

Annual Monitoring Report

Gila National Forest

2001 - 2004

Overview

This report summarizes monitoring results on the Gila National Forest from 2001 through 2004. Recommendations are provided to improve effectiveness of the current monitoring plan as outlined in the Gila National Forest Land Management Plan (Forest Plan). A monitoring action plan for 2005 work activities is provided as part of this report.

1. Monitoring and Trend Evaluation

Monitoring and trend evaluations are summarized for the following 14 resources:

- Air
- Costs
- Cultural Resources
- Facilities
- Fire
- Lands
- Protection
- Range
- Recreation
- Riparian
- Soil and Water
- Timber
- Wilderness
- Wildlife

Monitoring activities, monitoring frequencies, accuracy and precision standards vary for each of the 14 resource items listed above. Individual monitoring activities are selected annually based on the annual plan of work, not all monitoring items are applicable each year. Annual work plan activities are formulated based on Regional and Forest priorities, concerns expressed by land

users and land managers, and agency funding. This report lists all 33 monitoring activities and provides rationale for selection or non-selection.

Air

Air 1: Visibility in Class I Wilderness Areas

Monitoring Intent

Obtain baseline condition of visibility and determine if any visibility degradation is occurring in Class I areas.

Monitoring Method/Unit of Measure

The Forest Plan states that monitoring will occur through the use of an automated camera system and additional particulate sampling. Color slides are to be analyzed for standard visual range by micro densitometer. This method, however, is no longer used due to availability of new technology that has been adopted by Region 3. The Gila National Forest is a participant in the Interagency Monitoring of Protected Visual Environments (IMPROVE) particulate monitoring network in 1994. The IMPROVE protocol aerosol monitoring program is designed to collect quantitative information on the composition and concentration of fine (PM_{2.5}) aerosol particles that reduce visibility. These data correlate visibility with aerosol concentrations and compositions. The IMPROVE site collects fine and coarse particles from the air in sizes ranging from 0 – 10 mm. These particles are then analyzed for elemental composition, acidic gases (nitrate, sulfate, and chlorine), organic and elemental carbon, and Particulate Matter 10 mass loading. Optical extinction is also collected at the site through the use of a nephelometer, which measures light scattered by aerosols and gasses in a sampled air volume.

Measuring Frequency

The Forest Plan states that pictures will be taken 3 times daily, with particulate data collected on opportunity basis. This frequency is no longer valid in the IMPROVE monitoring protocol. The IMPROVE site is programmed to collect two twenty-four hour samples per week, on Wednesdays and Saturdays from midnight to midnight. The filter cassettes are changed weekly by on-site personnel and shipped to University of California at Davis for processing and analysis.

Percent Accuracy/Precision

The Forest Plan states that these values will be +10%; +10%. These values are not consistent with IMPROVE monitoring values. The following table shows the relative precision of key measured variables, calculated by taking the ratio of mean precision divided by mean concentration:

Range	Key Measured Variables
4%-6%	PM2.5, PM10, S, Si, K, Ca, Fe, Cu, Zn, SO4=, NO3-, SO2
6%-15%	H, Na, Ti, Se, As, Br, Sr, Pb, O4, E1
>15%	V, Mn, O1, O2, O3, OP, E2, E3

Re-evaluation

The Forest Plan states that re-evaluation needs to occur when form, line texture, and color of characteristic landscape is not clearly distinguishable from middle ground. These criteria do not pertain to IMPROVE monitoring protocol. The IMPROVE site data is evaluated by the University of California at Davis, which then makes a determination if a problem is indicated. Correspondence then occurs with the Forest to determine if there is equipment error, or if a valid air quality problem is occurring.

Monitoring and Trend Evaluation

In 2002, the Gila Wilderness Class I airshed was formally certified for visibility impairment greater than ten percent (10%) above natural background. This certification was based, in part, on collected monitoring data at the Forest's site near the Gila Cliff Dwellings, adjacent to the wilderness area. In the past four years, climate and resource conditions have led to a high risk and occurrence of extreme wildland fire behavior across the Southwest. Smoke from these occurrences has contributed, at times, to degradation of visibility in the Wilderness. In addition, the Forest has continued to be an advocate of fire use fires for resource benefit. This type of management may contribute to smoke lingering for a longer period of time in Wilderness. In urban areas south of the Forest (Deming, Lordsburg), energy facilities have increased their emission outputs, however modeling has indicated that no negative impacts to air quality are expected to the Gila Wilderness. Over the past four years, trends for visibility have likely been static from October through March, with more days of decreased visibility possibly occurring during spring and summer fire season. Long term trend data is currently unavailable for the Gila site on the IMPROVE website (<http://vista.cira.colostate.edu/improve/Default.htm>), as six years of data were not available at the time of the analysis.

Recommendations

Air 1: Visibility in Class I Wilderness Areas

1. Request the regional contract be modified to include an annual summary of air quality for summer months and special summary reports that address large fire events.
2. Create a new monitoring activity during Forest Plan revision (2006) that address air quality during prescribed fire activities to aid in tracking impacts to visibility in the Gila Wilderness airshed.

Costs

Cost 1: Units costs by selected activities

Monitoring Intent

Verify ability to implement Forest Plan

Monitoring Method/Unit of Measure

Expanded Budget Line Item (EBLI) which has replaced PAMARS

Monitoring and Trend Evaluation

Measuring progress toward achieving the goals, objectives and standards of the Forest plan using unit costs is a difficult measure and not completely effective tool. Fund code definitions have changed extensively over recent years and certain fund codes have been added, deleted and or combined during this period. For example, in recent years three EBLI's were used to allocate recreation management dollars—recreation management, heritage resources and wilderness. Other similar changes occurred in most other activities. In addition, accomplishment definitions have changed significantly over recent years with the implementation of the Budget Formulation and Execution System. This makes comparisons on unit costs difficult and an ineffective tool for monitoring results.

Cost 2: Total annual budget

Monitoring Activity Description

Verify ability to implement Forest Plan

Monitoring Method/Unit of Measure

Annual PAMARS reporting system and Regional Forester's Program, Budgeting and Information System.

Monitoring and Trend Evaluation

An analysis of the Forest's total annual budget over the last three years shows that actual budget has not varied more than -5% or +10% from an average over the past three years by main-head appropriation. Total budgets have varied more than the standard of measure when such factors as inflation and increased personnel salary costs are considered. It is unknown how this has affected the Forest's ability to implement the Forest plan without additional analysis as to how monitoring this item is a true measure of plan implementation.

Cost 3: Budget by program component

Monitoring Activity Description: Verify ability to implement Forest Plan

Monitoring Method/Unit of Measure

Annual PAMARS reporting system and Regional Forester's Program, Budgeting and Information System.

Monitoring and Trend Evaluation

As with Cost 1 above, measuring progress toward achieving the goals, objectives and standards of the Forest plan using this item is a difficult measure and not completely effective tool. Fund code definitions have changed extensively over recent years and certain fund codes have been added, deleted and or combined during this period. For example, in recent years three EBLI's were used to allocate recreation management dollars—recreation management, heritage resources and wilderness. Other similar changes occurred in most other activities. In addition, accomplishment definitions have changed significantly over recent years with the implementation of the Budget Formulation and Execution System. This makes comparisons on unit costs difficult and an ineffective tool for monitoring results.

Recommendations

Costs

1. Re-evaluate monitoring items during Forest Plan revision.

Cultural Resources

Cultural Resources 1: Protection of Significant Cultural Properties

Monitoring Intent

Compliance with law and executive order; assure resource protection.

Monitoring Method/Unit of Measure

Aerial and ground inspection in conjunction with other resource activities.

Measuring Frequency

Annual

Percent Accuracy/Precision

No variance allowed.

Monitoring and Trend Evaluation

All significant cultural resources encountered each year during cultural resource compliance activities (i.e. Sec. 106 of the National Historic Preservation Act) are assessed, inspected, inventoried and monitored. In addition, a program of site preservation and protection under Sec. 110 provides inventory and monitoring of

additional significant cultural sites every year. These include both previously recorded and newly identified cultural resource sites.

Site “protection”, under the NHPA, means that the federal agency (Gila National Forest) takes into account the effects of its actions (i.e. ground-disturbing projects) on significant cultural resources. On the Gila NF, this takes the form of either avoiding project effects to archeological and historic sites through project design, mitigating effects through a variety of data recovery techniques, or following protocols and treatments provided in the Forest Service Programmatic Agreement with the New Mexico State Historic Preservation Office.

On an annual basis from FY2001 through 2004, 80 to 315 cultural resource sites per year were monitored and inspected in conjunction with other resource activities, or Sec.110 activities. The wide range in accomplishments from one year to the next is due to the timing of various initiatives (such as Infra database, deferred maintenance condition assessments, roads protocol tiered to programmatic agreement, etc.), heritage program funding for Sec.110 activities, and level of compliance inventory required by the Forest’s program of work every year.

The current trend for numbers of cultural sites inventoried and monitored each year in this category is in the low hundreds (less than 500) for those years that deferred maintenance condition assessments are undertaken, and less than 100 in those years where routine Sec. 106 compliance and Sec. 110 projects are the main activities. The Forest meets the intent of this item with 100% accuracy by complying with laws and executive orders related to assuring cultural resource protection and consideration for all projects in the Forest’s program of work.

However, unauthorized and illegal activities (under the Archaeological Resources Protection Act) by members of the public are ongoing at a number of archeological sites, and continue to be a heritage program and law enforcement issue. See item “Protection 1” for further information.

Cultural Resources 2: Cultural Resource Compliance

Intent

Meet Federal regulation; ensure project compliance with guidelines.

Monitoring Method/Unit of Measure

Approved cultural resource clearance for each ground disturbing activity project.

Measuring Frequency

Before every ground disturbing activity.

Percent Accuracy/Precision

No variance allowed.

Monitoring and Trend Evaluation

The Gila National Forest completes a cultural resource compliance (“clearance”) report for each ground-disturbing project in accordance with the 36 CFR 800 regulations of the National Historic Preservation Act, or the Forest Service Region 3 Programmatic Agreement with the New Mexico State Historic Preservation Office (which offers an approved alternate process that complies with federal regulations). Appropriate, legally mandated concurrence is obtained from New Mexico SHPO for each of these reports.

Under 36 CFR 800, the “clearance” is completed prior to each ground disturbing activity. Under the Programmatic Agreement, if there are no cultural resources in the project area, or no cultural resources will be affected, the project is given approval to proceed, and the “clearance” report is completed within 30 days.

From FY2001 through 2004, the number of cultural resource compliance reports for ground disturbing projects ranged from 62 to 98 per year (average: 82), representing intensive inventories of 7,326 to 16,440 acres (average: 10,726). These projects include both in-house Forest-initiated activities, and externally initiated special uses.

This accomplishment meets the intent of this item with 100% accuracy by following federal regulations and Forest Service direction to obtain cultural resource “clearance”, concurrence, and compliance for all known ground disturbing projects.

The current trend is toward larger but equally numerous projects, resulting in greater acreage inventoried, but a fairly steady number of compliance reports. There is an emphasis on large, landscape level fuels reduction, ecosystem management, and grazing allotment permit renewal projects for which sample surveys are undertaken for cultural resource compliance. The current heritage workforce is spread thin in meeting the demands of this trend.

Recommendations

1. Add Native American Consultation under the National Historic Preservation Act as a new monitoring activity during Forest Plan revision. Number of consultation letters.

Facilities

Facilities 1: Forest transportation system

Monitoring Intent

Assure adequate road system to meet goals and objectives of Forest Plan.

Monitoring Method/Unit of Measure

National Forest Transportation Inventory System miles constructed and reconstructed.

Road management records on miles of travelways closed.

Road maintenance records for roads maintained to standard.

Traffic use and distribution data will be collected on 5% of the Forest system from:

- 1) State of New Mexico Highway Department;
- 2) Forest Service traffic

Measuring Frequency

Annual

Percent Accuracy/Precision

+15%; +15%

Variability that would indicate Re-evaluation

Change in average size of the system and in average miles not maintained to standard that exceed 25% of planned level. Review every 3 years.

Monitoring and Trend Evaluation***Amount and distribution of use of the Forest transportation system and the total miles in the system.***

The transportation system inventory is verified every year in September and a report is generated showing the number of miles of road in each maintenance level category. At the end of FY 2004, the following mileages were reported: Level 1 - 530 miles, level 2 - 4,077 miles, level 3 – 441 miles, level 4 – 159 miles, level 5 – 23 miles. Of the total 5,230 miles that comprise the transportation system, 818 miles are considered to be arterial and collector type roads, while the majority of the remaining 4,412 miles are classified as high clearance vehicle roads. Any changes in the disposition of roads are recorded in the Travel Routes module of INFRA. The number of miles of roads obliterated (decommissioned) on an annual basis has averaged 20 miles over the last five years, as compared with near 45 miles over the previous 5 year period.

Assure adequate road system to meet goals and objectives of Forest Plan.

On an annual basis, the engineering staff meets with each District Ranger to determine construction, reconstruction and maintenance needs for the coming fiscal year. Upon completion of District meetings, an overall Forest priority schedule is developed for project implementation. No new roads were constructed within the 1999-2004 time period. Road reconstruction over the same time period averaged approximately 10 miles on an annual basis, while road maintenance averaged approximately 680 miles an annual basis.

National Forest Transportation Inventory System. Miles constructed and reconstructed.

At the end of each fiscal year, a report is generated listing the amount of roads that were constructed/reconstructed over the past 12 months. Trends show that as a result of reduced roads related budgets, less construction/reconstruction projects are being completed.

Road management records on miles of travel-ways closed.

The INFRA database is used to track the disposition of each road within the Forest, with one of the categories being closed roads. The current inventory shows that 530 miles of roads are classified as closed. While the number of closed roads does vary slightly from year to year, the number has remained fairly stable over the last 10 years.

Road maintenance records for roads maintained to standard.

The road maintenance crew tracks their operations on a daily basis on paper forms. Those forms are retained in the Operations Engineer's files. In FY 2004, 1% of the roads were maintained to standard. Trends indicate that no substantial change in the percentage of roads maintained to standard will occur in the near future. This is mainly due to the 35% decrease in road maintenance budgets over the last four years.

Change in average size of the system and in average miles not maintained to standard that exceed 25% of planned level. Review every 3 years.

The number of miles of roads within each maintenance level category are verified each September. Trends show that decreasing budgets are causing the number of miles of roads maintained to standard to decrease. As a result, the amount of deferred maintenance in each road maintenance category is steadily increasing over time. At the end of FY 2004, the following deferred maintenance needs were shown: Level 1 - \$ 548,000, level 2 - \$ 6,988,000, level 3 - \$ 50,105,000, level 4 - \$ 75,886,000, level 5 - \$ 31,724,000. Deferred maintenance inventories were started in 1999, therefore no data is available prior to that date.

The Gila National Forest will be able to effectively implement the travel management portion of the Forest plan. However, with decreasing budgets, it is important to note that the amount of maintenance performed on passenger car roads (level 3-5) will decrease accordingly.

Recommendations

1. Traffic counting is no longer utilized as a monitoring measure on the Forest. Recommend removal of this measuring method during Forest Plan revision.

Fire Management

Fire Management 1: Fire Suppression Effectiveness

Monitoring Intent

Federal regulations, measure prescriptions and effects.

Monitoring Method/Unit of Measure

- a) Periodic inspections and review to determine if the fire management organization is effective in controlling fire losses within prescription
- b) The use of the fire budget analysis process to determine fire management efficiency
- c) Fire review of select res.

Measuring Frequency

Annual inspections, periodic reviews, and fire budget analysis as needed.

Percent Accuracy/Precision

+10%; +10%

Variability that would indicate Re-evaluation

Fire management organization is not insuring compliance with standards and guidelines applied to 90% of the wildfires. Reviewed every 3 years.

Monitoring and Trend Evaluation

Annual and periodic reviews of the fire management organization were conducted from FY2001 through FY2004, to determine the effectiveness in meeting fire suppression needs on the Forest. A comprehensive unit review of the fire organization was conducted in May of each year.

The Fire Qualifications Review Committee on Forest provides oversight for the qualifications and training of approximately 250 to 300 people. Training was conducted each year to ensure crew safety and effectiveness in managing wildland fire. All Incident Qualification carded fire fighters both seasonal and permanent undergo basic firefighter training S130 /190 or a refresher. Additional training is taken as required for different positions and skill needs.

The budgeting process was updated as needed to address needs in the fire organization. This is currently done in the National Fire Management Analysis System (NFMAS). The forest is currently working on the Fire Planning Analysis (FPA) process that will be implemented in 2007, and will replace NFMAS.

Fire reviews were conducted on larger fires with focus on wildland fire use fires that the forest has actively engaged in, having treated over 220,000 acre from FY2001 through FY2004. In general, the objective of managing fire to achieve resource benefits is being met.

Fire Management 2: Project generated fuel treatment.

Monitoring Intent

Federal regulations, measure prescriptions and effects. Assure that fuel treatment following the various timber activities is meeting fire protection and insect and disease control objectives.

Monitoring Methods / Units of Measure

Complete annual fuel treatment report, generated by district personnel directly associated with fuels treatment on the Forest. Fire Management 2 is interpreted to address only activity fuels.

Measuring Frequency

Annual

Percent Accuracy/Precision

+10%; +10%

Variability that would indicate Re-evaluation

Less than 80% of the fuels are not being treated within 2 years of generation.

Monitoring and Trend Evaluation:

Fire Activity

The Forest is utilizing fire use, both manager and natural ignitions, to re-establish the natural role of fire into the forest ecosystem. Over the last four years, the Forest has treated approximately 81,000 acres with prescribed fire and 220,000 acres with wildland fire use. In FY2003, the Gila treated 167,000 acres with wildland fire use, with acreage realized inside and outside the wilderness areas. Some the larger fires included Dry Lake at 65,000 acres, Boiler at 58,000 acres, Moonshine at 27,000 acres, and Ten Cow at 13,000 acres.

The Forest continues to treat fuels across the landscape. However, in the last four years the project emphasis has focused on the wildland urban interface (WUI) areas. Most of this work has been primarily mechanical treatment, removing accumulation of fuels around these areas. Secondary treatments may utilize fire to maintain the original fuel reduction treatment. The Forest still continues to treat large areas other than WUI to encourage fire to resume it's natural role in the environment and provide for a healthier forest landscape.

In general, there is support for fire to assume its natural role. Smoke is an issue when it settles into a community area. However, this has been the exception, rather than the rule. We work with the New Mexico Air Quality Bureau and register burn activities as required by the New Mexico Smoke Management Program.

Recommendations

It is recommended that the fuel monitoring item (Fire 2) include both activity and natural fuels. This would include fire use acres, which is the result of fire treatments associated with prescribed burns and wildland fire use fires.

Lands

Lands 1: Rights-of-way acquired

Monitoring Intent

Meet Federal regulations: measured prescriptions and effects.

Monitoring Method/Unit of Measure

Work accomplishment report/ miles.

Measuring Frequency

Annual

Percent Accuracy/Precision

+5%; +5%

Variability that would indicate Re-evaluation

Failure to acquire projected needed rights-of-way at the end of the seventh year.

Monitoring and Trend Evaluation

The priority for rights-of-way acquisition are: 1) resource harvesting programs; 2) administration of National Forest lands and 3) public access to National Forest lands (pg. 38). Between FY 2000 through 2004, approximately 0.77 acres of trail and 6.85 acres of road rights-of-way were acquired.

Over the past years, private landowners have blocked traditional access to the Forest by exercising their private land rights. Acquisition of rights-of-way ensures that the public will continue to have access to the Forest. As timber harvesting programs have declined, the need for access has also declined. Access for the range program has not been an issue. Instead, the need for access for recreation and administration has increased since the Forest plan was approved due to traditional routes being blocked.

At this time, right-of-way acquisition is dependent on willing sellers. The availability of willing sellers is not predictable. Although it is useful to determine highest priority ROW acquisition to determine who to approach, the actual cases being followed through are the ones with willing sellers; not necessarily, the highest priority cases.

Public access is not solely dependent on Forest Service acquiring easement. By law, County roads are open to the public. In addition, as subdivisions are created, some of the subdivision roads are dedicated to public use; generally, they are turned over to the County.

NFLM funding has been limited in the past with the bulk of the funding toward special use management. In the next Forest plan revision, it may be appropriate to review monitoring requirements.

Easements: Acquisition of rights-of-way through easements

S15, T21S R17W: Nair road easement: 257.31 ft x 66 wide =0.39 ac; provides access to approximately 14 sections of National Forest; acquired 2000

Land Acquisition: Acquisition of rights-of-way through land acquisition. Assumes road width of 66 feet and trail width of 10 feet.

Trails

S33, T14S R9W: approximately ¼ mile of FT 114 or approximately 0.3 acres

S34, T14S R9W; approximately ¼ mile of FT 114 or approximately 0.3 acres

S27, 28 T13S R9W; approximately 726 feet of FT 110 or approximately 0.17 acres

Roads

S34, T14S R9W: approximately ¼ mile of FR 761 or approximately 2 acres

S3, T13S R9W; approximately 484 feet of FR 730 or approximately 0.73 acres

S10, T13S R9W; approximately 1140 feet of FR 4081A or approximately 1.73 acres

The table below lists the projects in Table 10, Plan Correction No.1, 7/1991. Locations within the Forest where ROW's are needed are broken out by parcel.

Road/Trail	Name	Miles	Status As of 6/21/2005
TR 724	Turkey Creek Trail	0.3	FT 724 is entirely on NF; No ROW acquired for FT 155 in S15, T14S R16W, 0.3 miles
TR 179	DeLoche Trail	0.4	S1, T11S R19W: No ROW acquired. Per decision of Ranger, the trail is to be rerouted
TR 708	East Fork Jeep Trail	2.0	S9, T13S R13W: No ROW acquired S3, 4, T13S R13W: No ROW acquired S11, T13S R13W: No ROW acquired;
TR 247	Sapillo Trail	0.4	S31, T14S R13W: No ROW acquired
TR 77	Bloodgood and Cooney	0.4	S27, T14S R11W: No ROW acquired through the Bloodgood Place. Trail 77 was rerouted from the Mimbres River Trailhead at the Bloodgood Place to the Continental Divide Trailhead. S33, T14S R11W: Trail 77 does not go through the Cooney Place.

Road/Trail	Name	Miles	Status As of 6/21/2005
FR 506	Bear Creek	1.5	S20, 24, T16S R14W; No ROW acquired; Road is located in creek bottom and Forest should review whether it still wants to pursue ROW
FR 522	Tierra Blanca	1.0	S20, T16S R8W: No ROW acquired; prior to FY 2000, the road was rerouted around the private land. Portion of road outside of NF is Sierra County B013
FR 19	Bill Knight Gap	0.1	Now Catron County Road B-007
FR 19	Spur Lake	0.3	Now Catron County Road B-007
FR 157S	Hermosa	14.5	Probably should be FR 157N S20, T12S R8W is Sierra County Road C003; S23, T13S R9W: Most of the road was rerouted around the private land. Right-of-way on the remaining portion of the road on private land was acquired prior to FY 2000.
FR 3228	Wild Horse	1.5	Unable to determine road location
FR 231	Corduroy Canyon	10.0	S31, T8S R10W; S6, 7 T9S R10W, S12, 14, 15, 21, 22, 28, 29, 30, 31 T9S R11W, S1, T10S R12W: No ROW acquired
FR 524, 902, 896, 758	Area 2D Access	10.0	FR 524: S23, T10S R9W: No ROW acquired FR 524: S30, T10S R8W: No ROW acquired FR 902: S1, T10S R9W: No ROW acquired FR 896: S1, T11S R9W: No ROW acquired FR 896: (outside of NF); S8-10, T11S R8W: No ROW acquired FR 758: S18, T11S R8W; No ROW acquired FR 758: S12, T11S R9W: No ROW acquired FR 758 (outside of NF) S17, 21, T11S R8W: No ROW acquired

Road/Trail	Name	Miles	Status As of 6/21/2005
FR 157N	North Percha	3.0	Probably FR 157S, now known as Kingston (outside the NF), S4, 9, 16, T16S R8W: No ROW acquired S24, 25, T15S R9W: No ROW acquired S36, T15S R9W: No ROW acquired
FR 40E	Kingston	2.0	S18, T16S R8W: No ROW acquired S13, T16S R9W: No ROW acquired
FR 226	Chloride Creek	2.0	S31, T10S R10W ROW acquired in 1978 (outside of NF) is Sierra County Road C006
FR 142	Snow Lake	0.5	S22, T10S R15W: now Catron County Road C-021 (outside of NF):now Catron County Road C-021
FR 521	Adobe	2.8	S22, T9S R10W; ROW acquisition in progress (outside of NF): S12, S7, T7S R9W; S17, 18, 19, 30 T7S R10; S1, 12 T8S R10W
FR 886	Royal John	8.5	(outside of NF): Grant County Road 3-77 S9, 17, T17S R9W: No ROW acquired.
FR 210	Centerfire Creek	4.7	Now Catron County Road B-009
FR 28	Y Canyon TS	0.3	Outside of NF: Catron County Road B-019 and B-054 S24, 25 T7S R15W: Now Catron County Road B-054
FR 49	Toriette Lakes	0.5	FY 2004 Review of existing deeds showed that the Forest already has a 1955 right-of-way for FR 49.
FR 519	Frisco Hot Springs	0.5	No right-of-way acquired; Forest rerouted access to Sundial Mountain Road
FR 216 and 23	East Camp	2.0	FR 216: Now Catron County Road B-012 FR 23: Now Catron County Road B-029
<i>Total</i>		69.2	

Recommendations

Of the 69.2 miles of trail and road access identified to be acquired, 0 miles have been acquired between FY 2000 and FY 2004. As this exceeds the 5% of variation, the Forest Plan should be reevaluated during revision.

Protection

Protection 1: Law enforcement

Monitoring Intent

Federal regulation. Increase law enforcement effects by the Forest Service, aided by cooperative agreements with local Sheriff's Departments, commensurate with the goods and services produced on the Forest.

Monitoring Method/Unit of Measure

Professional evaluation of trend based on a review of case loads, solution rates, and public complaints. The evaluation will be based on a review of 1) protection of cultural resources; 2) fuelwood theft; 3) fire and recreation violations; 4) wilderness entry; 5) occupancy use; 6) ORV damage; 7) dollar cost of vandalism; and 8) trends in user protection. Data in the Lemars system will be reviewed and used as a Data Base.

Measuring Frequency

The Lemars system is updated monthly.

Percent Accuracy/Precision

+10%; +10%

Variability that would indicate Re-evaluation

Review every 3 years indicates law enforcement activities are becoming less effective.

Monitoring and Trend Evaluation

The Gila National Forest has shown an increase in activity in all the requested evaluation criteria. This can be shown more in incident reports than in violation and case reports. There are three officers and one Special Agent to cover the 3.3 million acres.

The agency database only tracks violations that are processed. Many violations occur that are unrecorded. Violations related to damage of cultural resources sites that are recorded in the agency database do not accurately reflect the number of violations that are occurring on the forest. The Gila National Forest has a relatively high number of cultural resource sites. A large proportion of sites

are not checked on a regular basis and there are incidents and cases that are unreported.

Fuelwood theft on the forest has increased over the years. There are more individuals using the sale of fuelwood to increase their income. The lack of easily accessible dead oak and juniper has pushed cutters to cut green wood. Even when green fuelwood areas are provided the cutters are not purchasing them.

Fire and Recreation incidents have increased over the past years. There are more visitors coming to the forest. This increases the chances for conflicts between forest users. Due to the severe fire seasons there have been more closures of recreational areas and parts of the forest. More visitors and severe fire conditions create and increase in fire problems.

Wilderness entries have increased due to a better knowledge by the public to report suspected violations. There is one Law Enforcement Officer assigned to patrol the wilderness and that is just when available. This has a big impact on the enforcement of regulations in the wilderness.

Occupancy and Use has increased in all areas of the Forest. This area has good weather year around and it bring visitors from all over the United States. Many of them like the area and decide to stay on the Forest. Structures are built and livestock is allowed to roam the forest. This is a constant problem but not reported most of the time.

Off Road Vehicle use is increasing each year on the forest. This is a major form of transportation for forest users. There have been roads and trails constructed in many areas of the forest. Hunters and visitors use them to cross country ride to access areas where there are no roads and this creates new problems. Other agency enforcement is limited due to the remote locations.

Vandalism on the forest increases each year. The recreation program is constantly repairing tables, restrooms, signs, grills and other informational presentations do to vandalism or theft. Much of this is repaired and not reported to Law Enforcement because that is the cost of doing business. An estimate to damage to facilities and the resource could run in the area of 150 to 200 thousand dollars.

Law Enforcement Officers on the forest concentrate on heavy use recreational areas to protect the forest visitors and the resource. During the hunting, and fuelwood seasons more patrols are in the remote locations. All uses of the forest have increased and enforcement is even more important. The enforcement actions are effective when done on a consistent basis. This is not possible when a few officers are required to cover such a large area.

Recommendations

No change in monitoring activities is needed at this time.

Range

Range 1: Overstory modification in woodland type

Monitoring Intent

Assure increase forage production in analysis areas where overstory modification is scheduled.

Measuring Frequency

Review of annual work accomplishment reports/ acres.

Percent Accuracy/Precision

The acres of overstory modification completed for the evaluation period (ending at the 7th year) should be within 10% of projected level.

Monitoring and Trend Evaluation

Forest decade projection (pg 19): 21,590 acres in first decade (2,159 acres per year);

For the period 2001-2005, over-story modification has continued at the pace of approximately 2,000 acres per year. This activity was primarily accomplished via fire use fires and mechanical treatment.

Primary treatment occurred on the Black Range Ranger District, Hermosa allotment and Wilderness Ranger District Mimbres allotment.

Mechanical treatment averaged about 75 acres per year utilizing a bobcat. Fire use treatment averaged about 2,000 acres per year.

It is projected that this activity will continue at the rate of approximately 2, 000 acres per year.

Range 2: Brush conversion and reseedling

Monitoring Intent

Assure Increased forage production

Measuring Frequency

Review of annual work accomplishment reports/ acres.

Percent Accuracy/Precision

The acres of brush conversion and reseedling completed for the evaluation period (ending the 5th and 9th year) should be with 25% of projection.

Monitoring and Trend Evaluation

Forest Decade Projection: 450 acres in first decade (45 acres per year); page 20;

For the period 2001-2005, brush control and seeding (control of rabbitbrush and snakeweed) has declined significantly. Some small acres of rabbitbrush have been treated via mechanical methods on the Quemado Ranger District. However, treatment is less than 20 acres per year. This activity (rabbitbrush and snakeweed control) is not expected to significantly increase in the future.

Range 3: Range development

Monitoring Intent

The following structural improvements will be added or reconstructed:

1. 36 miles of fence
2. 32 miles of pipeline
3. 52 water developments by the end of the first decade.

Monitoring Method/Unit of Measure

Annual work accomplishment reports/ improvements.

Measuring Frequency

Annual

Percent Accuracy/Precision

+10%; +20%

Variability that would indicate Re-evaluation

Less than 90% of the planned improvements are accomplished at the end of the 5th and 9th year.

Monitoring and Trend Evaluation

This activity has increased at the rate above what was projected in the Forest Plan. The Forest Plan underestimated the number of developments expected to be added or reconstructed. The majority of the work that has been completed has addressed reconstruction of existing improvements. These improvements have been repaired or reconstructed in order to provide for improved range management and prevent the loss of capital investments.

On a yearly basis, planned improvements are either added or reconstructed at the rate of approximately 6.5 miles of pipeline per year; 15 miles of fence per year; and approximately 22 water developments per year. This activity has occurred on all Ranger Districts. It is projected that this activity will continue at approximately the same rate in future years.

Range 4: Permitted use

Monitoring Intent:

Meet Federal regulations; measure prescription and effects. Assure that range permitted use is balanced with capacity by the end of the second decade.

Monitoring Method/Unit of Measure

Data generated from grazing permits and displayed in Annual Grazing Statistical Report/ permitted AUMs.

Measuring Frequency

Annual

Percent Accuracy/Precision

+10%; +10%

Variability that would indicate Re-evaluation

Evaluate at 5 year intervals. Reevaluate if permitted use exceeds projected levels or is more than 10% below projected levels.

Monitoring and Trend Evaluation

	Cattle	AUM's	Horses	AUM's
2001	29,817	328,041	304	4,051
2002	32,914	341,763	284	3,891
2003	29,064	304,354	303	4,180
2004	30,079	310,319	308	4,252

2005 data is not available but is projected to be within 10% of the average;

Permitted use is not expected to change more than 10% below projected levels

Range 5: Grazing capacity

Monitoring Intent

Meet Federal regulation; sample output. Assure that through improved management and additional structural and nonstructural range improvements, range capacity is increased to projected level.

Monitoring Method/Unit of Measure

Production and utilization studies, range analysis data, and capacity (AUMs).

Measuring Frequency

5th year.

Percent Accuracy/Precision

+10%; +20%

Variability that would indicate Re-evaluation

Evaluate at 5 year intervals to determine rate in meeting expected capacity. Re-evaluate if below anticipated capacity or more than 10% above anticipated capacity.

Monitoring and Trend Evaluation

Projected capacity within the Forest Plan is 329,994 AUM's (average annual output).

Average annual permitted use is 321,119. Authorized use is within projected capacity.

Recommendations**1. *Range2: Brush Conversion and Range Seeding***

Acres of rabbitbrush and snakeweed treated should be dropped from Forest Plan monitoring requirements. This activity occurs on such a small scale, the utility of this monitoring requirement is questionable.

Recreation**Recreation 1: Dispersed Recreation Use****Monitoring Intent**

Assure that demand for dispersed recreation use will be within anticipated capacity.

Monitoring Method/Unit of Measure

- a) Recreation Information Management Report
- b) Inspections of heavily used dispersed areas, including evaluation of vegetative deterioration and soil erosion/ RVDs and site condition.

Measuring Frequency

Annual

Percent Accuracy/Precision

+15%; +15%

Variability that would indicate Re-evaluation

Actual use exceeds 30% of projected use by ROS setting, and/or the trend in ORV violations increase by year 5 and 10.

Monitoring and Trend Evaluation

a) The RIM reporting system has been eliminated and the agency is currently using Recreation Days Managed to Standard. The Gila has averaged approximately 1,300 days for the last 5 years. There is no data available on actual Recreation Visitor Days (RVD) for the Forest. The general conclusion is the trend for Forest visits will continue to increase. When the National Visitor Use Monitoring is completed (2006), a more accurate use and trend will be derived from that report.

b) Dispersed recreation areas are not inventoried following a standard protocol. Some heavily used dispersed recreation areas are monitored and actions taken to reduce undesirable resource impacts such as Box Canyon day use area on the Silver City District.

Recreation 2: Developed site use, public and private sector

Monitoring Intent

Meet Federal regulation: sample output

Monitoring Method/Unit of Measure

Recreation Information Management Report.

Use Report (Based on District Ranger estimates and on actual count of tickets sold or other counts by private sector operators.)

Measuring Frequency

Annual

Percent Accuracy/Precision

+15%; +15%

Variability that would indicate Re-evaluation

Actual average use is under projected use by 10% or is over by 30% reviewed in year 3, 6, and 9.

Monitoring and Trend Evaluation

The RIM reporting system has been eliminated and the agency is currently using Recreation Days Managed to Standard (RDMS). The Gila has averaged approximately 200,000 persons at one time (PAOT) days RDMS per year for the last 5 years. The general conclusion is the trend for Forest visits will continue to increase. There is no data available on actual RVD for the Forest. When the National Visitor Use Monitoring is completed (FY06), a more accurate use and trend can be derived from that report. The general conclusion is the trend is going to continue with a slight increase in PAOT.

Recreation 3: Visual quality levels

Monitoring Intent

Meet Federal regulations: measure prescriptions and effect. Assure compliance with visual quality objectives.

Monitoring Method/Unit of Measure

The Visual Resource Management System will be used as a basis of the monitoring activity/ acres by visual quality level.

Measuring Frequency

4th and 9th year.

Percent Accuracy/Precision

+10%; +10%

Variability that would indicate Re-evaluation

Visual quality level acres are changed by larger percent than indicated in Forestwide Standards and Guidelines.

Monitoring and Trend Evaluation

There are no known effects on visual quality levels from management activities within the last 5 years. Most vegetation treatments have been limited in scope and size. Any changes in visual quality levels for all vegetation treatments were within the allowable limits for Retention, Partial Retention, & Modification, and no changes have been made for Preservation within the last 5 years. All treatment activities have complied with the visual quality objectives through mitigation in project proposal development and application of best management practices.

Recommendations:

Re-evaluate during Forest Plan revision.

Riparian/Aquatic**Riparian 1: Riparian/aquatic condition****Monitoring Intent**

Ensure improvement of riparian condition

The Forest continues its evaluation of riparian/aquatic conditions across the Forest. In the past four years fire management activities have had both negative and positive effects to aquatic habitats. Some effects have been localized; others have been far-ranging. Monitoring efforts to identify the scope of these effects have not been completed. Undesirable effects were limited to areas where fire intensities resulted in the loss of Gila trout (Little Creek) or severe

depletion of Gila chub (Turkey Creek) and undesirable fisheries habitat modification. Where fire occurred at low to moderate intensities within watersheds, beneficial results include reduced fuel loading, increased ground cover, reduced fire danger, and improved nutrient recycling, all of which lead to potential aquatic habitat improvement.

The Forest continues to exclude permitted livestock from riparian areas by fencing livestock out from on the Gila and San Francisco Rivers and major tributaries. These exclusions protect riparian condition and aquatic habitat. Riparian condition across the Forest indicates an upward trend due to more restrictive, site-specific management requirements. Some localized areas of poor condition occur, in particular those areas affected by fire, drought, roads, and heavy use by ungulates. The Forest is currently amending the 1986 Forest Plan to address inconsistencies in scheduled activities associated with the riparian standards and guidelines.

The following tables list monitoring activities that have occurred from 2001 to 2004:

2001 Monitoring Activities

Location	District	Activity	Description	Trend
Forestwide	All	Riparian Area Survey and Evaluation Survey (RASES)	Nineteen transects re-read covering approximately 50 lineal miles. Four new transects established covering approximately 15 lineal miles.	Upward trend in excluded reaches and those managed for light use. Static or downward trend in those areas experiencing heavy use, upland fire, drought, road impacts.
Gila & San Francisco Rivers and major tributaries, Dry Blue Creek, Mimbres River	Wilderness, Silver City, Glenwood, Quemado, Reserve	Fish survey	Fifteen annual monitoring points for fish species and populations. Completed in cooperation with NM Game and Fish Dept. Some habitat monitoring included in some points.	No trend analysis completed.

Location	District	Activity	Description	Trend
San Francisco and Gila River watersheds	Wilderness, Silver City, Glenwood, Quemado, Reserve	Water quality monitoring (temp, sediment, nutrients)	Monitoring in conjunction with Total Maximum Daily Load effort in these watersheds was concluded, data analyzed and shared with NM Environment Dept.	Perceived problems associated with heavy metals were not supported by the data.

2002 Monitoring Activities

Location	District	Activity	Description	Trend
Centerfire Creek, SA Creek	Quemado	Riparian Area Survey and Evaluation Survey (RASES)	Six transects reread covering approximately 15 lineal miles. Two new transects established covering approximately 5 lineal miles	Upward trend in excluded reaches and those managed for light use. Static or downward trend in those areas experiencing heavy use, upland fire, drought, road impacts.
Gila & San Francisco Rivers and major tributaries, Dry Blue Creek, Mimbres River	Wilderness, Silver City, Glenwood, Quemado, Reserve	Fish survey	Fifteen annual monitoring points for fish species and populations. Completed in cooperation with NM Game and Fish Dept. Some habitat monitoring included in some points.	No trend analysis completed.

2003 Monitoring Activities

Location	District	Activity	Description	Trend
Forestwide	All	Riparian Area Survey and Evaluation Survey (RASES) & Proper Functioning Conditioning survey (PFC)	Ten transects reread covering approximately 14 lineal miles. PFC completed on approximately 23 lineal miles.	Static trend in those areas with limited impacts. Downward trend in those areas experiencing heavy use, upland fire, drought, road impacts.

Location	District	Activity	Description	Trend
Gila & San Francisco Rivers and major tributaries, Dry Blue Creek, Mimbres River	Wilderness, Silver City, Glenwood, Quemado, Reserve	Fish survey	Fifteen annual monitoring points for fish species and populations. Completed in cooperation with NM Game and Fish Dept. Some habitat monitoring included in some points.	No trend analysis completed.

2004 Monitoring Activities

Location	District	Activity	Description	Trend
Patterson Canyon, Sand Flat Canyon, Indio Canyon, T-Bar Canyon, Canyon del Buey	Quemado, Reserve	Proper Functioning Condition survey	Survey of 9 springs and 4 streams on Canyon del Buey, East Sand Flat and T-Bar allotments, covering approximately 23 miles.	Trend varied amongst reaches from upward to static to downward. These trends were based on site specific factors. Downward trends were primarily a function of limited water. Recommendations were made to improve trend where management actions were possible.
Gila & San Francisco Rivers and major tributaries, Dry Blue Creek, Mimbres River	Wilderness, Silver City, Glenwood, Quemado, Reserve	Fish survey	15 annual monitoring points for fish species and populations. Completed in cooperation with NM Game and Fish Dept. & Western NM University. Some habitat monitoring included in some points.	No trend analysis completed. Noted trend for Gila trout is upward; trend for other T&E aquatic species is considered stable to downward. Native non T&E species trend considered stable.

Monitoring Method/Unit of Measure

The Forest Plan states the following methodology: *Establish baseline data on existing riparian condition during the first decade. Establish 20 aquatic sample stations and complete aquatic/fisheries habitat, evaluation. Sample each station during May, June, and July every 5 years in conjunction with Emlen and riparian condition transects. Establish 20 Emlen survey transects on lower Gila and San Francisco Rivers under 5500 ft. elevation. Establish 15 additional transects in*

riparian communities above 5500 ft. elevation. Transects will be read during May, June, and July every fifth year, with low elevation transects being read in years 6 and 1 and high elevation transects being read in years 7 and 2. Re-evaluate if sufficient progress is not being made to meet Regional Riparian Condition Goals found in Forestwide Standards and Guidelines. Methods used for aquatic monitoring currently include specific protocol developed for each stream, depending upon species and macro habitats present and relative size of stream. Monitoring includes efforts to characterize species and habitat associations, species populations and community dynamics, species interactions, and changes in species status and distributions. Riparian condition transect methods used in the last four years include Riparian Area Survey and Evaluation System surveys and Proper Functioning Condition surveys.

Measuring Frequency

The Forest Plan states that this will occur every five years. Aquatic habitat monitoring is currently done annually on 15 stations; most occurring during October to avoid reproductive periods of T&E species. Riparian condition transects are recommended for rereading every 10 years, or during project analysis, whichever comes first.

Percent Accuracy/Precision

±15%; ±15%.

Variability that would indicate Re-evaluation

Sufficient progress is not being made to meet Regional Riparian Condition Goals found in Forestwide Standards and Guidelines

Recommendations

Riparian 1: Riparian/Aquatic Conditions

1. Establish additional permanent aquatic monitoring stations.
2. Develop monitoring protocol in conjunction with fire planning to gain further understanding of fire's impacts on aquatic species and their habitats.
3. Implement 2005 amendment to Forest Plan for riparian standards and guidelines.

Soil and Water

Soil and Water 1: Watershed condition of forest lands

Monitoring Intent

Increase acres of watershed in satisfactory condition.

Watershed condition monitoring is primarily conducted during allotment analysis to determine what management action, if any, may be required to maintain satisfactory conditions or move unsatisfactory conditions to satisfactory. Allotment analyses are currently being done according to congressionally mandated 1995 Rescission Schedule. The majority of fifth code watersheds are in satisfactory condition, with a limited number of fifth codes in unsatisfactory condition. The long time period required to reverse soil loss makes it difficult to move unsatisfactory watershed condition to satisfactory condition very quickly. The following tables indicate watershed condition monitoring that has occurred in the past four years.

2001 Watershed Condition

Location	District	Activity	Description	Trend
Forestwide	All	Monitoring of livestock grazing allotments for permit compliance	Utilization levels monitored to ensure that overuse not occurring that would precipitate the loss of herbaceous ground cover.	No trend analysis completed
Gila River, Mangas Valley, Rough Canyon, Twin Sisters, & Silverdale allotments	Silver City	Watershed condition monitoring	Monitoring done for allotment analysis to determine management action needed to protect resources	Slight upward trend in flat areas, overall downward trend due to high amounts of soil loss, particularly on steep slopes
Pinos Altos Mountains & Glenwood	Silver City, Glenwood	140,000 acres of Terrestrial Ecosystem Survey	Ongoing Forestwide survey by New Mexico TES crew	Initial assessment, no trend noted
East Fork Gila River, Black Canyon	Wilderness	Biotic Condition Index survey	Sample of macro invertebrates, analyzing whether livestock grazing is having impacts.	Upward

2002 Watershed Condition

Location	District	Activity	Description	Trend
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Location	District	Activity	Description	Trend
Forestwide	All	Monitoring of livestock grazing allotments for permit compliance	Extreme drought conditions. Forest made additional efforts in conjunction with permittees to reduce numbers and/or vary management practices	No trend analysis completed
Cedar Breaks, Devils Park, Kelly, Dillman, Trout, Underwood Lake allotments	Glenwood, Quemado	Watershed condition monitoring	Monitoring done for allotment analysis to determine management action needed to protect resources	Stable to upward on Quemado allotments, Glenwood allotments stayed fairly stable to slight upward trend. Site specific areas of downward trend occurred on both Districts.
Pinos Altos Mountains & Glenwood	Silver City, Glenwood	140,000 acres of Terrestrial Ecosystem Survey	Ongoing forestwide survey by New Mexico TES crew	Initial assessment, no trend noted
East Fork Gila River, Black Canyon	Wilderness	Biotic Condition Index survey	Final sample of macro invertebrates, analyzing whether livestock grazing is having impacts. Concludes a 10-year study	Upward

2003 Watershed Condition

Location	District	Activity	Description	Trend
Forestwide	All	Monitoring of livestock grazing allotments for permit compliance	Utilization levels monitored to ensure that overuse not occurring that would precipitate the loss of herbaceous ground cover.	No trend analysis completed
Centerfire, Hot/Cold Springs, Copper Creek, Roberts Park, Tennessee Allotments	Quemado, Silver City, Glenwood	Watershed condition monitoring	Monitoring done for allotment analysis to determine management action needed to protect resources	Overall stable to upward, some isolated areas of downward trend
Black Range, Glenwood	Black Range, Glenwood	185,000 acres of Terrestrial Ecosystem Survey	Ongoing forestwide survey by New Mexico TES crew	Initial assessment, no trend noted

2004 Watershed Condition

Location	District	Activity	Description	Trend
Forestwide	All	Monitoring of livestock grazing allotments for permit compliance	Utilization levels monitored to ensure that overuse not occurring that would precipitate the loss of herbaceous ground cover.	No trend analysis completed
Black Mtn, Canyon del Buey, Negrito/Yeguas, East Sand Flat, T-Bar allotments	Black Range, Quemado, Reserve,	Watershed condition monitoring	Monitoring done for allotment analysis to determine management action needed to protect resources	Overall stable to upward, some isolated areas of downward trend
Black Range, Glenwood	Black Range, Glenwood	125,000 acres of Terrestrial Ecosystem Survey	Ongoing forestwide survey by New Mexico TES crew	Initial assessment, no trend noted
East Fork Gila River, Black Canyon	Wilderness	Biotic Condition Index Final Report	Final report provided by contractor for sampling of macro invertebrates, analyzing whether livestock grazing is having impacts. Concludes a 10-year study	Upward
East Fork Gila River, Black Canyon	Wilderness	Biotic Condition Index reinitiating of sample	Contract extended for 1 additional year to determine impacts, if any, from unauthorized livestock grazing on Diamond Bar Allotment	Unknown
Black Range, Glenwood	Black Range, Glenwood	125,000 acres of Terrestrial Ecosystem Survey	Ongoing forestwide survey by New Mexico TES crew	Initial assessment, no trend noted

Monitoring Method/Unit of Measure

Standard watershed condition transects (Hydro. Note 14), ocular estimates, evaluation of treated acres, range management plans implemented, and professional judgment/ satisfactory or unsatisfactory acres

Measuring Frequency

10% annually

Percent Accuracy/Precision

±80%; ±80%;

Variability that would indicate Re-evaluation

Re-evaluation if improvement acres show a 5% decrease in ground cover in transition zones or less, or 10% decrease in ground cover in ponderosa pine zones or greater.

Soil and Water 2: Watershed and Soils Prescriptions

Monitoring Intent

Meet State and Federal regulations. Monitor projects to determine compliance with project recommendations and to determine the suitability of recommendations (Best Management Practices). Assure improvement of watershed conditions.

The Forest uses Region 3 Soil and Water Conservation Practices during implementation of all ground disturbing projects. For all projects requiring certification under the Clean Water Act, a 404/401 permit is obtained from the US Army Corps of Engineers and New Mexico Environment Department. If additional best management practices are required under these permits, these are followed. Projects related to restoring fire adapted ecosystems, including prescribed burning and woodland thinning are currently the priority work on the Forest. Little monitoring has been done to determine the effects of prescribed burning on watershed conditions. The University of Arizona is currently assisting the Forest in modeling soil movement following a prescribed burn, and predicting future ground cover on the site. Expected completion of this project is 2005.

2001 to 2004 Soil and Watershed Monitoring

Location	District	Activity	Description	Trend
Forestwide	All	BMP monitoring on implementation of ground disturbing projects	Watershed personnel evaluate BMPs during implementation to determine effectiveness. Recommendations for additional mitigation may occur if monitoring indicates the need.	Upward—District project work complies with state and federal regulations. No warning or citations have been given during inspection by NM Environment Department of US Army Corps
Saliz Fire 2001	Glenwood	Cleaned sediment retention structure, 50 acres seeded, maintained straw bale structures, contour-felled additional dead trees	Monitoring Of BAER work from 2000 noted that structure was full and additional seeding was necessary to facilitate re-vegetation.	Upward
Burro Mountains	Silver City	Post-fire monitoring for erosion	Hillslope Erosion Model data collected	Incomplete

Location	District	Activity	Description	Trend
2004			on Bullard Peak to determine watershed post fire effects following prescribed burn.	

Monitoring Method/Unit of Measure

The Forest Plan states that the following items will be monitored:

A. Review timber sales for following measures: 1) drainage structure density, construction, and function 2) road relocations and obliterations 3) stream course and channel protection. The Forest currently has very limited activities involving the removal of timber. All project activities involving ground disturbance are designed to utilized Best Management Practices as set forth in the Watershed Specialist Report and 404/401 Permit(s) if required. Projects are reviewed on a site-specific basis to see if Best Management Practices are sufficient or if additional measures are required to protect water and soil resources.

Measuring Frequency

The Forest Plan states that this will occur by sale/district/year. The Forest currently measures by project/district/year.

Percent Accuracy/Precision

Not applicable

Variability that would indicate Re-evaluation

- a) 10% failure of drainage structures within 1 year of installation
- b) 20% of road closures being used within 3 years
- c) 10% of road obliteration/relocation being closed within 3 years
- d) 5% of drainages being damaged to the point that flows are concentrated and channel instability initiated.

Recommendations

Soil and Water 1: Watershed Conditions of Forest Lands

Initiate roads assessment by fifth code watershed basis to determine potential impacts to watershed resources. Establish monitoring plan of roads to see if changes in management are necessary.

Soil and Water 2: Watershed and Soil Prescriptions

Develop post-treatment monitoring plans to determine watershed effects of implementing projects that meet the Region's central priority of restoring functionality to fire adapted ecosystems.

Timber

Timber 1: Intermediate and Removal Harvest

Monitoring Intent

Meet Federal regulation; measure prescriptions and effects. To achieve a more balanced age class distribution, appropriate growing stock levels, appropriate rotations, and provide wildlife habitat needs. Acres of intermediate harvest and removal harvest are evaluated based on treatment prescriptions and effects of implementation of prescription treatments. The desired outcome of the treatment prescriptions is improvement in age class distribution for the appropriate growing stock levels, appropriate rotations, and meeting wildlife habitat needs.

Monitoring Method/Unit of Measure

Timber Management information system (FSH 2409.21e): staff field reviews of 5% of treatment projects/Acres.

Measuring Frequency

Annual

Percent Accuracy/Precision

± 10%; ± 20%

Variability that would initiate Re-evaluation

Planned treatment varies 35% from schedule at 5 year intervals.

Monitoring and Trend Evaluation

This item has traditionally been tied to specific silvicultural prescriptions for seed tree harvest and clear cuts. The description has been expanded more recently to include other general types of silvicultural prescriptions including free thinning where trees from all age classes are removed.

During 2001 through 2004, commercial timber sale treatments were designed to thin trees from below overstory trees. The treatment prescriptions focused on smaller diameter trees and the younger age classes. Current treatment prescriptions for understory thinning do not fit the definition of intermediate and removal harvests as defined in the forest plan. The original definition of intermediate and removal harvests did not take into consideration natural fuel reduction. The current emphasis in understory treatments focuses on reducing risk of crown fire by creating more open conditions within forested stands.

Wildland urban interface (WUI) treatment prescriptions meet the original Forest Plan definition of intermediate and removal harvests where fuel breaks were implemented. The following table lists acres of intermediate and removal harvest for commercial sales and WUI fuel break treatments by year treated during the monitoring period.

Acres of Intermediate and Removal Harvest

Unit	2001	2002	2003	2004
Acres	967	110	918	359

The Forest Plan 5 year schedule is not applicable due to current market conditions and closure of mill in Reserve. The 5 year schedule has been replaced by the 10 year schedule which is updated annually based on capability of local markets.

10 Year Timber Plan

Year	Volume Offered (ccf)
2005	5,204
2006	7,500
2007	6,300
2008	8,700
2009	10,200
2010	9,200
2011	7,650
2012	7,650
2013	7,650
2014	7,650
2015	7,650
Sum 10 Years	85,354

Timber 2: Regeneration Harvest

Monitoring Intent

To meet Federal regulations; measure prescriptions and effects. Achieve a balanced age class distribution, appropriate growing stock levels, and appropriate rotations.

Monitoring Method/Unit of Measure

Timber Management Information system (FSH 2409.21e) and examination procedures in compartment examination and prescription handbook/acres.

Measuring Frequency

Annual

Percent Accuracy/Precision

+ 10%; + 20%

Variability that would indicate Re-evaluation

Planned treatment varies 25% from schedule at 5 year intervals.

Monitoring and Trend Evaluation

The definition of this item is to achieve and maintain a balanced age class distribution, appropriate growing stock levels, and appropriate rotations for timber production. The Gila NF did not implement prescriptions of this nature during this monitoring period. Prescriptions implemented during this period were primarily designed to reduce the amount of younger age classes, smaller diameter trees, and to enhance the growth of middle / older age classes.

Timber 3: Timber Stand Improvement**Monitoring Intent**

To meet Federal regulation; Assure control of stocking levels for accelerated growth. Forested areas are evaluated to ensure that timber growth meets Federal regulations and that recently established timber stands are meeting the desired rate of growth.

Monitoring Method/Unit of Measure

Timber Management Information System (FSH 2409.21e) and examination procedures in compartment examination and prescription handbook/acres.

Measuring Frequency

Annual

Percent Accuracy/Precision

+ 10%; +20%

Variability that would indicate Re-evaluation

Cumulative deviation for 5 years falls 20 percent below planned program.

Monitoring and Trend Evaluation

This item is a Federal Regulation to ensure control of stocking levels for accelerated growth. This is a specific item that is tracked in the National Forest Vegetation and Watershed Management (NFVW) and National Forest Timber Management (NFTM) Timber Stand Improvement budget items. An increase in acres treated over the past two years is due to markets in place (Catron County Citizens Group Mill in Reserve and Gila Woodnet in Silver City) to process smaller diameter timber. The use of stewardship contracts in the past two years has improved our ability to treat more acres compared to traditional timber sale contracts that would not sell because the closet mill was in Alamogordo, New Mexico. The following table lists the acres of timber stand improvement areas.

Timber Stand Improvement Areas

Unit of Measure	2001	2002	2003	2004
Acres	390	210	1,600	7,495

Timber 4: Board Feet of Net Sawtimber Offered

Monitoring Intent

This item is monitored to ensure timber offered does not exceed allowable sale quantity (ASQ) for a 10 year period. The original ASQ in the Forest Plan was based on the presence of a local saw mill and markets for products. Sawlogs were processed in Reserve (Stone Container), small logs were processed by Stone Container in Springerville, Arizona, and pulp was processed in Snowflake, Arizona. The annual ASQ for the Gila NF is 10 million board beet or 10,000 Mbf. Stone Container closed all of their mills in Arizona and New Mexico, including the local mill located in Reserve, which closed in 1992. The closest mill to the Forest is located in Alamogordo, NM which is more than a 300 mile one-way haul trip. This long haul distance has eliminated the local market for forest products and has severely decreased the amount of timber sold on the Forest.

Monitoring and Trend Evaluation

This item is now reported in PAMARS (MAR) and timber data bases in CCF. The following table lists the net volume offered in Mbf and CCF. Volume is derived by dividing the CCF by 2 in accordance with the Conversion Factor from FSH 2400 page 8 of the Gila National Forest Supplement. The recent increase in sawtimber offered is due to new mills at Silver City and Reserve that have created a small local market that provide a variety of products such as pole trusses, furniture, fencing, chip-crete and custom beams.

Sawtimber (net) Offered

Units of Measure	2001	2002	2003	2004
CCF	0	0	6,379	7,186
Mbf	0	0	3,189	3,593

Timber 5: Fuelwood

Monitoring Intent

This item is in accordance with Federal Regulation that states green wood sales will continue on a sustained yield basis. Residue from commercial timber sales will be available for firewood.

Monitoring and Trend Evaluation

Due to the minimal amount of commercial timber sales sold on the Gila NF, districts have ensured fuelwood was available by preparing designated green fuelwood areas. The Gila NF also allows the gathering of dead fuelwood district wide in areas that are not designated Wilderness and limits the gathering of fuelwood in designated roadless areas. This item is now reported in PAMARS (MAR) and timber data bases in CCF and is reported with volume offered and volume sold. The following table lists the net volume offered in CCF and cords. The number of cords is derived by dividing the CCF by .8 in accordance with the Conversion Factor form FSH 2400 page 8 of the Gila National Forest Supplement.

Cords of Fuelwood Made Available

Unit of Measure	2001	2002	2003	2004
CCF	5,869	4,284	5,954	6,659
Cords	7,336	5,355	7,442	8,323

Timber 6: Restocking of Regeneration Harvests

Monitoring Intent

This item is used to monitor all regeneration cuttings are adequately restocked 5 years after final harvest.

Monitoring and Trend Evaluation

The Gila NF has not implemented any regeneration harvest prescriptions during the monitoring period and this prescription is not normally done on forest.

Timber 7: Size Limits for Harvest Areas

Monitoring Intent

This item is designed to meet the Federal Regulation of assuring size limits timber sales and openings are not exceeded. This item is designed to limit the size of clear cut acres and ensure harvest activities do not exceed the limit of 10 acres in one opening.

Monitoring and Trend Evaluation

The Gila NF has used prescriptions that include creating openings up to ½ acre in size which is considerably less than the 10 acre size limitation.

Timber 8: Review of Timber Land Classification

Monitoring Intent

This item meets the Federal Regulation that states the agency will better define those areas which may be suitable for sustained yield timber production. It includes review of new or updated soil survey data, development of better technology for regeneration establishment, stand exams, and timber inventory results.

Monitoring and Trend Evaluation

The Gila NF has conducted stand exams, reviewed timber inventory results, and updated soil survey data during the monitoring period. The table below shows the number of acres of stand exams reflect acres that are planned for mechanical treatment. Soil data was reviewed but may not have been updated on all projects.

Unit of Measure	2001	2002	2003	2004
Acres	2,450	756	1,753	1,565

Recommendations

The regional priorities, role of timber and regional market conditions have changed from when the Gila NF Forest Plan was first implemented. The current Gila NF priority is to restore and maintain ecosystems that are adapted to fire. Traditional timber markets that purchased forest products from the Gila NF have closed and since 2002 new smaller markets have begun to emerge. The way timber is awarded has also changed as we no longer use only timber sale contracts. To ensure accurate monitoring of activities now and in the future, we must modify existing items and monitor new items previously not considered. Given current priorities and conditions on the Forest the following is recommended for future timber monitoring.

Timber 1: Acres of Intermediate and Removal Harvest

Recommend item be changed to *acres treated with commercial component*. Currently only certain types of prescriptions fall under the existing definition. The suggested change would ensure all prescription and harvest activities that are awarded with some type of contract would be monitored.

Timber 4: Board Feet of Net Sawtimber Offered

Recommend changing units from board feet (bf) to agency standard of hundred cubic feet (CCF) and changing sawtimber to volume to reflect changing market conditions within our region.

Recommend adding category of *volume awarded* to track what is accomplished on the ground. During the monitoring period timber was offered but not awarded.

Timber 5: Cords of Fuelwood Made Available

Recommend this item be incorporated into the new *volume offered* and *volume awarded* categories as it is tracked in MARS and TIMS. Volume of fuelwood could be determined by the type of contract awarded (i.e. 2400-4 versus 2400-6).

Timber 8: Review of Timber Land Classification

Add new monitoring item that shows where restoration of fire adapted ecosystems is occurring and incorporate the work and maintenance of each project as fire regime condition class (FRCC) changes in project areas. Report change in FRCC by vegetation type and type of treatment (mechanical and burning).

Wilderness

Wilderness 1: Wilderness use by Wilderness Opportunity Spectrum Class

Monitoring Intent

Assume demand is within capacity so resource does not deteriorate

Monitoring Method/Unit of Measure

Wilderness R.I.M. Use information in concert with wilderness simulation model.

Measuring Frequency

Annual

Percent Accuracy/Precision

+20%; +20%

Variability that would indicate Re-evaluation

Actual use exceeds 30% of total projected use for any wilderness. Review in year 3, 6, and 9.

Monitoring and Trend Evaluation

This item was not selected for monitoring in the past four years.

Wilderness 2: Wilderness trail construction & reconstruction and maintenance

Monitoring Intent

Ensure better distribution of visitor use and improve wilderness opportunities supported by an improved trail system that includes construction, reconstruction and maintenance of trails.

Monitoring Method/Unit of Measure

Work Accomplishment Reports/ miles.

Measuring Frequency

Annual

Percent Accuracy/Precision

+5%; +5%

Variability that would indicate Re-evaluation

Cumulative deviation from the planned level varies by more than +25%.

Reviewed at years 3, 6, and 9.

Monitoring and Trend Evaluation

Forest Plan projections are for 115 miles of reconstruction per decade. In the past 15 years the Forest meet projections, the current trend is a substantial decrease in funding reaching the ground for trail construction, reconstruction and maintenance. In the last 2 years we have only accomplished 5 miles of reconstruction per year. Condition of trails is deteriorating at an accelerating rate.

Recommendations

Wilderness 1: Wilderness use by Wilderness Opportunity Spectrum Class

Recommend this activity be deleted because we no longer maintain a permit entry system that provided the information on use. Replace with recreation monitoring, national visitor use monitoring. Visitor use was monitored in 2003 and scheduled again for 2006. The 2003 survey suggested that there is relatively high visitor use on the Gila Wilderness. We think this estimate is higher than actual use due to design flaws in the survey. The survey method has been modified to correct previous problems and we expect the 2006 survey to provide more accurate information.

Wildlife

Wildlife 1: Population and habitat trends of management indicator species and State and Federally listed plants, animals, and sensitive species where management actions are likely to result in change.

Monitoring Intent

Evaluate trends and meet Federal and State regulations. Assure that wildlife will be maintained or increased and that sensitive species will be protected.

Federally and State Listed Species

Mexican spotted owl

Monitoring Method

Single season monitoring

Trend

The Gila National Forest has identified 247 Mexican spotted owl management areas (PACs) on the Forest. During this monitoring period, wildland fire on the Forest affected approximately 28 of these management areas. Low to moderate intensity fire has had an overall positive effect in approximately 20 of these management areas by reducing the risk of catastrophic/habitat modifying fire. Catastrophic fire is a threat identified in the Mexican spotted owl recovery plan. High intensity fire has negatively modified Mexican spotted owl habitat within portions of 8 of these management areas. Across the Forest, the available data shows that the amount of Mexican spotted owl habitat has been reduced; but because of the reduced risk of catastrophic fire in the remaining habitat, the quality of the existing habitat has been improved. Monitoring for Mexican spotted owl on the Gila over the last three years indicates that the population on the Forest is stable.

Southwestern willow flycatcher

Monitoring Method

Single season monitoring

Trend

Suitable and potential Southwestern willow flycatcher habitat on the Gila has been excluded from management activities that have the potential to impact these riparian areas; therefore, habitat conditions for this species are improving. Annual monitoring indicates that the population on the Forest is stable.

Chiricahua leopard frog

Monitoring Method

Single season monitoring

Trend

Most of the suitable and potential habitat for the Chiricahua leopard frog on the Gila has been excluded from management activities that have the potential to directly impact this species habitat; therefore, habitat conditions for this species are improving. Annual species monitoring indicates that the population on the Forest continues to decline. The continued decline is not related to Forest management activities. The decline appears to be a result of competition with non-native species and disease.

Loach minnow and Spikedace

Monitoring Method

Single season monitoring

Trend

Management activities that have the potential to directly impact both these species habitat, like livestock grazing and off road vehicle use, have been excluded from areas with occupied and potential habitat. This has allowed for the improvement of habitat conditions for these species. Management activities on the slopes upstream of these species habitat, like wildland fire use, have contributed some sediment and ash to streams that have occupied and potential habitat. Fire use has caused temporary impacts to instream habitat conditions, but has also helped protect these areas from the more significant effects of catastrophic wildfire; therefore, allowing for the long term improvement of loach minnow and spikedace habitat on the Forest. Habitat conditions for the loach minnow and spikedace that have the potential to be impacted by forest management activities are improving on the Gila National Forest. Both these species and their habitat are being negatively affected by non-native fish.

Annual species monitoring on the Gila National Forest indicates that the loach minnow and spikedace are doing better on some parts of the Forest than others. Loach minnow and spikedace population numbers are down in the west, middle and east forks of the Gila River. Loach minnow population numbers are stable in the San Francisco River and the Tularosa River. These rivers do not have occupied spikedace habitat. Loach minnow and spikedace numbers are up in the mainstem of the Gila River. Loach minnows and spikedace numbers are high within an area known as the Bird Area on the mainstem of the Gila River on the Gila National Forest. This area remains a strong hold for both species within their historic ranges.

Gila trout

Monitoring Method

Single season monitoring

Trend

Overall, habitat conditions and population levels for the Gila trout on the Gila National Forest are improving. Gila trout habitat has been excluded from most management activities that have the potential to directly impact suitable and potential habitat. This has allowed for the improvement of habitat conditions for this species. During this monitoring period, wildland fire use did have a temporary adverse effect to Gila trout habitat in Little Creek, but these same fire use fires helped reduce fuel levels in this same drainage and several other watersheds within currently occupied Gila trout habitat and soon to be occupied Gila trout habitat, thus helping to protect this species and its habitat from the potential long term effects of future catastrophic wildfires. Gila trout monitoring shows an upward trend for this species.

Management Indicator Species

Killdeer, Hairy Woodpecker, Horned Lark, Plain Titmouse, Mallard Duck, Wild Turkey, Northern Flicker, Hooded Oriole, Common Black-Hawk, and Yellow Warbler

Monitoring Method

Point-counting

Trend

Killdeer habitat conditions and population levels on the Gila Forest have declined. The Forest Plan projected a downward trend in this species habitat and population levels. Improvement of riparian conditions as directed by the Forest Plan reduces the amount of suitable habitat for this species. "As the amount of stream bank and sand bar vegetation increases, preferred killdeer habitat suitable for nesting and foraging decreases (Shook, 2004)."

Hairy woodpecker habitat conditions on the Gila National Forest have declined. The Forest Plan projected a downward trend in this species habitat. Monitoring on the Forest has shown a small decline in the detection of this species. Population trends for this species are estimated to be slightly down to stable.

Horned lark habitat conditions on the Gila within those habitat types that this species was chosen for as a management indicator species have remained stable. The Forest Plan projected a stable trend for this species. Currently there appears to be a decline in the detection of this species.

Plain titmouse habitat conditions on the Gila have remained stable. The Plan projected an upward trend in this species habitat. Insect and disease outbreaks and fire have negated the amount of growth expected in later seral stage woodland type habitat. Monitoring on the Forest has shown that Plain titmouse population levels have remained stable.

Mallard duck habitat conditions on the Gila National Forest have improved. The Forest Plan projected an upward trend in this species habitat. Improvement of riparian conditions as directed by the Forest Plan has increased the amount of suitable habitat on the Forest. Forest monitoring has not shown any change in the population levels on the Forest, population levels have remained stable.

Wild turkey habitat conditions on the Gila National Forest have remained stable. The Forest Plan predicted an upward trend in habitat conditions for this species. This trend increase was tied to vegetative treatments that have not occurred. Forest monitoring has not shown any change in the population levels on the areas being monitored; population levels have remained stable.

Northern flicker habitat conditions on the Gila National Forest have remained stable. The Forest Plan predicted a stable trend. Forest monitoring has not shown any change in the population levels in the areas being monitored, population levels have remained stable.

Hooded oriole habitat conditions on the Gila National Forest have improved. The Forest Plan predicted an upward trend in habitat conditions. Forest monitoring has not shown any change in the population levels on the Forest, population levels have remained stable.

Common black hawk habitat conditions on the Gila National Forest have improved. The Forest Plan predicted an upward trend in habitat conditions for this species. Forest monitoring has shown an increase in the detection rate for this species, population trends for this species have increased.

Yellow warbler habitat conditions on the Gila National Forest have improved. The Forest Plan predicted an upward trend in habitat conditions for this species. Forest monitoring has shown an increase in the detection rate for this species, population trends for this species have increased.

Mule deer, Elk, Beaver, Red squirrel, Arizona grey squirrel, Abert's squirrel, and Black-tailed jackrabbit

Monitoring Method

Single season monitoring

Trend

Mule deer habitat conditions in the seral stages of the vegetative types that this species was chosen for have remained stable. The plan predicted an upward trend in habitat conditions for this species. This predicted trend increase was tied to vegetative treatments that have not occurred. Monitoring on the Forest has shown a decrease in the overall deer numbers on the Forest. This decrease

is more a result of weather and hunting pressures than forest management activities.

Elk habitat conditions on the Gila National Forest in the seral stages of the vegetative types that this species was chosen for have remained stable. The plan predicted an upward trend in the habitat conditions for this species. This predicted trend increase was tied to vegetative treatments that have not occurred. Monitoring on the forest has shown an increase in the number of elk since the implementation of the plan, but this number has gone down during this monitoring period. This decrease is a result of hunting and possibly weather, but not forest management activities.

Abert's squirrel habitat conditions on the Gila National Forest have improved. The Forest Plan predicted a downward trend in habitat conditions for this species. This predicted trend decrease was tied to vegetative treatments that have not occurred. Population levels on the Gila appear to be stable.

Arizona gray squirrel habitat conditions on the Gila National Forest have improved. The Forest Plan predicted an upward trend in habitat conditions for this species. Population levels on the Gila appear to be stable.

Red squirrel habitat conditions on the Gila National Forest have declined. The Forest Plan predicted a downward trend in habitat conditions for this species. Population levels of this species on the Forests appear to be stable.

Beaver habitat conditions on the Gila National Forest have improved. The Forest Plan predicted an upward trend in habitat conditions for this species. Population levels on the Gila appear to be stable.

Black-tailed jackrabbit habitat conditions on the Gila National Forest have remained similar to conditions at the start of plan, as predicted by the plan. Population levels on the Gila appear to be stable.

Desert sucker, and Sonora sucker

Monitoring Method

Single season monitoring

Trend

Desert and Sonora sucker habitat conditions on the Gila National Forest in the seral stages of the vegetative types that these species were chosen for have declined, as predicted by the plan. Annual monitoring on the Forest shows considerable year-to-year variation in desert and Sonora sucker densities; however no long-term positive or negative trend can be discerned.

Recommendations

Wildlife 1: Management Indicator Species

Review and amend the current management indicator species list through a Forest Plan Amendment. Most species on the current list are not contributing to information needed by the decision maker to determine if the current Forest Plan is progressing toward achieving the goals, objectives, and standard and guidelines of the plan.

2. Action Plan for 2005

The action plan for 2005 identifies which monitoring items and monitoring activities will be reported on in the next years monitoring report. Activities monitored are selected from the Forest Plan list and may include recommended monitoring items from previous reports.

2005 Monitoring Plan

Monitoring Item	Monitoring Activity	Description	2005 Monitoring Plan
Air 1	Class I wilderness	Visibility baseline and current	Yes
Cost 1	Units costs	Ability to implement Forest Plan	No
Cost 2	Annual budget	Ability to implement Forest Plan	No
Cost 3	Program budget	Ability to implement Forest Plan	No
Cultural 1	Protection of significant cultural resource properties	Resource protection	Yes
Cultural 2	Compliance	Project clearance	Yes
Facilities	Transportation system amount and distribution	Forest Plan goals and objectives	Yes
Fire 1	Fire suppression	Prescriptions and effects	Yes
Fire 2	Fuel treatment (activity fuels) need uncharacteristic levels/FRCC	Prescriptions and effects	Yes

Monitoring Item	Monitoring Activity	Description	2005 Monitoring Plan
Lands 1	Rights-of-way acquired	Prescriptions and effects	Yes
Protection 1	Law enforcement	Effectiveness and cooperative agreements	Yes
Range 1	Woodland overstory	Forage production	Yes
Range 2	Brush conversion and reseeding	Forage production	Yes
Range 3	Range development	Range use and capacity	Yes
Range 4	Permitted use	Balance use with capacity	Yes
Range 5	Grazing Capacity	Projected levels	Yes
Recreation 1	Dispersed recreation (ROS settings)	Demand and capacity	Yes
Recreation 2	Developed sites (public and private)	Output	Yes
Recreation 3	Visual quality	Prescriptions and effects	Yes
Riparian and Aquatic	Riparian and aquatic condition	Improve condition	Yes
Soil and Water 1	Watershed condition	Increase in satisfactory condition (acres)	Yes
Soil and Water 2	Prescriptions	Compliance with State and federal regulations	Yes
Timber 1	Intermediate and removal harvest	Prescriptions and effects	Yes
Timber 2	Regeneration harvest	Prescriptions and effects	Yes
Timber 3	Timber stand improvement	Stocking levels	Yes
Timber 4	Sawtimber	Allowable sale quantity	Yes
Timber 5	Fuelwood	Sustained yield	Yes
Timber 6	Restocking regeneration Harvests	Restoration standards (5 years and 80%)	Yes
Timber 7	Harvest area size	Opening size limits	Yes
Timber 8	Timber Land Classification	Suitable for sustained yield production	Yes
Wilderness	Wilderness or	Prescriptions and	Yes

Monitoring Item	Monitoring Activity	Description	2005 Monitoring Plan
1	recreation opportunity spectrum class	effects. Ensure demand does not exceed capacity	
Wilderness 2	Trails	Construction, reconstruction and maintenance	Yes
Wildlife 1	Management indicator species and sensitive species	Population and habitat trends	Yes

Preparers

Air	Carolyn Koury	Hydrologist
Costs	Patrick McKee	Administrative Staff Officer
Cultural Resources	Gail Firebaugh-Smith	Cultural Resources Staff
Officer		
Facilities	Danny Montoya	Facilities Staff Officer
Fire	Bobby Madrid	Fuels Specialist
Lands	Liz Gross	Special Uses
Protection	Steve Edwards	Law Enforcement Officer
Range	Russell Ward	Range Management
Specialist/District Ranger		
Recreation	Arnold Wilson	Acting Recreation Staff
Officer		
Riparian	Carolyn Koury	Hydrologist
Soil and Water	Carolyn Koury	Hydrologist
Timber	Gabriel Partido	Forester
Wilderness	John Kramer	Wilderness Specialist
Wildlife	Art Telles	Wildlife Biologist
Editor	Cecilia McNicoll	Forest Planner