

Apache-Sitgreaves National Forests



FY 2002 – 2003

LAND MANAGEMENT PLAN

MONITORING

and

EVALUATION

REPORT

Apache-Sitgreaves National Forests

Land Management Plan

Monitoring and Evaluation Report

Fiscal Years 2002-2003

Contents

<u>FOREST SUPERVISOR CERTIFICATION</u>	6
<u>INTRODUCTION</u>	7
<u>SUMMARY</u>	7
<u>Watershed Restoration</u>	8
<u>Range Management / Grazing</u>	29
<u>Ecosystem Management</u>	9
Silviculture.....	10
Timber Sales.....	17
Wildland Urban Interface / Kyl Tables.....	19 - 26
<u>Recreation</u>	27
<u>Roads</u>	28
<u>SOCIAL, ECONOMIC & ECOLOGICAL</u>	
<u>FOREST PLAN OBJECTIVES</u>	27
<u>MONITORING REQUIREMENTS OF OTHER LAWS</u>	27
I. <u>Clean Water Act</u>	27
II. <u>Clean Air Act</u>	28
A. <u>Visibility Conditions Monitoring</u>	28
Optical, Aerosol, and Meteorological Monitoring.....	28

B. <u>Smoke Monitoring</u>	28
1. Remote Automated Weather Stations (RAWS)	29
2. Direct Visual Smoke Monitoring.....	29
3. Compliance with National Ambient Air Quality Standards (NAAQS)	29
III. <u>Endangered Species Act</u>	29
<u>EMERGING ISSUES & SOCIAL / RESOURCE TRENDS</u>	29
<u>Continued Drought</u>	29
<u>Grazing</u>	29
<u>Forest Health / Healthy Forest Initiative (HFI)</u>	30
<u>National Fire Plan (NFP) Hazardous Fuel Treatment Program</u>	30
<u>Management Indicator Species (MIS)</u>	31
<u>BARRIERS TO EFFECTIVE MONITORING & EVALUATION</u>	31
<u>PLAN IMPLEMENTATION BUDGETS & ACCOMPLISHMENT</u> <u>(Action Plan)</u>	31
<u>STATUS OF RECOMMENDATIONS</u>	31
<u>RESEARCH NEEDS</u>	32
<u>Arizona Willow</u>	32
<u>Grazing Effects</u>	32
<u>WEPP</u>	32
<u>Goshawks</u>	32
<u>Management Indicator Species (MIS)</u>	32
<u>LIST OF PREPARERS</u>	32

LOCATIONS OF SUPPORTING DOCUMENTATION
FOR MONITORING ACTIVITIES.....33

MONITORING PARTNERSHIPS.....33

APPENDICES.....36

- A. Vicinity Map -- Apache-Sitgreaves National Forests (A-S NFs)
- B. A-S NFs Land Management Plan (LMP) – Description of Amendments
- C. Description of the A-S NFs LMP Monitoring Action Plan (MAP) Items
- D. National Forest Visitor Use Monitoring -- National and Regional Project Results
- E. 2003 Annual Report -- A-S NFs Water Quality Non-Point Accomplishments
 - 10% Fund Project – Open Draw Crossing Reconstruction
 - 10% Fund Project – Forest Road 8854
 - 10% Fund Project – Burro Creek – West Fork Black River
- F. 2002 Guideline Non-Point Source Pollution Annual Report – Clifton Ranger District
- G. 2003 Non-Point Pollution Report – Clifton Ranger District
- H. FY2003 A-S NFs Management Indicator Species (MIS) -- Monitoring Completed & Funds Expended
- I. Management Indicator Species (MIS) Monitoring For Songbirds -- Black Mesa Ranger District
- J. Management Indicator Species (MIS) Monitoring For Songbirds -- Springerville Ranger District
- K. Management Indicator Species (MIS) Assessment For Pleasant Valley Allotment – Clifton Ranger District
- L. 2003 Chiricahua Leopard Frog Surveys -- Pleasant Valley Allotment -- Clifton Ranger District
- M. Mexican Wolf Reintroduction -- Status Summary Conditions Affecting Livestock Management
 - East Eagle Allotment -- Clifton Ranger District
- N. Situation Brief -- Mexican Gray Wolf Reintroduction & Management -- Clifton Ranger District
- O. Coal Creek / Highway 78 -- Riparian Corridor Enhancement -- Clifton Ranger District
- P. FY 2002 -- Status of Allotments by Number / Condition / Acreages -- Clifton Ranger District
- Q. 2003 Range Utilization Monitoring by Allotment – Springerville Ranger District
- R. Rodeo-Chediski Fire -- Summary Facts

- S. Talking Point Facts -- Rodeo-Chediski Fire Rehabilitation
- T. Status of the Rodeo-Chediski -- Fire Salvage Project
- U. 2002 Current Status of Bark Beetles in Arizona (PowerPoint Presentation)
- V. 2002 Acres of Bark Beetle Activity Detected from Aerial Survey in Arizona
- W. 2002 Aerial Detection Survey Totals – A-S NFs
- X. 2002 Briefing Paper: Sequence of Events Causing Pine Mortality in the Southwestern Region
& Possible Actions That Can Be Taken to Protect High-Value Trees
- Y. 2002 Bark Beetle Activity on the Alpine Ranger District
- Z. 2002 Briefing Paper: Bark Beetle Activity on the A-S NFs
- AA. 2003 Pine Bark Beetle Situation in Arizona
- BB. 2003 Arizona Insect Epidemic -- Fact Sheet and Information Bulletin
- CC. 2003 Bark Beetle Activity in Recreation Sites on the A-S NFs (Lakeside & Black Mesa RDs)
- DD. 2003 Douglas-Fir Beetle Activity in Rodeo-Chediski Fire PACs (Black Mesa Ranger District)
- EE. 2003 Apache-Sitgreaves NFs Drought Update

FOREST SUPERVISOR CERTIFICATION

I have reviewed this annual Forest Plan Monitoring and Evaluation Report for Fiscal Years 2002-2003. The report provides monitoring information and addresses monitoring questions as identified in the Apache-Sitgreaves "Monitoring Action Plan" (MAP). The Action Plan's purpose is to implement Chapter Five (Monitoring Plan) of the Forests Land Management Plan (FLMP). The monitoring plan and monitoring activities conducted by the Forests are based on the National Forest Management Act (NFMA) Regulation and Forest Service Manual (FSM) guidance. I have determined that the Forest Land Management Plan remains sufficient to guide the Apache-Sitgreaves National Forests (A-S NFs) plan implementation activities over the next fiscal year. A Plan amendment is under development for restricting cross country travel by wheeled motorized vehicles. Other Plan amendments may be needed and will be developed, as appropriate, and implemented after appropriate analysis, public participation, and comment.

ELAINE ZIEROTH
Forest Supervisor

Date

INTRODUCTION

The Apache-Sitgreaves National Forests (A-S NFs) encompass two million acres of magnificent mountain country in east-central Arizona (vicinity map, Appendix A). The Apache-Sitgreaves National Forests Land Management Plan (FLMP) guides management of this magnificent mountain area in accordance with the National Forest Management Act (NFMA) of 1976. This report documents implementation, evaluation, and validation monitoring of the Apache-Sitgreaves National Forests Land Management Plan as it is currently amended. A brief description of all current FLMP amendments is included in Appendix B. The forest plan contains a Monitoring Plan that has been adjusted in a Monitoring Action Plan (MAP) Chapter 5 that prioritizes monitoring efforts according to the budgets available to the Forests. A description of Monitoring Action Plan (MAP) items is included in Appendix C. 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 Region's customer driven work emphasis (Company's Coming) priorities. This revised document organization should aid members of the public and agency personnel take a more informed look at the A-S NFs and their administration.

The monitoring accomplished in FY 2002-2003 comes from many sources including project monitoring from National Environmental Policy Act (NEPA) documents, biological opinions, general ranger district reviews, and day to day administration of the Forests' activities. The monitoring includes *implementation monitoring* that examines if plan guidance was followed; *effectiveness monitoring* that checks to see if projects had their desired outcome; and *validation monitoring* that examines whether management activities are based on correct assumptions. These three levels of monitoring all occurred during these two fiscal years.

The ultimate purpose of this report is to evaluate management of the Forests. The actual monitoring data are not included in detail, but are summarized for evaluation purposes. Documentation of respective background data is available at the five district offices across the Forests – Alpine, Black Mesa, Clifton, Springerville, and Lakeside.

SUMMARY

Monitoring of forest plan implementation on the Apache-Sitgreaves National Forests proceeded within funding constraints for FY 2002-2003. Forest workers at all levels monitored FLMP implementation as we aggressively improved watershed conditions, bettered forest health and ecosystem conditions, provided for recreation opportunities, and managed roads and facilities to achieve desired future conditions. Funding constraints remain the greatest obstacle to continuing effective monitoring activities.

Watershed Restoration

Soil, water, and air resources represent the 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 in this section.

Range Management / Grazing

The highest priority for administration of the Forest was the alignment of grazing permits with environmental needs. From 1995 through 2001 the Forest analyzed 1,647,981 acres of grazing allotments for a number of environmental factors that include watershed condition, riparian ecological status, and stream proper functioning condition (MAP item #14). The Forests completed an additional 78,289 acres of grazing analysis in FY 2002-03 for a total of 1,726,270 acres completed since 1995. Stream habitat surveys were included in the analysis as appropriate often using the GAWS inventory system. However, use of GAWS 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 riffle component decreases. This fact has been previously identified in validation monitoring on the West Fork grazing allotment. On 2/15/2002, the Final Project Report, vol. 1 & 2, of the West Fork Allotment Riparian Monitoring Study 1993-1999, was issued by the USDA-FS, Rocky Mountain Research Station, RWU – 4302, Flagstaff, AZ. The Table of Contents and Executive Summary of this West Fork report (vol. 1) are included as Appendix D in our previous FY 2000-2001 Monitoring and Evaluation Report.

Prioritizing of allotments for grazing analysis centered on those with riparian and aquatic species having protection under the Endangered Species Act (ESA). During FY 2002-2003, a total of six (6) grazing allotments (MAP item #14) had grazing analysis and NEPA documents prepared. Forest Plan objectives are being met on schedule. Reductions in livestock numbers collectively indicate that some allotments had very large percentage reductions in allowed stocking and others had relatively small changes. Administration of the grazing permits (MAP item #14) received continued close monitoring to ensure that the direct affects of grazing did not impact streams or threatened and endangered (T&E) species. Pastures with T&E species had riparian areas fenced or cattle excluded from them during critical periods in the vegetative species life cycle. During FY 2002-2003, there were at least xx allotments in non-use or not stocked status. A number of grazing allotments were given reduced stocking thru memorandums of understanding (MOUs).

Utilization standards continue to receive close monitoring on A-S NFs allotments. Site specific checks of utilization (MAP item #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 provided for in the terms of the annual operating plan. Precipitation was variable throughout the grazing season and several mild winters allowed dispersal of wild ungulates over a wide area with fewer conflicts between them and livestock, with several exceptions. Appendices P and Q display some of this grazing monitoring status.

The collective result of these factors was a large scale improvement in watershed and vegetation conditions and reduced risk to T&E species.

The ecological status of riparian systems continues favorable trends for the most part (MAP item #28). Current riparian conditions show an improving trend of vegetation succession on stream banks. There are usually some intense summer thunderstorms, but very little damage seems to have occurred to fish bearing streams. The

recovery of these streams continues in large part, however, elk had significant negative impacts on willows in Nutrioso Creek and the West Fork of the Little Colorado River. In spite of this, these systems have not yet had an episode of destabilized stream bank occurrence. At the same time, the diversity of the woody riparian vegetation is at risk in some locales.

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 resulted in accelerated achievement of desired riparian conditions in most situations. Direct watershed projects (MAP item #27) were spread across the forest and amounted to xxx acres during FY 2002-2003.

Monitoring of water quality continued in cooperation with Arizona Department of Environmental Quality (AZ-DEQ). The bi-annual report of this monitoring was last released by AZ-DEQ in June, 2000 and the next report is due in 2002. *** Monitoring is restricted to streams that are classified as non-attainment by the AZ-DEQ. Eight streams are monitored for their turbidity by both agencies (Blue River, Little Colorado River, Hayground Creek, Stinky Creek, Snake Creek, Beaver Creek, West Fork Black River, and Lee Valley Creek). Joint macroinvertebrate sampling began in FY 2001 and is expected to continue for a total of five years.

Approximately xx miles of stream were inventoried for proper functioning condition (PFC) during FY 2002-2003. 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. Other water quality monitoring focused on implementation of Best Management Practices (BMPs) for specific projects in accordance with the Clean Water Act (CWA) resulting in attainment of State water quality standards within their application areas. Appendices E, F, and G report on some of this monitoring and positive watershed accomplishments.

In summary, watershed conditions are generally in an upward trend on the Forests and current management practices reinforce and enhance that trend for the most part.

Ecosystem Management

Ecosystem management includes many activities that move existing conditions toward desired conditions. Current ecological conditions indicate that forest health as related to forest cover in commercial and non-commercial forest types presents a large scale problem. Some site specific conflicts between wild ungulates and livestock reduced forage cover ratios (MAP item #11). There is also a strong correlation between tree crown closure and loss of forage production for wildlife and livestock. Treatment of this problem has been limited by the adverse economics of harvesting small diameter timber, though some notable improvements in treatment options continued to occur during FY 2002-2003. The scale of forest health treatments ideally needed still exceeds the funding available to deal with anything but the highest priorities thru healthy forest management activities. Specific vegetative manipulation activities utilizing timber sales are summarized on page 17.

Ecosystem condition and trend (MAP item #15) are important monitoring criteria. Substantial inventory of ecosystem condition and trend resulted from surveys of range conditions. These became a driving force in the earlier mentioned livestock adjustments. A second source of inventory results from the ecosystem management area assessments. Survey of those ecosystems is proceeding with the analysis for projects. As already noted under Watershed Restoration, approximately xx miles of stream were inventoried for proper functioning

condition (PFC) during FY 2002-2003. 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. In addition, a total of xxx acres of soil and watershed improvement projects were completed during FY 2002-2003.

Forest management practices are benefiting T&E species and with respect to riparian and aquatic species, management enhancements will improve watershed conditions and their habitats. The possible exception to this would be increasing wild ungulate populations that continue to create site specific impacts to woody species habitat in riparian corridors. Hopefully monitoring will continue to verify if the improvements occurring will exceed the scale of any natural disturbances that would put populations at risk.

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 forest treatment as portrayed in the project table on page 17. The forest MIS report establishes a point in time evaluation of Goshawk populations and estimates of habitat. This is included as Appendix H.

MAP item #15 relies heavily on RO3 WILD analysis. Comments from all districts indicate that this computer based analysis program may not be sufficiently sensitive at the project level to ensure the intent of forest plan direction is met. As applications of NRIS Terra are implemented, they will be evaluated for applicability.

FY 2002 Silvicultural Monitoring

The following accomplishments were reported in the SILVA database for the A-S NFs:

Timber Stand Improvement (TSI)

- 1,237 acres with appropriated funds
- 256 acres with KV funds
- 165 acres through fuelwood contract requirements
- 28 acres with fuels management funds
- 904 acres of previous TSI was certified as meeting treatment objectives.
- 1,406 acres received stand examination.
- 62 acres of first year plantation survival exams with an average 54% survival rate.
- 97 acres of third year plantation survival exams with an average 75% survival rate.
- 988 acres received commercial harvest (all intermediate thinning) – with no regeneration harvests.

Less than 2% of regeneration harvests in past five years have not been certified as stocked (only 146 acres).

Highlights from annual aerial insect and disease surveys completed in September 2002 are as follows:

- There has been a significant increase in bark beetle-killed pine across the Forests with a 4-fold increase in ponderosa pine mortality since last years' survey. The survey estimates 2 million pines were killed in 2002 over an accumulated total of 500,000 acres. While the majority of the pinyon-juniper type is not included in the survey, some areas have experienced as much as 90 percent mortality in the pinon pine.
- A significant increase in aspen defoliation was detected this year over past years. Drought is a factor in this pathological decline which results in high mortality, especially of large trees.
- Most plant communities are expressing drought related stress with even some of the most drought tolerant types (like manzanita and scrub oak) showing signs of mortality in a number of locations.
- Spruce beetle increased significantly over the Forest as well, with over 15,000 acres showing mortality in 2002, with only 10 acres showing similar mortality a year ago.

On-site monitoring visits conducted for the period by S.O. Silviculture Staff included the following:

- May 7, 2002 – adaptive management field review of recent silviculture prescriptions applied on the neighboring Coconino Forest.
- June 13, 2002 – inspection of contractor stand examination plots in the Greer area.
- June 19-July 1, 2002 – observe extreme fire behavior on Rodeo-Chediski Fire with fireline assignment on north and east divisions.
- October 29, 2002 – field review of Most Similar Neighbor analysis results for stand exam data imputations for Rodeo-Chediski vegetation analysis for EIS analysis.
- November 7, 2002 – attend field review of selected silviculture treatments within the Rodeo-Chediski Burn to assess the affect of treatment on burn severity.

Analytical and procedural activities for the period by the S.O. Silviculture Staff that relate to monitoring include:

- Reviews and edits of Alpine Urban Interface EA prior to DN / FONSI preparation.
- Assist in GIS edits of vegetation layer for TVA base coverage map contract.
- Provide information and assistance for Ecological Restoration Institute study plots in the Mineral Ecosystem Management Area (EMA).
- Reviews and edits of Mineral EMA EA prior to DN / FONSI preparation.
- Compile basal area information for Mexican Spotted Owl (MSO) Protected Activity Centers (PACs) for Recovery Team revision of Threshold specifications; review and comment on proposed revisions.
- Export existing tree data from RMRIS database to new standard service-wide FSVEG database.
- Vegetation database queries and compilation of Forest FIA data in support of Forest Management Indicator Species (MIS) analysis.
- Host training of Forest personnel in new Common Stand Exam procedure.

- Collect ponderosa pine bud samples for genetics study.
- Participate in pre-work meetings for stand exam contract.
- Participate in R.O. Inventory and Monitoring plan meeting with Forest.
- Query vegetation database for correlation between past silvicultural treatment and Rodeo-Chediski Fire effects.
- Start vegetation data compilation for Rodeo-Chediski salvage CEs and EIS.
- Public contacts at Forest Service booth at Apache County Fair.
- Review Region Geneticist's analysis of adequacy of Forests seed inventory for fire reforestation.
- Apply for Pest Management funding for bark beetle control in campgrounds and administrative sites.
- Conduct annual reconciliation of Forest KV and SSF fund balances.

FY 2003 Silvicultural Monitoring

Monitoring Item #18: Timber Reforestation (Priority 1)

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

Monitoring actions:

- Reviewed reforestation accomplishment through the SILVA report, which shows 356 acres of reforestation activities accomplished on the Forests for FY 2003. The report also shows a current reforestation need of 6,035 acres.
- Certified that reforestation requirements of NFMA do not apply to fire salvage harvest for the Rodeo-Chediski Fire Salvage EIS analysis.
- Field review of the Rodeo-Chediski Fire with district silviculturists and the R-3 Silviculturist for fire effects and reforestation needs was conducted November 7, 2002.
- Conducted assessment of artificial reforestation needs for the Rodeo-Chediski Long Term Rehabilitation Plan. Four alternatives range from a high of 36,192 acres to a low of 1,990 acres.
- Ordered 30,000 ponderosa pine seedlings from the USFS Bessey Nursery in Nebraska for planting 300 acres this year on the Rodeo-Chediski Fire.
- Evaluated and ordered seedling protectors to increase survival probability and stretch seedlings for Rodeo-Chediski planting.

Findings: Regeneration activities are being scheduled appropriately. Regeneration surveys were conducted on 227 acres and plantation survival surveys were conducted on 399 acres, and 3rd year survival

was 43%.

Monitoring Item #19: Timber Stand Improvement (Priority 3)

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

Monitoring actions:

- Reviewed timber stand improvement accomplishment through the SILVA report, which shows 1,266 acres of timber stand improvement activities accomplished on the Forest for FY 2003. The report also shows a current timber stand improvement need of 20,245 acres.
- Participated in the evaluation panel for awarding a thinning contract June 4, 2003.

Findings: TSI activities are in compliance with Plan direction and stocking levels are described by silvicultural prescription. There are more areas in need of stocking control than there is appropriated and KV funding available to accomplish the work. Fuels reduction associated with WUI work is complementing this work. 648 acres of previous TSI were revisited and certified as having successfully met objectives.

Monitoring Item #20: Silvicultural Practices (Priority 2)

The implementation of silvicultural practices (MAP item #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 level of quality control applied by Forest Supervisor's Office personnel is enumerated below and the findings of these reviews are summarized.

Monitoring actions:

- Reviewed silvicultural diagnosis, prescription and implementation work in conjunction with recertification of the Black Mesa District Silviculturist in November 2002.
- Participated in Region 3 field review of silvicultural practices on Lakeside and Black Mesa Districts, May 13-15, 2003.
- Reviewed marking guides in the field for implementing part of the timber harvest under the Mineral EMA EA on May 16, 2003.

Findings: Harvest types and treatments comply with NEPA documentation and Plan direction.

Monitoring Item #21: Volume/Productivity Class (Priority 3)

The volume and productivity class of forested lands are tracked through timber management data bases (Monitoring Item #21). 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. This is due in part to different procedures for sampling.

Monitoring actions:

- Harvest activities are entered into RMRIS and PTSAR, but productivity and yield are not currently priority considerations. Timber management activities are based upon the needs of fire protection or threatened, endangered, or sensitive wildlife species requirements.

Findings: Volume and productivity class receive very limited consideration in making forest management decisions.

Monitoring Item #22: Size of Openings (Priority 2)

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 the size of forest openings (MAP item #22) has been detailed below and the resulting findings have been summarized. In 2002 and 2003, no NEPA documents specified amendments to forest plan standards and guidelines.

Monitoring actions:

- Acres harvested by method and cover type were reviewed in conjunction with the annual SILVA report.

Findings: No acres received regeneration harvests in 2003 where size of opening comes into question. All harvests were by intermediate methods, which do not create regeneration openings.

Monitoring Item #23: Timber Offered (Priority 3)

Monitoring shows that the harvest rate of timber (MAP item #23) falls significantly below that needed to obtain a desired forest condition that has more favorable forage cover 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:

- Volume of timber offered was entered into the PTSAR and TSSA databases. Forest Plan volume schedules have been deleted with volume offered, a product of stand management for other purposes

rather than as an independent objective.

Findings: 48,000 ccf was offered in 2003.

Monitoring Item #24: Cords of Firewood Offered (Priority 3)

Review of Annual Free Use Reports and PTSAR personal use volume from mostly fuelwood (MAP item #24).

Monitoring actions:

- Volume of cords of firewood offered is tracked through the PTSAR and TSSA databases.

Findings: 1,728 cords of firewood were permitted in 2003 for free use firewood. An additional 19,921 cords were permitted in commercial or paid personal use permits.

Monitoring Item #25: Regenerated Yield Projections (Priority 3)

Monitoring actions:

- Regenerated yield projections were not made in 2003. With the de-emphasis of timber commodity production, yield projections are no longer a priority consideration.

Findings: Regenerated yield projections are not a priority consideration.

Monitoring Item #26: Timber Suitability (Priority 2)

Timber suitability determinations (MAP item #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:

- Burned-over stands in the Rodeo-Chediski Fire were evaluated for timber production suitability through the CE and EIS processes for salvage.
- As an initial step in determining reforestation suitability of stands in the Rodeo-Chediski Fire, an assessment of artificial reforestation needs was conducted for the Long Term Rehabilitation Plan.
- Reviewed timber suitability considerations in prescription and implementation procedures in conjunction with recertification of the Black Mesa District Silviculturist in November 2002.
- Participated in Region 3 field review of silvicultural practices on Lakeside and Black Mesa districts May 13-15, 2003. Timber suitability of burned-over lands was discussed and reviewed as part of this effort.

Findings: Suitability for timber production following catastrophic fires comes into question depending upon the degree of soil damage. There is no quick, large-scale method of accurately making that determination. Broad scale classifications help focus follow-up field examination, but suitability determinations will require a site-by-site visit by soil and vegetation specialists and will take years to accomplish on an area the size of the Rodeo-Chediski Fire.

Monitoring Item #35: Growth Reduction and Mortality Caused by Insect and Disease (Priority 3)

Monitoring of forest insect and disease effects (MAP item #35) were undertaken as follows:

Monitoring actions:

- Funding for bark beetle control was acquired for certain high value trees in campgrounds and administrative sites on the Lakeside and Black Mesa Districts.
- Forest Pest Management personnel reviewed the status of bark beetle and drought situation for the Forest Leadership Team Oct 16, 2002.
- Conducted a media field trip to view bark beetle activity for the local newspaper (WMI) on November 22, 2002.
- Participated in a regional review of carbaryl spraying strategy for bark beetle control in Albuquerque, December 16, 2002.
- Participated in Region 3 field review on Lakeside and Black Mesa Districts May 13-15, 2003, which included visits to sites receiving carbaryl treatment for bark beetle control.
- Made visits to private landowners at their request to evaluate bark beetle risk on three occasions.
- Participated in discussions of drought and beetle risk with academia representatives and county and industry partners on Mineral EMA field trip, September 18, 2003.

Findings: Bark beetle activity and other drought-induced mortality are increasing on the Forest. Relief from these agents will not occur until the drought abates. Long-term vigor maintenance through vigilant stocking control is preferable to postponing action until landscape scale mortality occurs.

A summary of forest health trends in Region 3 and specific information about individual insects and diseases is available on the internet at: www.for.nau.edu/usfs/r3_fpm

Appendices U, V, W, X, Y, Z, AA, BB, CC, and DD report on various aspects of the insect and disease situation.

TIMBER SALES – A-S NFs

FY 2002

	<u>Total Volume</u>	
Personal use sales:	7,331	ccf
Small commercial sales:	3,194	ccf
Commercial sales:	4,618	ccf (detailed below)

	<u>Total Volume</u>		<u>Sawtimber</u>		<u>Roundwood</u>		<u>Ranger District</u>
Alpine WUI Bark Beetle	379	ccf	379	ccf	0	ccf	Alpine RD
Jersey Horse II	4,239	ccf	4,239	ccf	0	ccf	Black Mesa RD
Total	4,618	ccf					

FY 2003

Personal use sales:	7,583	ccf
Small commercial sales:	2,776	ccf
Commercial sales:	47,531	ccf (detailed below)

	<u>Total Volume</u>		<u>Sawtimber</u>		<u>Roundwood</u>		<u>Ranger District</u>
Alpine WUI I	4,161	ccf	2,913	ccf	1,248	ccf	Alpine RD
Ross *	15,578	ccf	15,578	ccf	0	ccf	Black Mesa RD
Yarrow *	11,870	ccf	11,870	ccf	0	ccf	Black Mesa RD
Sacket #6	365	ccf	365	ccf	0	ccf	Black Mesa RD
Sacket #7	135	ccf	135	ccf	0	ccf	Black Mesa RD
Sacket #8	250	ccf	250	ccf	0	ccf	Black Mesa RD
Sacket #10	312	ccf	312	ccf	0	ccf	Black Mesa RD
Benny-Hide	1,032	ccf	474	ccf	558	ccf	Springerville RD
Montlure	168	ccf	50	ccf	118	ccf	Springerville RD
Ridge *	13,660	ccf	13,660	ccf	0	ccf	Lakeside RD
Total	47,531	ccf					

* Indicates

Rodeo-Chediski Fire
Salvage Sales

During FY 2002, the tree density issue was also addressed by mechanical treatments and timber stand improvement (TSI) activities on 1,237 acres with appropriated funds, 256 acres with KV deposits from timber sales, 165 acres through fuelwood contract requirements, and 28 acres with fuels management funds. However, this is not a sufficient area to achieve long term improvement in desired conditions. In contrast, xxx acres of under stocked areas were reforested using KV deposits from timber sales during FY 2002.

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 many sites. This problem occurs across northern Arizona and New Mexico. Where treatment is applied, considerable progress is made towards achieving desired conditions, particularly with respect to increases in tree diameter. This has been demonstrated with virtually all age classes and vigor categories.

The **wildland urban interface (WUI)** has the highest priority for vegetative treatment to reduce the risk of catastrophic wildfires that might threaten urban developments. Work in these WUI areas has progressed at a remarkable rate as detailed in the following tables. A large number of tools have been used to work towards achieving desired conditions. Much of this work has been cooperative with partners. Commercial timber sales have received the most opposition from critics but remain the most viable tool for getting forest cover types in WUI areas prepared for other treatments such as prescribed fire.

The tables that follow describe these forest health and WUI projects in greater detail.

Alpine Ranger District

Forest Health & Wildland Urban Interface (WUI) Projects

####

FY 2002

Proj. #	Project Name	Project Type	Location	Funding Source	Objective	Forest Health Acres	Urban Interface Acres	Total Acres
1	Iasbelle Rx Burn	Forest Health	Alpine RD	Fuels Mgmt.	Reduce Hazardous Fuels	610		
2	Highway Pile Burn	Forest Health	Alpine RD	Fuels Mgmt.	Reduce Hazardous Fuels	46		
3	Kettle Rx Burn	Forest Health	Alpine RD	Fuels Mgmt.	Reduce Hazardous Fuels	285		
4	Little Rx Burn	Forest Health	Alpine RD	Fuels Mgmt.	Reduce Hazardous Fuels		265	
5	East Castle Rx Burn	Forest Health	Alpine RD	Fuels Mgmt.	Reduce Hazardous Fuels	81		
6	Pace Creek Pile Burn	Forest Health	Alpine RD	Fuels Mgmt.	Reduce Hazardous Fuels		21	
7	Kettle Pile Burn	Forest Health	Alpine RD	Fuels Mgmt.	Reduce Hazardous Fuels	225		
8	Alpine Burn Pit	Urban Interface	Alpine RD	Fuels Mgmt.	Reduce Hazardous Fuels		125	
9	Little Pile Burn	Forest Health	Alpine RD	Fuels Mgmt.	Reduce Hazardous Fuels		21	
10	Rim Pile Burn	Forest Health	Alpine RD	BD	Reduce Hazardous Fuels	3		
11	Draw Pile Burn	Forest Health	Alpine RD	BD	Reduce Hazardous Fuels	3		
12	District Wide Pile Burn	Forest Health	Alpine RD	Fuels Mgmt.	Reduce Hazardous Fuels	14		
13	Little WUI Thinning	Urban Interface	Alpine RD	FM/Tim Mgmt.	Reduce Hazardous Fuels		190	
Totals						1,267	622	1,889

Black Mesa Ranger District

Forest Health & Wildland Urban Interface (WUI) Projects

#####

FY 2002

Proj.#	Project Name	Project Type	Location	Funding Source	Objective	Forest Health Acres	Urban Interface Acres
1	Trail Thinning & Slash	Pre-commercial Thin	Black Mesa	RTRT CWKV	Forest Health	414	
2	St. Joe Thinning & Slash	Pre-commercial Thin	Black Mesa	RTRT CWKV	Forest Health	229	
3	St. Joe Thinning & Slash	Pile Slash	Pile Burn	HFFW	Fuels Reduction		229
4	Clay Springs Crushing & Piling	Pre-commercial Thin	Black Mesa	HFFW	Fuels Reduction		82
5	Brookbank Rx Burn	Broadcast Burn	Black Mesa	HFFW	Fuels Reduction	768	768
6	Brookbank Rx Burn	Pile Burn	Black Mesa	HFFW	Fuels Reduction	184	184
7	Cottonwood Rx Burn	Pile Burn	Black Mesa	HFFW	Fuels Reduction	73	73
8	Larson Rx Burn	Broadcast Burn	Black Mesa	HFFW	Fuels Reduction	874	874
9	Misc District Piles	Pile Burn	Black Mesa	HFFW	Fuels Reduction	213	107
10	Wiggins Rx Burn	Broadcast Burn	Black Mesa	HFFW	Fuels Reduction	407	407
11	Grover Springs Thinning & Slash	Pre-commercial Thin	Black Mesa	HFFW	Fuels Reduction, Forest Health	13	13
12	Wash Thinning & Slash	Pre-commercial Thin	Black Mesa	CWKV	Forest Health	29	
13	Rim Thinning & Slash	Pre-commercial Thin	Black Mesa	RTRT	Forest Health	41	
14	Brook2 Thinning & Slash	Pre-commercial Thin	Black Mesa	RTRT	Forest Health	177	177
15	Wildcat TSI	Pre-commercial Thin	Black Mesa	CWK RTRT	Forest Health	106	106
Totals						3,528	3,020

**All acres thinned were completed for Wildland Urban Interface (WUI) as well as Forest Health so the acres were counted in both columns.

Springerville Ranger District

Forest Health & Wildland Urban Interface (WUI) Projects

#####

FY 2002

Proj.	Project Name	Project Type	Location	Funding Source	Objective	Forest Health Acres	Urban Interface Acres	Total Acres
1	Montlure Fuels Reduction	WUI	T7N R27E	WFHF	Reduce green fuel fire hazard		170	
2	Ranch I Thinning & Slash Treatment	Forest Health/WUI	T8N R27E	NFVW	Thinning for Density, disease, fuel reduction	195		
3	Ranch II Thinning & Slash Treatment	Forest Health/WUI	T8N R27E	NFVW	Thinning for Density, disease, fuel reduction	177		
4	Hay	Pile Burning	34.02x109.22	WFHF	Reduce Timber Slash		265	
5	Badger Knoll	Pile Burning	34.01x109.28	WFHF	Fuels Reduction		11	
6	Hideaways	Pile Burning	34.09x109.32	WFHF	Fuels Reduction		55	
7	District Piles 06	Pile Burning		WFHF	Fuels Reduction	45		
Totals						417	501	918

Lakeside Ranger District

Forest Health & Wildland Urban Interface (WUI) Projects

#####

FY 2002

Proj. #	Project Name	Project Type	Location	Funding Source	Objective	Forest Health Acres	Urban Interface Acres	Total Ac
1	Blue Ridge Demo	Com Thin, embed	Lakeside	CEM	Reduce Density & Fuel Load		393	393
2	Blue Ridge - last of thin & chip	TSI-thin & chip	Lakeside	CEM	Reduce Density & Fuel Load		340	340
3	Blue Ridge - Billy Springer	Fuelbreak, t & c	Lakeside	CEM	Reduce Density & Fuel Load		227	227
4	Blue Ridge - chip	Fuels - chip	Lakeside	CEM	Reduce Fuel Load		300	300
5	Pino Ridge - Chip	Fuels - chip	Lakeside	CEM	Reduce Fuel Load		305	305
6	Blue Ridge - Broadcast	Rx Fire	Lakeside	NFS, Fuels	Reduce Fuel Load		580	580
7	Show Low South Broadcast	Rx Fire	Lakeside	NFS, Fuels	Reduce Fuel Load		215	215
8	Pintail Lake Broadcast	Rx Fire	Lakeside	NFS	Improve Wildlife Habitat	4		4
9	Blue Ridge - Hand Piles	Fuels, burn	Lakeside	NFS	Reduce Fuel Load		990	990
10	Show Low South Hand Piles	Fuels, burn	Lakeside	NFS	Reduce Fuel Load		121	121
11	Timberland Acres Hand Piles	Fuels, burn	Lakeside	NFS	Reduce Fuel Load		35	35
12	Scattered Piles	Fuels, burn	Lakeside	NFS	Reduce Fuel Load & Dumping		28	28
13	Morgan Multi-Product Piles	Fuels, burn	Lakeside	NFS	Reduce Fuel Load		14	14
14	Whitcom Machine Piles	Fuels, burn	Lakeside	NFS	Reduce Fuel Load		5	5
15	Elk II Machine Piles	Fuels, burn	Lakeside	NFS	Reduce Fuel Load	5		5
Totals						9	3,553	3,562

Alpine Ranger District

Forest Health & Wildland Urban Interface (WUI) Projects

#####

FY 2003

Proj. #	Project Name	Project Type	Location	Funding Source	Objective	Forest Health Acres	Urban Interface Acres	Total Acres
1	Isabelle Rx Burn	Forest Health	Alpine RD	Fuels Mgmt.	Reduce Hazardous Fuels	772		
2	Cat Pile Burn	Forest Health	Alpine RD	Fuels Mgmt.	Reduce Hazardous Fuels	93		
3	Kettle Rx Burn	Forest Health	Alpine RD	Fuels Mgmt.	Reduce Hazardous Fuels	1011		
4	Kettle Rx Burn	Forest Health	Alpine RD	BD	Reduce Hazardous Fuels	271		
5	Isabelle Rx Burn	Forest Health	Alpine RD	KV	Wildlife Forage Improvement	518		
6	Isabelle Rx Burn	Forest Health	Alpine RD	KV	Site Prep. Natural Regen.	23		
7	Kerry Flat Pile Burn	Forest Health	Alpine RD	BD	Reduce Hazardous Fuels		200	
8	Alpine Burn Pit	Urban Interface	Alpine RD	Fuels Mgmt.	Reduce Hazardous Fuels		155	
9	Isabelle Rx Burn	Forest Health	Alpine RD	BD	Reduce Hazardous Fuels	87		
Totals						2,775	355	3,130

Black Mesa Ranger District

Forest Health & Wildland Urban Interface (WUI) Projects

#####

FY 2003

Proj.#	Project Name	Project Type	Location	Funding Source	Objective	Forest Health Acres	Urban Interface Acres
1	High Country Pines Thinning & Slash	Pre-commercial Thin	Black Mesa	HFFW	Fuels Reduction, Forest Health	258	258
2	Turkey Thinning & Slash	Pre-commercial Thin	Black Mesa	HFFW	Fuels Reduction, Forest Health	235	235
3	Clay Springs Crushing & Piling	Crushing	Black Mesa	HFFW	Fuels Reduction	50	50
4	Brookbank Rx Burn	Broadcast Burn	Black Mesa	HFFW	Fuels Reduction	481	481
5	Brookbank Rx Burn	Pile Burn	Black Mesa	HFFW	Fuels Reduction	119	119
6	Larson Rx Burn	Broadcast Burn	Black Mesa	HFFW	Fuels Reduction	643	643
7	Misc District Piles	Pile Burn	Black Mesa	HFFW	Fuels Reduction	144	144
8	Bruno Tank Thin & Chip	Pre-commercial Thin	Black Mesa	RTRT	Fuels Reduction, Forest Health	234	234
9	Bison Reforestation	Reforestation	Black Mesa	RTRT	Forest Health	150	40
10	Williams Crushing	Crushing	Black Mesa	CWKV	Fuels Reduction	25	25
11	300 Rd TSI	Pre-commercial Thin	Black Mesa	RTRT	Fuels Reduction, Forest Health	42	42
12	Ranger Station TSI	Pre-commercial Thin	Black Mesa	HFFW	Fuels Reduction, Forest Health	15	15
Totals						2,396	2,286

**All acres thinned were completed for Wildland Urban Interface as well as Forest Health so the acres were counted in both columns.

Springerville Ranger District

Forest Health & Wildland Urban Interface (WUI) Projects

#####

FY 2003

Proj. #	Project Name	Project Type	Location	Funding Source	Objective	Forest Health Acres	Urban Interface Acres	Total Acres
1	Fish Creek Meadow Restoration	Meadow Restoration	T8N R27E	Rocky Mountain Elk	Improve Elk Winter Range	400		
2	Iris Springs Winter Range Restoration	Meadow Restoration	T8N R27E	Rocky Mountain Elk / RAC	Improve Elk Winter Range	300		
3	Benny / Hide TSI	WUI/Forest Health Thinning	T8N R7E, T9N R27E	WFHF	Reduce live fuels and improve forest health		188	
4	Laing Fuels Reduction	WUI	T8N, R27E	Participatory agreement	Reduce live fuels		50	
5	Hay	Pile Burning	34.02X109.22	WFHF	Reduce Timber Slash		881	
6	Badger Knoll	Pile Burning	34.01X109.28	WFHF	Fuels Reduction		21	
7	Hideaways	Pile Burning	34.09X109.32	WFHF	Fuels Reduction		5	
8	District Piles 06	Pile Burning		WFHF	Fuels Reduction	61		
9	OD	Pile Burning	33.56X109.20	WFHF	Reduce Timber Slash	368		
Totals								
						1,129	1,145	2,274

Lakeside Ranger District
Forest Health & Wildland Urban Interface (WUI) Projects

####

FY 2003

Proj.#	Project Name	Project Type	Location	Funding Source	Objective	Forest Health Acres	Urban Interface Acres	Total Acres
1	Pinetop Springs	Com Thin, embed	Lakeside	CEM & Fuel	Reduce Density & Fuel Load		341	341
2	Upper Forestdale	Thin & Chip	Lakeside	NFS, Fuels	Reduce Density & Fuel Load		84	84
3	Blue Ridge Chip	Fuels, chip	Lakeside	CEM	Reduce Fuel Load		25	25
4	Pino Ridge - Chip	Fuels, chip	Lakeside	CEM	Reduce Fuel Load		30	30
5	Bagnal Chipping	Fuels, chip	Lakeside	CEM	Reduce Fuel Load		200	200
6	Show Low South, Fool Hollow Ridge Rx	Rx Fire	Lakeside	NFS, Fuels	Reduce Fuel Load		475	475
7	Show Low South, Summer Pines Rx	Rx Fire	Lakeside	NFS, Fuels	Reduce Fuel Load		165	165
8	Blue Ridge Broadcast	Rx Fire	Lakeside	NFS, Fuels	Reduce Fuel Load		90	90
9	Arab-Mineral	Rx Fire	Lakeside	NFS, Fuels	Reduce Fuel Load		100	100
10	Pintail / Polishing Ponds, Rx	Rx Fire	Lakeside	NFS, WL	Reduce Fuel Load/Improve WL Habitat	20		20
11	Deep Tank Hand Piles	Fuels, burn	Lakeside	NFS, Fuels	Reduce Fuel Load		173	173
12	Blue Ridge Hand Piles	Fuels, burn	Lakeside	NFS, Fuels	Reduce Fuel Load		213	213
13	Timberland Acres Hand Piles	Fuels, burn	Lakeside	NFS, Fuels	Reduce Fuel Load		12	12
14	Scattered Piles	Fuels, burn	Lakeside	NFS	Reduce Fuel Load & Dumping		23	23
15	Morgan / Pinetop Spr Machine Piles	Fuels, burn	Lakeside	NFS	Reduce Fuel Load		71	71
16	Elk II Machine Piles	Fuels, burn	Lakeside	NFS, Fuels	Reduce Fuel Load	5		5
Totals						25	2,002	####

Recreation

Existing developed recreation sites (MAP item #1) accommodate most demand except during peak use periods associated with holidays when camp sites are limited. During FY 2003, an update to the Recreation Use Survey was completed and is described in Appendix D. The comments previously made by recreationists are overwhelmingly favorable on the quality of experience available. Resource damage is not common even though a few sites are at or beyond their useful life.

Undeveloped sites also receive considerable use throughout the year. Their current level of management prevents unacceptable resource impacts for the most part. Restrictions are used to limit the impacts of heavy use. Surveys of recreationists reveal that high satisfaction levels dominate the user population. Occasional conflicts with livestock, other recreationists, or weather factors reduce user satisfaction at times.

The satisfaction associated with trails is generally good across the forests. In areas near population centers, volunteer help results in greatly increased user satisfaction. The use by mountain bikes is accelerating greatly while horseback use is declining. Maps needed for mountain bikers are available on the A-S NFs web site: www.fs.fed.us/r3/asnf. During both FY 2002 and 2003, the Valle Redondo Fat Tire Festival was held with modest increases in attendance. This annual event is well organized and shows that the Round Valley communities have the capacity to stage such events. The Forests have the potential to be a large mountain bike recreation center due to the variety of trail difficulty and the outstanding scenery present across the Forests.

Off highway vehicle (OHV) compliance has been good in most areas with minimal impacts requiring few rehabilitation efforts and closures. Saffel Canyon was a notable exception with a major cooperative rehabilitation effort concluded with State of Arizona funding in August, 2001, and a Grand Opening celebration for a new designated OHV trail. A Five Arizona National Forest OHV environmental impact statement analysis process was started in FY 2000 and hopefully will be completed in early 2005. It will include designation of roads open and closed to OHV use on the A-S NFs.

Much effort has been applied to site design of developed recreation areas to ensure user satisfaction. The tables that follow displays the FY 2002-2003 recreation facility projects.

FY 2002-2003 Recreation Facility Projects

Site	District	Recreation Facility Types	Funding Source	Accessible?	Project Status
FY2002					
Woods Canyon Lake	Black Mesa	Restroom	Forest Service	Yes	Completed 2002
Rocky Point	Black Mesa	Restroom	Forest Service	Yes	Completed 2002
Coal Creek Campground	Clifton	Restroom	Forest Service	Yes	Completed 2002
Fool Hollow Recreation Area	Lakeside	Kiosk	Forest Service	Yes	Completed 2002

FY2003					
Woods Canyon Lake	Black Mesa	Cul-de-Sac Campground Facilities	Forest Service	Yes	Completed 2003
Crook Group Campground	Black Mesa	Ramada, Restroom, Fire ring, grills	Forest Service	Yes	Completed 2003
Sinkhole Campground	Black Mesa	Restroom, sidewalks, trails	Forest Service	Yes	Completed 2003
Granville Campground	Clifton	Restroom	Forest Service	Yes	Completed 2003
Bunch Reservoir	Springerville	Ramadas, restroom, kiosk	State Lake Improvement Fund	Yes	Completed 2003
River Reservoir North	Springerville	Ramadas	State Lake Improvement Fund	Yes	Completed 2003
Tunnel Reservoir	Springerville	Ramadas, restroom, kiosk, Parking area	State Lake Improvement Fund	Yes	Completed 2003
Big Lake North Shore	Springerville	Ramadas, restroom	Boater Access Arizona Game and Fish	Yes	Completed 2003
Homestead Trailhead	Springerville	Kiosk, Hitching Post, Parking area	Arizona State Parks	No	Completed 2003
Murray Basin Trailhead	Springerville	Kiosk, Hitching Post, Parking area	Arizona State Parks	No	Completed 2003
Murray Basin Trail	Springerville	17.7 miles of trail system	Arizona State Parks	No	Completed 2003

Roads

Road management is proceeding toward meeting forest plan objectives. Reconstruction occurred on xx.x miles of road within developed recreation areas in FY 2002-2003. During FY 2002, xx miles of road were decommissioned. Maintenance funds are not adequate to meet the needs of the road system so disinvestment and loss of road quality occurs on many roads. In FY 2004, the forests will implement a national Roads Analysis Process (RAP) protocol to prioritize transportation system planning.

SOCIAL, ECONOMIC & 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 Forests have found in implementing the plan that social / economic effects are evident at the project level as they impact specific users, businesses, or other forest users. However, when considered on a larger scale such as a county or forest-wide, the effects are as forecasted in the plan and differences are not detectable or at least are 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. This has been largely due to the increasingly controversial nature of such activities as viewed by some segments of the U.S. population and evidenced by a substantial increase in the number of project analysis decision appeals and litigation. 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 and grazing).

From an ecological aspect, current implementation of the plan is failing to meet the projected silvicultural treatments, due largely to the same controversy mentioned above. This is creating considerable concern regarding forest health. Also the intensified management anticipated by the plan to bring forage use in balance with capacity has not occurred to the extent necessary to adequately help resolve this balance. To address this issue, a supplemental monitoring report was completed in July, 2000, addressing the forest-wide grazing capacity of the Apache-Sitgreaves National Forests. This report adjusts the expected output of livestock grazing in the forest plan and reflects the numerous adjustments to individual grazing allotments made since 1995 to the present time. It also presents an estimate of the livestock capacity on the other allotments. The values contained in this supplemental report should only be considered on a forest wide basis and not for site-specific decisions concerning the grazing allotments. This report is included in its entirety in Appendix E of the 2000-2001 A-S LMP Monitoring and Evaluation Report.

MONITORING REQUIREMENTS OF OTHER LAWS

I. Clean Water Act (CWA)

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 in cooperation with the State of Arizona (AZ-DEQ) as part of the Intergovernmental Agreement between the State and the Southwestern Region.

II. Clean Air Act (CAA)

The Clean Air Act (CAA) 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 FLMP monitoring element of air resources is the tracking of visibility condition in Class I Wilderness areas. The Forest has fulfilled this responsibility by monitoring visibility in the Mt. Baldy airshed on a seasonal basis (6/1-10/1). Photos are qualitatively analyzed for general visibility conditions.

A. Visibility Conditions Monitoring

Optical, Aerosol, and Meteorological Monitoring

Beginning in 1997, a partnership with Arizona Department of Environmental Quality Air Quality Division (ADEQ-AQD) was forged for a short-term (two year) visibility monitoring effort utilizing IMPROVE (Interagency Monitoring of Protected Visual Environments) protocol methods. This has been continued with methods to 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. A sampling site was established in Greer, AZ in February, 2000. Funding will be needed to maintain the network and meet the monitoring direction of the LMP and CAA. Specific information is available in the *Arizona Class I Area Visibility Monitoring 2001-2002 Operational Plan*, p. 11, dated May, 2002.

B. Smoke Monitoring

To better manage resource management created smoke from prescribed fires, the White Mountain Smoke Management Group was formed in FY 2001. This cooperative program between the Apache-Sitgreaves National Forests, the White Mountain Apache Tribe, Bureau of Indian Affairs (BIA), and Tonto National Forest coordinates with the Arizona Department of Environmental Quality (AZ-DEQ) to assess, monitor, and minimize the amount of smoke entering the local airsheds. It also serves as a point of contact to local citizens receiving and responding to their questions, comments, and concerns at a toll free telephone number: 1-800-798-0534.

1. Remote Automated Weather Stations (RAWS)

A number of RAWS have been established to allow better monitoring and prediction of smoke transport and dispersion from Forest Service prescribed fire operations. The Apache-Sitgreaves NFs are maintaining sites and these stations were operational during FY 2002-2003 and will be maintained into the future. In addition, two nephelometers are in use, one located at the Show Low Fire Department, and one portable unit placed on-site during prescribed fire operations.

2. Direct Visual Smoke Monitoring

As part of the requirements for certain prescribed burns in Arizona, State air quality rules stipulate the 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 NFs comply with both of these monitoring requirements on a routine basis. During FY 2002-2003, air flow has allowed smoke to settle at night into communities on several occasions. These events typically caused the postponing of further burning by the Forest Service until air conditions improved.

3. Compliance with National Ambient Air Quality Standards (NAAQS)

Although AZ-DEQ-AQD (Air Quality Division) maintains the network of actual NAAQS monitors throughout the State, the Apache-Sitgreaves NFs have no record of creating a violation of any NAAQS as a result of its operations. Monitoring of the effects of its operations is accomplished through the review of the AZ-DEQ-AWD monitoring data. We also maintain a liaison position (Pete Lahm) at the AZ-DEQ offices in Phoenix to review and comment on the above requirements.

III. 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 Forests are complying with these actions or in some cases negotiating with the F&WS to determine the priority monitoring activities.

EMERGING ISSUES & SOCIAL / RESOURCE TRENDS

Continuing Drought

The southwestern U.S. has been undergoing severe drought conditions for over five years. Reduced precipitation during all seasons has impacted the A-S NFs in many ways including increased plant drought stress, plant mortality, bark beetle infestations, longer and more intense fire seasons, reduced snow pack, municipal water supply concerns, reduced streamflows, and related factors.

Some of the implications of this drought are discussed in the 2003 Apache-Sitgreaves NFs Drought Update in Appendix EE.

Grazing

The Forests are charged with complying with numerous environmental laws. In order to meet these requirements over the last eight fiscal years, the Forests have accomplished NEPA allotment management analyses on over 115 grazing allotments. The Forests completed an additional 78,289 acres of grazing analysis in FY 2002-03 for a total of 1,726,270 acres completed since 1995. Compliance with Federal law on this large acreage has resulted in some concerns on the part of users of the National Forest (primarily grazing permittees), because livestock reductions will be needed to balance grazing capacity with resource management obligations 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.

In July, 2000, a supplemental monitoring report was completed addressing the forest-wide grazing capacity of the Apache-Sitgreaves National Forests. This report adjusts the expected output of livestock grazing in the forest plan and reflects the numerous adjustments to individual grazing allotments made since 1995 to the present time. It also presents an estimate of the livestock capacity on the other allotments. The values contained in this supplemental report should only be considered on a forest wide basis and not for site-specific decisions concerning the grazing allotments. This report is included in its entirety in Appendix E of the 2000-2001 A-S LMP Monitoring and Evaluation Report.

Rodeo-Chediski Wildfire

On June 18, 2002, the Rodeo Fire was ignited by an arsonist on the Fort Apache Indian Reservation near Cibecue, Arizona. On June 20th, the Chediski Fire was ignited as a signal fire by a lost visitor on Chediski Ridge also on the Fort Apache Indian Reservation. The two fires grew rapidly and merged on June 22nd. By the time the fires were contained on July 7th, the complex had grown to approximately 460,000 acres, the largest wildfire in Arizona history. Of this acreage, approximately 10,711 acres are on the Pleasant Valley Ranger District of the Tonto National Forest, and 164,440 acres are on the Lakeside and Black Mesa Ranger Districts of the Apache-Sitgreaves National Forests. Almost 8,700 acres of private lands were also burned.

A widespread restoration plan and several environmental analysis processes were initiated to rehabilitate and salvage burned timber from these devastating wildfires.

More details of these efforts are included in Appendices R, S, and T.

Forest Health / Healthy Forest Initiative (HFI)

Our nation's forests and rangelands are at risk. An estimated 190 million acres of federal forests and rangelands

in the United States, an area twice the size of California, face high risk of catastrophic fire due to unhealthy forest conditions. Decades of an accumulation of dense undergrowth and brush, along with drought conditions, insect infestation and disease, and invasion by exotic species make forests and rangelands in many areas throughout the country vulnerable to environmentally destructive wildfires.

The Apache-Sitgreaves NFs are similarly 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. Some of these effects are being addressed by the National Fire Plan (NFP) discussed in greater detail in the next section. Also local initiatives are addressing this issue, including the Blue Ridge Demo Project, several ecosystem assessments (e.g. Mineral, etc.), and a Pilot Forest proposal, the County Partnership for Restoration (CPR), involving four National Forests in the Four Corners area including the A-S NFs.

In August, 2003, President Bush stood on a blackened hillside in Oregon and announced his Healthy Forests Initiative (HFI) to improve the health of our nation's forests and rangelands. Since then, the Bush Administration has taken a series of actions to streamline and expedite high-priority fuel-reduction and forest restoration projects in our nation's forests and rangelands. The primary goal of the projects is to reduce the fire danger and return our forests and rangelands to a healthier state.

On December 3, 2003, President Bush signed into law the Healthy Forests Restoration Act (HFRA) of 2003 to reduce the threat of destructive wildfires while upholding environmental standards and encouraging early public input during review and planning processes. The FY 2004 A-S NFs Monitoring and Evaluation Report will provide information on implementation of the HFRA and another related initiative, the White Mountain Stewardship Contract.

National Fire Plan (NFP) Hazardous Fuel Treatment Program

Due to several years of severe drought and a resultant series of intense and severe wildfires throughout the western United States including Arizona, Congress provided legislative relief to address the situation titled the National Fire Plan (NFP). This relief was in the form of increased funding to improve fire prevention and fire fighting capabilities, hazardous fuel reduction, especially in the wildland urban interface (WUI), improved rural community fire protection measures, and revitalization of wood utilization capabilities and wood industry infrastructure redevelopment. The planned Alpine, Heber-Overgaard, Pinetop-Lakeside, and Greer WUI Fuel Reduction Projects, as well as several similar projects, will help address this serious situation. In addition, a proactive financial grant program is redirecting the wood using industry to utilize small diameter trees, rebuild wood using industry infrastructure, and enhance community fire protection activities.

Tables summarizing these WUI treatment activities during FY 2002-03 are included on pages 19 – 26 .

Management Indicator Species (MIS)

During the summer of 2001, members of the wildlife program staff on the Black Mesa Ranger District conducted FLMP monitoring surveys for management indicator species (MIS) songbirds along three road routes across that district. Work began on the survey project with the arrival of two very experienced birding

volunteers on June 22, 2001 and was completed on July 20, 2001. Surveys continued in FY 2002-03. The Springerville Ranger District also participated in similar MIS songbird surveys in the same timeframe.

Two reports summarizing these MIS songbird monitoring activities and some initial findings are included in Appendix I and J. Another site specific MIS monitoring report for the Pleasant Valley Allotment on the Clifton Ranger District is included in Appendix K. A table describing overall MIS monitoring activities and funding across the A-S NFs is included in Appendix H.

BARRIERS TO EFFECTIVE MONITORING AND EVALUATION

The barriers most often cited by Ranger District personnel to effective monitoring are inadequate funding and inadequate 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 project monitoring efforts. Some monitoring questions and methodologies are not providing appropriate results. A frequently cited example remains the R03 Wild model for estimating habitat capability indices (HCIs) on non-timber projects or projects of relatively small acreage. The A-S NFS upcoming Plan Revision process will address some of these needs.

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 as much as is desirable.

PLAN IMPLEMENTATION BUDGETS AND ACCOMPLISHMENT (Action Plan)

The Current Funding level does not equate to full Forest Plan implementation. The focus of funding available reflects the Chief's conservation priorities. As mentioned in the certification, implementation of the forest plan is adequate and direction may only need slight adjustment to maintain adequate management.

STATUS OF RECOMMENDATIONS

Recommendations of previous years monitoring reports have been adopted where possible. A forest plan amendment will be necessary to drop the GAWS and R03 Wild analyses from project study requirements.

RESEARCH NEEDS

The following research was identified as needed, initiated, continuing, or has been completed on the Apache-Sitgreaves NFs. The needs were identified through our continuing monitoring efforts and will be used to

address and guide future plan implementation efforts.

Arizona Willow

Work on a Conservation Agreement for Arizona Willow was completed with the forests dedicating considerable effort to removing and reducing the identified threats to survival. This included cooperation with a Ph.D. candidate in developing a vegetative occupancy history of wetlands across the Mogollon Rim.

Grazing Effects

The Rocky Mountain Station conducted 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 activities and project analysis and the final report was completed in April, 2002. This report's conclusion were included as Appendix xx in the FY 2000-2001 Monitoring Report.

Water Erosion Prediction Program (WEPP)

The Water Erosion Prediction Program (WEPP) is replacing the Universal Soil Loss Equation (USLE). In order for WEPP to be used in forest analysis and monitoring it must be validated locally and regionally. Training on the use of WEPP will be completed during FY 2002.

Goshawks

There have been several years of work done on the Forests concerning the reproductive success of Goshawks. This area of research needs to be continued.

Management Indicator Species (MIS)

Region 3 is determining the needs for additional research regarding management indicator species (MIS).

LIST OF PREPARERS

This report was compiled by the Ecosystem Group for Land Management Planning and Ranger District office personnel of the Apache-Sitgreaves National Forests. District Rangers and their primary staff officers and assistants had key roles in data acquisition, processing, and storage.

LOCATIONS OF SUPPORTING DOCUMENTATION FOR MONITORING ACTIVITIES

The Ecostaff Group for Land Management Planning stores the data used to compile this report at the Supervisor's Office of the Apache-Sitgreaves National Forests. Supporting data used to develop the report data are stored at other Forest Service offices, ranger districts, other work units, and in some cases, national data storage facilities. The storage protocol is detailed in the Apache-Sitgreaves National Forests Monitoring Action Plans (MAP) as prepared and documented by each ranger district staff.

MONITORING PARTNERSHIPS

Numerous partners are cooperating with the A-S NFs in analyzing and monitoring the land management plan and its implementation projects. These partners include Federal and State agencies, forest users, private citizens, special interest groups, and others. 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 desired result. Our efforts to date have provided improved understanding of resource, social, and 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 forests to better interact with the grazing users.

The Forests also have an on-going partnership with the Arizona Game & Fish Department and grazing permittees to monitor grazing utilization by both domestic and wild ungulates. This information is used in determining annual livestock management plans and in providing recommendations to the Arizona Game and Fish Department for big game harvest levels.

The Apache-Sitgreaves National Forests wish to thank all the countless volunteers and cooperators for their immense and tireless contribution to monitoring activities.

APPENDICES

- A. Vicinity Map -- Apache-Sitgreaves National Forests (A-S NFs)
- B. A-S NFs Land Management Plan (LMP) – Description of Amendments
- C. Description of the A-S NFs LMP Monitoring Action Plan (MAP) Items
- D. National Forest Visitor Use Monitoring -- National and Regional Project Results
- E. 2003 Annual Report -- A-S NFs Water Quality Non-Point Accomplishments
 - 10% Fund Project – Open Draw Crossing Reconstruction
 - 10% Fund Project – Forest Road 8854

- 10% Fund Project – Burro Creek – West Fork Black River
- F. 2002 Guideline Non-Point Source Pollution Annual Report – Clifton Ranger District
- G. 2003 Non-Point Pollution Report – Clifton Ranger District
- H. FY2003 A-S NFs Management Indicator Species (MIS) -- Monitoring Completed & Funds Expended
- I. Management Indicator Species (MIS) Monitoring For Songbirds -- Black Mesa Ranger District
- J. Management Indicator Species (MIS) Monitoring For Songbirds -- Springerville Ranger District
- K. Management Indicator Species (MIS) Assessment For Pleasant Valley Allotment – Clifton Ranger District
- L. 2003 Chiricahua Leopard Frog Surveys -- Pleasant Valley Allotment -- Clifton Ranger District
- M. Mexican Wolf Reintroduction -- Status Summary Conditions Affecting Livestock Management -- East Eagle Allotment -- Clifton Ranger District
- N. Situation Brief -- Mexican Gray Wolf Reintroduction & Management -- Clifton Ranger District
- O. Coal Creek / Highway 78 -- Riparian Corridor Enhancement -- Clifton Ranger District
- P. FY 2002 -- Status of Allotments by Number / Condition / Acreages -- Clifton Ranger District
- Q. 2003 Range Utilization Monitoring by Allotment – Springerville Ranger District
- R. Rodeo-Chediski Fire -- Summary Facts
- S. Talking Point Facts -- Rodeo-Chediski Fire Rehabilitation
- T. Status of the Rodeo-Chediski -- Fire Salvage Project
- U. 2002 Current Status of Bark Beetles in Arizona (PowerPoint Presentation)
- V. 2002 Acres of Bark Beetle Activity Detected from Aerial Survey in Arizona
- W. 2002 Aerial Detection Survey Totals – A-S NFs
- X. 2002 Briefing Paper: Sequence of Events Causing Pine Mortality in the Southwestern Region & Possible Actions That Can Be Taken to Protect High-Value Trees
- Y. 2002 Bark Beetle Activity on the Alpine Ranger District
- Z. 2002 Briefing Paper: Bark Beetle Activity on the A-S NFs
- AA. 2003 Pine Bark Beetle Situation in Arizona
- BB. 2003 Arizona Insect Epidemic -- Fact Sheet and Information Bulletin
- CC. 2003 Bark Beetle Activity in Recreation Sites on the A-S NFs (Lakeside & Black Mesa RDs)
- DD. 2003 Douglas-Fir Beetle Activity in Rodeo-Chediski Fire PACs (Black Mesa Ranger District)
- EE. 2003 Apache-Sitgreaves NFs Drought Update