

Apache-Sitgreaves National Forest

Land Management Plan

Monitoring and Evaluation Report

Fiscal Year 1998

Introduction

This report documents implementation, evaluation and validation monitoring of the Apache/Sitgreaves National Forest Plan as it is currently amended. The forest plan contains a monitoring plan that has been adjusted in a Monitoring Action Plan (MAP) that prioritizes monitoring efforts according to the budgets available to the Forest. Previous monitoring and evaluation reports have followed the numerical sequence of monitoring plan action items. This report has been restructured to conform to the Forest Service Natural Resource Agenda (NRA) and the Southwest Regions customer driven work emphasis (Company's Coming) priorities. This organization should aid the public and agency personnel a better look at the Forest and its administration.

The monitoring accomplished in FY 98 comes from many sources including project monitoring from NEPA documents and biological opinions, general ranger district reviews, and day to day administration of the forest activities. The monitoring includes implementation monitoring that examines if plan guidance was followed and effectiveness monitoring that checks to see if projects had their desired outcome. Validation monitoring examines whether the management activities are based on correct assumptions. All of these levels of monitoring occurred this year.

The ultimate purpose of this report is to evaluate management of the Forest. The actual monitoring data are not included in detail but are summarized for evaluation purposes. Documentation of the background data are available at unit offices across the Forest.

Watershed Restoration

Soil, water and air resources represent basic environmental capital that support the rest of the environment. These resources taken together with the aquatic and riparian ecological communities comprise the monitoring elements described here. The highest priority for administration of the Forest was the alignment of grazing permits with environmental needs. From 1995 through 1997 the Forest analyzed 830,000 acres of grazing allotments for a number of environmental factors that include watershed condition, riparian ecological status and stream proper functioning condition (MAP#14). Stream habitat surveys were included in the analysis as appropriate. The use of the GAWS inventory system does not appear to be appropriate under all circumstances. That system indicates that a greater amount of riffles should result from management. As streams locally become more stable and develop overhanging banks the ripple component decreases. This fact has been identified in validation

monitoring on the West Fork grazing allotment. The Forest completed an additional 360,000 acres of analysis in 1998 for a total of 1,190,000 acres. Prioritization of allotments centered on those with riparian and aquatic species having protection under the Endangered Species Act. A total (MAP #14) of 47 grazing allotments were under analysis and 32 of these had proposed actions taken through consultation with the U. S. Fish and Wildlife Service. Forest Plan objectives are being met on schedule.

Administration of the grazing permits (MAP#14) received unprecedented monitoring this year to ensure that the direct effects of grazing did not impact streams and T&E species. Pastures with such species had riparian areas fenced or cattle excluded from them during critical periods in the species life cycle. Aerial and ground monitoring of the effectiveness of these measures showed that any cattle found to be outside of the terms of the annual operating plan (AOP) were very promptly removed. The incidence of cattle in riparian areas was limited to individual or small groups of animals. All livestock were relocated within 24-48 hours of their detection outside the terms of the AOP.

Utilization standards also received close monitoring on many allotments. Site specific checks of utilization (MAP#14) were used as a basis for moving cattle through their pasture rotations. This resulted in some herds completing their use of forage earlier than that given in the terms of the annual operating plan.

The collective result of this effort is a large scale improvement in watershed conditions and reduced risk to threatened and endangered species.

The ecological status of riparian systems is favorable in its trend (MAP #28). Current riparian conditions show an increasing trend of vegetation succession on stream banks. Most grazing allotments examined showed that the stream banks have at least primary succession occurring. Historic grazing adjustments have allowed grasses and forbs to occupy those sites. Many sites have had significant increases in woody vegetation such as cottonwood and willows. The increase in this component reduces velocity of flood flows and greatly stabilizes the riparian area soils as well as providing shade to streams. Currently the goal for most riparian areas is to induce secondary plant succession. Under this situation grasslike plants such as sedges occupy stream banks and allow over hanging banks to develop. Some streams have this occurring currently. Exclusion of direct effects from livestock grazing should accelerate this process.

Collective review of riparian conditions indicates that Forest Plan standards and guidelines are being applied to all new grazing allotment management plans and annual operating plans. Application of this direction results in more rapid achievement of desired riparian conditions.

Direct watershed projects (MAP #27) contributed to improved watershed conditions on a priority basis. In addition to the enclosure of livestock mentioned above, the Springerville Ranger District completed watershed restoration of ORV damage in Saffle Canyon. The area was seeded and non-system roads were closed and drained.

Monitoring of water quality was conducted in cooperation with Arizona Department of Environmental Quality. The annual report of this monitoring is due in November. Monitoring is restricted to streams that are classified as non-attainment by the AZDEQ. Four streams are monitored for their turbidity by both agencies.

Macroinvertebrate samples were collected in cooperation with Arizona Game and Fish Department this year. The results of these samples have not yet been processed through the laboratory.

Other water quality monitoring focused on implementation of Best Management Practices (BMPs). This indicated that their application does result in attainment of State water quality standards within the area they are applied.

In summary, watershed conditions are in an upward trend on the Forest and current management is accelerating that trend.

Ecosystem Management

Ecosystem management includes many activities that move existing conditions to desired conditions. Considerable overlap exists with the watershed restoration activities described above. The assessment of existing ecological conditions reveals that forest cover in commercial and non-commercial forest types comprises a very large problem. The forage cover ratios (MAP#11) are becoming adverse and increasing competition between wild ungulates and livestock produces site specific conflicts.

Vegetative seral stages are evaluated for all projects where this is appropriate. The diversity of wildlife habitat indices indicate that a great deal of work is needed to accelerate the development of mature and late successional habitat from acres that are currently dominated by sapling and small pole size trees that over stock the sites. This problem occurs across northern Arizona and New Mexico. Where treatment is applied considerable progress is made towards desired conditions. The growth towards vegetative seral stages that are below desired levels is accelerated. The scale of treatment needed exceeds the funding available to deal with anything but the highest priorities of forest management.

Urban interface has the highest priority for vegetative treatment. Work in this area has progressed at a very high rate. The following table details the remarkable extent that this work has proceeded. A large number of tools has been used to work towards desired conditions. Much of this work has been cooperative with partners. Commercial timber sales have received the most opposition from critics but remain as the most viable tool for getting forest types prepared for other treatments such as prescribed fire.

Proj. No.	Project Name	Project Type	Location	Funding Source	Objective	Forest Health Acres	Interface Acres
1	Southside Interface	Interface	Heber RD	NFS, Salvage	Reduce hazardous fuels		100
2	Gramma TSI	Forest health	Chevelon RD	CWKV	Improve tree vigor	152	
3	Deer Lake TSI	Forest health	Chevelon RD	CWKV	Improve tree vigor	178	
4							
5	Holcomb Thinning	Forest health	Heber RD	CWKV	Improve tree vigor	55	
6	St Joe TSI	Forest health	Heber RD	CWKV	Improve tree vigor	194	
7	Willow TSI	Forest health	Chevelon RD	CWKV	Improve tree vigor	72	
8	Middle & Hatchery TSI	Forest health	Chevelon RD	NFS	Improve tree vigor	305	
9	Nicks Camp & Red Rock TSI	Forest health	Heber RD	NFS	Improve tree vigor	450	
10	Work Center Sale	Forest health	Heber RD	NFS, Salvage	Reduce tree density	485	
11	Larson Ridge Sale	Forest health	Heber RD	NFS, Salvage	Aspen regeneration	40	
12	Bear Canyon Sale	Forest health	Chevelon RD	NFS	Reduce tree density	149	
13	Cottonwood Sale	Forest health & Interface	Heber RD	NFS, Salvage	Reduce tree density	848	447
14	Brookbank Sale	Forest health	Heber RD	NFS, Salvage	Reduce tree density	2700	
15							
16	Jersey Horse Sale	Forest health	Heber RD	NFS, Salvage	Reduce tree density	734	
17	Ridge Broadcast Burn	Forest health	Chevelon RD	Fuels	Reduce hazardous fuel loading	990	

Proj. No.	Project Name	Project Type	Location	Funding Source	Objective	Forest Health Acres	Interface Acres
18	Promontory Fuelbreak	Forest health	Chevelon RD	Fuels	Reduce hazardous fuel loading	80	
19	Car Lake Broadcast Burn	Forest health	Chevelon RD	Fuels	Reduce hazardous fuel loading	293	
20	Duran Pile Burn	Forest health	Chevelon RD	BD, Fuels	Pile fuelbreak & reduce fuels	100	
21	Chevelon Broadcast Burn	Interface	Chevelon RD	Fuels	Reduce fuel loading		850
22	Miscellaneous Hand-pile Burn	Forest health	Chevelon RD	NFS, Fuels	Reduce hazardous fuel loading	554	
23	Outlaw Broadcast Burn II	Forest health	Heber RD	Fuels, Partnership	Reduce hazardous fuel loading, increase forage	2800	
24	RTRT Hand-pile Burn	Interface	Heber RD	NFS, Fuels	Reduce hazardous fuels		80
25	Morgan Timber Sale	Interface	Lakeside RD	NFS, Salvage	Reduce tree density		482
26	Elk Timber Sale	Forest health	Lakeside RD	NFS, Salvage	Reduce tree density	455	
27	Whitcom Timber Sale	Interface	Lakeside RD	NFS, Salvage	Reduce tree density		759
28	Fuelwood Projects	Interface	Lakeside RD	NFS, Salvage	Reduce tree density		760
29	Colbath TSI	Interface	Lakeside RD	NFS	Improve tree vigor		329
30	Fence-Bagnal TSI	Interface	Lakeside RD	CWKV	Improve tree vigor, reduce density		249
31	Cottonwood Burn Regeneration	Forest health	Lakeside RD	NFS	Restore Forest after burn	200	
32	Fence-Bagnal Seeding	Interface	Lakeside RD	CWKV	Watershed protection		100
33	Burton/Bursally Forage Project	Interface	Lakeside RD	RB	Enhance forage		168

Proj. No.	Project Name	Project Type	Location	Funding Source	Objective	Forest Health Acres	Interface Acres
34	Blue Ridge Broadcast Burn	Interface	Lakeside RD	Fuels	Hazardous fuel reduction		500
35	Lons Broadcast Burn	Interface	Lakeside RD	Fuels	Hazardous fuel reduction		750
36	Porter Mountain Fuelbreak	Interface	Lakeside RD	Fuels	Hazardous fuel reduction		105
37	Whitcom Piling	Interface	Lakeside RD	Fuels	Hazardous fuel reduction		10
38	Fool Hollow Fuelbreak	Interface	Lakeside RD	Fuels	Hazardous fuel reduction		7
39	Jacques Marsh Prescribed Burn	Forest health	Lakeside RD	NFS	Wetlands maintenance	3	
40	Pintail Lake Broadcast Burn	Forest health	Lakeside RD	NFS	Wetlands maintenance	25	
41	Hidden Broadcast Burn	Forest health	Lakeside RD	Fuels	Hazardous fuel reduction	50	
42	Pino Ridge Broadcast Burn	Interface	Lakeside RD	Partnership	Hazardous fuel reduction		20
43	Elk Broadcast Burn	Forest health	Lakeside RD	Fuels	Hazardous fuel reduction	15	
44	Scattered Pile Burning	Forest health	Lakeside RD	NFS Partnership	Range forage improvement	50	
45	Community Pile Burning	Interface	Lakeside RD	NFS Partnership	Forage improvement		250
46	Phone Line Road Timber Sale	Forest health	Springerville RD	NFS	Pre-settlement forest demo	250	
47	Greer Fire Hazard Reduction	Interface	Springerville RD	NFS	Fuels reduction		200
48	Elk Winter Range Meadow Restoration	Forest health	Springerville RD	Partnership	Meadow restoration	150	
49	Hay Sale Meadow Restoration	Forest health	Springerville RD	CWKV	Meadow restoration	150	
50	South Fork Deer Burn	Interface	Springerville RD	Partnership	Improve deer forage		600

Proj. No.	Project Name	Project Type	Location	Funding Source	Objective	Forest Health Acres	Interface Acres
51	Badger Knoll Fuels Reduction	Interface	Springerville RD	Fuels	Hazardous fuel reduction		50
52	Hideaway Fuels Reduction	Interface	Springerville RD	Fuels	Hazardous fuel reduction		100
53	Conklin Broadcast Burn	Forest health	Springerville RD	Fuels	Hazardous fuel reduction	300	
54	Greens Peak Habitat Burn	Forest health	Springerville RD	Partnership	Improve elk habitat	200	
55	OD Sale TSI	Forest health	Springerville RD	CWKV	Remove diseased trees	300	
56	Hay Broadcast Burn	Forest health	Springerville RD	Fuels	Hazardous fuel reduction	450	
57	Scattered Piles	Forest health	Springerville RD	Fuels	Hazardous fuel reduction	200	
58	Boggy Broadcast Burn	Forest health	Alpine RD	Fuels	Hazardous fuel reduction	891	
59	Heifer Broadcast Burn	Forest health	Alpine RD	Fuels	Hazardous fuel reduction	1130	
60	Isabelle Pile Burn	Forest health	Alpine RD	BD	Hazardous fuel reduction	400	
61	Isabelle Broadcast	Forest health	Alpine RD	BD	Hazardous fuel reduction	210	
62	Coyote-Oscar Piling & Burning	Forest health	Alpine RD	BD	Hazardous fuel reduction	140	
63	Alpine Thinning & Broadcast Burn	Interface	Alpine RD	Fuels	Hazardous fuel reduction		40
64	Kettle Timber Sale	Forest health	Alpine RD	NFS	Reduce tree density	508	
65	Draw Sale	Forest health	Alpine RD	NFS	Reduce disease & increase diversity	242	
66	Isabelle Sale	Forest health	Alpine RD	NFS	Reduce tree density	288	
67	Hagen TSI	Forest health	Alpine RD	CWKV	Reduce stocking & disease	40	

Proj. No.	Project Name	Project Type	Location	Funding Source	Objective	Forest Health Acres	Interface Acres
68	Hagen Salvage	Forest health	Alpine RD	Salvage	Fuels reduction	50	
69	Dump TSI	Forest health	Alpine RD	NFS	Reduce tree density	28	
70	Hot Air 1 Broadcast Burn	Forest health	Clifton RD	Fuels	Hazardous fuel reduction	350	
71	Hot Air 2 Broadcast Burn	Forest health	Clifton RD	Fuels	Hazardous fuel reduction	1000	
72	East Eagle Broadcast Burn	Forest health	Clifton RD	Fuels	Hazardous fuel reduction	650	
73	4-Bar Mesa Fuelwood	Forest health	Clifton RD	CWKV	Forage & watershed improvement	22	
74	Smith Canyon Fuelwood	Forest health	Clifton RD	NFS	Habitat improvement	150	
Total Acres						20076	6956

Ecosystem condition and trend (MAP# 15) is a very complex determination for an entire forest. This is assessed as inventories proceed. The inventories of greatest extent have been associated with the range project decisions. These have indicated that priority should remain on inventory and adjustment of grazing permits.

Desired future conditions have been described for major ecosystems on the Forest. Survey of those ecosystems is proceeding with the analysis for projects. Riparian and aquatic surveys are an important part of those inventories. Project evaluations indicate that most of the riparian conditions are improving, but those with T&E species typically require acceleration of trend to optimize conditions for listed species.

Forest management practices are benefiting T&E species. With respect to riparian and aquatic species, management changes will improve watershed conditions and their habitats. This improvement should exceed the scale of any natural disturbances that would put populations at risk. The possible exception to this would be increasing wild ungulate populations that would create site specific impacts to habitat in riparian corridors. The ingrowth of forest vegetation creates imbalances of forage and cover ratios as well as micro-habitat conditions that put forest stability and habitat for species such as Northern Goshawk at risk. This trend cannot be overcome with the existing level of treatment as portrayed in the ecosystem management project table listed above.

MAP item 15 relies heavily on RO3 WILD analysis. Comments from all units indicate that this program may not be sufficiently sensitive at the project level to ensure the intent of forest plan direction is met.

Regeneration of forested land after timber harvest is a legal requirement of NFMA. The following monitoring activities (MAP#18) were accomplished to certify that regeneration has been properly completed within the required five year time frame.

Monitoring actions:

1. Reviewed the Beehive EA (Springerville District) 10/20/97 and the Wiggins EA (Chevelon District) 3/18/98, including compliance with regeneration scheduling.
2. Field checked the timber designation on Little Timber Sale (Alpine District) for compliance with regeneration scheduling during marking assistance in October and November 1997.
3. Field reviewed the group selection regeneration units on the Cottonwood Wash Sale (Heber District) during silviculturist re-certification review 10/9/97.
4. Field reviewed a seed cut on the Whitcom Sale (Lakeside District) during silviculturist re-certification review 10/30/97.
5. Field inspected tree planting on the Cottonwood Burn Reforestation contract (Lakeside District) 4/23/98.
6. An annual Reforestation and TSI Needs Report is completed each year. The FY '98 report will be available mid-December. Annual review of the stand data base occurs concurrently with that reporting cycle.

NFMA Findings: Regeneration activities are being scheduled appropriately. Acres not successfully regenerated within 5 years are less than 1%.

The above mentioned problems with over stocked forests are treated with pre-commercial thinning in many instances. While the scale of action is too small to quickly restore natural ecosystem function, the work accomplished meets Forest Plan direction. Monitoring (MAP#19) was undertaken on selected projects to ensure compliance with standards and guidelines.

Monitoring actions:

1. Field reviewed pre-commercial thinning on the Holcomb and Cottonwood Wash (Heber District) riparian restoration projects during silviculturist re-certification review 10/9/97.
2. An annual Reforestation and TSI Needs Report is completed each year. The FY '98 report will be available mid-December.

Findings: TSI activities are in compliance with Plan direction and stocking levels inspected are as described in the prescription. Availability of KV funds to accomplish TSI is diminishing drastically with lower sale values.

The implementation of silvicultural practices (MAP #20) is frequently monitored and is subject to intense quality control by second level of review in many cases. All timber harvest operations of live commercial forests received silvicultural prescriptions by certified silviculturists. The second layer of quality control applied by the Supervisors Office is enumerated below and the findings of these reviews are summarized.

Monitoring actions:

1. A field review was conducted of the understory removal prescription and marking for Blue Ridge (Lakeside District) on 12/11/97.
2. A joint field review with the Coconino NF silviculturist of the marking on Little (Alpine District) was conducted 4/30/98.
3. The appropriateness of prescribed treatments was field reviewed on Cottonwood Wash, Sundown, Holcomb and Southside Salvage (Heber District) 10/9/97 in conjunction with silviculturist re-certification.
4. The appropriateness of prescribed treatments was field reviewed on Blue Ridge-Morgan, Elk and Whitcom (Lakeside District) 10/30/97 in conjunction with silviculturist re-certification.
5. Annual harvest by method of cut is reported annually in the SILVA report.

The FY '98 SILVA report will be available mid-October.

6. RMRIS was queried to locate stands where harvest occurred in FY '98 without a prescription activity code.

Findings: Harvest types and treatments comply with Forest Plan direction. The RMRIS query found no stands harvested to date in CY '98 that did not also have a prescription activity code.

The volume and productivity class of forested lands are tracked through timber management data bases. The data from these data bases can be used to track these factors over time. The parameters modeled in the original forest plan before amendments lack sufficient similarity to connect them with statistical inference to the existing guidelines.

Monitoring actions:

1. Harvest activities are entered into RMRIS and PTSAR.

Findings: Board foot/cubic foot ratios and volume per acre yields are not projected in the Forest Plan. Harvest Activities are entered in R2RIS yearly. Contracts and Permits are entered as soon as feasible into STARS, which then show up as volume accounted for in PTSAR.

Monitoring of forest openings as a result of timber harvest has diminished in its importance since amendments have focused harvest on the production of habitat for the Northern goshawk and the Mexican spotted owl. Timber management has shifted from even aged silviculture to unevenaged management. While size limits on openings are a reality of regulations, they seldom come into play with current harvest practices. Monitoring of the size of forest openings (MAP#22) has been detailed below and the resulting findings have been summarized.

Monitoring actions:

1. Reviewed the Beehive EA (Springerville District) 10/20/97 and the Wiggins EA (Chevelon District) 3/18/98, including examination of opening sizes.
2. Field checked the unit designation on Little Timber Sale (Alpine District) for compliance with opening size during marking assistance in October and November 1997.
3. RMRIS queried to determine range and average size of created openings.

Findings: Opening sizes are in compliance with the Plan. The RMRIS query showed no harvest openings (patch, strip or stand clearcuts) have been created

in the past year. Openings created through group selection are 4 acres or less.

Monitoring shows that the harvest rate of timber (MAP#23) falls significantly behind that needed to obtain a desired forest condition that has more favorable cover forage ratios. Because the sale of all types of wood is highly regulated, good records exist on the amount and type of forest products sold.

Monitoring actions: Review of 2400-17's (Report of Timber Sale) & PTSAR for ten year period from 1987-1996. 2400-17's show larger sawtimber and multiproduct sales for which an appraisal is done; PTSAR shows all volume, including fuel wood and miscellaneous sales.

Findings: 2400-17's show a ten year sold volume average of 46,761 MBF/year, or 39% of Forest Plan ASQ for sawtimber and pulp. PTSAR shows ten year sold volume average of 54,513 MBF/year, or 40% of Forest Plan ASQ for sawtimber, pulp, and fuel wood.

Monitoring actions: Review of Annual Free Use Reports and PTSAR personal use volume, which is mostly fuelwood (MAP# 24), for the ten year period from 1987-1996,

Findings: Annual Free Use Reports show an average of approximately 6044 cords/year fuel wood offered as free use, with the exception of 1993,1994, for which data is missing. PTSAR personal use volume shows an average Use of approximately 16,000 cords/year, or 50% of the estimated demand in the Forest Plan EIS.

Timber suitability determinations (MAP#26) are made at the Forest Plan level and verified during projects. This is tracked in a data base (RMRIS) to ensure that harvest is limited to appropriate types of land.

Monitoring actions:

1. Reviewed the Beehive EA (Springerville District) 10/20/97 and the Wiggins EA (Chevelon District) 3/18/98, including verification of suitability classification.
2. Little (Alpine District) and Beehive (Springerville District) project areas queried through RMRIS for land suitability classifications.

Findings: Suitability determinations are in compliance with Plan direction. RMRIS query showed suitability codes to be in agreement with cover type, slope class, productivity class, ownership and land use.

Monitoring of forest insect and disease effects (MAP #35) were undertaken in FY 98 but results are not yet available. The results of surveys will be portrayed on a map with a narrative. They will be appended to this report when available. According to the last survey map & narrative and field observations throughout the year, insect/disease levels are generally at endemic levels. Steep slopes in mixed conifer appear to be experiencing increasing mortality by the fir engraver due to density related mortality.

Recreation

Existing developed recreation sites (MAP #1) accommodate demand except during peak use periods associated with holidays. The contacts made by recreationists are overwhelmingly favorable on the quality of experience available. Resource damage is very uncommon. A few sites are at or beyond their useful life. Lakeside campground for instance will not be replaced when it wears out due to its poor location and age.

Undeveloped sites also receive considerable use throughout the year. Their management is currently adequate to prevent unacceptable resource impacts. Restrictions are used to limit impacts of heavy use. Surveys of recreationists reveal that high satisfaction levels dominate the population of users. Occasional conflicts with livestock, other recreationists or weather reduce user satisfaction.

The satisfaction associated with trails is variable across the forest is variable. In areas associated with population centers volunteer help greatly increases user satisfaction. The use by Mountain bikes is accelerating greatly while horseback use is declining. Maps that reflect needs of mountain bikers are limited to the western ranger districts. The Forest has the potential to be a large mountain bike recreation center due to the variety of trail difficulty and the outstanding scenery present across the forest.

ORV Compliance has been good in most areas with minimal area impacted to the point where rehabilitation and closure are required. Saffle Canyon was rehabilitated this year and additional restrictions applied.

Visual quality impacts have not been associated with forest activities due to the uneven aged management requirements of forest plan amendments. Landscape architects apply the greatest amount of effort in site design of developed recreation to ensure user satisfaction

NAME	FACILITY	FUNDING SOURCE	ACCESSIBILITY
Tutt Creek	Alpine Dispersed Site Trailhead	FS	No
Hannagan Meadow	Winter Sports Parking Lot	FS CIP	Yes
Toboggan Hill	Snow Play Area Parking Area	FS CIP	Yes
Pole Knoll	Parking Area Cross country Ski Trailhead	FS CIP	Yes
Crescent Lake	Parking Area Boat Ramp Boat Dock Kiosk Restroom	AZG&F	Yes
Sheep Crossing	Parking Area Toilet and Handicap Access	ISTEA	Yes
Lightning Ridge	Parking Area Toilet	ISTEA	Yes
Chase Creek	Overlook	ISTEA	Yes
Red Mountain	Overlook Restroom Picnic Tables	ISTEA	Yes

NAME	FACILITY	FUNDING SOURCE	ACCESSIBILITY
Fool Hollow	Observation Point Group Use Ramada		Yes

Roads

Road management is proceeding toward meeting forest plan objectives. Reconstruction occurred on 0.4 miles of road within a developed recreation area in FY 1998. Road obliteration occurred on 25 miles of system roads. Maintenance funds are not adequate to meet the needs of the road system so disinvestment and loss of road quality occurs on many roads.

SOCIAL, ECONOMIC AND ECOLOGICAL FOREST PLAN OBJECTIVES

The Forest Plan predicted that there would be essentially no different effect on local communities if one alternative was selected over another. This was predicted to be true if the area was considered as a whole. The Forest has found in implementing the plan that social/economic effects are evident at the project level as they impact specific users, businesses or permittees, etc.. However, when considered on a larger scale such as a county or forest-wide the effects are as forecast in the plan and are not detectable or at least not significant.

The Forest Plan measured social/economic effects in many sectors. Those sectors dealing with production of commercial timber products or use of the forest for livestock grazing are not providing the positive economic and social effects anticipated by the plan. On the other hand the sectors that addressed recreational uses and wildlife and fish are believed to be meeting or exceeding plan predictions. These conditions are felt to be true based on respective resource use and development (recreation related) or the lack of anticipated use (timber harvest).

From an ecological aspect current implementation of the plan is failing to meet the projected silvicultural treatments. This is creating considerable concern regarding forest health. Also the intensified management anticipated by the plan to, in part, bring forage use in balance with capacity has not occurred to the extent necessary to adequately help resolve this balance.

MONITORING REQUIREMENTS OF OTHER LAWS

Clean Water Act

The Forest Plan calls for compliance with the "Federal Water Pollution Control Act" primarily through the implementation of Best Management Practices (BMPs). The Forest has been fulfilling this requirement with the cooperation of the State of Arizona as part of the Intergovernmental Agreement between the State and the Southwestern Region.

Clean Air Act

The Clean Air Act and its amendments assign to the Federal Land Manager "the affirmative responsibility to protect the air quality-related values of Class I lands". The primary LMP monitoring element of air resources is the tracking of visibility condition in Class I Wilderness areas. The Forest has fulfilled this responsibility by photographically monitoring visibility in the Mt. Baldy airshed on a seasonal basis (6/1-10/1). Photos are qualitatively analyzed for general visibility conditions.

Visibility Conditions Monitoring

1. Scene Monitoring
2. Since 1989, visibility conditions in the Mt. Baldy Class I Wilderness area have been assessed through the use of an automated camera system and densitometric analysis of the 35mm color slides. This technique has a significant rate of uncertainty associated with it and other more precise methods have been developed since 1989. As a result of excessive cost, scientific uncertainty, and the length of the specific monitoring records at individual sites, the decision was made to stop this form of monitoring on the Apache-Sitgreaves National Forest at the end of 1996.
3. 2. Optical, Aerosol, and Meteorological Monitoring
4. Beginning in 1997 a partnership with Arizona Department of Environmental Quality-Air Quality Division (ADEQ-AQD) has been forged for a short-term (two year) visibility monitoring effort utilizing IMPROVE (Interagency Monitoring of Protected Visual Environments) protocol methods. These methods will provide much greater and scientifically robust information to characterize the visibility conditions within Class I Wilderness Areas. Optical measurements are taken with a nephelometer while aerosol measurement are taken using an IMPROVE Sampler with Modules A and B. Some sites collect only optical measurements while others collect both types of data, all sites collect supporting meteorological information. Funding will be needed to maintain the network and meet the monitoring direction of the LMP and CAA after the initial study period.
5. Smoke Monitoring
 - a. Remote Automated Weather Stations (RAWS)
 - i. A number of RAWS have been established to allow better monitoring and prediction of smoke transport and dispersion from Forest Service prescribed fire operations. These stations have been maintained through 1998 and will be maintained into the future for this purpose. The A/S in maintaining sites for this purpose.
 - b. Direct Visual Smoke Monitoring
 - i. As part of the requirements for certain prescribed burns in Arizona, State Rule stipulates monitoring of winds prior to ignition of a fire by releasing and tracking a pilot balloon. After ignition of a prescribed fire, certain size incidents require hourly monitoring and recording of smoke dispersion. The Apache/Sitgreaves complies with both of these monitoring requirements on a routine basis.

6. Compliance with National Ambient Air Quality Standards (NAAQS)
 - a. Although ADEQ-AQD maintains the network of actual NAAQS monitors throughout the State, the Apache/Sitgreaves NF has no record of creating a violation of any NAAQS as a result of its operation. Monitoring of the effects of its operations is accomplished through the review of the ADEQ-AWD monitoring data.

Endangered Species Act

Numerous consultations with the US Fish and Wildlife Service (F&WS) have occurred on each Ranger District. Monitoring activities normally result from each consultation. The Forest is complying with these actions or in some cases negotiates with the F&WS to determine the priority activity

RESEARCH NEEDS

The following research needs have been identified as needed, either initiated or continued on the Apache/Sitgreaves. The needs have been identified through our continuing monitoring efforts and will be used to address and guide future plan implementation efforts.

Arizona Willow

A Conservation Agreement has been developed for Arizona Willow and the forests have dedicated considerable effort to removing and reducing the identified threats to survival. The threat concerning accumulation of fine sediments high in organic content is in need of additional research. The forests are presently cooperating with a PHD candidate in developing a vegetative occupancy history of wetlands across the Mogollon Rim.

Grazing Effects

The Rocky Mountain Station has been conducting research on the effects of ungulate grazing as it relates to riparian and fish resources within the West Fork Allotment on the Alpine Ranger District. This was identified as a need through monitoring and project analysis and must be continued.

WEPP

The Water Erosion Prediction Program (WEPP) is replacing the Universal Soil Loss Equation. In order for WEPP to be used in forest analysis and monitoring it must be validated locally and regionally.

Goshawks

There have been several years of work done on the Forest concerning the reproductive success of Goshawks. This area of research needs to be continued for perhaps up to an additional five years.

EMERGING ISSUES AND SOCIAL/RESOURCE TRENDS

Grazing

The Forest is challenged to comply with numerous environmental laws. In order to meet these challenges the Forest has accomplished, over the last three fiscal years, NEPA on 84 grazing allotments. The scope of this analysis encompasses over 1.1 million acres. Compliance with the laws on this large acreage, has resulted in a concerns on the part of users of the National Forest (primarily grazing permittees), because livestock reductions will be needed to balance capacity with obligation on grazing allotments. These NEPA decisions point to the fact that additional or changing management is needed to protect watersheds and habitats for wildlife species.

Each decision incorporates a planned monitoring protocol to insure that the decisions implement the goals and objectives of the analysis.

Forest Health

The Apache/Sitgreaves is experiencing increasing evidence of declining forest health. Stand densities have risen, fuel loads are continuing to increase, tree mortality is more common and there is more incidence of insects and disease.

MONITORING PARTNERSHIPS

Numerous partners are cooperating with the Forest in analyzing and monitoring plan implementation projects. These partners include Federal and State agencies as well as County governments, forest users, local citizens, and special interest groups. Most partners have specific interests and are very willing to participate. Timely, efficient and unbiased data that is creditable to the general public is the hoped for result. Our efforts to date have provided improved understanding of resource/social/economic conditions, planned actions and on the ground results.

The Forest has enlisted the Rocky Mountain Experiment Station to monitor the effects of grazing on watershed and wildlife species, primarily native fish. The station is developing for the forest a protocol for monitoring techniques which will enable the forest to better interact with the grazing users.

The Forest is currently developing a Memorandum of Understanding and training program with Navajo County, University of Arizona , and the Cooperative Extension Service to train and certify livestock operators in managing the range resource. This concept allows

the Forest to work with livestock operators in developing a stewardship role that will, hopefully, maintain livestock grazing on the National in balance with other uses.

The Forest also has an on-going partnership with the Arizona Game & Fish and grazing permittees to monitor grazing utilization. This information is used in determining annual livestock management plans and in providing recommendations to the Game and Fish for big game harvest levels.

BARRIERS TO EFFECTIVE MONITORING AND EVALUATION

The most often cited barriers by the Ranger Districts is the lack of adequate funding and time to conduct identified monitoring needs. Monitoring is being identified through project analysis, biological evaluation and consultation but it is simply more than can be accomplished with the existing work-force and budgets.

Several monitoring items in the Forest's Monitoring Action Plan (MAP) are in need of modification. Changes should be made in the way some MAP Items are applied to specific projects monitoring efforts. Some monitoring questions and methodologies are not providing appropriate results. A frequently cited example is the use of the RO3 Wild model for estimating habitat capability indices on non timber projects of projects of relatively small acreage.

Some monitoring activities require the participation of partners not only in data gathering but also in sharing the cost of the monitoring. This is currently not occurring.

PLAN IMPLEMENTATION BUDGETS AND ACCOMPLISHMENT

The following three pages show the budgets available to the Apache/Sitgreaves to implement the Forest Plan since its approval in 1987. Funding does not always track across each EBLI and Fund Code due lack of funding in some years or changes in EBLI definition. The third page depicts accomplishment and is a summary of management attainment reporting for each of the plan years.

FOREST SUPERVISOR CERTIFICATION

I have reviewed this annual Forest Plan Monitoring and Evaluation Report for Fiscal Year 1998. The report provides monitoring information and addresses monitoring questions as identified in the Apache/Sitgreaves "Monitoring Action Plan". The Action Plan's purpose is to implement Chapter Five (Monitoring Plan) of the Forest Plan. The monitoring plan and monitoring activities conducted by the Forest are based on NFMA Regulation and Forest Service Manual guidance. I have determined that the Forest Plan remains sufficient to guide the Apache/Sitgreaves implementation activities over the next fiscal year. Amendments may be needed and will be developed and implemented after appropriate participation and analysis.

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Forest Supervisor

Date