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Monitoring and Evaluation Report

FY2011

Coconino National Forest

Introduction and Forest Supervisor Certification

This report provides monitoring information for fiscal year 2011, as required by the Coconino National Forest's amended 1987 Land and Resource Management Plan (Forest Plan). The intent of the monitoring and evaluation report is to inform the decision maker and the public of progress toward achieving the goals, objectives, and standards and guidelines.

The information provided in this report follows Table 14 in Chapter 5: Monitoring Schedule of the Forest Plan. Monitoring items that have changed or are no longer relevant are noted where they apply.

I have reviewed the Coconino National Forest's annual Monitoring and Evaluation Report for fiscal year 2011. This Monitoring and Evaluation Report meets regulatory requirements for completing an annual report. Amendments or revisions to the Forest Plan are not likely to be made as a result of this report. Instead, information from this report will be used in the Coconino National Forest Plan revision process currently underway.

M. Earl Stewart

Forest Supervisor

25 Sept 2012

Date

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
RECREATION				
Developed Site Use	Determine recreation use and demand.	National Visitor Use Monitoring (NVUM) reports. Measure is National Forest Visits (NFVs). Annual reports from concessionaire receipts and activity reports for sites run by concesionaires (all sites except those on Mogollon Rim Ranger District).	NVUM is conducted in 5 year increments. 2010 NVUM report has been updated in 2011. Concessionaire reporting is annual.	NVUM showed a 15% decrease in total NFVs between 2005 and 2010. The decrease may be related to the slow economy and slower population growth in the Arizona since most users come from within the state. Developed site use stayed fairly level, with sites at capacity on weekends and some weekdays. Wilderness visits increased about 33% from 5 years ago. Day use and general Forest use both decreased. The race and ethnicity of recreation users remains about the same, and is dominated by those who identify as White. There was a slight increase in Hispanic/Latino use. Over half of users are between 30 and 60 years of age, but there is a relatively large number of users under 16 years of age. Most visitors come from within Arizona, with about one-third from Coconino County, and 20% each from nearby Yavapai and Maricopa Counties. About 20% of visitation is International. The most popular activities continue to be hiking/walking, viewing the National Forest and relaxing. There was an increase in the downhill skiing that may reflect better winter precipitation.
Developed Site Condition	Prevent damage and deterioration. Meet health and safety	Condition site surveys (CSSs) are recorded in INFRA database.	5 year cycle. Each site can go no longer than 5 years without a CSS.	Site upgrades have slowed with lower budgets and consequently, less progress has been made in decreasing deferred maintenance this year. One new site, Dry Creek Picnic Area, is scheduled to begin construction this year. Operation and maintenance of

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	requirements		All sites are current.	sites continues, but not all maintenance can be accomplished, resulting in increasing deferred maintenance needs.
Implementation of Recreation Opportunity Spectrum (ROS) Guidelines	Ensure the protection of existing ROS classes.	Review project work plans involving vegetative treat-ment, road/trail construction, or major development/Acres by ROS class.	Ongoing – by project and by area consideration	State population growth has slowed with the economic recession. In 2011, the Forest began implementation of Travel Management, which prohibits motorized cross country travel, except in designated camping corridors, select areas for motorized game retrieval (for elk only), and for permitted activities. This will begin to improve recreation settings across the Forest. In addition, fuels reduction projects and increased use of fire are helping to restore recreation settings over time and make them more sustainable. Increased use in designated Wilderness areas may reduce opportunities for solitude in some places.
Off-Road Driving Compliance and Damage	Prevent unacceptable damage to resources and meet provisions of Forest Off-road Driving implementation plan.	Area and Project reviews.	Ongoing – by project and by area consideration	In 2011, the Motor Vehicle Use Map (MVUM) was updated per the Travel Management Rule and implemented. The Forest scheduled regular field contacts and patrols to provide information and familiarize Forest users with travel management changes. It is expected that route proliferation will begin to decrease as will damage to natural resources. Evidence of off road driving will take many years to disappear.

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Dispersed Area Use and Experience Levels	Determine recreation use and Demand.	Area and Project reviews. NVUM for dispersed area total use and for "satisfication" of user and evidence of crowding.	Ongoing – by project and by area consideration 5 year cycle for NVUM (2000, 2005, 2010 etc.)	Survey data suggest a decrease in use in dispersed areas; however this cannot be confirmed with anecdotal evidence, as use of many general dispersed areas continues to be high especially over holidays and weekends. As travel management implementation continues, it is expected that there may be more evidence of concentrated use in camping corridors. If use begins to exceed provision of camping corridors, adjustments will need to be made in future years.
Dispersed Area Condition	Prevent unacceptable resource damage.	Area and Project reviews	Ongoing – by project and by area consideration	Anecdotal evidence and area survey data suggest continued dispersed area degradation due to increases in visitors and in motorized cross country travel. Travel management will now concentrate users more into dispersed camping corridors.
Trail Condition	Determine effectiveness of Forest Trails Program.	Trail Assessment and Condition Surveys (TRACS) / INFRA Miles to standard	Sample 20% Annually	Trails maintenance and reconstruction lags behind condition survey results. Districts are working to complete Trail Management Objectives and update trails databases.

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Visual Quality Objective (VQO) Compliance	Ensure Forest standards and guidelines for visual management are met.	Review project work plans and conduct project reviews - involving vegetative treatment, road/trail construction, or major development/acres by VQO	Annually – Compliance is ongoing through VMS application for all projects on the Forest. VQO acres are hard to quantify and are not an accurate measure of VQO compliance.	Forest VQO standards and guidelines are outdated. The Forest completed Scenery Management System mapping as part of Forest Plan revision. This mapping is now being used for project level environmental analysis per handbook direction. The conversion reflects changes in use patterns, increased visibility of Coconino National Forest (hereafter referred to as Forest) landscapes, and increased concern for scenic quality by visitors.
Items Monitored	**Intent**	**Monitoring Method Unit of Measure**	**Frequency**	**FY 2011**
Wilderness Use	Determine wilderness use and demand	National Visitor Use Monitoring (NVUM) report from 2000 and 2005 and pending for 2010. Measure is National Forest Visits (NFVs).	NVUM is conducted in 5 year increments. 2010 NVUM report has been updated in 2011	NVUM showed a 33% increase in total NFVs to wilderness between 2005 and 2010. Some wilderness areas (Kachina Peaks, Red Rocks -Secret, Wet Beaver) exceed capacity in some areas. The Forest is placing emphasis on campsite monitoring and encounter/solitude surveying to determine if there are places that need additional management actions. Visitor education at trailheads continues to be expanded as funding allows.

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Wilderness Condition	Minimize resource damage and changes of wilderness opportunity spectrum (WOS) classes, particularly primitive end	Professional observation and in areas where there are more serious problems we are doing some limits of acceptable change (LAC) monitoring.	Annually	Some wilderness areas (Kachina Peaks, Red Rocks-Secret, Wet Beaver) exceed WOS capacity in some areas. This has resulted in increased need for trail and site work in these areas that has generally been accomplished. Wilderness condition is generally good but has declined some in the more popular areas.
CULTURAL RESOURCES				
Cultural Resource Compliance Project	Meet Federal regulation; ensure project compliance with guidelines.	Approved cultural resource clearance for each ground-disturbing activity.	Annually	Approximately 113 projects received clearance in fiscal year (FY) 2011.
Cultural Resource Property Protection	Protect significant Properties.	Patrol areas in conjunction with other duties/ Site condition	Annually	Approximately 200 sites are enrolled in the site monitoring program of the Arizona Site Stewards Program and receive periodic inspection by them. In addition, sites in the Winona Village National Historic Landmark and Ridge Ruin National Register District receive periodic inspection by volunteers in the Arizona Archaelological Society. Forest archaeologists inspected 5 National Register sites and monitored 31 sites for project/post-project impacts. No major site or rock art vandalism was found in 2011.
WILDLIFE				

Items Monitored	Intent	Monitoring Method/ Unit of Measure	Frequency	Fiscal Year 2011
WILDLIFE				
Northern goshawk, Pygmy nuthatch, and Mexican spotted owl (MSO)- Amount of Mature and Old-Growth Habitat	Applied management achieves desired stand characteristics for old-growth and indicator species do not significantly decrease. Maintain habitat capability.	Old-growth inventory, compartment exams and habitat capability modeling/Acres. Habitat capability model/ Percent habitat capability	Annually	Forest-wide bird monitoring continued under a Cost-Share Agreement with the Rocky Mountain Bird Observatory. Fifty transects (grids) were completed in habitats across the forest. Vegetation data was collected at the beginning of each transect. ***Northern goshawk (Accipiter gentilis)*** There are 47 Post-fledging Family Areas (PFAs) on the Forest. Eight PFAs were monitored: 4 PFAs were monitored to protocol, all were determined to be unoccupied; 4 additional PFAs were monitored but not to full protocol. There were no responses at these sites. **Flagstaff Ranger District (RD):** • 4 PFAs monitored; 1 occupied; 1 young • 20,563 acres presence/absence surveys for Northern goshawks. • 3 Northern goshawks detected, with one nest located, fledging 1 young. **Mogollon Rim RD:** • Seven PFAs were monitored and it was determined that none had occupancy in 2011. During surveys for owls, however, an active Northern goshawk nest was located in an 8th PFA with one young. • Northern goshawk inventory was initiated in 2011 for Mahan project, with 520 points visited, and no responses were detected. ***Pygmy nuthatch* (*Sitta pygmaea)***

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
				119 Pygmy nuthatches were detected on 21 of 50 transects completed in 2011, resulting in a current occupancy estimate of 0.44 and a density estimate of 15.67. ***Mexican spotted owl (Strix occidentalis lucida)*** 190 Protected Activity Centers (PACs) occur wholly or partially on the Forest; 186 have Forest PAC numbers assigned. Twenty-seven PACs were monitored: • 16 of the PACs were not occupied • 11 of the PACs were occupied • 2 PACs had 2 young each (total 4) Habitat was evaluated for all projects that contained MSO habitat. ***Old Growth*** • Existing and potential old growth is evaluated at the project level to provide habitat for management indicator species (MIS) and other species.
Wild Turkey Habitat Capability	Maintain habitat capability	Habitat capability model/habitat capability	Annually on 90% of affected projects	Wild turkey (*Meleagris gallopavo*) habitat was evaluated for all projects that contained habitat. Habitat capability is addressed during project planning through consideration of tree clumps and groups, forbs and grasses, slashpiles for nesting, and conditions of springs.

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Wild Turkey Population Trend	Meet population goal	Arizona Game and Fish Department (AZGFD) surveys/habitat capability modeling	Annually	Wild turkey populations have been in a general decline in the Arizona since 1969 (http://www.azgfd.gov/pdfs/h_f/HuntAZ2011.pdf .) The Forest reviewed and discussed population data with AZGFD at the annual hunt recommendation meeting.
Wild Turkey Nesting Habitat	Maintain nesting habitat	On-the-ground evaluation	Annually and 5 year trend review	See capability above
Red Squirrel Habitat Capability	Maintain habitat capability	Habitat capability model/habitat capability	Annually on 90% of affected projects	Red squirrels (*Tamiasciurus hudsonicus*) were monitored as part of the Rocky Mountain Bird Observatory Cost-Share Agreement. Eight squirrels were detected and density and occupancy estimates were determined: • Occupancy estimate was 0.61 but with a high coefficient of variation (56%). • Density estimate was 0.92 per square mile with a high coefficient of variation (67%) and has not yet been stratified by habitat type. More samples through continued monitoring and stratification by habitat will yield less variable results.
Elk & Mule Deer Habitat Capability	Maintain habitat capability	Habitat capability model/habitat capability	Annually	Habitat capability is addressed at the project level where habitat improvements for mule deer (*Odocoileus hemionus*) (grasslands, aspen, and shrubs) are addressed and incorporated into project implementation where appropriate. Effects of projects on elk (*Cervis elaphus*) and mule deer habitat were addressed through MIS

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
				analysis.
Elk & Mule Deer Population Trends and Distribution	Meet population goal	AZGFD surveys/habitat capability model	Annually	According to AZGFD, mule deer numbers have been cyclic, responding mainly to climatic events. Drought conditions in recent years have resulted in low fawn survival. The ratio of fawns per 100 does is a rough surrogate for the reproductive success of mule deer. On the Forest, these ratios have been variable from year to year, and overall, seem to be relatively static*. The ratio of calves per 100 cows is a rough surrogate for the reproductive success of elk. On the Forest, elk populations continue to do well. From 2006-2010, calf:cow ratios have ranged from 22-65 in Game Management Units on the Forest*. Reviewed and discussed population data with the AZGFD at the annual hunt recommendation meeting. *(http://www.azgfd.gov/pdfs/h_f/HuntAZ2011.pdf). **Flagstaff RD**: • 20,563 acres were inventoried • presence of elk was documented at 179 points • presence of mule deer was documented at 113 points

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
Abert's Squirrel Habitat Capability	Maintain habitat capability	Habitat capability model/habitat capability	Annually	Habitat capability is addressed at the project level where habitat improvements for Abert's squirrel (*Sciurus aberti*) (groups and clumps of ponderosa pine) are addressed and incorporated into project implementation where appropriate. Effects of projects on Abert's squirrel habitat were addressed through MIS analyses. Abert's squirrels were monitored as part of the Rocky Mountain Bird Observatory Cost-Share Agreement: • 4 squirrels were detected on transects in 2011 **Flagstaff RD**: • 20,563 acres presence/absence surveys for MIS • 22 points documented the presence of Abert's squirrels or squirrel nests
Hairy woodpecker, Pygmy nuthatch & Red-naped sapsucker (formerly known as Yellow-bellied sapsucker) - Snag Densities, Sizes, and Species (Existing and	Maintain habitat capability	Compartment exams, snag inventories, project reconnaissance and habitat capability modeling/acres	Annually	Forest-wide bird monitoring continued under a Cost-Share Agreement with the Rocky Mountain Bird Observatory. Fifty transects (grids) were completed in habitats Forest-wide, with vegetation data collected at the beginning of each transect. 119 Pygmy nuthatches and 58 Hairy woodpeckers (*Picoides villosus*) were detected. No Red-naped sapsuckers (*Sphyrapicus nuchalis*) were detected in 2011. The Happy Jack North American Breeding Bird Survey was conducted. Hairy woodpeckers and Pygmy nuthatches were detected (results listed by individual Ranger District below). **Flagstaff RD**

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Future)				• The FRD conducted 20,563 acres of presence and absence surveys for MIS. • Pygmy nuthatches were detected at 11 points • Hairy woodpeckers at 27 points. **Mogollon Rim RD** • Snag size, density, and tree species were recorded within 15 post-implentation microhabitat plots (in Blue Ridge Urban Interface). • Within the district's managed fires, there were 50 microhabitat plots sampled pre- and post-burn. Data entry is ongoing. • 1 North American Breeding Bird Count was conducted at the Anderson Mesa Important Bird Area (IBA): –1 Juniper titmouse (*Baeolophus griseus*) was detected (no other species was detected)
Plain (Juniper) titmouse - Amount of Mature and Old-Growth, Pinyon-Juniper	Maintain habitat capability	Habitat capability model/habitat capability	Annually	Forest-wide bird monitoring continued under a Cost-Share Agreement with the Rocky Mountain Bird Observatory. Fifty transects (grids) were completed in habitats Forest-wide. Vegetation data was collected at the beginning of each transect. 118 individuals were detected on 22 of 50 transects completed in 2011, resulting in a current occupancy estimate of 0.45 and a density estimate of 12.3.

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
Plain (Juniper) Titmouse - Snag Densities and Sizes of Pinyon-Juniper	Maintain habitat capability	Compartment exams, snag inventories, and project reconnaissance/acres	Annually	**Flagstaff RD:** • Conducted 20,563 acres of presence and absence surveys for MIS. • Snags were tallied at each point. 1 North American Breeding Bird Count was conducted at the Anderson Mesa IBA: • 1 Juniper titmouse was detected (no other species were detected)
Pronghorn antelope - Forage Availability	Maintain habitat capability	Production-Utilization surveys, habitat capability model/habitat capability	Annually and 9-13 years on each grazing allotment	**Flagstaff RD**: • 20,563 presence/absence surveys for MIS • Pronghorn antelope (*Antilocapra americana*) were detected at 2 points.
Pronghorn antelope - Population Trends	Meet population goal	AZFGD surveys/ Numbers	Annually	Annual surveys were done by AZGFD. The ratio of fawns per 100 does is a rough surrogate for the reproductive success of pronghorn. On the Forest, pronghorn populations continue struggle. From 2006-2010, fawn:doe ratios have ranged from 0-80 in Game Management Units on the Forest*. Reviewed and discussed population data with the AZGFD at the annual hunt recommendation meeting. *http://azgfd.gov/pdfs/h_f/HuntAZ2011.pdf

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Cinnamon teal - Amount of Suitable Nesting Habitat	Maintain habitat capability	Field surveys (height density method) or score cards/acres	Every 5 years on selected wetlands	No surveys completed for Cinnamon teal (*Anas cyanoptera*) this year.
Cinnamon teal - Nesting Success	Maintain habitat capability	Systematic field sampling, cooperative survey with AZGFD/ Numbers	Every 5 years on selected wetlands	None completed this year.
Riparian Areas, Lincoln's Sparrow, Lucy's Warbler, & Yellow-Breasted Chat - Habitat Condition	Maintain habitat capability	Habitat capability modeling and systematic field sampling using riparian scorecard/ analyses/acres	5% of stream miles annually	The Red Rock RD repaired riparian exclosures at Sheepshead and Stagestop. As part of statewide AZGFD riparian surveys, two surveys were conducted on Red Rock RD: • The first of two Arizona Bird Conservation Initiative (ABCI) surveys at the Tlaquepaque plot (Oak Creek) was conducted in May 2011. The second was conducted in June 2011. • Despite quite a bit of recreation use (from private lands and resorts, not National Forest System lands), a pair of common blackhawks still (*Buteogallus anthracinus*) nested in this area.

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Aquatic-Macro Invertebrates - Species Diversity and Biomass	Maintain aquatic habitat effectiveness	Systematic field sampling (modified surber sampling)	Every 5 years on selected streams	Northern Arizona University (NAU), via a Cost-Reimbursable Agreement between the Forest and NAU, conducted aquatic and terrestrial invertebrate surveys in Fossil Creek during 2011. They used black lighting and ambient emergence traps in Fossil Creek at four sites six separate times in order to augment previous invertebrate surveys conducted which employed different methodologies. The final report is underway. Volunteers photo-documented pre-opening conditions at Pine Flat Campground and wrote up a report. Post-opening monitoring needs to be conducted to determine recreation effects on riparian.
Threatened And Endangered Species - amount of Suitable Habitat and Population	Meet Federal regulation Meet recovery plan goals	Field surveys/ Acres Field surveys, U S Fish and Wildlife Service surveys/ Numbers	Annually Annually	***Mexican Spotted Owl (MSO)*** 190 Protected Activity Centers (PACs) occur wholly or partially on the Forest; 186 have Forest PAC numbers assigned. Twenty-seven PACs were monitored: • 16 of the PACs were not occupied • 11 of the PACs were occupied • 2 PACs had 2 young each (total 4) Habitat was evaluated for all projects that contained MSO habitat. **Flagstaff RD:** • 44 MSO Target/Threshold stands evaluated • 10 PACs monitored: 2 confirmed occupied

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				• 28, 598 acres of MSO habitat surveyed. These were inventories that included Highway 89A highway widening project, Schultz Fire monitoring, and 4FRI MSO habitat monitoring (Mormon Mountain area, Bob's Timbersale, Clark/Elk Park Timber Sale) ***Chiricahua Leopard Frogs (CLF)*** (***Rana chiricahuensis)*** **Mogollon Rim RD:** • Wildlife technicians conducted Chiricahua leopard frog surveys on an allotment and noted the presence of non-native fish in stock tanks and springs. • On the Mogollon Rim RD, where historic range for Chircahua leopard frogs overlaps with Northern leopard frogs (*Rana pipiens*), 89 tanks and 10 springs were surveyed for frogs in 2011. No new Chiricahua leopard frog locations were found. **Red Rock RD:** • Forest personnel, U.S. Fish and Wildlife Service (FWS), AZGFD, and permittee met to discuss the failing berm at a previously occupied site and miscellaneous needs at an occupied site. Forest biologists later had a workday at the occupied site to: change the angle of a panel to facilitate livestock access to water when the water level lowers (as per permittee's request), seed the bank, mitigate

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				the upright rebar, and to obliterate a track which had been caused by a tank cleaning effort and which was exacerbated by others driving on the created track. • Range technician fixed popped welds on livestock fencing at an occupied site. • District biologist wrote up a protocol for preventing introduction and spread of aquatic nuisance species and pathogens. This document was submitted to district employees, range permittees, and outfitter/guide permittees. • Various springs on an allotment were inventoried using three methodologies: Proper Function Condition, herpetology visual encounter surveys (VES), and Colorado Plateau Spring Ecosystems Spring Inventory. One spring was monitored within the range of Chiricahua leopard frog; no frogs were detected. • FWS and AZGFD monitoring in April showed over 406 frogs at 3 locations. • In August 2011, FWS and AZGFD released 420 tadpoles and 38 frogs into two separate locations. ***Southwestern Willow Flycatcher (SWWF)*** (***Empidonax traillii extimus)*** **Mogollon Rim RD:**

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				• No SWWF sites were surveyed in 2011. **Red Rock RD:** • NAU (via a Cost-Reimbursable Agreement between the Forest and NAU) surveyed for Southwestern Willow Flycatchers in Fossil Creek; none were detected. ***Listed Fish:*** Wildlife technicians assisted Red Rock RD fisheries biologist in conducting fish habitat monitoring in Fossil Creek on several occasions. ***Gila Topminnow* (*Poeciliopsis occidentalis occidentalis), Spikedace* (*Meda fulgida), and Loach Minnow* (*Tiaroga cobitis)*** • Fossil Creek was monitored by AZGFD and Forest personnel in 2011 using snorkel surveys and minnow traps. • A total of 70 Gila topminnow, 70 Spikedace, and one Loach minnow were either observed or captured. ***Little Colorado Spinedace (Lepidomeda vittata)*** • Streams surveyed by AZGFD were: East Clear Creek, West Leonard Canyon, Bear Canyon, Dane Canyon, Miller Canyon, and Yeager Canyon. Little Colorado spinedace were found in all locations except East Clear Creek and Miller Canyon. Sensitive native fish were found at all sampling locations.

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				• The Poverty Draw crossing of East Clear Creek was sampled by Forest personnel and AZGFD in August 2011, prior to cattle crossing. This sampling was done to meet requirements of the Hackberry/Pivot Rock Allotment Biological Opinion and Annual Operating Instructions. ***Arizona cliffrose (Purshia subintegr)*** • Historic locations and current data for Arizona cliffrose in and around the Verde Valley Botanical Area were entered into the Natural Resource Information System for Threatened, Endangered, and Sensitive Plants (NRIS TESP)/Invasives database. The Cottonwood, AZ, population was surveyed and documented. • The Plant Atlas Project (PAPAZ) , a volunteer project to conduct floristic surveys in sensitive areas of the Forest, is ongoing. Volunteers have donated hundreds of hours and contributed substantially to the knowledge of the local flora in the area. One area of focus is the Verde Valley Botanical Area, which focuses on Arizona cliffrose and associated Region 3 sensitive species; Verde Valley sage (*Salvia dorrii* ssp. *mearnsii*), heath-leaf wild buckwheat (*Eriogonum ericifolium* var. *ericifolium*), Ripley's wild buckwheat (*Eriogonum ripleyi*) and Rusby milkwort (*Polygala rusbyi*). • District biologist examined Lime Kiln Trail

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				maintenance needs with recreation technician in February 2011. District biologist and Forest botanist attended a Dead Horse Trails Coalition trail maintenance workday in February 2011 and handed out bundles of rare plant cards to Forest personnel, State Park employees, and volunteers; taught everyone how to identify Arizona cliffrose, Verde Valley sage and Ripley's wild buckwheat; and improved the trail delineation around half a dozen or so Arizona cliffrose plants that were in danger of being trampled. • District biologist created sensitive plant identification cards for a volunteer and took same volunteer to occupied habitat to learn how to identify species. This volunteer has started inventorying trails proposed by organized motorized groups for the presence of rare plants.
Sensitive Species - Amount of Suitable Habitat and Population Trends	Manage at appropriate levels to prevent listing as threatened or endangered species	Field surveys/ Acres	5 years	***Bald eagle*** **(*Haliaeetus leucocephalus)*** *Note: Bald eagle was moved from the T&E section to here, since the spp is no longer federally listed.* ***Wintering*****:** Forest-wide, the annual Bald Eagle Midwinter Survey was completed. 35 Bald eagles and 4 Golden eagles (*Aguila chrysaetos*) were counted on the 14 standardized routes completed. An additional 4 bald eagles and 1 unidentified eagle on non-standardized routes completed.

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				Nesting*:** The Lower Lake Mary breeding area produced 2 young. Both the Ladder and Towers Bald Eagle closures were implemented in 2011. The Towers nest failed for the third year in a row. The Oak Creek pair fledged two young. The Beaver pair fledged two young. The Ladders pair fledged one young. The Coldwater pair fledged two young. In summary, of six breeding areas: • 2 nests failed • 4 nests were successful • Of the 4 successful nests, 7 young were fledged. ***Northern Goshawk There are 47 Post Fledging Family Areas (PFAs) on the Forest. Eight PFAs were monitored: 4 PFAs were monitored to protocol, all were determined to be unoccupied; 4 additional PFAs were monitored but not to full protocol. There were no responses at these sites. **Flagstaff RD:** • 4 PFAs monitored; 1 occupied; 1 young • 20,563 acres presence/absence surveys for Northern goshawks. • 3 Northern goshawks detected, with one nest located, fledging 1 young. **Mogollon Rim RD:** • Seven PFAs were monitored and it was determined that none had occupancy in 2011.

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
				During surveys for owls, however, an active Northern goshawk nest was located in an 8th PFA with one young. • Northern goshawk inventory was initiated in 2011 for Mahan Project, with 520 points visited; no responses were detected. ***Lowland leopard frog* (*Rana yavapaiensis)*** **Red Rock RD:** • Five sites within the range of Lowland leopard frogs were surveyed on the district. • Lowland leopard frogs were only detected at Spring Creek North. ***Northern Leopard Frog*** • In September 2011, a contractor (through a Challenge Cost-Share Agreement) completed repairs to the existing pipe rail fence at an important breeding site. The repairs consisted of re-welding broken rails and double welding all rail/post joints. • Numerous sites were visited during Apache Maid springs inventory and the Rattle Fire field visits. • Northern leopard frogs were detected at multiple sites **Mogollon Rim RD:** • 89 tanks and 10 springs were surveyed for frogs • 4 new Northern leopard frog sites discovered

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				Sensitive Plants • An agreement was established between the Forest and the Arboretum at Flagstaff to update a management plan in the Verde Valley for an area with a number of sensitive species habitat. While the plan is not yet completed, it will result in new maps showing the distribution of Arizona cliffrose and its associated Region 3 sensitive species in the Verde Valley; allow for examination of factors (such as pollinators) that impact these species; and provide information and awareness on this rare habitat type. • Using the information accumulated on the Arizona cliffrose, Forest botanists were able to provide FWS with documentation for its 5-year review of the Arizona cliffrose, which was used to complete the review the following year (2012). • One Arizona bugbane (*Actaea arizonica)* site was monitored. The plants were in good condition with no impacts observed. • The Forest and The Nature Conservancy monitored exclosures established for Bebb's willow (*Salix bebbiana*) and Blumer's dock (*Rumex orthoneurus).* In one set of enclosures, the purpose is to monitor establishment and growth of Bebb's willow. Coincidentally, Blumer's dock is germinating successfully only in the exclosure and it is also being monitored. The purpose of the second set of enclosures is to evaluate techniques for transplanting and possible re-introduction in the future. • Coconino Rural Environmental Corps (CREC), via a

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				Master Participating Agreement with the Regional Office (Region 3) and Supplemental Project Agreements with the Forest, surveyed over 14,000 acres of habitat for Rusby milkvetch (*Astragalus rusbyi*) and Arizona sneezeweed (*Helenium arizonicum*). Numerous previously unknown locations were recorded in the NRIS TESP/Invasives database by Forest personnel and are currently being used in project planning. • Data entry to enter historic locations for Region 3 sensitive plants into the NRIS TESP/Invasives database. Species included Rusby milkvetch, Arizona bugbane, Flagstaff pennyroyal (*Hedeoma diffusum*), Arizona sneezeweed, Sunset Crater beardtongue (*Penstemon clutei*) amd Flagstaff beardtongue (*Penstemon nudiflorus*). Entering this data into the database will allow the Forest to consistently record and use plant location, soil types, location of past large fires, past management activities, etc., to determine trends in the species. • The habitat for Sunset Crater Beardtongue within a wildfire (Fly Fire, 2011), was monitored. The habitat was damaged but plants were able to survive. Flowering and reproduction were observed. • The PAPAZ, a volunteer project to conduct floristic surveys in sensitive areas of the Forest, is ongoing. Two of those areas are the Fern Mountain Botanical Area, which focuses on the preservation of Bebb's willow and the Verde Valley Botanical Are, which focuses on Arizona cliffrose and associated Region

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
				3 sensitive species; Verde Valley sage, heath-leaf wild buckwheat, Ripley's wild buckwheat and Rusby milkwort. Volunteers have donated hundreds of hours and contributed substantially to the knowledge of the local flora in those areas. ***Rare Invertebrates*** The Museum of Northern Arizona was contracted by the Forest to compile information on invertebrate distribution. The draft report is entitled: "A Guidebook to the Rare Invertebrates of the Coconino National Forest Region." **Red Rock RD:** • FWS, via a Cost-Reimbursable Agreement between the Forest and FWS, surveyed for Fossil springsnails (*Pyrgulopsis simplex*) at three sites. Springsnails were collected from each site in quantities sufficient for genetic analysis if funding becomes available. FWS is collaborating with NAU to review specimens they are collected from Fossil Creek. FWS collected Riffle beetles (*Elmidae*) from the Fossil Creek spring complex as they could be an undescribed endemic species. • NAU, via a Cost-Reimbursable Agreement between the Forest and NAU, conducted aquatic and terrestrial invertebrate surveys in Fossil Creek. They used black lighting and ambient emergence traps in Fossil Creek at four sites six separate times in order to augment previous invertebrate surveys

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
				conducted which employed different methodologies. While identification of the specimens collected at one site in August is not yet complete, approximately 135 general, 160 species, 11 orders and 70 families have been identified to date. This number exceeds the 110 species that were identified by Dinger in 2005 (NAU Ph.D dissertation); this increase may be related to the different sampling methodologies. Two mayflies have been identified that were not previously found in Fossil Creek but are known from Arizona. A caddisfly was found that that may be rare and NAU is working on confirming this more confidently. ***Mexican Garter Snake (Thamnophis eques)*** A Forest Service volunteer assisted AGFD and NAU in the monitoring of Mexican garter snakes at Bubbling Ponds Hatchery. The telemetry study determined habitat and hibernation preferences: • Eight Mexican gartersnakes were radio-tracked. • Each preferred pond edge habitat during the active season, and rocky upland slopes for overwintering. • Each avoided areas of heavy human use. • In 72% of telemetry locations, the snakes were underground or under cover objects. ***Narrow-headed Garter Snake (Thamnophis rufipunctatus)***

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
				The Flagstaff and Red Rock Ranger Districts' wildlife technicians assisted NAU personnel in monitoring Narrow-headed garter snakes in Oak Creek Canyon. **Red Rock RD:** • District biologist and Forest Service volunteer created and disseminated a brochure for Oak Creek Canyon Campground concessionaires and visitors on what to do when a snake is encountered. The intent is to reduce harassment to and killing of rare garter snakes as well as other snake species. ***Bats*** On the Forest, numerous sites were mist netted to determine species composition. At known and suspected roost sites, emergence counts were conducted (using infrared binoculars and infrared videography). In addition various roosts were inspected for the presence of bats. **Flagstaff RD:** • 6 roost inspections, 4 exit counts, 3 sites mist netted • 2 bridges were monitored with game cameras for presence/use by bats. **Mogollon Rim RD:** • In 2011, in response to historic buildings being razed, six bat boxes were installed on trees near the building sites, and monitored with screens below the box entrances. • Five of six boxes were utilitzed within 8 weeks.

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
				• Three tanks were mist netted to determine species composition. **Red Rock RD:** • Bats were reported being active during the daytime out at Palatki in October 2010. One of the site docents collected a dead bat. The bat was identified as a Mexican free-tailed bat (*Tadarida brasiliensis*). The bats were likely using Palatki as a temporary roost during migration. Since the bat did not exhibit any signs of white-nose syndrome (*Geomyces destructans),* it was not retained for testing. • A local geologist reported that a blowhole (named 4543 from its road elevation) had been excavated by some vandals. The blowhole is from a sinkhole and since the vandals excavated an opening, it was suspected that bats may begin using the sinkhole. • In December of 2010, although Forest personnel checked for sign of bats near the entrance, no bat guano was found. Further investigations during the spring/summer 2011 did not occur. • In March 2011, Forest personnel investigated the Midden Sinkhole, reported by the local geologist. One hibernating Townsend's big-eared bat (*Corynorhinus townsendii*) was observed. • In April 2011, Forest personnel reported that

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
				the Townsend's big-eared bats had returned to Willard's Roost at Palatki. However, they left in early April when a cold front hit. It was noted that the same thing happened last year. • In May 2011, Forest personnel investigated the Cathedral Mexican free-tailed bat roost to determine if it had been active this year. Bat guano was detected under the roost; consequently, it was determined the roost must have been active earlier in the spring. • As part of the Fossil Creek Comprehensive River Management Plan (CRMP) bat contract, NAU and AZGFD organized and carried out a "bat blitz" in Fossil Creek at the end of June 2011. Over 35 biologists from various agencies across the state turned out for both nights. Forest personnel led a crew each night and assisted with logistics. As a result of this effort, agency and volunteer biologists mist netted six sites in Fossil Creek the first night (including 3 crews hiking down the springs trail 4 miles, mist netting three sites until one, then hiking out 5 miles). The next night biologists mist netted three tanks in the uplands within 1/4 mile of Fossil Creek (so still within the CRMP boundary). Overall, 13 species of bat were mist netted. A few unusual species netted included one Cave myotis (*Myotis velifer*), two Western red bats

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
				(*Lasiurus blossevillii*), two Townsend's big-eared bats, one Allen's lappet-browed bat (*Idionycteris phyllotis*), and the Forest Service s first big free-tailed bat (*Nyctinomops macrotis*). • In July 2011, Forest personnel brought in a dead bat collected from Palatki. The immature bat was identified as either a big-free tailed bat or an Underwood's mastiff bat (*Eumops underwoodi*). Big free-tailed bats were only just detected in Fossil Creek this year and Underwood's mastiff bat has never been detected to date on Red Rock RD. The specimen will be sent to NAU for positive identification. • District biologist created a brochure for landowners with direction on how to properly exclude roosting bats from houses and structures on private lands. ***Common Blackhawk*** **Red Rock RD:** • NAU, via a Cost-Reimbursable Agreement between the Forest and NAU, monitored common Common blackhawk nests and monitored prey delivery in Fossil Creek. Six Common blackhawk nests were detected and monitored between the springs and fish barrier; all but one successfully fledged one

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
				young. Prey deliveries were studied at Fossil Creek and compared to prey deliveries observed at Oak and Wet Beaver Creeks and Red Tank draw. Common blackhawks in Fossil Creek delivered overwhelmingly more native aquatic species (native fish and amphibians) than at the other streams where crayfish and lizards made up the majority. ***Peregrine Falcon (Falco peregrinus)*** **Red Rock RD:** • District biologist met with local falconer to discuss peregrine nest sites not yet known to the Forest and AZGFD biologists. Falconer gave a detailed description of the location of a pair in Sterling Canyon, which Forest Service volunteers later investigated (see below). In addition, he described suspected a peregrine falcon nest in the bowl upstream of Slide Rock on the west side and a peregrine falcon nest near Cave Springs at milepost 286 on the west side of the canyon. Falconer also suspects a peregrine nest on the north side of House Mountain. None of these three sites were investigated this year. • Forest Service volunteers spent some time investigating suspected peregrine falcon eyries in Sterling Canyon. No suspected nest sites were observed and it was thought that the pair may be

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
				nesting further up Sterling Canyon. • Investigation of the Valhalla eyrie (Schnebly Hill road) by district biologist on two different visits determined the 2011 peregrine falcon nest to be relocated east of the anvil on the next set of cliffs. This pair's nest used to be located on a spire near where the Hangover social trail crosses. Perhaps this pair relocated their nest site in response to use of the Hangover trail. • Forest Service volunteer investigated the Cathedral pair but only detected one adult that was vocalizing. A week later, a Forest visitor reported three peregrine falcons on Cathedral the week of May 23. In August, a Friend of the Forest (FoF) member reported three peregrines flying around Cathedral. It can be assumed that the peregrine falcons there fledged one young. FoF member mentioned that he did not detect young during his Cathedral hikes in 2010. • A Forest visitor reported a single adult peregrine falcon in West Fork on May 31. • Agency biologists were concerned that the Pumphouse Fire in June would adversely affect the Pumphouse pair. However, Dr. John Hildebrand from Northern Arizona Audubon Society monitored the birds and reported that he did not detect any impact to the peregrine falcons. He

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
				described a new nest site in an alcove west of the eyrie that was used the previous two years. ***ABCI Riparian Bird Plots*** **Red Rock RD:** Two Arizona Bird Conservation Initiative (ABCI) surveys were conducted in the Red Rock RD: • Tlaquepaque plot (Oak Creek) in May 2011and a second was conducted in June 2011. • Despite quite a bit of recreation use (from private land and resorts, not National Forest System lands), a pair of Common blackhawks still nested in this area. ***Sensitive Fish*** • Forest personnel and AZGFD sampled Fossil Creek with hoop nets and found roundtail and headwater chub to be abundant • AZGFD sampled East Clear Creek Watershed: sensitive species found included Bluehead sucker (*Catostomus discoblolus*) and Little Colorado River sucker (*Catostomus sp.3*). • AZGFD surveyed Wet Beaver Creek: sensitive fish found were Roundtail chub (*Gila robusta*), Desert sucker (*Catostomus clarkii*), Sonora sucker (*Catostomus insignis*), and Longfin dace (*Agosia chrysogaster*).

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
Diversity - Successional Stages of Major Vegetation Types	Meet Federal regulation (National Forest Management Act (NFMA))	Compartment exams, field surveys, timber inventory, habitat diversity model/acres	Every 5 years	**Flagstaff RD:** total of 9,350 acreas (935 stand exams @ 10 acres per plot) **Mogollon Rim RD**: total of 15,100 acres (1,510 stand exams @ 10 acres per plot)
Habitat Improvements - Condition of Structural Improvements	Identify those structures which must be reconstructed	Inspections/ structure	50% of structures per	**Flagstaff RD** • 3 signs were installed on Anderson Mesa to interpret lakes and wildlife. • 3 Rattlesnake Quiet Area signs repaired and installed birdhouse signposts with quiet area information **Red Rock RD:** • The Fossil Creek fish barrier was inspected by biologists from U.S. Geological Survey (USGS) and Marsh and Associates, LLC. The barrier is in need of repair after winter flooding in Fossil Creek. Non-native smallmouth bass were discovered above the barrier in July 2011. A temporary barrier was constructed upstream of the permanent barrier in August 2011. Repair work is ongoing.
Habitat Improvements Non-structural	Improve habitat for native plants and animals			Noxious weed control on 70+ acres in various locations on the Forest improved habitat for native plants and animals by removing non-native weed competition and improving native community resiliency for all species including Threatened, Endangered, & Sensitive (TES)

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
				plants and animals. **Flagstaff RD:** The Flagstaff wildlife crew spent 3 days mapping and manually controlling leafy spurge populations in Brolliar Park and adjacent satellite populations.
Stream temperature of cold water fisheries	Monitor current conditions and effects of management practices on stream temperature to assure compliance with State water quality standards and tolerance levels for cold water fish	Maximum temperature thermometers	All perennial cold water streams in the first decade. Five projects annually	None completed this year by Forest personnel. AZGFD monitored water temperature in Wet Beaver Creek to determine if there was a temperature barrier to Smallmouth bass (*Micropterus dolomieu*) dispersal upstream. Report is in preparation. Arizona Department of Environmental Quality (ADEQ) collected some stream data but stream location is not known. Contact ADEQ for data.
Permitted Use	Meet Federal regulation, check for term grazing permit and Plan compliance.	Annual Grazing Statistical Report/ Animal Unit Months (AUMs) Forest-wide	Annually	110,779 AUMs permitted for the grazing year: • Flagstaff RD: 45,292 • Mogollon Rim RD: 23,989 • Red Rock RD: 41,498

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
Actual Use	Check compliance with term grazing permit, Allotment Management Plan (AMP), and Forest Plan.	Grazing actual use record, permittee reports, and actual range counts/ AUM's Forest-wide	Annually	83,062 AUMs authorized for the grazing year: • Flagstaff RD: 37,925 • Mogollon Rim RD: 16,065 • Red Rock RD: 29,072
Capacity	Meet Federal regulation, determine sustained livestock stocking levels.	Production and utilization surveys, range inspections/ AUMs Forest-wide	50% of Forest acres per decade	No production-utilization surveys were completed. Forage production surveys were conducted on 2 allotments (approximately 256,400 acres). Utilization monitoring and range inspections were conducted on 28 allotments. This includes monitoring and inspections prior to the grazing season, during the grazing season, post grazing season, and at the end of the growing season.

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
Range Condition and Trend	Meet Federal regulation, identify changes in range condition and trend, recom-mend changes in management, and determine shifts away from grass aspect due to overstory.	Range analysis, transect data, photo plots, inspection records/ Acres	50% of Forest acres per decade	Range/vegetation condition and trend studies were conducted on 4 allotments (220,373 acres).
Allotment Management Plan (AMP) Status	Meet Federal regulation, determine if permittee is compliance, and if AMP reflects current needs of resource.	Actual use, permitted use, in capacity records, range analysis, production and utilization studies, and allotment inspections/ Plan	Yearly to once every 10 years per allotment	570,816 acres on 32 active allotments were administered to standard (39% of total acres within active allotments). Actual use was 75% of the Permitted use. Utilization monitoring and range inspections were conducted on 28 allotments. This includes monitoring and inspections prior to the grazing season, during the grazing season, post grazing season, and at the end of the growing season.

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
Condition of Structural Improvements	Meet Federal regulation, and identify those structures which must be reconstructed.	Range inspections, range analysis, permittee reports.	50% of range structures per decade (*national requirement is now once every five years)*	No existing range structures inventoried or inspected. 100% of the improvements have been inspected in the last 5 years.
Condition of Nonstructural Improvements	Meet Federal regulation, and identify those vegetative improvements that require retreatment.	Range inspections, range analysis, production and utilization surveys, and permittee reports/ Acre	50% of treated acres per decade	Not applicable – There are no non-structural range improvements to monitor.
Forage Condition in Transitory Range	Determine and monitor added capacity created behind timber and firewood cuts.	Range inspections, pre-sale review, compartment exams/ Acre	5-10 years on 50% of transitory acres	Not applicable – There are no transitory rangelands.

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
Practices and Assumptions	Ensure that: -Regeneration is obtained within 5 years after final harvest cut and scheduled planting is accomplished or prior to final harvest cut when natural regeneration is planned**.**	Annual Reforestation/Timber Stand Improvement (TSI) Needs Report, plantation survival surveys, stand certification, silvicultural prescriptions, post-sale administrative review, Timber Management Information System (TMIS), Stand Data Base/Acres	Annually (plantation survival surveys are 1st, 3rd & 5th growing seasons) or as scheduled. Annual stand certification for natural regeneration stands (5th & 10th years).	Not applicable
Timber Stand Improvement Acres and Assumptions	Ensure that: -- Scheduled TSI projects are accomplished Reduce insect and disease risk.	Silvicultural prescriptions, accomplishment reports, certified projects, Reforestation/TSI Needs Report, Stand Data Base/ Acres	Annually	Compliance inspections done on all contracts, and silviculturist reviewed work done by the Forest Service.

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
Silvicultural Assumptions and Practices	Ensure that: -- Appropriate management is applied to Retention and Partial Retention zones and riparian areas, -- Rotation age and Culmination of Mean Annual Increment (CMAI) assumptions are correct, -- Silvicultural prescriptions follow management area standards, -- Silvicultural prescriptions precede vegetative treatments, -- Silvicultural prescriptions are practical and achieve desired results	Silvicultural prescriptions, Environmental Assessments (EA), project reviews	Annually	Silviculturist conducts formal review every 4 years and an informal review annually.

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
Timber Assumptions: Volume, Produc-tivity, Condition Class, Acres Harvested	Ensure that: -- Board foot/cubic foot ratios are correct, -- Volume/acre yield is correct, -- Condition class assignments are correct, -- Schedule of acres harvested is correct	Sale review, EAs, cruise summaries, TMIS, compartment exams, stand data base Use the same conversion ratios as used in Plan calculations/ As appropriate	Annually	Reviewed all Forest Supervisor authority timber sales. Used standard Forest Service timber cruising software programs
Size of Openings	Ensure that: -- Openings comply with size limits and are periodically evaluated for appropriateness	EAs, presale and administrative reviews, and post-sale reviews/ Project area	Annually	No openings > 4 acres
Acres of Over-story and Final Removal Harvest	Meet Federal regulation, measure prescriptions and effects	TMIS, Staff review of 5% of treatment projects (at least 2 projects) /Acres	Annually	Not applicable
Acres of Intermediate Harvest	Meet Federal regulation, measure	TMIS, Staff review of 5% of treatment	Annually	Informal reviews completed and surveillance plots conducted on Designation by Description prescriptions.

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
	prescriptions and effects	projects (at least 2 projects) /Acres		
Board Feet of Net Sawtimber Offered, sold, and harvested	Meet Federal regulation, measure output, assure timber offered or available for offer meets, but does not exceed, the allowable sale quantity.	Program Accounting & Management Attainment Reporting System (PAMARS; an annual reporting system); programmed harvest reports in million board feet (mbf); Periodic Timber Sale Accomplishment Reports (PTSAR, an annual reporting system from the Timber Information Manager (TIM) system, in mbf and in hundred board feet (ccf)	Annually	**Offered:** 11,700 mbf/25,435 ccf **Sold:** 3,173 mbf/6,897 ccf These amounts did not exceed the allowable sale quantity.

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
Cords of Firewood Available	Ensure that: -- Green firewood is made available, -- Potential firewood from timber sales and road building is made reasonably available to the general public before slash disposal	Review annual total of firewood sale reports, firewood advertised but not sold, and free use/cords	Annually	Several free use areas were identified on all ranger districts using slash piles from recent timber sales and recent tornado damage areas for personal use firewood. **Commercial firewood sold (dead salvage volume):** • 27 cords • 21 ccf/14 mbf **Personal Use Paid**: • 16,951 cords • 13,340 ccf/8,511 mbf **Personal Free Use** • 3,200 cords • 2,518 ccf/1,607 mbf No green firewood was made available because there was insufficient capacity on the Forest to establish and administer these areas.
Yield Projections	Ensure that: Yield projections are correct	Establish Growing Stock Level (GSL) studies in cooperation with Rocky Mountain Forest and Range Experiment Station (RMFRES)/ Permanent plots in regenerated stands/ mbf/acre and/or	First decade	Not applicable

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
		trees/acre		
Re-evaluation of Unsuitable Timber Lands	Evaluate the accuracy of suitable timberlands classification, periodically reexamine lands identified as not suitable for timber production to determine if they have become suited and could be returned to timber production	Review new or updated soil survey data, compartment exam, project plans, timber planning process/ Acre	Cover entire Forest in 1st decade (1/10 of Forest annually)	This process was completed as part of Forest Plan Revision by the close of Fiscal Year 2010.

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
Watershed Condition of Forest Lands	Meet Federal regulation, ensure that Forest watersheds in satisfactory condition by 2020, assure productivity of the land is maintained. Monitor soil and watershed condition.	Watershed Condition Framework for 6th Hydrologic Unit Code (HUC) watershed conditions evaluating 12 indicators. Verification of accomplishment of project activities and monitoring improvement of watershed and stream conditions will occur in step 6 (F) after implementation in 2012. Forest Service Handbook (FSH) Region 3 Supplement No. 2509.18-99-. Soil Management Handbook for soil condition.	Step A for 6th HUC assessments. Step f (monitoring following implementation). 10% annually for soil condition	Baseline watershed condition assessments (step A) were completed on all 101 6th HUC watersheds following the Watershed Condition Framework (WCF) process. The assessments were a qualitative and quantitative look at watershed condition and evaluated 12 resource indicators serving as an indication of watershed condition. The information was input into a web-based application called the Watershed Classification and Assessment Tracking Tool (WCATT). The majority of 6th HUC watersheds (65%) are in Functional at Risk condition followed by Properly Functioning (21%) and Impaired Function (14%).. 5 watersheds were prioritized for treatment and 1 watershed restoration action plan was completed for #1 priority watershed Barbershop canyon. Implementation and monitoring to begin FY 2012. Soil condition assessments were completed in several pastures and ecological units on the Walker Basin and West Windmill allotments to determine existing condition. Soil/watershed condition was monitored on the Fossil Creek allotment to determine hydrologic function and vegetative ground cover for erosion function to determine maintenance of soil productivity following project implementation. 200 person days of range monitoring (permit/AOI compliance, forage utilization, forage production, condition and trend monitoring) occurred.

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
		Daubenmire transects. Photo points, ocular estimates to determine trends/acres.		
Watershed/ Soils Prescriptions	Monitor projects to determine 1) compliance with recommendations and suitability of recommendations and Best Management Practices (BMPs), and 2) to ensure water quality standards are met.	Review soil disturbing projects for compliance with BMPs and water quality standards during project implementation by contracting officer and specialists and effectiveness monitoring months later. Ocular, and Dabenmire plots and forms used.	Minimum of 1 project per District per year	BMPs were included and implementation monitoring occurred in the prescriptions for prescribed burning to retain adequate large woody debris, burn under proper moisture conditions and to protect soil organic material in the Oak Creek, Mountainair and East Clear Creek projects.

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
	Monitor watershed condition in project areas.	FSH R3 Supplement No. 2509.18-99-. Soil Management Handbook for soil condition. Daubenmire transects.	1 Project/ year Forest-wide	BMPs to minimize non-point source pollution were identified and implementation monitoring occurred in all fuel reduction projects including prescribed burning and mechanical treatments on the Mountainair, Oak Creek and East Clear Creek Projects. Implementation monitoring occurred for each project including on the Red Rock RD, Mogollon Rim RD and Flagstaff RD. BMPs were included in the Timber Sale contracts for designated landings and skid trails that limited operation to periods when the soils are not wet and specified sanitation and fuels storage requirements for on-site logging camps. Burned Area Emergency Rehabilitation (BAER) implementation and effectiveness monitoring occurred on the Schultz Wildfire in the Rio de Flag 5th code watershed for woodshred, straw mulch and seeding treatments. Results indicate woodshreds were about 70% effective in staying on slope and straw was effective below about 35% slope. Recovery of seeded species and herbaceous ground cover is slow on steep slopes and much better over most of the other areas. BMP effectiveness monitoring occurred in riparian pastures and measured livestock utilization on all 3 Ranger District allotments where livestock have access to streams including Oak, Spring, Fossil, West Clear, Walker, Wet and Dry Beaver Creeks.

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
				Vegetation frequency and ground cover monitoring occurred on several dozen sites dispersed throughout the Walker Basin, Buckhorn, Apache Maid, Fossil Creek and Windmill allotments using enhanced quadrant method. Approximately 85 acres within Wickiup 6th HUC watershed was restored and BMPs identified, implemented and monitored. Overgrown juniper was removed by hand sawyers, lopped and scattered on impaired soils to reduce accelerated erosion, improve downstream water quality and improve soil productivity. For more details on soil and water accomplishments and monitoring, please see separate attachment labeled *Coconino National Forest 2011 Non-Point Source Water Quality Report.*
Riparian Improvement Projects	Resolve Issues at Forest level and meet Federal regulation; review riparian improvement projects for changes in ground cover, species composition, bank stability, stream flow and water	Standard watershed condition transects, ocular, estimates and professional judgment/ Project	1 Project/ year Forest-wide	**Flagstaff RD:** Maintained fencing on 22 wetland exclosures (approx. 44 miles of exclosure fencing). **Red Rock RD:** Several spring exclosures were built on the Red Rock RD to protect and maintain riparian function and reduce accelerated erosion, sediment delivery and nonpoint source pollution to connected stream courses. Implementation of soil and water conservation practices includes the following accomplishments:

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
	quality changes, effectiveness of and compliance with recommendations			• Porta-johns were maintained on a monthly basis. • About 8-10 dispersed camping sites were relocated to stable soils outside of the riparian zone and rehabilitated with erosion control measures. Invasive weed removal occurred on Fossil Creek and the Verde River. • Litter pickup occurred. • NAU conducted fecal contamination water quality monitoring. • Footbridges were installed over portions of springs leading into Fossil Creek to reduce damage to riparian function and water quality. • Social trails adjacent to Fossil Creek were relocated to stable soils or blocked and rehabbed with straw wattles, wooden poles and water bars. • An education campaign was introduced with environmental awareness through signage (see attached poster at end of report on page 20).
Riparian Areas	Monitor condition and trend of riparian areas photo points.	Standard watershed condition transects, Proper Functioning Condition assessments, ocular, estimates, photo points, stream gaging	5 percent annually	New riparian Proper Function Condition Assessments were not made on riparian areas in FY11 but several were visited and validated during range National Environemtal Policy Act (NEPA) planning. Riparian utilization was monitored on District allotments where livestock have access to streams, at primarily water gaps, including Oak, Spring, Fossil, East Clear Creek, West Clear, Walker, Wet and Dry Beaver Creeks. Seasonal, monthly or daily stream gauge monitoring

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
				continued on Barbershop Canyon, Yeager Canyon and Fossil Creek. The automated stream gauge at Fossil Creek was recently installed to quantify daily and year round flows necessary to validate Wild and Scenic River reserved water rights flow. The purpose of gauging the flow and procurement of water right is to collect sufficient data to acquire in-situ instream flow water rights for recreation, fisheries and wildlife use resulting in riparian area, water quality and quantity protection. The volunteer group led by National Park Service personnel and Forest personnel continued additional spring inventory in the Rio de Flag, West Clear Creek, and other Forest watersheds and plan to continue collecting location, proper functioning condition assessments, chemistry and some flow data on unknown or on known but non-Global Positioning System (GPS)-located springs.
Road Obliteration	Ensure compliance with Standards and Guidelines concerning road densities Forest Issue related.	Work accomplishment reports/ miles	Annually (Report in years 3, 6, 9)	Updated information not required until FY2013. 2010 information: 4.5 miles of roads were obliterated and 12 acres of riparian habitat were restored by removing roads and trails in riparian area Forest-wide. BMPs to minimize non-point source pollution were identifed and implementation monitoring occurred, including designating camp locations outside of riparian filter strips.

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
Water Quality	Ensure compliance with Standards and Guidelines, State and Federal Water Quality Standards.	Fecal coliform sampling at sites designated for full body contact	3 Sites Annually (minimum)	**Friends of the Forest Water Quality Monitoring:** Weekly samples are taken between Memorial Day and Labor Day at four different sites on Oak Creek in high use recreational areas and these samples are tested for E coli. Results indicated water quality exceeded standards on busy days at Slide Rock State Park (see ADEQ website below); and consequently, both Spring Creek and Oak Creek remain listed impaired for pathogens. This is due to a combination of unsanitary habits of swimmers on weekends and leaky septic systems on adjacent non-FS lands. **NAU Fossil Creek Fecal Coliform Monitoring:** Under the Middle Fossil Creek Water Quality Improvement Grant (WQIG), NAU conducted fecal coliform water quality monitoring in FY 2011. Results of monitoring can be obtained through contact with NAU and the Red Rock RD. Initial results of Fossil Creek monitoring show some exceedences of E. coli also. In response, the Forest has asked Friends of the Forest to take samples one time per month at three different locations in Fossil Creek. Some Forest perennial streams were in the 3 year cycle and monitored by ADEQ. See website link to ADEQ below for site-specific information or contact ADEQ for detailed data by stream. Lake water quality monitoring discontinued at Upper and

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
				Lower Lake Mary, Soldiers Lake, Soldiers Annex, and Lower Long Lake but will resume in next 3 year cycle. Water quality results by stream can be found on this link including a link to the draft 2010 report: http://www.azdeq.gov/environ/water/assessment/assess.html
ROADS				
Arterial/ Collector, Construction/ Reconstruction	Ensure compliance with identified needs for arterial/collector Reconstruction. Forest Issue related	Work accomplishment reports/ Miles	Annually	355 miles of roads were maintained on the Forest: • 306 miles of passenger car system roads were maintained. 11 miles of road were reconstructed or improved on the Forest: • 10 miles of passenger car system roads were improved.
Purchaser Credit Roads	Ensure compliance with identified needs for construction and reconstruction of purchaser credit roads	Work accomplishment reports/ Miles	Annually	None on the Forest.
MINERALS				
Compliance with	Meet legislative	Field checks/	Annually	The Forest has only a few mineral operations. We

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
Terms of Minerals Operating Plans	mandate and Agency guidelines.	Plans		administered 2 plan of operations in 2011, including final closure of White Vulcan Mine. A large area of the Verde Gypsum Plant was patented. The Forest issued 87 personal use and free use mineral permits and monitoring use in these existing pits. Free use for government or permit holder to drive to National Forest roads/facilities or for federal agencies.
Non-patented Mining Claim Compliance	Minimize illegal mining activity.	Field checks, Bureau of Land Management (BLM) file checks	Annually	There is little mineral activity on the Forest. Mining claims are reviewed during routine lands cases and when mineral activities are observed. There is little evidence of much mineral activity due to the limited mineralization for locatable minerals on the Forest.

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
LANDS				
Special Use Permits	Process and administer special use permits in accordance with established guidelines.	Land Uses Report (LUR), field inspections/ Permits Permits are tracked and processed through Secure UDS (SUDS) Process.	Annually	106 Lands permits were administered to standard. 186 recreation and lands permits were issued in FY 2011. Other permits were administered to a lesser standard, including billing for most. Limited budgets reduce the ability to do inspections except when there is a need or opportunity associated with other projects or reissuance. The Forest is implementing cost recovery for almost all permit actions. Demand for permits, especially communications and energy facilities are increasing.

Items Monitored	Intent	Monitoring Method Unit of Measure	Frequency	Fiscal Year 2011
				There are almost 600 issued special use permits on the Forest including recreation and land uses, as well as additional short term permits.
Land Purchase, Acquisition, and Exchange	Consolidate Forest lands and meet public needs.	Forest Land Adjustment Plan, Management Accomplishment Report (MAR) target/ Cases	Annually	The Forest continues to work on a few land adjustment cases under direction in the Forest Plan. Both the City of Flagstaff and Forest Ring projects were dropped during FY 2011. The Forest has worked cooperatively with the Apache Sitgreaves NF on the Show Low South Land exchange. Ongoing discussions have occurred with the Yavapai Apache Nation about their proposed land exchange. Purchase cases for Fossil Creek and Shield Ranch were in discussion but the projects did not go forward.
Occupancy Trespass	Minimize Forest trespass problems.	Field checks, landline location/ Cases resolved vs. new cases	Annually	One case was resolved. The Forest continues to respond to landowners and political entities on resolution of encroachment cases in Mountainaire. Legislation was introduced for this. Action is taken on simple and immediate trespass issues, however larger scale projects are not resolved.
Landline Location	Maintain Forest boundary.	Landline location, MAR target/ Miles	Annually	Limited budgets and staff have reduced the landline work being done. Development of private in holdings and adjacent private property has increased and is resulting in new trespass. 2 miles of boundary was maintained in FY11.
FIRE / FUELS				
Growth Reduction and Mortality Caused by	Ensure endemic and introduced infestations do not	Integrated Pest Management aerial observation by regional entomologists,	Annually	Aerial surveys are conducted to monitor Forest health conditions over large areas. Forests are monitored for dying trees (from bark beetles, drought, and other factors), various types of defoliation, and abiotic impacts such as from storms and weather factors. The 2009 report was published in August 2010

Insect and Disease Infestations	become epidemic Reduce adverse effects of dwarf mistletoe.	compartment exam, project inspections and reviews/Acres, Forest-wide		(http://www.fs.fed.us/r3/publications/documents/fidc2009.pdf) Maps are available at: http://www.fs.fed.us/r3/resources/health/fid_surveys.shtml Forest highlights suggest that most instances of insect and disease have declined since last year and include: Acres ponderosa pine needle cast, likely fungal caused: 2,810 Acres of bark beetle incidence: 540 Acres of aspen damage: 2,250 Acres defoliation by drought: 1,540
Air Quality	Ensure prescribed fire does not cause violations of State and Federal air quality standards in sensitive areas.	Project reports, field monitoring	Annually	No violations per ADEQ. Field monitoring is consistent with guidelines set in Forest Service Manual 5100, Chapter 5140: Fire Use. Daily prescription (Rx) requests are submitted for approval from ADEQ
Fuel Treatment Outputs	Ensure balanced fuel treatment outputs, emphasizing utilization.	Accomplishment reports/Acres	Annually	12,482 wildland urban interface (WUI) acres treated. 5,419 Non-WUI acres treated. 17,901 Total Acres Treated
Wildfire Acre PAR's	Ensure wildfire acres are	Reports/Acres	Annually	A Fires 351 (Class A - one-fourth acre or less) B Fires 112 (Class B - more than one-fourth acre, but less than 10) C Fires 9(Class C - 10 acres or more, but less than 100 acres)

	within projected annual burned acres period and by Fire Management Zone where acres are not specific to Management Areas (MA).			D Fires 1 (Class D - 100 acres or more, but less than 300 acres) E Fires 3 (Class E - 300 acres or more, but less than 1,000 ac) F Fires 1 (Class F - 1,000 acres or more, but less than 5,000 ac) G Fires 1 (Class G - 5,000 acres or more) **Total Fires:** 478 (201 Human caused, 277Lightening) **Total Acres Burned:** 21,1885 A total of 8,229 Wildland Fire Acres were managed for multiple resource benefits in 2011.
Cost of Suppression, Protection, Organization, and Net Value Change	Keep fire management program cost effective.	Dollars	Annually	Suppression costs were minimized as much as possible to meet objectives in maintaining resource effectiveness and safety guidelines during suppression activities. Suppression costs are tracked through the use of wildfire suppression funds and a summary of total suppression costs for 2011 is not currently available. Pre-suppression costs have remained flat or have decreased slightly due to lower budget levels in 2011.
Fire Suppression Effectiveness	Meet Federal regulation and measure prescriptions and effects.	Periodic inspections and reviews to determine if fire management organization is effective in controlling fire losses within prescription; the use of the fire budget analysis	Annually	Pre-season planning and budgetary allocations are coordinated to provide effective and efficient fire suppression response to wildland fires based on historical data and projected fire danger ratings through the use of hazard analysis procedures Pre-season preparedness reviews are conducted and safety discussions held. After-Action Reviews are held after each incident. Informal reviews are conducted periodically during the fiscal year to assess needs to the fire organization. Budget allocations for the Forest are discussed with Regional Office Fire Management to evaluate requirements for funding levels. Mid-year reviews are

		process to determine fire management efficiency; and reviews of selected fires Annual inspections, periodic re-views, and use of fire bud-get analysis process as needed		conducted to project funding needs and/or potential savings in the Preparedness Budget through the end of the FY. Spring and Fall fire leadership meetings are conducted to confirm fire program needs to meet operational objectives for fire suppression.
LAW ENFORCEMENT				
Law Enforcement Person Hours	Improve law enforcement Forest Issue related	Professional evaluation of trend based on a review of case loads, solution rates and public complaints Based on: protection of cultural resources, Off-road Driving damage, firewood theft, and dollar cost of vandalism and trends in user protection. Update monthly using Law Enforcement & Investigations Management Attainment Report System	Annually	Law enforcement officers on the Forest respond to Washington Office and Regional priorities in addition to Forest issues. The demand for law enforcement exceeds Forest capacity. **FY 2011 statistics include:** Fines collected: $124,989 Damage to Government property and resources: $4,184 Public contacts: 2,445 Violations issued: 702 Warnings issued: 407 Arrests: 38 Cannabis plants eradicated: 0 Cannabis plots eradicated: 0

		(LEIMARS)		
PUBLIC INVOLVEMENT				
Citizen Participation Plans Public Affairs Standards	Measure responsiveness to potentially affected interests.	Citizen Participation Plans and Public Affairs Plan review/ Completed contacts and actions	Quarterly	Based on quarterly Schedule of Proposed Actions (SOPA) reports from October 2010 – September 2011, public contacts were made with respect to: • Arizona Snowbowl improvements • Aspen restoration • Campfire restrictions • Campground improvements • CC Cragin Reservoir • Childs-Irving Hydropower Project • Christmas tree area • Commercial fuelwood from tornadoes • Eagle nesting areas • Firewood permits • Forest closure areas and wet road closures • Four Forest Restoration Initiative (4-FRI) • Forest health projects • Forest fires • Forest plan revision • Forest restoration projects • Fuels reduction • Fossil Creek Area recreation management

				• Graffiti mitigation on Forest resources • Land exchange • Logging operations • Mineral exploration • Mountainaire boundary issues for private parcels • Outfitter guide permits • Partnerships with other agencies • Pit permit • Prescribed burns and fires managed for resource benefits • Travel Management Rule and off-highway vehicle (OHV) • Transmission line permits/wind energy • Tribal relations • Range allotments • Recreation projects (climbing, trails) • Recreation Residence Permits • Red Rock Pass Program • Resource Advisory Committee projects • Schultz burned area restoration • Schultz flooding mitigation • Sedona National Scenic Area proposal • Smoke impacts and mitigation • Special Use Permits (roads, improvements, access) • Walnut Canyon Study • Water storage tanks • West Fork of Oak Creek Aquatic Restoration • Wildlife protection and habitat improvement • Youth camps
Verification of Unit Cost Used	Acquire accurate cost data.	Actual costs from a representative	Annually	Due to a change in budgeting process, this can no longer be tracked in the same manner.

in Plan Compared to On-the-Ground Cost		sample of projects and programs including both force account and contract. Discount to 1982 dollars for comparison to Plan costs/Dollars		
LAND MANAGEMENT				
Effects of Management on Adjacent Lands on National Forest Goals and Objectives	Determine effects of management of other ownership on Forest Plan.	Reports from appropriate resource monitoring items, review of other Agency plans, new issues	Every 5 years	Effects of adjacent land management on Forest goals and objectives has led to an increased public desire for Forest lands to provide open space around communities, as well as the need for easements on, or land conveyances of, Forest lands for community infrastructure, roads and energy corridors. These topics are incorporated in the ongoing Forest Plan revision process.

SUPPLEMENTAL DOCUMENT to FY2011 Monitoring Report

Coconino National Forest 2011 Non-Point Source Water Quality Report

This Water Quality Report is in response to the Clean Water Act Non-Point Source program Agreement with the Arizona Department of Environmental Quality and covers those activities contributing to the control of non–point source pollution affecting water quality on the Coconino National Forest. During the past fiscal year (October 1, 2010 – September 30, 2011), the Coconino National Forest has designed, implemented (using Best Management Practices), or cooporated in a variety of activities intended to improve and protect soil and water resources and water quality on and off of the Forest. The Forest was also active in soil, vegetation, riparian and water resource monitoring and in watershed related assessments and partnerships.

This report briefly summarizes the status of impaired waters, TMDLs and summarizes those soil and water activities and associated BMPs implemented to maintain or improve soil productivity, riparian function and reduce non point source pollution and improve water quality. Project area maps and monitoring data can be found in District and the Supervisors office.

Status of Impaired Waters on the Forest

Forest-wide:
Water quality on Coconino NF lakes and streams is variable. Portions of Oak Creek, Spring Creek and five reservoir lakes on the Forest are classified as impaired and are not attaining designated beneficial uses by ADEQ or EPA, the category of most severe water quality problems. The impairment in the streams is E. coli and mercury in fish tissue on the lakes.

The 2006/2008 ADEQ 303(d) Impaired waters report lists waters including Oak Creek (from headwaters to Spring Creek, about 43.4 miles) as impaired due to exceedances in bacteria E. coli, including Spring Creek from Coffee Creek to Oak Creek, 6.4 miles). The likely source of the impairment is leaky septic systems, ungulate presence and high levels of recreational swimming in Oak Creek.

The 5 Lakes with mercury exceedances in fish tissue include Upper and Lower Lake Mary, Soldier and Soldier Annex Lake and Tremaine lake. They have a recently approved TMDL and can be found at the following website, http://www.azdeq.gov/environ/water/assessment/download/Lake_Mary_Region_Draft-6-16-2010.pdf.

The TMDL concludes the majority of the mercury is derived from atmospheric deposition and is transported through runoff over the watershed. Where vegetation is inadequate to trap the soil and water, mercury is transported into connected streams and lakes. Increased soil erosion from inappropriate motorized use on unsuitable soils thus can increase mercury levels in nearby waterways.

Even though the Lake Mary TMDL does include recommendations to limit OHV or motorized vehicular use on roads, and develop a voluntary implementation plan, it does state that watershed loading of mercury can be reduced though management of sedimentation and vegetative stability. This infers limiting soil disturbance including OHV and motorized use on roads could reduce sediment and mercury transport into the identified, impaired lakes.

An additional 24 miles of streams (about 11%) are classified as not attaining (category 4), the next most severe water quality category. These streams do not meet state and federal water quality standards and do not support designated beneficial uses including either aquatic and warm water fisheries, full body contact (swimming) or fish consumption. Most are located in the Verde River and its tributaries where past and current impairments of the turbidity water quality standard have occurred.

There are 189 miles in Category 1, 2 or 3 streams on the Forest.

TMDLs

The Forest has the following 5 approved TMDL's designed by ADEQ in response to past water quality impairments; Verde River for Turbidity, Stoneman Lake for DO, pH and nutrients, Oak Creek at Slide Rock for Pathogen (E. Coli), and Oak Creek Basin including Munds Creek for Nitrogen and Phosphorus and Lake Mary Regional TMDL for Mercury in Fish Tissue. These TMDL's strive to improve water quality through recommended appropriate management activities by the Forest and State agencies.

Recreation Management

Improving or removing selected areas for recreation use helps reduce non-point source pollution. BMPs are used in constructing or removing recreation sites to reduce the potential for sediment to enter streams and lakes from these sites. Toilets are planned and installed to reduce bacterial contamination from heavily used recreational areas and are placed using standard state regulation for setback distances from waterbodies.

Red Rock Ranger District (RRRD):

Middle Fossil Creek ADEQ Water Quality Improvement Grant 11-00609

This project is aimed towards improving water quality by paying for placement of temporary porta johns in highly used recreational sites as well as funding research with NAU that looks at fecal contamination. Funding for this project was extended in FY 2011. Implementation of soil and water conservation practices includes the following accomplishments:

- Porta johns were maintained on a monthly basis.

- About 8-10 dispersed camping sites were relocated to stable soils outside of the riparian zone and rehabilitated with erosion control measures. Invasive weed removal occurred on Fossil Creek and the Verde River.
- Litter pickup occurred.
- NAU conducted fecal contamination water quality monitoring.
- Footbridges were installed over portions of springs leading into Fossil Creek to reduce damage to riparian function and water quality.
- Social trails adjacent to Fossil Creek were relocated to stable soils or blocked and rehabbed with straw wattles, wooden poles and water bars.
- An education campaign was introduced with environmental awareness through signage (see attached poster at end of report on page 20).

Additional BMPs include the following:

- No camping within 100 feet of Fossil Creek or riparian area
- No campfires allowed
- No camping on north side (Tonto National Forest side) of Fossil Creek bridge
- Use of cactus transplants, large boulders, wire fencing, and slash on rehabbed and closed trails to camouflage and deter use

Select before and after photos of social tree rehab, foot bridges and dispersed campsite removal are included below.


02/16/2011


02/22/2011


02/16/2011


02/22/2011


02/16/2011


02/16/2011


02/16/2011

Livestock Grazing

Red Rock Ranger District

1) Signed Decision Notice on Walker Basin Allotment reduced allowable use from about 50% to 30-40% and soil condition objectives identified. BMP's included in the NEPA are designed to minimize sediment production on-site and improve downstream water quality. Roads were closed and grazing in pastures with high amounts on unsatisfactory soils (Wickiup 6th HUC watershed)-was deferred until vegetation and soil condition are improved. Road closures, improved grazing strategies and grazing deferrals implement recommedations identified in the Verde River TMDL for turbidity and should reduce non point source pollution and improve water quality inWest Clear Creek and the Verde River.

- Approximately **266,733 acres** reported as administered to standard.
- Provided material for the reconstruction of approximately 6 miles of existing pasture/allotment fence. Newly constructed fence meets wildlife specifications.
- 200 person days of range monitoring (permit/AOI compliance, forage utilization, forage production, condition and trend monitoring).

Flagstaff and Mogollon Rim Ranger Districts (MRRD):

1. No range Decision Notices made this year on allotments.

Range Improvement Projects

- Authorized 39,142 AUM's of livestock grazing (86% of permitted livestock AUM's).
- Authorized livestock grazing on approximately 499,786 acres (64% of total permitted grazing acres).
- Planned and managed for rest/deferment from livestock use on approximately 287,057 acres (36% of total permitted acres).
- Approximately 304,600 acres reported as administered to standard (53% of forest target; actual accomplishment much greater).
- Provided material for the reconstruction of approximately 9.25 miles of existing pasture/allotment fence; fence reconstruction completed by permittees. Newly constructed fence meets wildlife specifications.
- Provided material for the reconstruction of 6 livestock/wildlife watering facilities. Reconstruction completed by permittees (4) and Coconino Sportsmen (2).
- Provided 3 miles of fence material for the Copeland Ditch fencing project.
- Maintained fencing on 22 wetland exclosures (approx. 44 miles of exclosure fencing).

- Coordinated with the Az. Game and Fish Department to acquire signs for wetland exclosures; signage intended to reduce the amount fencing damage. Signs will be posted on all exclosures early in FY 2012.
- 255 person days of range monitoring (permit/AOI compliance, forage utilization, forage production, condition and trend monitoring).
- In coordination with NAU and RMES, reconstructed a historic grazing exclosure near Fry Park (one of the Hill Plots; est. 1912).

These improvements are designed to minimize sediment production on-site thereby reducing non point source pollution, stabilize streamcourses, improve riparian function, soil condition and improve downstream water quality.

Resource Protection Measures and BMP's:

The Forest Plan establishes standards and guidelines to follow or adjust in the grazing plan on all allotments. Conservative use in uplands is 30-40% and aims to move soil towards sastisfactory condition.

Resource Protection Measures mirror Best Management Practices and are included in each new EA. Soil condition objectives were established for the Walker Basin allotment. These objectives are set to improve or move soil condition toward satisfactory functioning soil conditions and improve water quality. BMPs are designed to reduce sediment delivered (total suspended sediments), nutrients and E. coli to impaired, perennial waters.

Grazing Resource Protection Measures and BMPs include the following where appropriate.

- Allotments are grazed establishing limits for timing, frequency, and duration of grazing including drought. These factors may be adjusted based on conservative use guidelines for uplands and riparian areas, as well as long term effectiveness monitoring.
- Grazing will be managed at an intensity that will improve vegetative ground cover (plant litter and basal area).
- Pastures with high amounts of unsatisfactory soils connected to impaired waters will be deferred or rested until soil condition objectives are met (increase in vegetative ground cover to protect against accelerated soil erosion).
- Use salt to improve livestock distributions and more than ¼ mile from water.
- Designated streamside management zones around streamcourses and wetlands.

Walker Basin Specific EA

- The District Range Staff will monitor Permittee compliance with the Allotment Management Plan throughout the grazing period of each year for the life of the Permit. Compliance with the terms and conditions of the livestock grazing permit will

be strictly enforced including livestock grazing scheme, contingencies for drought conditions and monitoring agreements.

- Manage livestock grazing at an intensity that will improve vegetative ground cover and composition (primarily the litter component) to enhance soil function (minimizes soil erosion, promotes water infiltration and enhances nutrient recycling) and to improve the quality and quantity of desirable vegetation. Pastures dominated by satisfactory soil conditions should be allowed up to 40% utilization during the growing season and pastures dominated by impaired soils should be allowed up to 30% annual utilization. Pastures with high amounts of unsatisfactory soils connected to impaired waters are rested or unsatisfactory soils fenced until desired conditions are met. Adequate rest during the plants dormant season allows for the accumulation of plant litter. Key grazing areas will be monitored to determine when cattle should be moved to prevent over use. A planned grazing system is designed to promote flexibility in the grazing program and to buffer the adverse effects of drought. BMP 22.11, 22.12, 22.14 (FSH 2509.22)
- Utilize salt to improve livestock distribution. Salt at a ¼ mile distance away from waters or natural congregating areas such as swales, drainages, riparian areas and meadows. Move salt when livestock distribution objectives are not being achieved or to correct localized over use by livestock grazing. BMP 22.12
- Manage livestock grazing on all soils at an intensity that will maintain or improve effective ground cover (effective ground cover is defined as the % litter greater than 1.25 cm in size and % total plant basal area) to enhance soil function (minimizes soil erosion, promotes water infiltration and enhances nutrient recycling) and to improve the quality and quantity of desirable vegetation. BMP 22.11
- **Soil Condition Objectives:** Soil condition objectives are established used in the monitoring plan and adjustment made where needed in adaptive management. Manage livestock grazing at an intensity so that target effective ground covers for **all** soils (by TES Map Unit) are approximately equal to or greater than the threshold effective ground cover (amount necessary to maintain soil stability and productivity) as described in the table below **and** be moving towards the natural (under potential plant community) within 10 years for all **Impaired** and **Unsatisfactory** soils. Overall soil conditions will move towards satisfactory on Impaired and Unsatisfactory soils and remain at satisfactory for soils that are currently in satisfactory condition.
- Montane meadows (TES units 53 and 55) should strive to achieve 90 percent of potential ground cover to prevent accelerated surface erosion and gully formation but is probably unattainable within 10 years. Therefore, during the 10 year permit, target ground covers on these soils should be about 2/3rds of Natural covers. Threshold ground cover values are not achievable on Inherently Unstable soils but target cover values should strive to move towards natural cover values.
- During drought, these effective ground covers will be difficult to attain, but livestock grazing should not decrease existing effective ground cover.
- Avoid grazing soils in unsatisfactory soil condition areas where adjacent to and connected to major tributaries to the Verde River and West Clear Creek by active herding or deferral. BMP 22.12
- Manipulate the intensity, frequency, duration and season of grazing in such a manner that the impacts to vegetative and water quality will be positive. Maintain or improve riparian and upland area vegetation and protect stream banks from erosion. Promote ecological and stable plant communities on both upland and bottom land sites.

- Assure vegetative filter strips between stream courses and disturbed areas and/or road locations are adequate to filter sediment and have protective vegetative cover above threshold covers and moving towards potential covers within 10 years. See Filter Strip Table in Forest Plan Forest-wide Standards and Guidelines under Watershed/Soil/Air, F2. BMP 24.16
- Use of improved grazing management systems (e.g., herding) to reduce physical disturbance of soil and vegetation and minimize direct loading of animal waste and sediment to sensitive areas. Installation of alternative drinking water sources and use of exclusionary practices, such as fencing (conventional and electric) will also be used as appropriate.
- Decommission roads where resource issues may be a concern.

Fuels, Vegetation Management , Watershed Improvement and BMP's

Hazardous fuel reduction was accomplished on about 17,539 acres Forest wide. These acres were either mechanically thinned or used prescribed fire including initial, maintenance or pile burning. Best management practices (described below) were included in the prescription to retain adequate large woody debris, burn under proper moisture conditions and to protect soil organic matter. The treatments are beginning to restore watershed function and have reduced the likelihood of adverse watershed effects from uncharacteristic wildfires. An objective is to maintain and improve watershed condition by reducing the tree density and thick litter ground cover that fuels wildfires that result in large areas of high burn severity. Left untreated, post storm events following wildfires poses a threat to water quality from accelerated erosion that could result in non point source pollution.

Flagstaff Ranger District:
About 5673 acres were treated in the Oak Creek, Walnut Creek and Rio de Flag 5th code watershed.
Reducing hazardous fuels in the Walnut Creek watershed should reduce the risk of uncharacteristic wildfire that would result in large areas of high burn severity that leaves soil bare. Following storm events, these areas have accelerated erosion and may transport mercury that may be present in surface soils. Treating hazardous fuels reduces the risk of wildfire and the subsequent risk of further contaimination of Lake Mary mercury impaired waters.

Mogollon Rim Ranger District:
About 11,024 acres were treated, predominantly in the Upper Clear Creek 5th HUC watershed.

Red Rock Ranger District:
About 842 acres were treated in portions of the Beaver Creek and Oak Creek watersheds.

The Oak Creek Canyon fuels Reduction Project treated portions of Oak Creek 5th HUC watershed adjacent to Oak Creek.

BMP's Specific to Oak Creek
No fuel piles burned within 100 feet of Oak Creek.
No fuel piles burned within 50 feet of any ephemeral tributary to Oak Creek.

MRRD: Other Vegetation Treatments and Watershed Improvements

- 208 acres of timber stand improvement, hand thinning East Clear Creek Watershed Health Project. Hand piled slash away from stream courses or other sensitive areas.
- Little Draw aspen restoration project. Installed elk exclosure fence.
- Elk fence repair and maintenance at three maple draws
- Hazard tree cutting in campgrounds. Lopped and scattered slash away from stream courses
- Cut hazard trees and rebuilt one elk exclosure fence at Merritt Springs riparian area. Lopped and scattered slash away from stream courses

RRRD: Other Vegetation Treatments and Watershed Improvements

Approximately 85 acres within Wickiup 6th HUC watershed was restored. Overgown juniper was removed by hand sawyers, lopped and scattered on impaired soils to reduce accelerated erosion, improve downstream water quality and improve soil productivity.

BMP's for lop and scatter are similar to those listed within fuels management projects below:

Fuels management projects all contain BMP's that are specific to the project-specific NEPA. The exception to this are the managed fires where soil and water objectives are stated within the Wildland Fire Decision Support System (WFDSS) document for each managed fire. General project specific BMP's (described below) are designed to reduce non-point source pollution from silvicultural activities and include filter strip designation, limiting equipment use in filter strips, and limiting burn severity through prescription controls. BMP's included in the NEPA are designed to minimize sediment production and nutients and E. Coli on-site. Many fuels reduction BMP's are included below.

Harvest and Fuels Reduction and BMP's

24.11 - Use of Terrestrial Ecosystem Survey Timber Harvest Limitation Rating

1. Objective. To identify severe and moderate erosion hazard areas and othersoil limitations in order to adjust treatment measures to prevent downstream water quality degradation.

24.13 - Limiting the Operating Period of Timber Sale Activities

1. Objective. To ensure that the Purchaser conducts operations, including but not limited to erosion control work, road maintenance, and log landing drainage in a timely manner, within the time period specified in the Timber Sale Contract. The CT6.3 "Plan of Operation" provision is required in all Timber Sale Contracts. This provision states that the Purchaser must submit a general plan of operation

which will set forth planned periods for and methods of road construction, timber harvesting, completion of slash disposal, erosion control work, and other contractual requirements. Forest Service written approval of the Plan of Operation is a prerequisite to the commencement of the Purchaser's operation. Provision BT6.6 can be used to suspend operations because of wet or saturated soils in order to protect soil and water resources.

24.18 - Tractor Skidding Location and Design

1. Objective. To minimize erosion and sedimentation by designing skidding patterns to best fit the terrain. Proper skid pattern management involves such things as locating skid trails to avoid stream courses and restriction of skidders to designated trails. The Sale Administrator locates the skid trails with the timber Purchaser or by agreeing to the Purchaser's proposed locations prior to construction

24.2 - Log Landing Location

1. Objective. To locate landings so creation of unsatisfactory watershed conditions which lead to water quality degradation is avoided.

24.21 - Erosion Prevention and Control Measures During Timber Sale Operations

1. Objective. To ensure that the Purchaser's operations shall be conducted reasonably to minimize soil erosion.

Equipment shall not be operated when soil conditions are such that accelerated soil erosion will result. The kinds and intensity of control work required of the Purchaser shall be adjusted to soil and weather conditions and the need for controlling runoff. Erosion control work shall be kept current immediately preceding expected seasonal periods of precipitation or runoff.

24.3 - Slash Treatment in Sensitive Areas

1. Objective. To comply with Federal and state water quality standards by protecting sensitive areas from degradation which would result from using mechanized equipment for slash disposal.

Protected streamcourses will be designated on the sale area map. Disturbance from mechanical equipment will be minimal within 50’ on either side of the protected streamcourse.

41.3 - Obliteration of Roads

1. Objective. To reduce sediment generated from unneeded roads, roads that run in streambeds, and roads that are located in streamside management zones by closing them to vehicle use and restoring them to productivity.

Roads that are no longer necessary for public access or management purposes need to be obliterated. Roads that are allowed to exist without proper maintenance are subject to continued, uncorrected damage and can become chronic sediment sources.

Prescribed Burning

- On areas to be prescribed burned, fire prescriptions should be designed to minimize soil temperatures over the entire area. High intensity and burn severity fire should occur on 10% or less of the entire area. Fire prescriptions should be designed so that soil and fuel moisture temperatures are such that fire intensity is minimized and soil health and productivity are maintained.
- On areas to be prescribed burned, retain 5-10 tons/acre of course woody debris in ponderosa pine and 10-15 tons/acre of course woody debris in mixed conifer be left on-site after the prescribed burns to maintain long-term soil productivity on areas to be burned outside of the buffers around private land in.
- On areas to be prescribed burned, establish filter strips averaging 1 chain (66 feet) buffer on each side of riparian streamcourses and an average of ½ chain (33 feet) buffer on each side of non-riparian streamcourses to filter sediments that will occur from the burn. Do not ignite fuels within this buffer area. Some creep may occur into the buffer, but an average of width by stream type will be maintained.

National Fire Plan (NFP) Projects and Burned Area Emergency Response

NFP Projects: Several NFP projects were implemented on the 2010 Schultz Wildlfire for the purpose of stabilizing the soil, improving drainage on eroded roads to redice acclearted erosion, ronoff and flooding downstream. Approximately 3200 acres within the fire perimeter were treated to remove invasive weeds. About 6 miles of badly deteriorated roads and 6 miles of trails were stabilized and drainage features installed using BMP's. The purpose of NFP projects is to accomplish critical rehabilitation and restoration work on lands damaged by fire or fire-related impacts and should restore watershed function and reduce nonpoint source pollution.

Burned Area Emergency Response: One new wildfire close to 500 acres was assessed to determine if emergency watershed conditions existed that posed a risk to values including life, property and natural resources from post fire storm events. The BAER assessment concluded that less than 5% of the fire burned in the high burn severity class and did not pose a risk to life, property or natural resources including water quality from accelerated erosion.

The 2010 15,051 acre Schultz wildfire continued to receive several emergency watershed treatments to reduce the threat of accelered erosion that could pose a risk to water quality in the Rio de Flag, reduce the risk of flooding to adjacent neigborhoods and the threat of contamination of hazardous materials in the City Landfill.

Additional seeding, mulching, site scarification (89 acres) and about 6 miles of drainage berms were constructed to direct floodwaters safely away from some neighborhood areas and the City landfill..

In the fall of 2010, about 1000 acres of steep slopes within areas of high burn severity were seeded and helimulched with certified weed-free seed and certified weed-free agricultural mulch. The seed was a combination of native perennial and non-persistent annual barley.

In the late spring of 2010, hazard trees within the fire perimeter were grinded to produce woodshreds on –site and were helimulched to the steepest, most severly burned slopes (about 330 acres) in an effort to reduce threats to life, property and water quality downsteam.

Managed Fires:
6 managed fires (resource benefit) caused by lightning during the monsoon season were assessed by the BAER team to determine burn severity and threat to life, property and natural resources including water quality. A total of about 13,650 acres burned within these fires. Using remote sensing bu rned area reflectance classification validated in the field by the BAER team, each fire burned less than 5% in the high burn severity class and less than about 5-15% in the moderate class. The remainder burned in the low or unburned and low mosaic class, met resource objectives and does not pose a risk to life, property or water quality.

Highways and Travel Management

Legacy Roads and Trails Projects

Five Legacy Roads and Trails Projects were implemented or funds obligated for immediate implementation. These projects are designed to improve road and trail drainage, riparian area and aquatic function, reduce nonpoint source pollution to connected waters and improve imparied water quality.

The Red Rock Trail Tread Stabilization Project was implemented to remove unnecessary trails that have been contributing to non point source pollution to Beaver Creek, Oak Creek and the Verde River. About 515 acres of the watershed was restored.

Little Elden Springs, Secret Mountain and Schultz Creek trail projects were implemented. Many miles of trails were improved or constructed stabilizing hundred of acres of soil condition and reducing non point source pollution The restoration will improve riparian habitat, reduce sedimentation and improve water quality into Sycamore Creek, Oak Creek and the the Little Colorado River downstream.

Resurfacing 17 miles Forest Road 300 and replacing all culverts along the Mogollon Rim began in fiscal year 2011 and was finshed in November, 2011. The road resurfacing should allow proper road drainage and reduce sediment detachment and transport into Barbershop Canyon, Yeager Creek and East Clear Creek and improve water quality. BMPs included the use of straw wattles to control sediment delivery into connected streamcourses.

Unmaintained forest roads adjacent to Wickiup Draw and the large gully were decommissioned in 2010 and 2011 and signage installed. However, no physical barriers were constucted and illegal OHV trespassing and epemeral stream damage, and non point source pollution from accelerated erosion continues to occur threatenting water quality donwstream to lower West Clear Creek and the Verde River.

Travel Management Forest-Wide:

Actions in travel management are designed to limit sediments from roads that are poorly located and out side of riparian areas.

Travel Management Planning was finalized on the Forest. The final EIS and record of decision will be released in October and proposes to restrict cross-country travel and designate suitable roads for travel that should result in reduced nonpoint source pollution to connected waters downstream. The motor vehicle use map is being developed to inform users of closured and designated camping areas.

Riparian Exclosures:

Several spring exclosures were built on the RRRD to protect and maintain riparian function and redice acclearted erosion,sediment delivery and non point source pollution to connected streamcourses.

Wildlife Improvement Projects MRRD

- Decision on the Leonard Point Wildlife Drinkers Repair and Replacement Project, December, 2010. Installation of one drinker at Site #3 ongoing since September, 2011. Mitigation measures include equipment cleaning to prevent introduction and spread of noxious and invasive weeds, road closure, and installation of wildlife escape ramps.

Instream Flow Water Rights

Stream gauge monitoring continued on Barbershop Canyon, Yeager Canyon and Fossil Creek. The automated stream gauge at Fossil Creek was recently installed to quanity daily and year round flows necessary to validate Wild and Scenic River reserved water rights flow.

The Forest seeks to procure certified water rights on these streams for wildlife including fish. The water will remain in-situ and cannot be diverted thereby assuring riparian function is maintained or restored and aquatic habitat and biota have ample water to rely on.

Instream flow assessments were completed and submitted to ADWR for Red Tank Draw and Sheepshead perennial stream reaches and await approval for certification.

Hazardous Waste Cleanup

Only one complaint surface with respect to possible hazardous waste spilled. In September, an individual called the Forsest and alerted us to possible contamintaion adjacent to I-17 in a small area of Woods Canyon. The Forest called in a complaint to ADEQ but was never responded to by ADEQ. The forest hazmat coordinator visited the site and determined some contamination may have occurred from an upstream asphalt project storing a pile near Woods Canyon but since then has been removed and is no longer contributing any oil base to the water.

Stream Assessment and Monitoring

Forest-wide:
The volunteer group led by Steve Monroe (NPS) and specialists at the Coconino National Forest continued additional spring inventory in the Rio de Flag and West Clear Creek and other forest watersheds and plan to continue collecting location, proper functioning condition assessments, chemistry and some flow data on unknown known but non GPS located springs.

Friends of the Forest Water Quality Monitoring:
Weekly samples are taken year round at six different sites on Oak Creek in high use recreational areas and these samples are tested for E coli.

NAU Fossil Creek Fecal Coliform Monitoring:
Under the Middle Fossil Creek WQIG, NAU conducted fecal coliform water quality monitoring in FY 2011. Results of monitoring can be obtained through contact with NAU and the RRRD.

Nonpoint Source Planning and Partnerships

6th HUC Watershed Assessments.

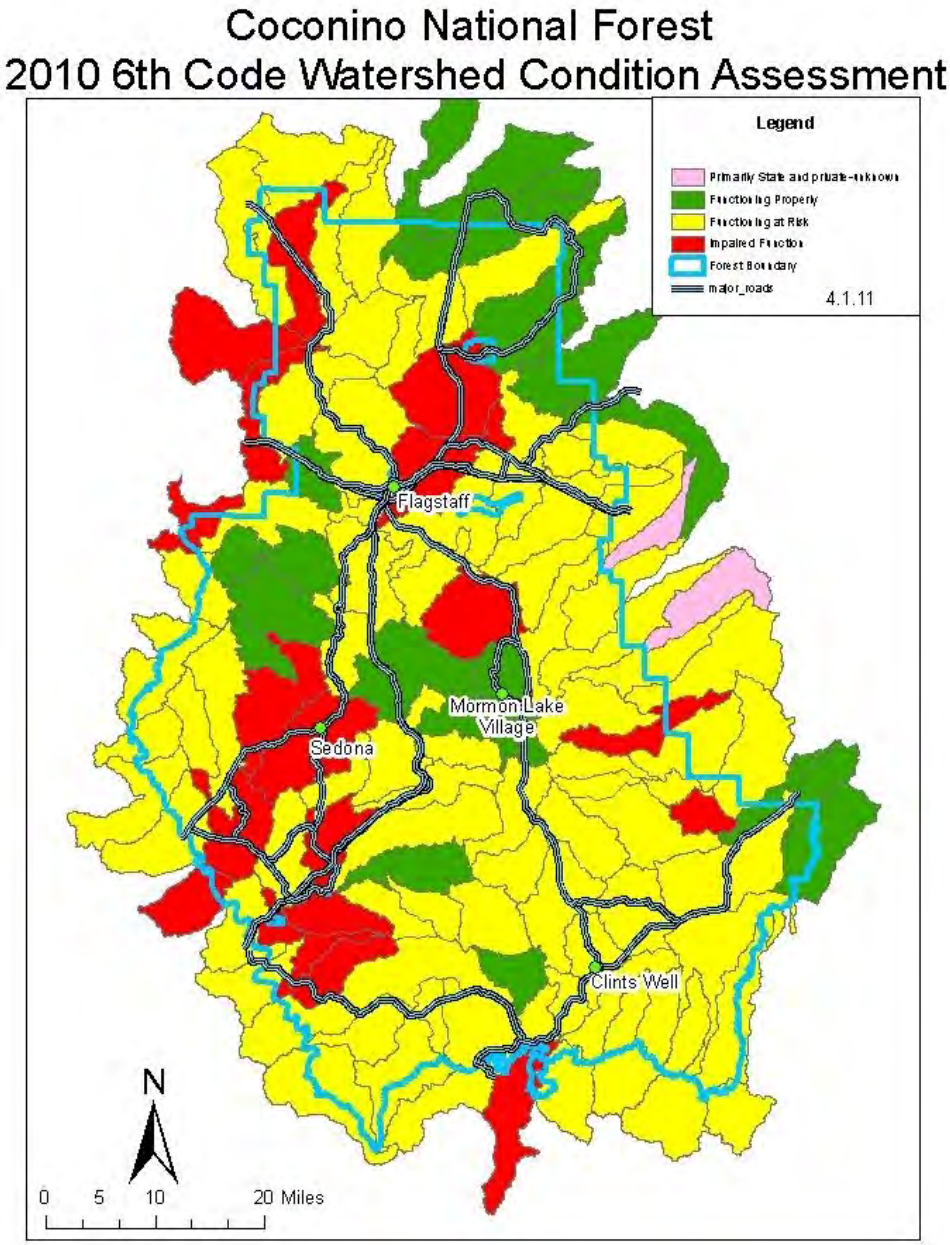
The forest completed steps A, B and C of 6 steps in the Watershed Condition Framework. Step A included classifying the condition of all 101 6th HUC watersheds analyzing 12 indicators representing aquatic physical including water quality, aquatic biological, terrestrial physical and terrestrial biological functions.

Results indicat 20 or 20% of forest 6th HUC watershed are functioning properly, 67 or 66% are functioning at risk and 14 or 14% are impaired. See the following map labeled Coconino National Forest 2010 6th Code Watershed Condition Assessment for a snapshot of watershed conditions by 6th codes.

Watersheds in properly functioning condition have terrestrial, riparian, and aquatic ecosystems that capture, store, and release water, sediment, wood, and nutrients within their range of natural variability for these processes. Properly functioning watershed conditions create and sustain functional terrestrial, riparian, aquatic, and wetland habitats

that are capable of supporting diverse populations of native aquatic- and riparian-dependent species. In general, the greater the departure from the natural pristine state, the more impaired the watershed condition is likely to be. Properly functioning watersheds are commonly referred to as healthy watersheds. Watersheds rated as functional at risk or impaired have reduced watershed function. Changes to the factors that caused the degraded state are commonly needed to restore the watershed to a condition that sustains physical, hydrological and biological integrity.

Step B included prioritizing the top 5 watersheds for watershed restoration action planning and implementation. Step C was completed and consisted of developing a Watershed Restoration Action Plan that included treatments and estimated costs that could be immeidately implemented. Barbershop Canyon 6th HUC was selected as the top priority watershed in 2011 for priority watershed restoration.



Forest Plan Revision

Specialist reports were finalized and the draft plan was released for public comment. The Draft Environmental Impact Statement will be released for public comment in fiscal year 2012. The plan identifies a need for chacnge for water quality, riparian and soil resources and has developed plan components (desired condition, standards, guidelines and

treatment objectives) to improve existing conditions toward desired conditions including attaining beneficial uses and State Water Quality standards.

NPS Grants and Partnerships:

ADEQ Water Quality Improvement Grant - 11-00609

Middle Fossil Creek Water Quality Improvement Grant

This project is aimed towards improving water quality by paying for placement of temporary porta johns in highly used recreational sites as well as funding research with NAU that looks at fecal contamination. Funding for this project was extended in FY 2011. Accomplishments and BMPs are described in the recreation section above:

Arizona Water Protection Fund Grant - 09-162WPF

Middle Fossil Creek Riparian Habitat Protection and Restoration

This project continues to restore riparian habitat, reduce sediment and improve water quality in Middle Fossil Creek through permanent removal of high use dispersed campsites, ripping and reseeding of access roads located within the riparian zone and redesignation of these features. Work is on-going and described in the recreation section.

ADEQ/EPA Target Watershed Grant with Oak Creek Watershed Council :

State Project # 11-TO3 and EPA Grant Number 98961308 M

In 2009, the Arizona Department of Environmental Quality awarded a $311,603 grant to the Oak Creek Canyon Task Force to reduce the level of E. coli bacteria in the Oak Creek Watershed. Phase one of this two phase grant continued in 2010 and focused on developing a watershed improvement plan and the watershed improvement council which will help the cleanup projects to be implemented the following year.

A time extension and additional funding were awarded by ADEQ in FY 2011 to allow the group to collect and analyze additional data necessary to make implementation recommendations and finalize the planning document. The council is finalizing the planning document and targeting e. coli reductions as the pollutant of concern.

Other Partnerships:

A partnership with the Arizona State Parks and Friends of the Forest to monitor water quality at 5 locations on Oak and Spring Creeks was maintained and supported. Samples were taken weekly during the peak recreation season, from May to October, to sample for E-Coli for full body contact – swimming in Oak Creek. Sampling was conducted along Oak Creek (we sampled from approximately 1 mile above Slide Rock to Page Springs, about 26 stream miles).

A partnership with the Oak Creek Task Force, (now known as the Oak Creek Watershed Council) a community based watershed organization, was maintained and supported. The 2002 Watershed Based Plan for Oak Creek Canyon developed with the Task Force is being implemented.

The Forest is an active member of the Colorado Water Advisory Council. The Council was formed to ensure an adequate long-term supply of water is available to meet current and future reasonable needs, while preserving the health of the environment.

The Forest is an active member of the Walnut Creek Watershed Technical Advisory Committee also. This committee was formed to study methods of improving favorable conditions of water flow and riparian condition in Walnut Creek and to maintain or improve water quality conditions in the domestic water supply Lake Mary watershed.

Partnership continued with the Diablo Trust on Anderson Mesa range allotments and livestock grazing strategies in multiple 5th codes, Little Colorado River watershed.

The Verde River Basin Partnership was formed in 2005 in response to Federal legislation stemming from the Northern Arizona Land Exchange. The objectives include development of a Verde River water supply and demand analysis including groundwater and surface water and longterm supply management options. The Coconino is collaborating but not a current board member. No meetings were scheduled in 2011 to our knowledge.

Partnerships – MRRD

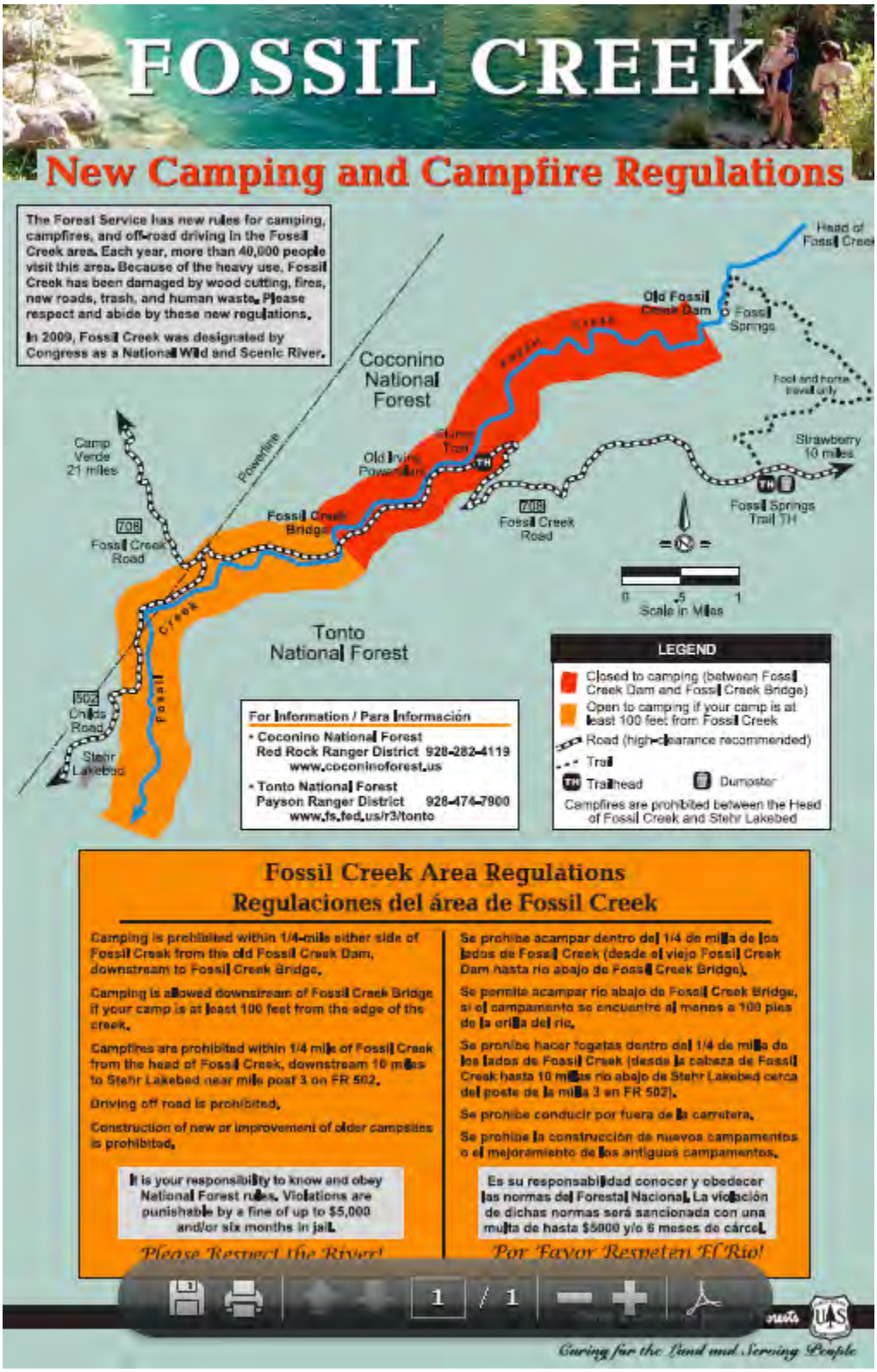
Arizona Elk Society; completed 2 cost share agreements for two projects: 5 stocktanks were cleaned on MRRD (National Forest Foundation Grant) and Merritt Spring Elk Exclosure fence rebuilding (HPC Grant). Both projects will be completed in 2012.

Presidents Initiative:

In 2009, the Oak Creek watershed and portions of the Sedona Red Rock Area was selected as part of the Presidents Initiative where some $21 million dollars may be spent to improve maintenance deferred recreation areas. Projects are linked to improvement of water quality, facilitating TMR implementation, addressing urgent health and safety needs and/or restore the ecosystem or cultural resources with special emphasis on sacred site protection.

The Forest identified potential projects to submit under the initiative and would plan projects in the first year and implement in the second. Treatment implementation should result in reduced nonpoint source pollution into Oak, West Fork of Oak Creek and Spring Creek and improved water quality. To our knowledge, in 2011, there has been no response on the status of project selection under this initiative.

Fossil Creek Public Educational and Informational Poster



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