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Subject: Apache-Sitgreaves National Forests
Annual FLMP Monitoring and Evaluation Report for FY 1997

To: Regional Forester

Attached is the Annual Monitoring Report for the Apache/Sitgreaves National Forests. Responses have been made to each of the eight elements referenced in your letter of 6/12/97. Most of the report consists of information related to project monitoring. It is an assimilation of efforts by our Ranger Districts and Supervisor's Office Project Staff in responding to monitoring as identified in the A/S Monitoring Action Plan.

In addition an element was added depicting budgets and MAR accomplishment.

/s/ John C. Bedell
JOHN C. BEDELL
Forest Supervisor

APACHE-SITGREAVES ANNUAL FLMP
MONITORING AND EVALUATION REPORT
FY 1997

MONITORING ACTIVITIES

This section summarizes various Implementation, Effectiveness and Validation monitoring activities as called for in the forest's monitoring action plan (MAP) and as accomplished during FY 1997. Monitoring results may have come from specific project monitoring as determined by NEPA analysis, biological analysis and evaluation, biological opinions, general ranger district reviews by the forest management team but the bulk of the monitoring effort has been through the day to day administration of forest use activities. The following topic headings track with the forest's MAP.

-Developed Recreation Site Use-

A general forest-wide perspective is that current developed recreation sites are meeting customer demands, expectations and desires.

Sites and facilities are being maintained to an acceptable standard with no significant amount of resource damage occurring, however some sites are closed periodically to allow resource recovery (the east and west forks of the black river are examples of such closure). Some facilities are at or beyond their useful life.

Sites are not being used at their capacity season long but on some major holidays capacity is exceed and use is increasingly directed to dispersed areas and developed site overflow areas.

-ORV Compliance and Damage-

ORV use is occurring relatively uniformly across that part of the forests above the Mogollon Rim except in those area where use is prohibited (Closure areas, Wildlife Habitat Areas and Wilderness).

Use tends to conform with standards for the management area except that some areas such as the Saffel Canyon area on the Springerville District have required closures with in the past year to control resource damage resulting from ORVs.

The forest is continuing to close roads as identified during NEPA project analysis. These closures are bringing road densities into compliance with Forest Plan standards and guidelines.

-Dispersed Area Use and Experience Levels-

Undeveloped campsite use is occurring in many areas of the national forest. Some associated with the same resource types and locations as developed recreation and also some in locations permitting the use of trails, wilderness areas, and facilities such as cabins corrals and forest roads.

Use of the dispersed area seems to be meeting the majority of the current demand and is usually not resulting in unacceptable resource damage. Restrictions on dispersed use have occurred in popular locations and in vicinities served by developed facilities. Some improvements such as cabins, trails and signs are in need of stabilization, maintenance or improvement to accommodate the current use.

-Cultural Resource Compliance-

4882 acres of cultural survey were completed on the forest in FY 97. About half was accomplished by contract and the remainder by force account. All surveys were done to Regional standards.

The cultural survey acres completed were sufficient to allow all planed activities to move forward, however, the recording of accomplishment in the GIS database continues to lag behind. Work in progress will help to reduce the GIS backlog.

-Cultural Resource Property Protection-

All unevaluated cultural resource sites were flagged for avoidance or excluded from project boundaries as protective measures. All National Register sites on the Forests are visited routinely to assure that essential characteristics are protected. Where site density is high, projects are reviewed to assure that cultural resource sites are not disturbed.

Instances of vandalism did occur on the forests in FY97 and are noted below:

Petroglyphs at Blue Crossing and Adirondack shelters at the Upper Blue Campground were damaged on the Alpine Ranger District.

A Rock Shelter in Black Canyon and the Baily Ruin also received vandalism.

Additional digging has been noted at Chevelon Crossing and Chevelon Retreat on the Chevelon and Heber Ranger Districts

Damage assessments for FY 97 total nearly $20,000 and one person was convicted.

-Trail Condition-

Trail construction/reconstruction has been at the same scale as that projected by the Forest Plan. The Forest Plan identified 113 miles of Forest trails to be constructed/reconstructed during the planning period and to date 107 miles have been reported as accomplished since the plan was approved.

Reduced budgets in FY 97 in both construction and maintenance have raised concerns as to the Forests ability to maintain the existing system.

-Visual Quality-

There has been little monitoring forest-wide concerning visual quality objectives in FY 97. However the Ranger Districts continue to manage aspen stands to preserve their biological as well as visual quality values.

Opportunities for rehabilitation of borrow pits are also being considered along with their use and continued development.

-Wilderness-

Physical, biological and social values of the Forest's wilderness system areas are being maintained.

-Threatened, Endangered and Sensitive Species-

The Apache-Sitgreaves Forests are implementing Recovery Plans for the following six species: Apache Trout; Bald Eagle; Loach Minnow; Mexican Spotted Owl; Peregrine Falcon; and Spikedace. A description of forest activities relative to each species is described below by Ranger District.
Apache Trout

Alpine R.D. - The Isabelle Timber Sale has been monitored since December of 1996. The sale area in general, the Campbell Blue and the Blue River have been monitored for any dead fish. Monitoring is intended to determine if sale operations are affecting fish populations. No dead fish have been observed.

Approximately three miles of fencing to exclude livestock was completed on Corduroy, Double Cienega and Hannagan Creeks. This was part of the Apache Trout Recovery Plan implementation.

Springerville R.D. - Exclosure fences on Mineral and Coyote Creeks were monitored for condition and effectiveness.

Bald Eagle

Alpine R.D. - Biological analysis was conducted on approximately 11,000 acres.

Mid-winter monitoring of three impoundments and the Black River was conducted to help determine occurrence and populations.

In conjunction with the Arizona Game and Fish the nest site at Luna Lake was monitored

from April through June. This site fledged three young and the death of one of the young for an unknown reason was noted.

Clifton R.D. - District participated with the Arizona Game and Fish and other federal agencies in the annual Bald Eagle winter count. Birds were located in the Blue, San Franciso and Eagle Creek drainages.

Springerville R.D. - Biological analysis was conducted on 80,000+ acres for 18 projects.

District participated in the winter survey with nine birds (7 adults and 2 immature) located.

Loach Minnow

Alpine R.D. - About 3.5 miles of fencing on Campbell Blue and the Blue Rivers to exclude livestock as well as a road closure on the East Fork of the Black River have been completed to protect Loach Minnow habitat. These were identified as part of the Seven Species Project.

Clifton R.D. - Field work on a multi-year survey of the Blue and San Francisco Rivers within the Clifton Ranger District was completed in 1997. This survey is to determine species composition, relative abundance and genetic diversities.

Road closure for the Blue River monitored for compliance and effectiveness.

BA&E completed for two prescribed burns (Pine Flat Interface and East Eagle addition). Also two BA&Es for the Baseline AMP and the Dark Canyon AMP were completed.

Allotments rested in part to prevent deterioration of habitat were Hickey, Granville, Sandrock and AD Bar.

Established monitoring sites were rephotographed on Eagle Creek.

Rested riparian areas (Blue River-17 miles, San Francisco-6 miles, Eagle Creek-24 miles) were continued in 1997.

Chevelon/Heber R.D. - Another Seven Species Project that was completed was the fencing and placement of large woody debris in Dynes Tank in Leonard Canyon.

Mexican Spotted Owl

Alpine R.D. - Eleven thousand acres of BA&E analysis as mentioned under Bald Eagle activities.

Occupancy was monitored on eight territories and five were determined to be occupied. Reproduction was also confirmed on two territories.

Chevelon/Heber R.D. - The recovery plan for Mexican Spotted Owl continues to be implemented through BA&E analysis for all the District's projects and specifically the tree harvest and range management programs.

Springerville R.D. - BA&E analysis as noted under Bald Eagle.

Formal monitoring was completed on the Carnero and Water Canyon PACs, with pairs located at each site.

Surveys were completed for the Phoneline timber sale and the Badger Knoll interface project. An owl pair was located and a PAC established on Badger Knoll.

Peregrine Falcon

Alpine R.D. - BA&E analysis as noted under Bald Eagle.

Clifton R.D. - Habitat continues to be upgraded through road closures on the Blue River, low intensity prescribed burns and the exclusion of livestock from priority one streams.

Chevelon/Heber R.D. - BA&Es as noted earlier.

Springerville R.D. - One known site was monitored in FY 97.

Southwestern Willow Flycatcher

Alpine R.D. - An elk and livestock exclosure fence was completed around the administrative site horse pasture.

Springerville R.D. - Surveys were completed at the following sites:

Tunnel Reservoir
East Fork of the Little Colorado River Confluence
West Fork of the Little Colorado River
West Fork Sheeps Crossing
Hall Creek
East Fork of the Little Colorado River at Phelp's Cabin
Benny Creek at Rosey Creek
North Fork of the Black River at Thompson Ranch
Greer Townsite
River Reservoir
Little Colorado River Trout Ponds

Spikedace

No specific monitoring activities for Spikedace occurred on the Apache-Sitgreaves in FY

97. The Clifton District continues to conduct habitat improvements with the objective of a possible re-introduction within some drainages.

Springerville R.D. - Part of the Seven Species Project was the fencing completed on the Picnic Allotment and in Nutrioso Creek.

In addition to monitoring and recovery plan implementation for species with recovery plans the forests also conducted numerous similar actions for other TE&S species.

Following is the species list that the Forest routinely uses in conducting BA&E analysis.

-Aquatic Macroinvertebrates-

Little specific monitoring has occurred on the A/S relative to aquatic macroinvertebrates. Some water quality data has been gathered on the Clifton R.D. by the Arizona Department of Environmental Quality. This work was done on the Eagle Creek and the Blue and San Francisco watersheds.

Data has also been gathered on the Alpine R.D. to indicate that the following streams or stream reaches have a Biotic Condition Index (BCI) of less than 80. A BCI of 80 is felt to be a break point at which macroinvertebrates are impacted to the extent that fish species may not have self sustaining populations.

-Bear Wallow Creek (All Reaches)
-Coleman Creek (All Reaches)
-Corduroy Creek (Reach 2)
-Coyote Creek (All Reaches)
-Fish Creek (Reach 3)
-Hannagan Creek (All Reaches)
-Home Creek (All Reaches)
-Mamie Creek (Reach 2)
-Snake Creek (All Reaches)
-Soldier Creek (All Reaches)

Best Management Practices (BMPs) are adhered to in project planning and implementation but little or no specific aquatic macroinvertebrate surveys or monitoring is occurring on a project basis.

It is suspected that long term cumulative effects may be increasing sediment loading resulting in long term losses of invertebrates and changes in stream morphology on some streams or stream reaches.

-Stream Habitat Survey_

The primary limiting factors of stream habitats on the A/S follow and generally can be tied to land-use activities.

-high sediment levels
-stream bank soil stability
-stream bank vegetation stability
-riparian condition
-pool quality and quantity
-adequate stream flows
-spawning gravel availability
-high stream gradients
-poor watershed condition

Habitat improvement opportunities are generally the reverse of the limiting factors and would normally relate to improved watershed conditions and specifically streamside conditions by improved management of ungulates.

Implementation of BMPs are instrumental in achieving habitat improvements. The Forest Plan states a set of BMPs which are being followed to bring about improved habitats. No additional BMPs have been identified through monitoring.

-Allotment Management Plan Status-

Allotment management plans are being revised on the A/S according to the schedule resulting from PL 104, Section 504(A) "The Rescission Act".

In many instances Forest Plan objectives are being met through implementation of current Allotment Management Plans (AMPS) and/or Annual Operating Plans (AOPs). This is not always the case. AOPs tend to be more current and effective in bringing about plan objectives. Newer AMPs are also in line with the Forest Plan, as amended, objectives. The Forest is, however, making significant and steady progress towards AMP revision and plan objectives achievement

AMPs are being implemented as planned in regards to yearly operations and allotment management except where Forest Plan amendment has caused the AMP to be out-dated and when climatic factors require adjustment. Planned improvements to allotments are not always on track because of budgets and lack of opportunities involving other program areas (fuelwood harvest, thinnings, watershed projects, etc.).

The following is the Apache/Sitgreaves AMP update schedule for the years 1997 through 2010 and is in line with the Rescission Act.

-Timber Reforestation-

No final removal harvest has occurred in resent years which would require regeneration. Where necessary regeneration efforts are being scheduled and some planting has been necessary due to wildfire rehabilitation. Plantations often do not meet Region Three stocking standards after five years. The reasons for plantation failure or inadequate

stocking can usually be attributed to drought or wildlife browsing.

-Watershed-

Watershed projects are being accomplished on the Forest on a priority basis but appropriated funds have been very limiting.

In FY 97 Nutrioso and the East and West Forks of the Little Colorado River watersheds have been identified as needing water quality monitoring. State water Quality standards are not being met on these watersheds under current BMPs.

Little data is currently being gathered that would help identify unsatisfactory watershed conditions. However, some water quality monitoring and assessment is being accomplished by the Arizona Department of Environmental Quality. Riparian inventory, water resource analysis and additional water quality monitoring are needed to identify causes for unsatisfactory conditions.

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 it's 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 photgraphically monitoring visibility in the Mt. Baldy airshed on a seasonal basis (6/1-10/1). Photos are qualitatively analyzed for general visability conditions.

Visibility Conditions Monitoring

1. Scene Monitoring
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 if excessive cost, scientific uncertainty, and the length of the specific monitoring records at individual sites, the decision was made to stop this from of monitoring on the Apache-Sitgreaves National Forest at the end of 1996.

2. Optical, Aerosol, and Meteorological Monitoring
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.

Smoke Monitoring

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. These stations have been maintained through 1997 and will be maintained into the future for this purpose. The A/S in maintaining sites for this purpose.

2. Direct Visual Smoke Monitoring
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.

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

ArizonaWillow

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 two fiscal years, NEPA on 52 grazing allotments. The scope of this analysis encompasses over 830,000 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.

Effects of Litigation

Nearly two years of restricted Forest Plan implementation have occurred in the past few years as a result of litigation over specific Forest projects as well as Region-wide issues. Federal courts have enjoined project implementation primarily because of threatened and endangered species issues. Significant social/economic and forest resource impacts are occurring.

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 sited 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 sited 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 1997. 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.

/s/ John C. Bedell
JOHN C. BEDELL
Forest Supervisor

September 26, 1997
Date