located at the New Mexico Department of Game and Fish State Office in Santa Fe, New Mexico.
	Point count transects for **neotropical migratory birds** (NTMBs) are accomplished annually (100 acres in FY 2003) on the Camino Real and El Rito ranger districts. Each transect is run several times during the summer. These counts provide trend data of NTMB migrations, as well as trend information about the cowbird population in **southwestern flycatcher** habitat. Supporting documentation is located at the Forest Supervisor's office.
	Although surveys to locate populations of the **Arizona willow** have been done in previous years, no formal field surveys were performed on the Forest in FY 2003 for Arizona willow. Informal field surveys were preformed during project planning in

areas where habitat for Arizona Willow may be present. Work is being done on Questa Ranger District in order to protect this sensitive species. The Arizona willow has not been found on any other districts.

Baseline inventory and monitoring of **Rio Grande cutthroat trout** (RGCT) populations are ongoing throughout the Carson NF. The surveys are performed using the three-pass regression method and population estimates are calculated from the regression. Samples from populations are also collected for genetic analysis. These surveys are ongoing and help determine the level of management appropriate for the population. Supporting documentation is located at the Forest Supervisor's office.

Wild trout populations and macroinvertebrates are also surveyed and monitored on the Carson NF. Supporting documentation is located at the Forest Supervisor's office.

Due to Forest Priorities and lack of funding no habitat surveys were done in 2003.

Several streams in the monitoring rotation were surveyed in 2003. The streams surveyed were the Red River, Rio Pueblo, Los Pinos, and the Rio Costilla. These streams were monitored for changes in fish population structure (i.e., abundance, length frequency, relative weight, etc.) The waters that are monitored have self-sustaining fish populations, most of the naturally reprocucing fish are brown trout (*Salmo trutta*) with the exception of Rio Costilla, which has a self-sustaining population of two subspecies of cutthroat trout: Snake River cutthroat (*Oncorhynchus clarkii* spp.) and Rio Grande cutthroat (*Oncorhynchus clarkii virginalis*). Some of the previously established survey sites have been monitored since 1990. The population surveys are also conducted to provide quantitative data to compare populations through time within given water. Survey results when compared to previous years data indicate a slight decline in population abundance. It is believed to be due to the continuing drought affecting the southwest.

Several other streams in the monitoring rotation were also surveyed in 2003. Those streams were the Santa Barbara, the San Antonio, Angostura, La Junta and La Presa. There is no previous data at these sites so no determination of trend can be made.

Sikes Act projects, such as prescribed burning to improve the quality of habitat, are monitored after completion and continue over several years. Areas are visited to check implementation work, take photos and document project effectiveness. The NM Department of Game and Fish is a partner in Sikes Act project implementation monitoring and whether predicted results have been met. Supporting documentation is located at the Forest Supervisor's office.

Baseline macroinvertebrate surveys have been conducted annually since 1998 but as of yet there are no multiple data sets. Trend cannot yet be determined. Beginning in 2002, streams placed on the 3-year population monitoring rotation were placed on the same rotation for macroinvertebrate sampling. In this way trend can be determined. Macro-invertebrate data was collected in 2003 but data analysis and

reporting is expected to be completed in Fiscal Year 2004.

Results: A summary of status and habitat trends for 11 **management indicator species** identified in the Carson Forest Plan will provice biologists a forest-wide evaluation of MIS habitat to use when analyzing a project's site-specific effects. The report will also allow district biologists to focus on those MIS that are appropriate for analyzing effects. Inventory and monitoring was done in FY 2003 under contract. The collected data will be added to the MIS assessment during FY 2004.

New species have been listed as **threatened or endangered** since Forest Plan implementation, and these species are being protectec through project design features and mitigation measures. Recovery plans have been completed for several species and provide direction to enhance their habitats. Coordination with universities and the US Fish and Wildlife Service and proactive management have prevented the listing of several species, most notably the northern goshawk. Monitoring results in 2003 do not indicate significant alterations in occupied or potential habitat for TE&S species that could result in a downward trend of habitat condition or populations.

Mexican spotted owl surveys did not identify any birds residing on the Forest. Follow up surveys on Jicarilla Ranger District did not find any birds residing in previously known MSO nesting habitat.

Monitoring of the population of **Rocky Mountain bighorn** transplanted to the Wheeler Peak Wilderness from the Pecos Wilderness has shown that reproduction has been successful and the herd is growing better than anticipated. Monitoring of continued reproductive success may eventually lead to another transplant project, but not likely for another five to ten years. It is likely that sheep from the expanding herd in the Wheeler Peak Wilderness will be transplanted to Arizona in near future in cooperation with the New Mexico Department of Game and Fish.

Elk numbers have steadily increased over the past two decades with a large herd ranging yearlong on the Tres Piedras Ranger District. A significant migration also occurs to and from the Rio Grande National Forest in southern Colorado to the north and the Tierra Amarilla Grant to the west. Monitoring in recent years has indicated that the elk population on the Tres Piedras RD is fairly stable. On the Jicarilla Ranger District, data shows a steady or increasing population from 1981-1993, and a slightly decreasing population since then. It is estimated that the district has between 600 and 800 resident elk. Annually, the Forest Service, Bureau of Land Management and NM Department of Game and Fish jointly conduct elk surveys in January. These surveys are expected to continue. Established 33 elk photo monitoring points within Game Management Unit 52. These plots were monitored in conjunction with the Rocky Mountain Elk Foundation in 2003.

There is only one location with known occupied **southwestern willow flycatcher** (SWWF) habitat on the Forest. The status of this population appears to be stable. Forest activities do not point to having any negative effect on the individuals that occupy the suitable habitat. Neotropical migratory bird surveys along the Rio Grande del Rancho have served to also monitor cowbird populations in or near occupied southwestern willow flycatcher habitat. The results from annual monitoring over the past four years indicate an increase in the number of cowbirds along the river. Since

Program Area	Summary of Monitoring Conducted and Evaluation
	livestock grazing on National Forest has not occurred in or near the area for several years, it is deduced that the gradual migration up the river corridor is from the concentrated livestock use in the Talpa area, southeast of Taos. At this point in time, no plans are in place to actively remove the cowbirds, a threat to the SWWF. The Talpa-Penasco 45 kV distribution line is in portions of the occupied location. An upgrading of the Talpa-Penaco power line is in the engineering stages. The Environmental Impact Statement and Decision Notice was published in January of 2002. The decision removes the existing powerline from SWWF habit. The upgrade line will be adjacent to the existing highway. Construction, movement to the highway and removal of the existing powerline, is ongoing in FY 2003. It is anticipated that the Talpa-Penasco 69 kV distribution line construction will be completed in late 2004 or early 2005. The stabilization of **Rio Grande cutthroat** populations and the reintroduction of the species in a number of the Carson's stream reaches have progressed and monitoring is ongoing. However, the threat of whirling disease contaminating New Mexico's trout fisheries is imminent. The RGCT is extremely susceptible to whirling disease. The disease has been detected in several hatcheries in the state and infected fish have been found in the San Juan River in the northwestern corner of the state. How the disease will affect the RGCT and other trout is not yet known, but the consequences could be catastrophic. The installation of fish barriers and the improved condition of water quality in many of the Carson's mountain streams may be factors in warding off this devastating epidemic. Coordination with the NM Department of Game and Fish continues. The agency reviews the majority of environmental analyses conducted for project level proposals. Forest biologists have been active in assisting in bighorn transplants and Rio Grande cutthroat surveys of stream reaches that have not been recently inventoried.
Riparian	**Goals:** To improve the condition of riparian areas through direct treatment and improved resource management, indirectly benefiting fish and wildlife habitat diversity, water quality, and water oriented dispersed recreation. **Monitoring:** (1) Determine the response in riparian condition resulting from the implementation of the standards and guidelines and; (2) Monitor the activities and uses to insure they are within the Standards and Guidelines. **Results**: Riparian health is key to a sustainable, healthy forest ecosystem. Historic railroad logging across watersheds and settlement activities (such as intensive grazing) in riparian areas, significantly altered these systems in the late 1800 and early 1900's. Although most of these systems have remarkably recovered, many still need improvement to regain their full natural function. Surveys as part of fisheries surveys are being completed to identify the location and condition of existing riparian areas. Properly functioning conditions are also being assessed. For key projects, baseline watershed quality information is being collected.
Special Areas (Management Area 19)	**Goals:** The proposed Arellano Canyon Research Natural Area, the Tres Piedras *Haplopappus microcephalus* Botanical Area, the Middle Fork Lake/Sangre de Cristo

Program Area	Summary of Monitoring Conducted and Evaluation
	Pea Clam Zoological Area and other potential research natural areas will be maintained and protected. **Monitoring:** NEPA analysis of site-specific proposed actions include the evaluation of effects on special areas, to insure that they are not adversely impacted. An interdisciplinary team evaluates a proposal through the NEPA process and recommends restrictions or corrective actions if inspections reveal adverse impacts on the potential RNA or endangered plants or animals. **Results:** In FY2003, there were no proposals within or adjoining a special area. No uses or activities on the Carson National Forest are causing adverse impacts to special areas.
Protection 3 Insect and Disease	**Goals:** To meet Federal regulation, ensure destructive insect and disease organisms do not increase to potentially damaging levels following management activities. **Monitoring:** Determine growth reduction and mortality caused by insect and disease infestations. **Results:** Aerial insect and disease surveys of the Forest are conducted annually. Supporting documentation is located at the Forest Supervisor's Office. Results for 2003 are as follows:

Insect and Disease Conditions for years FY1999 to FY2003.

Insect/Disease	1999	2000	2001	2002	2003
Western Spruce Budworm	143,340	86,645	290,610	114,680	62,700
Aspen Defoliation	15,505	15,160	640	2,645	680
Pinyon Bark Beetle (Ips)	No data collected	No data collected	Rudimentary data collected	16,240	277,615
Western Pine Beetle	No mortality detected	585	1500	3,265	3,325
Douglas-fir Beetle	No mortality detected	40	75	90	6,235
Spruce Beetle (included corkbark fire mortality)	1,235	955	1,230	1,675	5,840
Fir engraver Beetle	135	95	200	455	85
Ips beetle in ponderosa pine	185	Not detected or recorded	275	Not detected or recorded	Not detected or recorded

Diseases such as dwarf mistletoes and root disease causing organisms are found scattered about the forest. Dwarf mistletoes infect approximately 1/3 to ½ of the forested stands on the Carson National Forest. These diseases cause the death of individual trees and at times small pockets of trees. The scattered nature of these dead trees prevents an estimate of acreage of killed trees.

Foliage diseases such as Ponderosa Pine Needle Cast are scattered over the

Program Area	Summary of Monitoring Conducted and Evaluation
	Carson National Forest. These disease are difficult to aerially detect unless at high levels. Needle cast was not noted during aerial detection surveys. **Western Pine Beetle** is not easily detected until a small clump of 3 to 5 trees (personal communication with Terry Rodgers, Pest Management Specialist, Albuquerque, New Mexico) or more are infested with the resultant browning of needles. This insect rarely infests trees less than 9 inches in diameter. Hence one beneficial effect of this insect is to create dead or dying trees suitable for cavity nesting species. Using the minimum number of trees needed to aerially detect this insect nearly 10,000 new snags were created naturally in 2003. Western Pine Beetle has increased its presence since 1999. 2003 continues the increase in affected ponderosa pine areas. The increased presence is a result of high stand densities and continued drought stress. Prolonged drought reduces the trees ability to respond to insect attack through reduced sap production. It is anticipated that the upward trend of affected acreage will continue in 2004. **Douglas-fir beetle** is similar to Western Pine Beetle in the number of trees, dead or dying, infested before aerial detection is effective. The larger trees, greater than 9 inches in diameter, are attacked. A beneficial effect of this insect is to increase snag densities in infested stands. Using the minimum number of trees needed to aerially detect this insect and the acres noted with mortality approximately 18, 800 new snags were created naturally in 2003. Douglas-fir beetle has increased its presence from 90 acres to 6, 235 acres affected. This is an increase of nearly 700 percent. The increased presence is a likely result of high stand densities and continued drought stress. This large increase may be a precursor of a coming epidemic outbreak. Information gathering in 2004 will aid in predicting the possibility of an epidemic outbreak. **Pinyon Bark Beetle** (Ips) generally infests the entire stand. Other tree species within the stand are not infested. The insect is host specific. (Western Forest Insects, Miscellaneous Publication No. 1339, USDA Forest Service). The effect of this insect is to remove nearly all the pinyon in the infested stands. The large increase from 2002 to 2003, nearly 250,000 acres indicates continued tree losses in the immediate future. Based on Forest Plan acreage information for the various management areas over 80% of the pinyon/juniper type on the forest is affected by this beetle. The immediate vegetative result of this beetle infestation is loss of tree cover. The longer-term result should be an increase in grass and forbs cover as the dead trees fall and breakup creating ground debris that in turns provides micro sites (shade and moisture collection) for grass and other plant establishment. Other plants likely to invade the areas denuded of trees include big sagebrush and four-wing saltbush.
Protection 5 Fuels	**Goals:** Fuel treatment will follow the various timber activities as a means of reducing fire hazard and insect and disease potential. **Monitoring:** Maintain a fuel treatment atlas and record areas treated. Data is

generated from field personnel who monitor and/or direct fuel treatment by Forest Service crews, logging companies, contractors, etc.

Results: With few timber sales implemented on the Forest, most of the fuel treatment is being conducted in wildland/urban interface areas. All communities adjacent to the Carson National Forest have been mapped for fire risk, thus focusing fuels reduction projects in areas where the fire risk is the greatest. Supporting documentation is located at the Forest Supervisor's office.

Forest-wide, the trend is toward increasing fuel loadings, mortality and dense stands of trees. Management options for dealing with these issues are limited. Over the last five years the trend has been toward more restrictions on use of active management, both through application of restrictive standards and guidelines and through limitations outlined in appeals and litigation.

Physical Environment

Soil and Water 1
Watershed Conditions

Goals: To improve unsatisfactory watershed conditions on 25,000 acres by 2020. As a result of this change, productivity of the land is expected to improve.

Monitoring: Improvement of watershed on the Forest is based on certain activities that will increase or enhance ground cover and improving watershed condition. These activities include prescribed burning, converting sagebrush to native grasses and forbs, improving livestock distribution on grazing allotments, thinning densely stocked forested stands, installing sediment retention structures, and implementing proper grazing management.

The Forest Plan monitoring plan identifies sampling of percent ground cover every three years as specified in *Terrestrial Ecosystem Survey Handbook*, Chapter 8 as the method for monitoring watershed conditions. Samples are to be taken randomly within the Forest. Each point sampled can fall into one of two classes (a) unsatisfactory watershed condition or (b) satisfactory or better watershed condition. This method was not used in FY 2003.

Results: Activities that improved Forest watershed conditions were accomplished on over 5,332 acres in FY 2003. The trend in the types of projects proposed on the Forest is towards improving watershed conditions and being light on the land. Even the wildland/urban interface projects proposed in the coming year involve primarily thinning and prescribed burning. Supporting documentation is located at the respective ranger districts. A detailed summary of district activities is attached to this report.

Some Highlights of watershed Improvement work

Fiscal Year	2000	2001	2002	2003
Road Maintenance (miles)	459	243	476	431

Program Area

Summary of Monitoring Conducted and Evaluation

Fiscal Year	2000	2001	2002	2003
Road Obliteration (miles)	45	43	8	20
Re-seeding (Acres)	110	50	3,000 (Montoya fire)	0
Sagebrush conversion (Acres)	650	400	200	0

Fiscal Year	2000	2001	2002	2003
Thinning (acres)	300	1,486	630	966
Prescribed burning	7,388	1,010	4,770	3,915

Summary for Year 2003

CANJILON RANGER DISTRICT

Range NEPA analysis and permit re-issuance:

- Completed environmental analysis for the English grazing allotment.

Range Management and Improvements:

- Type converted approximately 50 acres of sagebrush by brush-hogging on Canjilon allotment.
- Cleaned out and reconstructed one earthen stock tank in Mogote Allotment to increase capacity for water and silt and aid in better livestock distribution.
- Range readiness and forage utilization monitoring was conducted in all 12 allotments.
- Allotment boundary fences were inspected prior to cattle entry to facilitate adherence to scheduled grazing rotations.
- Adjustments in entry dates and permitted cattle numbers were made in 10 allotments due to drought conditions.

Road Maintenance:

- Performed road maintenance on 55 miles of road district wide.
- Cleaned out four cattle guards district wide.

Program Area	Summary of Monitoring Conducted and Evaluation

Burned Area Emergency Rehabilitation and National Fire Plan Restoration

- Reconstructed three and one half miles of fence and performed maintenance on 5 miles of fence within the Montoya burned area.
- Seeded and mulched 15 acres within the Montoya burned area.
- Cleaned out two sediment retention structures in Blas Canyon. Replaced riprap on dam faces of these structures.
- Constructed three erosion control (erosion cloth and riprap) structures in upper reaches of Blas Canyon. These structures will protect the acequia and head gate that transports irrigation water to private land downstream.
- Surveyed the Montoya burned area for invasive weeds.
- Removed invasive weeds (by hand) on fifteen acres within Montoya burned area.
- Removed hazard trees on 15 acres within Montoya burned area.
- Performed heavy road maintenance on 10 miles of FDR 724 and replaced one culvert damaged by fire suppression activities.

EL RITO RANGER DISTRICT

Range NEPA analysis and permit re-issuance:

- Continued Environmental Analysis on the San Gabriel Allotment

Road Maintenance:

- Forest roads 20, 137, 106, 559, 44, 197 and 45 received maintenance, consisting of 37 miles of grading, brush removal, drainage, culvert installation and culvert cleanout.

Watershed Improvement:

- 319 Grant for improvements in the Vallecitos Creek watershed has been carried over into FY2004 due to fire restrictions and drought conditions this year. Several of the projects were completed in FY2003:
  - Ojito Azul Spring improvement completed in Jarosita allotment
  - Goodge Spring improvement completed in Jarita Mesa allotment
  - Jacal de Palo Spring improvement completed in Alamosa allotment
  - Posos Spring development completed in Alamosa allotment

Program Area	Summary of Monitoring Conducted and Evaluation
	Forest Road 106 Spring development completed in Alamosa allotment Jarita Ranches Spring development completed in Alamosa allotment One mile of fence reconstructed along enclosed Watershed plot in Alamosa allotment

- A 319 grant extension for FY 2004 was approved by NMED to commence brush hogging of approximately 600 acres of the "Ancones Flats" area of the Alamosa allotment and for reconstruction of 1.5 miles of allotment boundary fence between the Jarosita and Salvador Complex allotments.
- Constructed a 10-acre exclosure fence around the Potrero Falls. This structure will prevent livestock trampling and trailing in the riparian area and will allow the native riparian vegetation to rejuvenate.
- Reconstructed the berms and cleaned out Seco Tank and La Jara #2 Tank on the Jarita Mesa allotment.
- Reconstructed the berms and cleaned out Jacal de Palo earthen tank on the Alamosa allotment
- Removed and cleaned out the areas under two cattle guards: One located on Forest Road 106 and the other located on Forest Road 137.
- Installed a new cattle guard between the Jarosita and Salvador Complex allotments

Prescribed Fire/Fuel Management:

- Conducted prescribed burns on 3,600 acres of the Madera Canyon WUI using the combined funding of Forest Service fuel reduction funding and Sykes Act wildlife program funding. The objective of this burn was to improve wildlife habitat by increasing vegetative diversity and herbaceous groundcover while reducing hazardous fuels near the community of El Rito. This project will continue to reach a target of 5,000 acres.
- Established and completed data collection on 24 fuel treatment plots in the Alamosa analysis 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.
- Pine Angel Personal Fuelwood Sale - Approximately 30 acres. This activity was a personal fuelwood cutting and gathering area for designated green ponderosa pine trees.

Program Area	Summary of Monitoring Conducted and Evaluation
	■ 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). ■ La Mangajo Timber Sale - 52 acres harvested. This activity was part of a commercial timber sale that involved the following logging operations: felling of trees, skidding of logs, and hauling of logs over constructed roads. ■ Accomplished 405 acres of pre-commercial thinning to improve forest health in the Felipito contract. This includes 73 acres from Kiowa Prospects Timber Sale, 43 Acres from Felipito 8 Timber Sale, and 289 acres in the Felipito area.
	Monitoring: ■ Range Readiness and forage utilization monitoring was conducted on all of the El Rito Ranger Districts 10 grazing allotments ■ Adjustments in entry dates and/or permitted livestock numbers were made in 8 allotments due to drought conditions
	Education/Technology Transfer: ■ District personnel made 9 presentations focusing on environmental education to local school groups. ■ Several Forest Service personnel at the El Rito District assisted in the annual fish fiesta at Hopewell Lake on the Tres Piedras district. We had several booths focusing on environmental education. ■ Several Forest Service personnel at the El Rito District participated at the New Mexico State Fair, focusing on environmental education.
	JICARILLA RANGER DISTRICT Range Management: ■ Did not allow permitted livestock to graze 4 allotments this year. ■ Delayed entry, reduced stocking levels and moved up departure dates on 2 allotments this year.
	Road Improvements: ■ Place sandstone road surfacing on approximately 1 mile on FR 311A and 0.5 mile FR 309I.

Program Area	Summary of Monitoring Conducted and Evaluation
Watershed Improvements:	■ Cleaned out and maintained 1existing stock tank. ■ Constructed 2 new sediment traps in association with new gas well locations and drills. ■ Completed watershed condition assessment on the Jicarilla RD in association with Jicarilla RD Oil and Gas Expansion EIS. The EIS is currently available for public comment. ■ 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.
Prescribed Fire/Fuel Management:	■ Thinned 10 acres around Cedar Springs Camp Ground to reduce hazardous fuel levels. ■ Established and completed data collection on 17 fuel treatment plots in the Bixler area.
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. 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 have entered into an Interagency Agreement for consolidation of the Fire Suppression and Fuels Management for both agencies. The two agencies work jointly on all fuels and fire suppression activities following the guidance of the surface management guidelines. In fiscal year 2003, the majority of the fuel work was accomplished on public lands managed by the BLM.

Program Area	Summary of Monitoring Conducted and Evaluation

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 approx. 400 elementary school children (4-6 grades) in the Four Corners area schools.
- Participated as a member of the San Juan Basin Water Committee, working with NMED and all surface landowners in the process of establishing TMDL's in the San Juan and Animas Rivers.

Clean Up Projects:

- Cleaned up one (1) produced water spills through oil and gas lease operators and NMOCD.

CAMINO REAL RANGER DISTRICT

Range Management and Improvements:

- Completed environmental analysis on the Tienditas grazing allotment for the purposes of permit re-issuance

Road Management and Improvements:

- Accomplished 16 miles of road obliteration in the Rancho de Rio Grande watershed.
- Reinforced 8 miles of road closures along Frijoles Creek to reduce the sediment input to the creek.

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, and Cejita Mesa 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 1700 acres.
- New fence was constructed around Bull Springs and Apache Springs in the Flechado grazing allotment.

Program Area	Summary of Monitoring Conducted and Evaluation

- Installed two new cattle guards: one on FR 697 in the Trampas grazing allotment and one on FR 437 in the Tienditas grazing allotment.
- Installed seven earthen tanks in the headwater area of Capulin Creek to trap sediment from the Encebado Fire.
- Implemented contracts with local community members to thin approximately 73 acres within the Santa Barbara area. This work was funded through a 319 grant.

Burned Area Emergency Rehabilitation:

- Participated as interagency members of the Encebado Burned Area Emergency Response team. Provided technical resources to the team for Cultural Resources, Engineering, GIS, Watershed and Inter-agency liaison to allow coordination of damage assessment, rehabilitation planning and design, specification development and on-the-ground implementation of recommended treatments.
- Provided 25 pounds of Ponderosa pine seed to Taos Pueblo for use in reforestation efforts on high burn severity areas treated by hydromulch.
- Pulled slash back and seeded 13 acres of fuel break constructed to protect private residences.
- Performed maintenance, graded and replaced water bars on 9 miles of forest roads damaged by suppression activities.
- Pulled slash back, constructed water bars and seeded 14 acres of firefighter safety zones.
- Pulled slash back, water bar and seeded 8 miles of mechanical fire line, and rehabilitated a 1-acre helispot.
- Coordinated rehabilitation needs and treatments on private lands damaged during suppression efforts.

Prescribed Fire/Fuel Management Treatments:

- Accomplished 831 acres of prescribed burning and pile burning on the District:
  - 460 acres on the West Entranas project
  - 20 acres on the Ruedas project
  - 70 acres on the El Valle/Canada Maria project
  - 10 acres on the Llano Abeyta project
  - 271 acres on the Santa Barbara (Bear Mountain) project
- Accomplished 570 acres of precommercial thinning
  - 180 acres of precommercial thinning on the Ojos Ryan project

Program Area	Summary of Monitoring Conducted and Evaluation
	390 acres of precommercial thinning on the Canada Hondo project
	The objective of these treatments was to reduce hazardous fuel loading and improve and enhance wildlife habitat conditions. Slash was scattered which will allow for native plant regeneration.
	Recreation Improvements: ■ Resurfaced the road in the Upper La Junta Campground including parking spaces. ■ Placed vehicle barrier rocks in campsites to prevent erosion from vehicles. ■ Areas damaged previously by illegal OHV use (approximately 1 mile) were administratively closed, signed and rehabilitated using native materials, native seed, and erosion control matting. ■ Removed the toilet at Tierra Azul because of safety and environmental concerns. The toilet was adjacent to Pot Creek and Southwest Willow Flycatcher habitat. ■ Installed two new toilets in campgrounds in Taos Canyon immediately adjacent to Rio Don Fernando.
	Education/Technology Transfer: ■ Worked with youths from the Rocky Mountain Youth Corps in building fence for a research project in Taos Canyon and maintenance/construction of recreation facilities in La Junta Canyon. These youth assisted District personnel in implementing district projects and gained an understanding of forest and range resource management. ■ Provided interpretive campground programs at the Agua Piedra campground on twelve weekends. Topics included native plants, raptor identification, Forest Service history, archaeology, etc. ■ District personnel visited schools K-6 in Penasco, Taos, and Vadito and the Angel Fire Kite Festival. 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.
	Monitoring: ■ Range readiness and forage utilization monitoring was conducted on fifteen allotments in a drought year. This monitoring resulted in a deferred entry of one allotment. In addition, several allotments were stocked voluntarily at percentages under allowed capacity due to

Program Area	Summary of Monitoring Conducted and Evaluation

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.

TRES PIEDRAS RANGER DISTRICT

Range Management and Improvements:

- Completed environmental analysis on the TCLP grazing allotment for the purpose of permit re-issuance.
- Implemented action items on the Rangeland Management Action Plan with all District grazing permittees.
- Implemented the following range management improvements:
    - Re-constructed 3 miles of lay down fence in the Apache allotment.
    - Re-constructed 1.3 miles of lay down fence reconstruction in the Lagunitas allotment
    - Re-constructed 2 miles of lay down fence in the San Antonio allotment.
    - Cleaned 2 cattle guards in the Cow Creek/Deer Trail pastures.
    - Installed a 30,000-gallon water storage tank in the TCLP allotment.
    - Re-constructed 0.75 mile of interior allotment fence in the Spring Creek allotment.
    - Installed 1 cattle guard in the TCLP allotment.
    - Installed 2 cattle guards on FDR 557 and State Hwy. 64 in the Tio Gordito allotment in partnership with NMDOT.
    - Cleaned out 2 earthen water tanks on the Spring Creek allotment.

- Monitored forage utilization and livestock distribution on 17 grazing allotments and 73 pastures. Prepared end of season reports for these allotments and reviewed these with grazing permittees.
- Reduced stocking levels on grazing allotments by 20 to 38 percent based on range readiness, vegetative conditions and management objectives.
- Delayed entry of livestock on grazing allotments by 1 to 10 days.
- Non-use was taken on 3 grazing allotments due to vegetative resource conditions.

Program Area	Summary of Monitoring Conducted and Evaluation

- Permittees on the Tio Gordito allotment completed their second year at Valle Grande Grassbank while improvements continued at their home allotment including 100 acres of sagebrush conversion.

Road Improvements:

- Performed road maintenance of the following forest roads (49 miles total)
    - Maintained 6 miles on FR 83
    - Maintained 3 miles on FR 284
    - Maintained 4 miles on FR 97
    - Maintained 2 miles on FR 556
    - Maintained 4 miles on FR 557
    - Maintained 2.5 miles on FR 87AA
    - Maintained 27.5 miles on FR 87

Watershed Improvements/Wetland Management and Protection:

- Completed construction of the irrigation head gate on the Rio San Antonio as part of the Stewart Meadows waterfowl habitat improvements and wetland restoration.
- Completed migratory song bird survey in Stewart Meadows
- 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:

- Conducted the following prescribed fires

  Dry Lakes Prescribe Burn - 1,235 acres.

  South Tres Piedras Wildland Urban Interface - pile burn – 75 acres.

  South Tres Piedras Wildland Urban Interface mechanical treatment - 375 acres.

- Conducted planning and environmental analysis for the following projects

  Red Mesa Vegetation Management Project - 4,232 acres.

  Pinon Deer Habitat Mechanical Treatment - 120 acres.

  Upper Petaca Wildlife Prescribe Burn - 800 acres.

Program Area	Summary of Monitoring Conducted and Evaluation

- Provided support to the forest wide prescribed fire/fuel management program

  Supported the Madera Rx Burn - 750 acres (El Rito RD)

  Supported the La Mesita Rx Burn - 350 acres (Canjilon RD)

- Responded to 19 wild land fires ranging from 1/10 to 3 acres in size.
- Supported the Zone, Regional & National wild-land Fire suppression effort.
- Established and completed data collection on 17 fuel treatment plots in the Cow Creek analysis area.

Recreation Improvements:

- Performed maintenance on 21 miles of trails across the District, including the Cruces Basin and Tony Marquez Trails
- Completed the construction of the Hopewell Lake Campground.
- Issued 26 letters of authorization for recreation prospecting at Placer Creek.

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.

Technology Transfer/Education:

- Hosted the annual Fishing Fiesta at Hopewell Lake. This is a cooperative effort with the BLM, NM Game and Fish Dept., Town of Taos, Forest Service and many other sponsors. The target audience is children aged 3 and up. The objective is to provide the opportunity for kids to be educated about environmental issues and learn about fisheries, macro invertebrates, and aquatic habitats. This effort reached 178 children and their parents.
- 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.

Program Area	Summary of Monitoring Conducted and Evaluation

QUESTA RANGER DISTRICT

Range management and monitoring:

- Worked with grazing permit tees to reduce stocking numbers, defer entry, and to agree to total non-use on their allotments due to on-going drought conditions.
- Closely monitored utilization all grazing allotments on the district, stocked and non-stocked.
- Constructed 7 miles of pasture fence on Valle Vidal to enhance cattle management and distribution.
- Electronically mapped all allotment key use areas.

Road Improvements/Management:

- Increased level of road maintenance on roadways in the Valle Vidal unit and Cabresto Canyon.
- Collaborated with the Town of Red River to secure a State TEA-21 grant for recreational road improvements in the Goose Creek and Trail Canyon areas. Completed reconstruction, with many additional watershed improvements (251 rolling grade dips and 6 major sediment traps to intercept road sediments), on 5.2 miles of Trail Canyon Road. Planning, engineering survey and design of improvements underway for Goose Lake Road.
- Increased law enforcement activities and significantly increased signing to address ORV use and resulting resource damage from this activity. Completed a comprehensive inventory of the existing ORV damage in the Red River drainage.
- Installed significant road improvements in Marlette Canyon and resurfaced the first mile of the Mallette Canyon road. The objective of this project is to provide needed drainage structures, eliminate user created roads impacting Mallette Creek and place barricades to control ORV use both along the main road and within the adjacent riparian area.
- Worked closely with Quivira Coalition on their 319 Grant to identify road run-off issues on the Valle Vidal.
- Inventoried and geo-positioned all roads on the Questa Ranger District. Roads will be entered into the Forest INFRA database.
- Completed routine maintenance on approximately 60 miles of roads.

Erosion Control/Mitigation:

- Partnered with the Rocky Mountain Youth Corp in constructing 130 watershed structures in the Cebolla Mesa area, entailing the hand placement of 129,600 pounds of riprap, and constructed two multiple tier gabion basket road retention structures adjacent to Lama Creek.

Program Area	Summary of Monitoring Conducted and Evaluation

This involved approximately 2700 person hours. We also closed 4 roads in the Hondo Fire area and channeled a secondary drainage back to the original channel.

- Constructed 19 new and 13 partial riparian vegetation enclosures along Comanche Creek involving NM Trout, Trout Unlimited, and NMED volunteers under Quivira Coalition's 319 Grant. This involved 1,190 hours of volunteer time.
- Constructed 1 head cut control structure with raised culvert inlet in upper Midnight Meadows.
- Coordinated with Taos Ski Valley and Red River Ski Area to implement on-going watershed improvements at the ski areas.
- Provided environmental analysis and approval of various investigative activities conducted by the US Geological Survey related to the Molycorp clean-up under the administrative order of consent.
- Continued partnership with the Philmont Scout Ranch to construct watershed improvements on the Valle Vidal.

Recreation Improvements:

- Constructed 5 new corrals to minimize watershed impact resulting from horse in Cimmaron Campground.
- Constructed .25 mile of hiking trail to direct foot traffic in close proximity to Goose Lake.
- 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.
- Installed additional rock traffic control barriers at Cimmaron Campground.
- Installed new toilets at Cabresto Lake, Middle Fork parking area, and at Taos Ski Valley campground. Most all of the replacement toilets are located adjacent to streams or lakes.
- Installed guardrail in the area of Mallette Canyon to limit vehicular access in adjacent riparian area of Mallette Creek.

Vegetation Management/Wildland Urban Interface/Wild Fire

- Completed the NEPA process on approximately 8,000 acres of wildland urban interface projects in the Questa and Lama areas. The proposed action is to thin forest stands to provide for defensible areas near communities and minimize the potential for stand replacement wildfires and subsequent property loss and watershed damage.
- Accomplished 100 acres of mechanical thinning and piling/chipping on the Upper Red River Wildland Urban Interface Project.

Program Area	Summary of Monitoring Conducted and Evaluation

Burned Area Emergency Rehabilitation and National Fire Plan Restoration

- Re-constructed 7 miles of allotment boundary fence within the Ponil Complex burned area (Valle Vidal) to provide for livestock cattle management and distribution.
- Monitored effectiveness 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 Sealy, Hart and Bonito Canyons.
- Maintained and re-constructed numerous rock and cloth erosion control structures 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.
- Identified approximately 600 acres suitable for re-forestation and initiated the acquisition process for tree seedlings from Lucky Peak tree nursery. Approximately 250 acres will be planted in fiscal year 2004.

Clean Up Projects – Petroleum

- Performed maintenance tilling of historically diesel-contaminated soil at Shuree Ponds, in accordance with a multi-year remediation process. A contractor provided needed tilling on three bio-remediation pads. Pads are now within State standards.

Partnerships:

- Continued our participation in the Red River Watershed Group. Participated in meetings and field trips.
- Participate with Meridian Associates on the formation of a Cimmaron watershed group.
- 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. Coordinated with USGS personnel conducting groundwater monitoring in the upper watershed.
- We are working closely with the Quivira Coalition, NMED-SWQB, Valle Vidal Grazing Association and other partners on a Watershed Restoration Action Strategy and potential project list on the Comanche watershed under a 319(h) grant.

Program Area	Summary of Monitoring Conducted and Evaluation
	Abandoned Mine reclamation: ■ The Questa RD supported efforts by contractors working on the preliminary assessment/site investigation of abandoned and in-active mines in Bitter Creek, Pioneer Canyon, Placer Creek, Marlette and Upper Watershed. Preliminary report completed outlining abandoned mine clean-up alternatives. Three seasons sampling of these mine sites is complete, analytical results and interpretation are in hand. Planning: ■ Hosted workshop focused on stream restoration techniques developed by Bill Zeedyke and other watershed improvement techniques.
Soil and Water 2 Best Management Practices	**Goals:** Production of water from forestlands will meet State water quality standards. **Monitoring:** Established designated qualified personnel check Best Management Practices (BMP) (i.e., seeding disturbed areas, water barring roads, etc.) for implementation on the ground. Best management practices monitoring follows Regional evaluation guidelines and procedures. **Results:** The application of BMPs is standard procedure with any ground disturbing activity undergoing environmental analysis. Implementation of BMPs is the responsibility of each district ranger. Field trips are taken to validate on-site BMP implementation. It is recommended that more emphasis be put on BMP training and the development of a BMP monitoring program to track actual implementation and effectiveness. Several water quality projects have been implemented on the Forest: ▪ Baseline and existing condition information (primarily turbidity) are being collected in cooperation with the New Mexico Environment Department (NMED) for several creeks within the Carson National Forest boundary. Collected information will help determine whether these reaches should be removed from the State's 305b list for non-attainment. Supporting documentation for data collections in 2003 is located at the Ranger District Offices. ▪ Identification of existing and potential non-point source water pollution on the Carson is ongoing and helps determine where watershed work would provide the most significant results.
Soil and Water 3 Roads	**Goals:** To assure that Best Management Practices (BMP) are implemented in all phases of road design, construction and maintenance to minimize erosion and maintain on-site productivity and water quality. Also to assure that density is not exceeded. **Monitoring:** Road design, construction, maintenance and density. **Results:** BMPs are standard mitigation measures when any road construction is proposed. Analysis of the proposal and alternatives are usually conducted with the

Program Area	Summary of Monitoring Conducted and Evaluation
	assumption that BMPs are integrated into the activities. No projects with new road construction were implemented in 2003. Much of the road maintenance performed on Forest roads is to apply BMPs (e.g., water bars, crowning, resurfacing, etc.) in order to minimize erosion and maintain on-site productivity and water quality. Supporting documentation is located at the respective ranger districts. Camino Real Ranger District ▪ Accomplished 16 miles of road obliteration in the Rancho de Rio Grande watershed. ▪ Reinforced 8 miles of road closures along Frijoles Creek to reduce the sediment input to the creek. Canjilon Ranger District: ▪ Performed road maintenance on 55 miles of road district wide. ▪ Cleaned out four cattle guards district wide. El Rito Ranger District ▪ Forest roads 20, 137, 106, 559, 44, 197 and 45 received maintenance, consisting of 37 miles of grading, brush removal, drainage, culvert installation and culvert cleanout. Jicarilla Ranger District ▪ Place sandstone road surfacing on approximately 1 mile on FR 311A and 0.5 mile FR 309I. ▪ Approx. 120 miles of road received maintenance through our continued partnership with the oil and gas companies via the Jicarilla RD Roads Committee. Tres Piedras Ranger District ▪ Total of 49 miles maintained District wide. Questa Ranger District ▪ Completed reconstruction, with many additional watershed improvements (251 rolling grade dips and 6 major sediment traps to intercept road sediments), on 5.2 miles of Trail Canyon Road. Planning, engineering survey and design of improvements underway for Goose Lake Road. ▪ Installed significant road improvements in Marlette Canyon and resurfaced the first mile of the Mallette Canyon road. ▪ Completed routine maintenance on approximately 60 miles of roads.
Human Environment	
Facilities 2	**Goals:** Travel management objectives will be developed for all Forest Development Roads (FDR) and travelways which will further determine and verify which are needed and should be included or remain on the FDR System, which are needed only periodically and should be closed, and which should be added to the obliteration list. New construction of Forest Development Roads is primarily for timber sales and

Program Area	Summary of Monitoring Conducted and Evaluation
	oil & gas development. Approximately 70% of these roads should be local terminal functional classification and should be closed promptly after resource management activities have ended. **Monitoring:** A schedule to complete an inventory of all roads on the Carson NF is in place. A revised transportation plan for the Carson will be put together upon completion of the inventory. In FY 2002, an inventory was performed on level 3, 4 and 5 roads. The result will be a Forest-wide Road Analysis (RAP) for these arterial and collector roads. The RAP was completed in April 2003. In addition, in Fiscal 2003 over 864 miles of road, level 1, level 2 and 3, were inventoried, documenting conditions of road surface, drainage, sight distance and proper signing. It is planned to continue the inventory in FY 2004. Facility, road, bridge and dam maintenance monitoring is ongoing, although minimal. It is of a reactive nature, rather than a proactive one. **Results:** No new road construction occurred in 2003; one mile of reconstruction occurred in 2003. Roads have been moved out of meadows and canyon bottoms where feasible, and riparian function has been improved with structural and nonstructural improvements. Supporting documentation is located at the Forest Supervisor's office.
Recreation 1	**Goals:** Provide the opportunity for the public to obtain a variety of recreation experiences by managing the natural resource setting and the activities that occur within it. Provide a spectrum of opportunities on the Forest from Semi-primitive to Urban, with emphasis on the less developed end of the spectrum. To offer a balanced level of developed and dispersed recreation experiences. Demand for dispersed recreation will be within capacity. Quality of experience will increase due to more intensive management. **Monitoring:** Effects on dispersed recreation are evaluated in the majority of environmental analyses for project proposals – whether or not they are recreation related. Changes to the Recreation Opportunity Spectrum (ROS) class are assessed and avoided if possible. **Results:** No decisions on site-specific projects in FY 2003 caused an analysis area's ROS class to change.
Recreation 2	**Goals:** The Forest will offer a wide range of opportunities for developed sites in the public and private sector to support recreationists, to provide barrier-free access, and to implement recreational strategies. **Monitoring:** Assessment of goal achievement for the recreation program is based on professional judgment by recreation specialists, public comments and information from Regional, Forest and District recreation managers. Customer satisfaction on how well we are managing the Forest is monitored through evaluation cards, newspaper articles and comments from recreation fee envelopes and walk-in visitors. Developed campgrounds and picnic areas are monitored at least on a weekly basis during the summer months by Forest Service law enforcement, district personnel, campground hosts and/or concessionaires, as well

as through cooperative agreements with state and county law enforcement. These comments provide input on the conditions of developed recreation sites, the presence of user conflicts and public safety problems. Supporting documentation is located at each ranger station or in the Forest Supervisor's office.

The National Recreation Visitor Use survey was undertaken on the Carson National Forest during FY 2003. The data collect should be available in 2004.

Taos Ski Valley (TSV) and Red River Ski Area (RRSA) operations are monitored at least once a week during the winter by the Questa snow ranger. Sipapu Ski Area operations are monitored at least once a month. Site inspections by Forest Service lift engineers are made at least once a season at each ski area. Supporting documentation for monitoring operations at TSV and RRSA is located at the Questa Ranger Station and at each ski area. Supporting documentation for monitoring operations at Sipapu is located at the Camino Real Ranger Station and at Sipapu Ski Area. Supporting documentation of lift inspections is located at the Southwestern Regional office in Albuquerque.

Results: Recreation use and demand appears to be experiencing a small, steady growth. Use is concentrated at developed sites, streams, rivers, lakes, wilderness and backcountry areas.

Several nearly barrier-free recreational facilities have been provided in recent years at Santa Barbara Campground, Echo Amphitheater Picnic Area and Hopewell Lake Campground.

For the past several years Hopewell Campground was closed for reconstruction. It was reopened for the 2002 summer season and the area experienced steady use in 2003.

Monitoring ski area operations has not exposed any noncompliance or safety violations.

Skier visits to respective ski areas.

Ski Season	Taos Sky Valley	Red River Ski Area	Sipapu Ski Area
1999-2000	173,031	98,351	14,068
2000-2001	248,814	104,012	14,573
2001-2002	201,113	107,840	14,300
2002-2003	196,162	97,874	28,447

The Enchanted Forest provided cross-country skiing opportunities for approximately

Program Area	Summary of Monitoring Conducted and Evaluation
	3,800 skiers in 2003. Snow conditions or lack of snow also influences the number of skiers. Red River Ski area and Sipapu Ski Area both permit snowboarding with the snowboarders reflected in the number of skiers. Overall, skiers are satisfied with the conditions of the four ski areas on the Carson, although a movement by the snowboarding community to open Taos Ski Valley to snowboarding surfaced in 1999. The snowboarding community continues to pressure Taos Ski Valley regarding allowance of snowboarding. This decision has been left up to the ski area operator. Many comments from skiers approve of the Ski Valley's decision to remain closed to snowboarding. This issue continues to resurface but the operators are adamant on not allowing snowboarders.
Recreation 3	**Goals:** Help the public enjoy their Forest visit and instill an understanding of the resources and uses of their National Forests. Wildlife recreation use will increase by 183 percent by the end of the planning period. This, however, is within capacity for this type of use. **Monitoring:** No specific monitoring of wildlife recreation use has taken place on the Forest. The NM Department of Game and Fish regulates hunting and fishing on the National Forest System lands. **Results:** Inquiries and comments received at the ranger stations and the Forest Supervisor's Office verify that many visitors come to see wildlife through active bird watching, camping, hiking and cross-country skiing.
Recreation 4	**Goals:** All developments are high quality and well maintained. They fill the needs of the users. **Monitoring:** Assessment of goal achievement for the recreation program is based on professional judgment by recreation specialists, public comments and information from Regional, Forest and District recreation managers. Customer satisfaction on how well we are managing the Forest is monitored through evaluation cards, newspaper articles and comments from recreation fee envelopes and walk-in visitors. Developed campgrounds and picnic areas are monitored at least on a weekly basis during the summer months by Forest Service law enforcement, district personnel, campground hosts and/or concessionaires, as well as through cooperative agreements with state and county law enforcement. These comments provide input on the conditions of developed recreation sites, the presence of user conflicts and public safety problems. Supporting documentation is located at each ranger station or in the Forest Supervisor's office. Recreation facility construction projects include reviews to ensure contract work meets specifications, environmental assessment requirements, and to monitor how well the design meets user needs. Such reviews have been performed at the Santa Barbara Campground, Echo Amphitheater Picnic Area and Hopewell Lake Campground. Supporting documentation is located at the Forest Supervisor's office. **Results:** Customer satisfaction on the condition of developed sites varies depending on the location and the age of the facility. The newest campgrounds, such as Agua

Program Area	Summary of Monitoring Conducted and Evaluation
	Piedra and Hopewell are experiencing positive comments. On the other hand, Taos Canyon facilities are heavily used and sites closest to Taos are frequently vandalized.
Recreation 5	**Goals:** Establish a full spectrum of trail opportunities, considering all modes of travel, ranging from opportunities fro challenged and adventure to opportunities for people with disabilities, and give special emphasis to the protection, development and management of specially designated areas and trails. **Monitoring:** Assessment of goal achievement for the recreation program is based on professional judgment by recreation specialists, public comments and information from Regional, Forest and District recreation managers. **Results:** Non-ATV hunters have been complaining over the increasing use of ATVs on the Forest during hunting season. There is little enforcement of ATV use off designated roads and trails. Hunters on the Jicarilla RD complain of the disturbance caused by an increase in gas drilling activity and traffic in their favorite hunting spots. ATV use in unauthorized areas is becoming a significant problem on the Forest. The development of a transportation plan that designates the type of use on roads and trails is needed. Involvement of the public to resolve issues and educate users is an integral part of designing a new transportation plan. In addition, the following recreation projects were completed to provide a quality recreational experience on the Forest, while protecting natural resources. Supporting documentation is located at the Forest Supervisor's office. A total of 125 miles of trail were inventoried and located using Global Positioning System techniques. The documentation is located at the Forest Supervisor's office. **Forest trail activities**

	FY 2000	FY 2001	FY 2002	FY2003
Trail Maintenance (miles)	40	20	162	28
Trail Condition Surveys (miles)	75	50	50	10
Trail Reconstruction (miles)	7	7	6	1

Recreation 6	**Goals:** Potential wilderness characteristics will be maintained In Management Area 20, in order that the areas can be considered for multiple use or wilderness recommendation when a new plan is prepared in 10 -15 years. **Monitoring:** In 1999, the President of the United States initiated the Roadless Area Conservation analysis for all National Forest System (NFS) lands. The Carson National Forest's Management Area 20 includes all inventoried roadless areas

Program Area	Summary of Monitoring Conducted and Evaluation
	identified in the Roadless Area Review and Evaluation II (RARE II), with the exception of a portion allocated for potential expansion of Sipapu Ski Area. The nation-wide Roadless Area Conservation Proposed Rule would prohibit any road building or timber harvesting in most RARE II inventoried roadless areas on NFS lands. The Roadless Area conservation Rules were promulgated in 2000. These rules have been a source of litigation since. Currently the Rules are not being implemented due to litigation. However, The Carson National Forest is maintaining the integrity of the roadless areas pending outcome of the litigation process **Results:** For the most part, the implementation of the Roadless Area Conservation proposal would duplicate protection for Management Area 20 already in place through Forest Plan standards and guidelines.
Recreation 7	**Goals:** Trails will be reconstructed and maintained at a level that provides public safety and travel and resource protection. **Monitoring:** The assessment is based on professional judgment of recreation specialists, public comments, and information from Regional, Forest and District recreation managers. **Results:** Trail use is primarily by recreationists and grazing permittees. Use levels appear to be moderate to heavy with a slight increase depending on the location of the trail and trailhead. Some trailheads provide information about recreational opportunities. In FY 2003, 28 of the 639 miles of trail were maintained and 1 mile of trail was reconstructed. Many trails do not meet trail standards (clearing, logging out, tread maintenance, signing, nonexistent trail logs, etc.) due to budget/staff limitations. Management decisions regarding acceptable limits, zoning, and resource emphases are often made informally, frequently lacking the support of coordinated plans or professionally established analysis methods.
Wilderness 1	**Goals:** Maintain an enduring high quality wilderness and provide a quality recreational experience. **Monitoring:** The assessment is based on professional judgment of recreation specialists, public comments, and information from Regional, Forest and District recreation managers. Volunteers and/or recreation specialists perform wilderness patrols several times during a summer. Patrols include inspections of trail conditions, dispersed camping areas and outfitter/guide permit use. Supporting documentation is located at each ranger station. **Results:** Wilderness use is primarily day-use by recreationists and grazing permittees. Wilderness use is increasing slightly and is primarily concentrated along trails in the Wheeler Peak and Pecos wilderness areas and Columbine-Hondo Wilderness Study Area. Most trailheads provide information about recreational opportunities and wilderness resource conservation issues. Regular patrols are becoming more infrequent as the number of district employees is reduced each year. Public complaints about the presence/impacts of cattle grazing

Program Area	Summary of Monitoring Conducted and Evaluation
	on aesthetics and ecosystems have occurred. Many trails do not meet trail standards (clearing, logging out, tread maintenance, signing, nonexistent trail logs, etc.) due to budget/staff limitations. Management decisions regarding acceptable limits, zoning and resource emphases are often made informally, frequently lacking the support of coordinated plans or professionally established analysis methods.
Wilderness 2	**Goals:** Maintain an enduring high quality wilderness trail system that is a source of minimal resource damage. **Monitoring:** The assessment is based on professional judgment of recreation specialists, public comments and information from Regional, Forest and District recreation managers. **Results:** Regular patrols are becoming more infrequent as the number of district employees is reduced each year. Wilderness use is primarily day-use by recreationists and grazing permittees. Wilderness use is increasing slightly. Use is primarily concentrated along trails in the Wheeler Peak and Pecos wilderness areas and Columbine-Hondo Wilderness Study Area. Most trailheads provide information about recreational opportunities and wilderness resource conservation issues. Public complaints about the presence/impacts of cattle grazing on aesthetics and ecosystems have occurred. Many trails do not meet trail standards (clearing, logging out, tread maintenance, signing, nonexistent trail logs, etc.) due to budget/staff limitations. Management decisions regarding acceptable limits, zoning and resource emphases are often made informally, frequently lacking the support of coordinated plans or professionally established analysis methods. Supporting documentation is located at each ranger station.
Wild and Scenic Rivers	**Goals:** Conduct a Wild and Scenic River eligibility assessment on all river and stream segments on the Carson National Forest and maintain and enhance the outstandingly remarkable values and free-flowing conditions of eligible and designated Wild and Scenic Rivers. **Monitoring:** Eligibility assessments have been conducted on all ranger districts with the exception of Canjilon Ranger District. These assessments involved an analysis team of field personnel – a biologist, hydrologist/soil scientist, recreation specialist, archeologist and technicians – familiar with the district. A representative from the NM Department of Game and Fish also participated. Rivers were sectioned into logical segments for evaluation. Each member of the team reviewed each segment and determined whether it supported any outstandingly remarkable values. Discussions were generated when there were differences of opinion and final determinations were based on consensus. The Bureau of Land Management monitors the wild and scenic designated portions of Rio Grande and Rio Chama that are on National Forest System lands. **Results:** Sixty-five river segments have been identified as eligible for Wild and Scenic designation. Supporting documentation is located at the Forest Supervisor's office. The outstandingly remarkable values for which each segment was deemed eligible will be protected until a suitability study has been completed or Congress

Program Area	Summary of Monitoring Conducted and Evaluation
	designates it as a Wild and Scenic River. Supporting documentation is located at the Forest Supervisor's Office. The outstandingly remarkable values of the Rio Grande and Rio Chama are being maintained.
Lands	**Goals:** Successfully complete, process or administer planned land exchanges, title claims, purchases, donations, withdrawal reviews, property boundary locations, special uses, memorandums of understanding, and the acquisition of needed rights-of-ways, to meet other program output needs (timber sales, range projects, recreation operations etc.) and the needs of other agencies, private parties and corporations. **Monitoring:** Conditions to be monitored are dictated by individual projects, applications, annual programs, etc. **Results:** Approximately 600 Special Use Permits related to real estate are administered on the Carson National Forest. In 2003, 6 new permits were processed and 26 permits (approximately 5%) were administered to standard. Supporting documentation is located at the Forest Supervisor's Office.
Protection 1 Drinking Water	**Goals:** Comply with state health and sanitation - codes to protect public health. All public potable water supplies will be in compliance with the Safe Drinking Water Act and applicable state laws. Wastewater treatment will comply with state laws. **Monitoring:** Monitor all potable water systems open to public use. **Results:** Water samples are taken once a month from all campgrounds (when open) and Forest Service administrative buildings (year-round). In 2003, tests found that water at all the campgrounds was safe. Supporting documentation is located at the Forest Supervisor's office.
Protection 2 Fire Suppression	**Goals:** Provide effective fire suppression to reduce or minimize fire risk as the projected increase in population is realized. **Monitoring:** Determine the effectiveness of fire suppression by – 1. Periodic inspections and reviews by specialists to determine if fire control organization is effective in controlling fire losses within acceptable limits. 2. Fire reviews of selected fires. **Results:** The 2003 fire season was one of the more challenging on record. The largest fire on or adjacent to the Carson National Forest was the Encebado Fire visible from the Taos community. This fire started on July 4, 2003. Many of the Carson's personnel contributed to the national fire fighting effort during the summer of 2003 in addition to the Encebado Fire suppression efforts. The Carson National Forest faced the possibility of an unprecedented fire season in 2003. The Carson had a total of 95 starts in 2003, which burned a total of over 232 acres. Although the majority of fires were less than one acre in size, one fire

exceeded 40 acres. This was the Orcones fire at 85 acres.

Wildfires on the Carson 1999-2003

	1999	2000	2001	2002	2003
Total Acres	342	160	226	31,238	232
Average Size (acres)	28.5	3.0	4.5	558	2.4
Number of Fires	12	53	50	56	95
Largest fire (acres)	323	185	50	92,194	85 5400 adjacent on Taos Pueblo lands

The magnitude of these fires is the result of two primary factors: a severe drought, accompanied by a series of storms that produced thousands of lightening strikes followed by windy conditions; and the long-term effects of almost a century of aggressively suppressing all wildfires that has led to an unnatural buildup of brush and small trees in out forests and rangelands.

Protection 4
Law Enforcement

Goals: Law enforcement efforts by the Forest Service, and aided by cooperative agreements with local sheriffs' departments, are adequate and commensurate with the goods and services produced on the Forest and Grasslands.

Monitoring: Professionally evaluate trend in law enforcement effectiveness based on reviewing caseloads, solution rates and public compliance. The evaluation will be based specifically on a review of 1) protection of cultural resources; 2) changes in ORV damage; 3) changes in fuelwood theft; 4) changes in the dollar cost of vandalism; 5) trends in user protection; and 6) recurrent law enforcement problems at developed recreation sites.

Results:

- Maintained signing in areas north of Red River to address illegal ATV use. Law enforcement efforts were also increased to address this concern.
- Over one third of these violation notices issued were for -- dumping private trash on national forest, cutting forest products without a permit and off road vehicle violations.
- The majority of incident reports issued in 2003 are for: exceeding the 14 day limit, leaving fires unattended, destruction of government property, and dogs not on a leash, removing forest products without a permit, and destruction of government

Program Area	Summary of Monitoring Conducted and Evaluation
	property (graffiti). ▪ Recurring law enforcement problems at developed recreation sites are exceeding the 14 day limit, leaving fires unattended, destruction of government property, and dogs not on a leash.
Air Quality Visibility – Class I Areas	**Goals:** Class I areas will retain good visibility to meet Class I standards. Visibility will be retained in form, line, texture and color of characteristic landscapes. **Monitoring:** Determine baseline condition of visibility and determine if any visibility degradation is occurring in the Class I areas. **Results:** After nearly 20 years of photo documentation of the Wheeler Peak Wilderness to detect changes in air quality of a Class I airshed, it has been determined that photo comparisons are qualitative data that do not provide substantive results in determining whether quantitative standards for air quality have been exceeded. Late in 2000, a new air quality monitoring station was installed in the Taos Ski Valley to monitor air quality in the Wheeler Peak wilderness area using quantitative data, such as percent particulate matter. As of yet, no reliable baseline data has been collected from the station. It is anticipated that the station will provide consistent data in the next two to three years. Fiscal year 2003 was the third year of data gathering at this site. In the mean time, photo documentation will continue.
Timber 1	**Goals:** Achieve a more balanced age class distribution, appropriate growing stock levels, appropriate rotations and provide wildlife habitat and other resource needs. Ensure that – 1) Rotation age and CMAI assumptions are correct -- silvicultural prescriptions follow management areas standards; 2) Silvicultural prescriptions precede vegetative treatments; 3) Silvicultural prescriptions are practical and achieve desired results. **Monitoring:** Determine age class distribution, growing stock levels, rotations and wildlife/resource needs through stand database reports; Timber Management Information System; silvicultural prescriptions; Staff field reviews of 5% of treatment projects. **Results:** Forest Plan goals for forest health, especially treatment of mid-seral vegetation to improve diversity, have not been met, but the few small projects accomplished each year continue to move the Forest towards its desired condition. Mixed conifer and ponderosa pine forests on the Carson still contain large areas of small, densely growing trees. These conditions pose a threat of catastrophic wildfire over extensive landscapes. Vegetation treatments on the Tres Piedras and El Rito ranger districts received post-treatment monitoring by the Forest or district silviculturalist to assess their effectiveness. Supporting documentation is located at the respective ranger stations. Periodic field visits to project areas by sale administrators, specialists and/or line

Program Area	Summary of Monitoring Conducted and Evaluation
	officers usually result in informal monitoring and evaluation of the application of best management practices or actions needed. Documentation is captured through specialist notes, sale administration inspection reports and/or photo points located at the ranger stations.
Timber 2 Timber Assumptions	**Goals:** Timber plans and projections support a sustained yield of forest products and achievement of multiple-resource objectives. Validate timber assumptions: volume, productivity, Management Area descriptions and acres harvested. **Monitoring:** Through sale review, EA's (environmental assessments), cruise summaries, TMIS (electronic database), compartment exams, stand database (use the same conversion ratios as used in Plan calculations), ensure that: ▪ board foot/cubic foot ratios are correct; ▪ volume/acre yield Is correct; ▪ management area descriptions are correct; ▪ schedule of acres harvested is correct. **Results:** The Carson National Forest large sale timber program was very limited in 1999-2003. Several small fuelwood and viga sales did occur. The schedule of sales outlined in the Forest Plan has been discarded. The sales listed are no longer valid based on many external factors such as of forest litigation. The board foot/cubic foot ratio used is determined at the region level. The ratio is accurate at approximately 1 CCF (hundred cubic feet) the same as .5 MBF (thousand board feet) or stated differently 1 MBF equals 2 CCF. Other measures are not being used.
Timber 3 Sawtimber and Products	**Goals:** Annual sale offerings will be made on a sustained yield basis. Meet Federal regulation, measure output; assure allowable sale quantity is not exceeded. **Monitoring:** PAMARs or other annual reporting systems and programmed harvest reports. **Results:** The large sale timber program of the Carson was not implemented in 2002. Several small sales, fuelwood and vigas, did occur. The amount harvested was below the minimum ingrowth on the Carson ensuring sustained yield. The allowable sale quantity was not exceeded. The Carson National Forest sold and harvested approximately 5 MMBF out of an allowable sale quantity of 42 MMBF.
Timber 4 Fuelwood	**Goals:** Green wood sales will continue on a sustained yield basis. Dead/dry firewood will continue to be available through timber-sale residue and natural mortality. **Monitoring:** Review annual total of firewood sale reports, total firewood advertised but not sold, free use and administrative or other use. **Results:** The Carson continued to provide the necessary firewood, latillas, vigas and other small products to the local populace. The amount of woody material provided

Program Area	Summary of Monitoring Conducted and Evaluation
	met the needs of the communities and local population.

	FY2000	FY2001	FY 2002	FY 2003
Latillas, and small products not convertible to volume				
Permits	1,655	481	649	816
Fuelwood				
Permits	3,918	3,686	3,775	3,750
Volume (cords)	19,001	14,132	18,377	17,885

Timber 5 Openings	**Goals:** Improve wildlife habitat through timber harvest by manipulation of stand sizes, methods of cut and juxtaposition of stands. **Monitoring:** Insure stand size of other harvest areas is appropriate through EA, presale and administrative reviews, and post sale reviews/project area. **Results:** Harvest prescriptions are geared toward the manipulation of wildlife habitat improvement. Guidelines for the Northern Goshawk are used to insure adequate opening size and number, retention of overstory trees. These guidelines are melded with the requirements of Mexican spotted owl recovery plans. The end result is harvest areas meeting wildlife habitat needs with any timber harvest the tool used to provide for wildlife habitat improvement.
Timber 6 Practices and Assumptions	**Goals:** All lands harvested for timber production as part of the allowable sale quantity are adequately restocked within 5 years after final harvest. **Monitoring:** Assure that regeneration is obtained within 5 years after – final harvest cut, and scheduled planting is accomplished through Annual Reforestation/TSI needs report, plantation survival surveys, silvicultural prescriptions, post sale administrative review, Timber Management Information System (TMIS), Stand Data Base/Acres. **Results:** Lands harvested are not harvested for timber production. Emphasis is on wildlife habitat improvement. Regeneration on harvests for other than timber production emphasis are not required to meet the 5 year time period. No lands were harvested for timber production reasons in 2003.

Program Area	Summary of Monitoring Conducted and Evaluation

Summary FY 2003

Activity	District	Acres
Post Treat-Regeneration Survey	D1	150
Post Treat-Regeneration Survey	D2	100
Natural Regeneration Certification	D2	100
Natural Regeneration Certification	D6	267
Post Treat-Regeneration Survey	D6	158
Post Treat-Regeneration Survey	D7	183
Post Treat-Plantation Survey	D7	183
Total Acres Regeneration Survey for 2003		**591**
Total Natural Regeneration Survey for 2003		**367**

Timber 7
Unsuitable Timberlands

Goals: Meet Federal regulations to periodically re-examine lands identified as not suited for timber production to determine if they have become suited and could be returned to timber production.

Monitoring: Evaluate the accuracy of suitable timberlands classification through --

1) Review new or updated soil survey data.
2) Review development of better technology for regeneration establishment.
3) Stand exams.
4) Timber Inventory and planning results.

The data monitored will be used as the basis for an evaluation to determine which lands are suited to timber production.

Results: The soil information, stand examination data, timber inventory, and

Program Area	Summary of Monitoring Conducted and Evaluation
	regeneration establishment technology has not changed since implementation of the Forest Plan. No stands identifies as unsuitable were placed in timber production category.
Minerals	**Goals:** To meet the requirements of the law, regulations, contract obligations, fiscal accountability, protection of surface resources and successful reclamation. The expected future conditions should be specified in the documentation of the approval of the activity, project, lease, sale, etc. **Monitoring:** The mineral program will be monitored through a combination of the MAR data reporting system, systems designed for individual project quality control, field examinations by Forest Staff personnel and the Activity review system. Management of the minerals activities: Environmental Assessments, bonds, bond justifications, response times for applications and plans of operations, quality of resource coordination, field checks for compliance of the terms of the operating plans, reasonableness of resource protection requirements, mineral sales program, pit plans, accountability, documentation, and reclamation. Concerns of public in 2003 include increase natural gas and oil drilling on Jicarilla Ranger District. **Results:** A Forest Geologist was hired in FY 2002. The San Juan Basin (Jicarilla Ranger District) has experienced an upturn in Applications for Permit to Drill (APD). These APD's are on lands leased prior to 1970. An environmental assessment is made for each APD or grouped APDs. An environmental impact study to commenced in FY 2002 concerning unleased lands and surface occupancy on this ranger district. The EIS is expected to include information related to a Forest Plan amendment concerning gas drilling. The EIS should be completed in late 2004 or early 2005.
Range 1 Unsatisfactory Range	**Goals:** Bring unsatisfactory ranges to satisfactory condition through increasing management intensity levels, constructing structural range improvements, adding nonstructural range improvements. **Monitoring:** Use allotment analysis data to update Grazing Statistical Report. **Results:** The drought over the last few years continued in 2003. This change in the weather has brought many hardships to cattle producers. Late entry dates and early removal continued to be use as intensive management options to reduce impacts to unsatisfactory ranges to aid in moving these ranges toward a satisfactory condition. See discussion under watershed improvement for details pertaining to range condition monitoring and actions to improve conditions.
Range 2 Range Condition and Trend	**Goals:** Range conditions will be improved at 2030 by decreasing unsatisfactory range to 68,883 acres; and increasing satisfactory range to 753,244 acres. **Monitoring:** Conduct range analysis per Regional standards by qualified Range Conservationists. **Results:** Improved range conditions have resulted from implementation of structural and nonstructural improvements, and more intensive management developed in

Program Area	Summary of Monitoring Conducted and Evaluation
	allotment management plans. Continued NEPA analysis on all of the Forest's allotments will help sustain this type of improvement. Drought conditions have slowed the progress of improving range conditions.
Range 3 Management Plans	**Monitoring:** Track allotment management plans through PAMARS. **Results:** The Forest completed one allotment management plan. However, the Forest is behind in meeting the schedule outlined in the Burns Amendment to the Recission Act. The Forest is striving to complete the analysis and documentation phase on numerous allotment environmental analyses.
Range 4 Range Development	**Goals:** To move toward balancing range use with capacity, the structural and nonstructural improvements will be added or reconstructed based on the allotment management plans and funding levels. **Monitoring:** Track data on completed range improvements (fences, waters, revegetation, etc.) through the existing RAMIS system and the annual grazing statistical report. **Results:** The needed data was reviewed, verified and entered in the Infra database by District personnel. The Range Infra Deferred Maintenance database has replaced the RAMIS database.
Range 5 Permitted Use	**Goals:** Through increased management and additional structural and nonstructural range improvements, range capacity is expected to increase from the present 119,000 AUM's to 136,000 AUM's in the fifth decade. **Monitoring:** Track through data generated from grazing permits and displayed in Grazing Statistical Report. **Results:** All permitted Use data for stocked allotments was verified/updated in the Range Infra database by Forest Personnel in FY 2001 and 2002. The database was maintained with information collected in FY 2003.
Range 6 Grazing Capacity	**Goals:** Grazing capacity is expected to exceed permitted use through the fifth decade. **Monitoring:** New analysis data updates Annual Grazing Statistical Report. **Results:** The grazing capacity was verified for the four allotments analyses, English, TCLP, Tienditas, and Knob, completed in 2003 through the NEPA process.
Visual Quality 1	**Goals:** Prevent acres with visual quality objectives of Retention or Partial Retention from being reduced by more than 20%. **Monitoring:** The Visual Resource Management System will be used as a basis of

Program Area	Summary of Monitoring Conducted and Evaluation
	the monitoring activity. **Results:** There was no activity that would reduce the visual quality objectives of Retention or Partial Retention in 2003.
Visual Quality 2	**Goals:** Visual Quality levels will be maintained or enhanced. **Monitoring:** Projects involving vegetative treatment or manipulation, road or trail construction and major development will be evaluated through the NEPA process to enhance or maintain visual quality levels. Results: Two powerline project analyses are on going or have been completed. Visual resource management is an integral part of both projects. It is expected that neither project will reduce the visual quality levels below current levels or not follow the standards and guidelines in the Forest Plan. Some enhancement should be expected where portions of the powerlines could be relocated or removed. The Talpa-Penasco 69 kV distribution line construction has started. The line is screened from view maintaining visual quality for most of its length. During construction the visual quality may be reduced.
Forest Plan Implementation	**Goals:** Assure compliance with and implementation of the Carson Forest Plan in accordance with its stated mission, goals, objectives and standards and guidelines. **Monitoring:** This will be done in light of funding or any other constraints **Results:** Each project implemented in 2003 was evaluated to insure compliance with the Forest Plan. There were no Forest Plan amendments in 2003. A Forest Plan correction was issued in FY 2003.

Baseline/Inventory Monitoring

- Contracts for wildlife population monitoring are planned to begin in FY 2003.
- Vegetation data are being collected on each ranger district. This information is being used to determine existing conditions for wildland urban interface and forest health projects, salvage sales, Mexican spotted owl thresholds and old growth at the landscape level, and Forest Plan Revision preparation. Vegetation conditions are recorded on maps and tracked in the RMRIS database and GIS. Photo history is also used to document changes in vegetation composition, structure and health. Much of this data determines where management activities are needed on the Forest to help reach a desired condition. Supporting documentation is located at the ranger stations and the Forest Supervisor's office.
- The Forest archeologist provides program oversight and quality control by reviewing all heritage resource clearances. The purpose of this type of monitoring is to gain overall knowledge of new sites found on the Forest and the course of action taken to protect them. Supporting documentation is located at either the ranger stations or the Forest Supervisor's office.

Implementation Monitoring

- Fuelwood monitoring includes field checking for "leave" trees and assessing how the public is harvesting. Monitoring information is considered when determining cleanup efforts needed for fuelwood areas. Cleanup efforts are also monitored. Recommendations and actions are normally documented and are located at the ranger stations.
- Precommercial thinning and salvage sale activities include post-sale inspections. Areas are examined to ensure contract requirements are met and results are documented in the RMRIS database. Supporting documentation is located at each of the ranger stations.
- Forage utilization is monitored periodically in grazing allotment pastures to determine whether over utilization is occurring. Supporting documentation is located at each of the ranger stations. The information is placed in the Range INFRA database.
- Range readiness is monitored on an annual basis to determine the time livestock can be released onto an allotment pasture. Current drought conditions have resulted in later than normal turnouts. Supporting documentation is located at each of the ranger stations.
- Archeological and heritage surveys are completed prior to the implementation of any ground disturbing proposals to assure protection or mitigation of cultural and/or historic sites. Supporting documentation is located at the Forest Supervisor's office.

Effectiveness Monitoring

- Prescribed fire treatments are monitored through on-site visits. Usually "before and after" photos are taken for burn projects to determine whether the anticipated objectives have been attained (i.e., has the palatability of the oak browse noticeably improved?). Recommendations and follow-up actions are determined. Supporting documentation is located at each of the ranger stations.
- Numerous public field trips are taken each year on the Carson to areas where projects have been implemented. These trips result in informal monitoring of the effectiveness of actions taken and provide excellent opportunities for the public to express their opinions about a type of project. Line officers are also involved in these trips. Supporting documentation is located in the NEPA project documentation at each of the ranger stations.
- Damage, erosion and changed conditions of prerecorded heritage resource sites are documented. Project areas are inspected upon project completion to verify that flagged archaeological sites have been avoided. Site monitoring forms are kept on file in the Forest Supervisor's office.

Certain assumptions made in the Carson Forest Plan are continually being validated by many of the monitoring activities listed above. Amendments, such as the 1996 region-wide amendment for the Mexican spotted owl, northern goshawk and old growth, can significantly change how we meet our goals and objectives, but not necessarily the assumptions or desired conditions made in the Forest Plan. Since the Forest Plan primarily focuses on desired condition rather than how to get there, we can be flexible in finding and determining better ways of moving toward our desired condition.

Upon reviewing Chapter 5 (Monitoring Plan) of the Carson Forest Plan, much of the Carson's monitoring activities are closely linked to the items listed in Chapter 5. Formal evaluation and documentation of these monitoring activities is limited, given the emphasis and budget constraints put on the specialists. The

information generated from these monitoring efforts achieves the intent of the majority of monitoring items found in Chapter 5 of the Forest Plan.

Monitoring Results

Introduction

Specifically this year, what has happened on the forest/grassland or externally that has affected the forest/grassland such as natural changes, social and economic changes, and management actions?

Drought

The drought conditions persisted for the entire year of 2003. The drought began about 1996 and has continued with short breaks of near normal moisture. The grasslands have been affected. The grass grew very little this past summer. The mature plants were often times less than 6 inches in height. Grazing was curtailed with some permittees not allowed to graze cattle. The act of not permitting cattle to graze many allotments and by extension much of the national forest aided in maintaining grasslands at their current levels.

Forested lands were also affected by the lack of moisture. The moisture stress is beginning to show with increase bark beetle and other insect population increases. Small spots of dead, dying, or damaged trees are evident across the forest. These areas are well scattered. These population centers could be a forbearer of increase insect attack and mortality across the forest.

The forestlands infested by insects continued to increase. The pinyon/juniper forest type is the hardest hit with nearly 277,000 affected. Ponderosa pine, mixed conifer, and the spruce-fir forest types all showed an increase in mortality by insects. One result is the loss of trees in all forest types, another is an increase in snags for cavity nesting birds and other animals, a third is the forest floor receiving more sunlight which in turns aids grasses and forbs cover. In short 'todo esta connectado todo lo dema´s'.

Fire season

The potential for large fires was present for an extended period of time during 2003. Northern New Mexico experienced the Orgones Fire. This fire burned over 85 acres. Lightning activity was prominent throughout much of June and July. Late season fire activity was higher and more severe than normal. Fire activity throughout the Southwest was high with numerous large fires, which stretched the resources on a local basis. Several lightning and human caused fires were detected. The fire personnel remaining on the forest extinguished these scattered fires.

Social and Economic Changes

The communities adjacent and within the forest boundaries are experiencing a continue influx of people. Many visitors return becoming residents. The attitudes brought by the newer residents conflict with many traditional

land uses and at time the cultures of current residents. There were continuing comments concerning cessation of grazing activities to protect the land. Yet many long-term residents have used or have family members who use the forestlands to supplement or provide incomes to sustain their families. The newer residents may conflict with the long-term residents causing tension with the Forest Service in the middle.

The economic changes have been in the seasonal business sector, and lodging and food establishments. Many of these jobs are on the lower end of the income level. Businesses capable of using forest products and paying higher wages have not moved into the area.

Ecosystem Health

The increasing insect populations in the pinyon/juniper woodland are a potential change agent. The outbreak could continue for many years reducing he amount of pinyon in these woodlands. The potential is to see the woodlands become juniper savannahs is a few years. The loss of the pinyon trees could benefit grasslands. As the trees die and fall to the ground the added litter should provide microenvironments suitable for grass establishment. The grass would likely increase giving the soil more vegetative cover. The current situation is a change in visuals as the trees die. The forestlands infested by insects continued to increase. The pinyon/juniper forest type is the hardest hit with nearly 278,000 acres affected. Ponderosa pine, mixed conifer, and the spruce-fir forest types all showed an increase in mortality by insects. One result is the loss of trees in all forest types, another is an increase in snags for cavity nesting birds and other animals, a third is the forest floor receiving more sunlight which in turns aids grasses and forbs cover. In short 'todo esta connectado todo lo dema´s'.

Selected Insect conditions and snag creation 1999-2003

Insect/Disease	1999	2000	2001	2002	2003	Estimated Snags * Created since 1999
Pinyon Bark Beetle (Ips)	No data collected	No data collected	Rudimentary data collected	16,240	277,615	881,565
Western Pine Beetle	No mortality detected	585	1500	3,265	3,325	26,025
Douglas-fir Beetle	No mortality detected	40	75	90	6,235	19,320
Spruce Beetle (included corkbark fire mortality)	1,235	955	1,230	1,675	5,840	32,805
					Total Snags (est)	**961,714**

*Snags are estimated using 3 trees over 9 inches that are killed in one clump to make the insect attack detectable from the air. One clump per acre is estimated to be killed. Total per insect is determined by total acres time 3 trees killed per acre.

Wildland Urban Interface (WUI) projects also contribute to ecosystem heath by reducing tree densities and helping to restore fire onto the landscape. In Fiscal 2003 five projects treated 1200 acres. Approximately 100 acres were treated with prescribed fire the remainder by mechanical methods (thinning). One result of these projects is to open the tree canopy increasing the sunlight received by the forest floor. The increased sunlight aids in establishment of grass and forbs cover.

Multiple Benefits to People

In FY 2003, fuelwood was provided to individuals. Northern New Mexico has a high proportion of resident who use fuelwood for heating and cooking. The Carson provided fuelwood supplies to local communities as is typified by the Camino Real Ranger District's stewardship blocks. Communities are both obtaining fuelwood and creating thinned areas to aid in providing increased fire protection to their homes.

The Carson National Forest has a long-standing tradition and desire to provide for the local communities while providing for national needs. The fuelwood program provides for both of these needs.

Scientific and Technical Assistance

Management activities were designed to improve the productivity of the natural resources while providing for people. The grazing program while delaying entry dates was designed to provide for the natural resources. Early and constant contact with livestock owners permitted the owners to reduce numbers or find other sources of feed. The range program continued to monitor the conditions of the allotments with the intent of providing the permittees an opportunity to graze the land.

The planned accomplishment of 6 allotment management plans was met.

Barriers To Effective Monitoring

The predominant barriers overriding effective monitoring and evaluation have been higher priority work and lack of funding. Congressional and budget intent comes to us functionally, and is still tied to targets. In addition, user groups want us to produce a "product" (wilderness experience, firewood, forage, clean campgrounds, etc.) for them. Few are asking for monitoring results. In order to show responsiveness toward the public and accomplishments to Congress, we maintain focus on products and targets. Often any internal or external interest there may be in monitoring is focused on the "gotcha" versus the adaptive management of learning. People or special interest groups are more interested in using our deficient documentation of monitoring activities as a way of demonstrating that we are not following regulations.

Status of Previous Year's Recommendations and Current Year's Recommendations

Status of Recommendations

--Forest Plan Direction for the Management of Mexican Spotted Owl and Northern Goshawk Habitat and Old Growth

Recommendation for 1999:

Correction pages have not been developed for the Carson Forest Plan. The Carson is continuing to use the Record of Decision signed by the Regional Forester for direction on the management of Mexican spotted owl and northern goshawk, as well as, old growth.

Recommendation for 2003:

Develop and issue correction pages for the Forest Plan to incorporate the changes in standards and guidelines made through the June, 1996 Record of Decision (ROD) for Amendment of Forest Plans. This region-wide amendment includes direction for the Mexican spotted owl, northern goshawk and old growth. Currently the ROD is used as a separate document to the Forest Plan.

--Inventory of River Sections Eligible for Wild and Scenic River Designation

Recommendation for 1999:

An inventory has not been completed for the entire Carson National Forest. Eligibility analyses have been completed on all ranger districts, except Canjilon.

Recommendation for 2003:

The eligibility and classification inventory and analysis for wild/scenic/recreational river designation for the Forest to Management Area 18 was completed in January 2002 (FY 2003). This will protect these areas until a suitability assessment can be done. A Forest Plan amendment (#12) added language to aid in protecting areas until the suitability assessments can be done in the future.

--Forest Plan Direction for the Vallecitos Federal Sustained Yield Unit

Recommendation for 1999:

Most of the technical writing for the proposed amendment is complete.

The proposed changes must still go through the NEPA process.

Recommendation for 2003:

Amend the Vallecitos Federal Sustained Yield Unit section of the Carson Forest Plan to reflect the intent of two court settlements (March, 1996).

--The Carson Forest Plan as a *"User Friendly" Document*

Recommendation for 1999:

Review and reorganization of the Forest Plan document has not been completed.

Recommendation for 2003:

Review of the Forest Plan and elimination of extraneous information is a "nice thing to do", but with current funding and workload this is not a priority. Ideas on making the Forest Plan more accessible and easy to read will be accomplished as amendments are completed to comply with Forest Plan revision.

Recommendation for 2003:

Compose a white paper analyzing the existing status of the management indicator species (MIS) listed in the Carson Forest Plan EIS. When MIS were identified and selected (according to CFR 219.19) all federally and State listed and Forest sensitive species were included. Many of these species have not been known to exist on the Forest for many years or not at all. Other species are only found on the periphery of the Forest.

The MIS assessment was completed in FY 2003. Data collection continued with the collected data to be added in FY 2004. This document is a living document to be updated on an annual basis.