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Forest
Service

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Monitoring and Evaluation Report

FY2012

Coconino National Forest

Introduction and Forest Supervisor Certification

This report provides monitoring information for fiscal year 2012, 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 Monitoring and Evaluation Report for fiscal year 2012. 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.

FOR M. Earl Stewart
Forest Supervisor

8/12/13
Date

Items Monitored	Intent	Monitoring Method (Unit of Measure)	Measuring Frequency	Fiscal Year 2012 Reporting Information
RECREATION				
Developed Site Use	Determine recreation use and demand.	Recreation Information Management (RIM) system use reports/RVD's	Annually	RIM system has been replaced by National Visitor Use Monitoring (NVUM) that provides day, overnight, general forest area, trail and wilderness use based on user surveys at these locations throughout the forest. The new measure is national forest visits. NVUM is completed on a 5 year cycle. The Coconino NF has data from 3 cycles: 2000, 2005, and 2010. NVUM showed a decrease in national forest visits from 2005 to 2010. Day use and general forest area use declined, but wilderness visits increased. Developed site use remained level, and this is confirmed by annual use data collected and reported at concessionaire operated sites. 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 somewhat better winter precipitation as well as snowmaking.
Developed Site Condition	Prevent damage and deterioration. Meet health and safety requirements	RIM system facility condition reports, project reviews/facilities by RIM maintenance class	Annually	RIM system has been replaced by condition site surveys that are completed on a 5 year cycle. All sites are current. Site upgrades are very limited now. One new site, Dry Creek Picnic Area, will be completed in 2013. Emergency repairs are spread over several years. There are often increased costs with providing temporary facilities (such as portable toilets). Progress in decreasing deferred maintenance has slowed to almost none. Operation and maintenance of sites continues, but not all maintenance can be accomplished resulting in additional deferred maintenance.
Implementation of Recreation Opportunity Spectrum (ROS) Guidelines	Ensure the protection of existing ROS classes.	Review project work plans involving vegetative treatment, road/trail construction, or major development/acres by ROS class.	Annually	ROS is regularly evaluated during project planning and critical items are monitored during implementation. ROS mapping was updated as part of forest plan revision. The new mapping is being used in project level evaluations. The forest began implementation of Travel Management this year and is focusing on map distribution, patrol and education. 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 may reduce opportunities for solitude in some places. ROS and WOS are being completed as part of the planning process for and will be included in the Fossil Creek Wild and Scenic River comprehensive river management plan.

Items Monitored	Intent	Monitoring Method (Unit of Measure)	Measuring Frequency	Fiscal Year 2012 Reporting Information
Motor Vehicle Use	Impacts of motor vehicle use in designated camping corridors and prevalence of motorized use outside of designated areas.	Compliance will be measured through the collection and documentation of tickets, warnings, and incident reports. Impacts of motor vehicle use in deisignated camping corridors shall be measured based on field surveys.	Annually	Based on the observations of Forest Service field personnel, the camping corridors have had little effect to ground cover and number of new spur roads in these areas. Monitoring of an area around the Community of Mountainaire was conducted in 2012 and 2013 to document changes resulting from the designation of a number of 300-foot corridors. This report can be found in Appendix 1 of the Coconino National Forest Travel Management Monitoring Report, and shows little evidence of impacts resulting from 300-foot corridor designation. Education and enforcement were combined extensively in 2012 through concentrated patrols to educate the majority of users on the new motor vehicle rules, while enforcing motor vehicle abuses that impacted forest resources. In summary, it is unclear if the new motor vehicle rules changed the overall number of tickets/notices issued in relation to motor vehicle use on the Forest. Generally, the new rules have resulted in a change in the type of ticket/notice issued, which focuses more on enforcing the appropriate use of motor vehicles instead of the appropriate licensing and registration of these vehicles. For additional information see the Coconino National Forest Travel Management Monitoring Report
Dispersed Area Use and Experience Levels	Determine recreation use and demand.	RIM system/RVD's	Annually	RIM system has been replaced by NVUM. Survey data suggest a decrease in use in dispersed areas, but 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. Public comments received during travel management implementation indicate the public desires additional camping corridors be identified.
Dispersed Area Condition	Prevent unacceptable resource damage.	RIM system, project reviews/area condition	Annually	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.	RIM system, project reviews, trail condition surveys/miles	Sample 20% Annually	RIM system has been replaced by Trail Assessment Condition Surveys (TRACS) completed annually on approximately 20% of randomly assigned trails. Districts complete Trail Management Objectives (TMO’s) indicating the trail class and type of use by trail. These are compared with TRACS to prioritize trail maintenance and improvements. Declining budgets result in decreased ability to keep trails to standard. The Forest has a backlog of maintenance and reconstruction identified by condition survey results. Volunteers work with the Forest to provide some maintenance, and in some areas Adopt-a-Trail programs are established where partners are trained to assist the forest with trail maintenance and patrols.

Items Monitored	Intent	Monitoring Method (Unit of Measure)	Measuring Frequency	Fiscal Year 2012 Reporting Information
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	Forest VQO standards and guidelines are outdated. The Forest completed Scenery Management System mapping in preparation for 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 NF landscapes, and increased concern for scenic quality by visitors. Scenic stability is fair to poor in many locations due to overstocked forest conditions and lack of regular burning. As restoration projects are implemented, an improvement in scenic stability is expected over time. A few locations in Schultz fire area are being replanted, helping speed recovery of forest settings where the landscape character was impacted by high severity wildfire.
Wilderness				
Wilderness Use	Determine wilderness use and demand	RIM system/RVD's	Annually	RIM system has been replaced by NVUM. The new measure is national forest visits. NVUM showed a 33% increase in total visits to wilderness between 2005 and 2010. Some wildernesses (Kachina Peaks, Red Rocks -Secret, Wet Beaver) exceed capacity in some areas. The forest is placing emphasis on improving overall management per the 10 year wilderness stewardship challenge.
Wilderness Condition	Minimize resource damage and changes of wilderness opportunity spectrum (WOS) classes, particularly primitive end	RIM system, Code-a-Site inventories, project reviews/area condition	Annually	RIM and Code-a-Site have been replaced with updated inventory protocols for the 10 elements of the 10 Year Wilderness Stewardship Challgenge. The Coconino NF is working to improve its management to meet and in some places exceed the basic standards. Wilderness intrusions are recorded. Requests for management activities in wilderness are evaluated using the Minimum Requirements Decision Guide. Some wildernesses (Kachina Peaks, Red Rocks- Secret, Wet Beaver) exceed WOS capacity in some 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 137 projects received cultural resources review and clearance in FY 2012. This resulted in approximately 18 sites being recorded and 3,175 acres surveyed (5 sq. mi.) In the course of doing surveys, another 193 acres (0.3 sq. mi.) were re-examined, finding no new sites and confirming our continued reliance on the results of previous Forest surveys. 19 sites were determined eligible and five sites were determined not eligible for the National Register of Historic Places. **Native American Graves Protection and Repatriation Act (NAGPRA)** In FY 2012, the Forest conducted its third year of repatriating prehistoric burials and burial-related artifacts, in compliance with the Native American Graves Protection Act. The Forest Archaeologist and Tribal Relations Specialist attended the NAGPRA Review Committee Meeting in Santa Fe on May 10, 2012 and took part in a presentation about the Hopi Tribe-Coconino National Forest NAGPRA project, along with representatives from the Museum of Northern Arizona, Arizona State University, and the Hopi Tribe. The National Review Committee and meeting attendees were very favorably impressed with the presentation and were highly complementary with their comments on the cooperation and success of our project. **Non-Project Site Inventories** Five archaeological survey projects were conducted on the Forest in FY 2012 that were not related to Section 106 project clearance requirements. All were conducted by volunteers. Two of these are multiple-year, on-going projects that have been in progress for five or more years. These are more fully described under Volunteer Projects, below.
Cultural Resource Property Protection	Protect significant properties.	Patrol areas in conjunction with other duties/Site condition	Annually	The Forest is an active participant in the Arizona Site Stewards Program, where volunteers periodically monitor sites on the Forest. There are currently 102 sites and 60 Site Stewards enrolled in the program. National Historic Preservation Act, Sec. 106 Monitoring: 394 archaeological sites were monitored as part of project compliance work. No sites were found damaged by project-related activities. National Historic Preservation Act, Sec. 110 Monitoring: 14 Priority Heritage Asset Sites, listed on the National Register of Historic Places, were monitored. 50 other sites that were not Priority Heritage Assets were also monitored. Two pictograph sites were found vandalized but no new damage was noted at any of the other sites that were monitored this year.

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.	Old-growth inventory, compartment exams and habitat capability modeling/Acres.	Annually	**Amount of Mature and Old Growth Habitat:** **Ponderosa Pine:** The most recent FIA data available (2001-2005) indicates that approximately 253,407 acres (32%) of the forest type is in the late seral stage. **Mixed Conifer and Spruce-fir:** FIA data (2001-2005) indicate that approximately 7,750 acres (7.7%) of these forest types are in late seral stages.
	Maintain habitat capability	Habitat capability model/percent habitat capability	Annually	**Northern goshawk (*Accipiter gentilis*) and Pygmy nuthatch (*Sitta pygmaea*):** The primary cover type used by the goshawk and pygmy nuthatch is ponderosa pine. Forest-wide, the trend for late seral ponderosa pine is increasing slightly. Although the age class distribution is shifting slightly, the proportion of the forest in uneven-aged conditions has stayed about the same. **Mexican spotted owl (*Strix occidentalis lucida*):** The MSO is tied to old-growth mixed conifer and ponderosa pine-gambel oak (pine-oak) habitats. Pine-oak represents approximately 40% of the ponderosa pine type. Although the amount of old-growth pine-oak is not known, it is assumed to be roughly proportional to the amount of old-growth in the PNVT; therefore, an estimate of old-growth pine-oak is 101,363 acres (40% of 253,407 acres). Forest-wide, the trend for the amount of late seral mixed conifer and spruce-fir is increasing slightly, and these forest types are moving towards more even-aged structure.
Turkey				
Habitat Capability	Maintain habitat capability	Habitat capability model/habitat capability	Annually on 90% of affected projects	The primary cover type used by turkeys is ponderosa pine. The Forest-wide trend for late seral ponderosa pine is increasing slightly. The most recent FIA data available (2001-2005) indicates that approximately 253,407 acres (32%) of the forest type is in the late seral stage. Wing Mountain Fuels Reduction and Forest Health Project- Design features for approxiamtely 11,000 acres included prepping roost trees as needed prior to broadcast burning and target "cool" burns. Mangement recommendations in the 16,800 acre Clints Forest Restoration project (Mogollon Rim Ranger District) included leaving scattered patched of untreated slash within 0.5 miles of dependable waters.

Population Trend	Meet population goal	Arizona Game and Fish Department (AZGFD) surveys/habitat capability modeling	Annually	Because estimating actual population size is difficult, the Arizona Game and Fish Department (AGFD) has been using 1) the percent of archery hunters seeing turkeys during archery elk hunts, and 2) the number of turkeys harvested during the spring to estimate population trends. Data on percent hunters observing turkey and harvest data are available for 1997-2010. The available information indicates a variable, yet fairly stable turkey population on the Forest. Flagstaff Ranger District: Presence/absence data were collected during northern goshawk (NOGO) surveys totaling 12,838 acres.
Nesting Habitat	Maintain nesting habitat	On-the-ground evaluation	Annually and 5 year trend review	Wing Mountain Fuels Reduction and Forest Health Project - Design features included to provide nesting habitat on approximately 11,000 acres by leaving at least 9 scattered patches of slash, post-treatment, distributed within each section (640 acres) of the analysis area if possible.
Red Squirrel Habitat Capability	Maintain habitat capability	Habitat capability model/habitat capability	Annually on 90% of affected projects	The red squirrel is a Management Indicator Species (MIS) for late seral mixed conifer and spruce-fir. FIA data (2001-2005) indicate that approximately 7,750 acres (7.7%) of these forest types are in late seral stages and the Forest-wide trend for late seral mixed conifer and spruce-fir is increasing slightly. Forest structure is moving towards more even-aged conditions. Hart Prairie Fuels Reduction and Forest Health Project - The biologist worked with silviculturist and marking crew to identify red squirrel caches in mixed conifer treatments on 256 acres (100% of the mixed conifer proposed for vegetation treatments). Caches were marked and marking crew left ALL trees within a 26-ft radius (1/20th acre deferral). Flagstaff Ranger District: Presence/absence surveys were conducted during NOGO surveys totaling 12,838 acres.
Elk and Mule Deer				
Habitat Capability	Maintain habitat capability	Habitat capability model/habitat capability	Annually	**Elk:** Elk was selected as a big-game indicator species for early-seral stage pinyon-juniper, ponderosa pine, mixed conifer and spruce-fir habitat types. Although changes in acreage or percent are not large, early seral stages of all indicator habitats for elk are increasing slightly. **Mule deer:** The mule deer was selected as an indicator species of early-seral stages of aspen and pinyon-juniper woodlands. Early seral aspen is declining. Although some early seral aspen is being created through wildfire, most are not surviving to be recruited into the population. Forest-wide, early seral pinyon juniper is increasing slightly.

Population Trends and Distribution	Meet population goal	AZGFD surveys/habitat capability model	Annually	**Elk:** AGFD uses a combination of annual survey data (see Figure 1) and population estimates derived from computer simulation modeling (see Figure 2) to evaluate trends in elk populations. AGFD is careful to note that many of the data inputs and assumptions lack the accuracy and precision for reliable model estimates; therefore, results should only be taken as gross population estimates and not as absolute numbers (Arizona Game and Fish Department 2011). Additionally, game management units are not closed systems for elk, and immigration and emigration is common but unmeasured; however, the modeled estimates have comparative value in establishing trend when compared from year to year (Arizona Game and Fish Department 2011). Consequently, AGFD recommends greater emphasis on trends rather than absolute numbers. Population trend estimates are available from 1988 through 2009, and the overall elk population trend on the Coconino National Forest is currently stable to increasing. Flagstaff Ranger District - Presence/absence surveys were conducted during NOGO surveys and totaled 12,838 acres. **Mule Deer:** The AGFD uses two indicators for mule deer population trend: 1) the number of mule deer observed during annual surveys, and 2) number of fawns per 100 does. These two indicators are used because they are more reliable than population modeling estimations for mule deer. On the forest, the current population trend for mule deer is declining. Flagstaff Ranger District - Presence/absence surveys were conducted during NOGO surveys, totaling 12,838 acres.
Abert's Squirrel Habitat Capability	Maintain habitat capability	Habitat capability model/habitat capability	Annually	The Forest Plan designates the Abert's squirrel as a management indicator species for early seral stage ponderosa pine forests and FIA data (2001-2005) indicate that approximately 93,444 acres (11.8%) of the ponderosa pine type is in early seral stages. The Forest-wide trend for early seral ponderosa pine is slightly increasing. Although the age class distribution is shifting slightly, the proportion of the forest in uneven-aged conditions has stayed about the same. Although identified as an indicator for early seral ponderosa pine habitat, Abert's squirrels use a variety of age classes, and research from several locations has shown strong habitat associations with mature ponderosa pine.

Hairy woodpecker, Pygmy nuthatch & Red-naped sapsucker (formerly known as Yellow-bellied sapsucker) - Snag Densities, Sizes, and Species (Existing and Future)	Maintain habitat capability	Compartment exams, snag inventories, project reconnaissance and habitat capability modeling/acres	Annually	**Ponderosa Pine Snags:** The number of snags >18 inches diameter at breast height (dbh) ranges from 0.5 - 1.2 per acre. **Mixed Conifer and Spruce-fir:** The number of snags >18 inches dbh ranges from 1.1 - 2.8 per acre. **Aspen:** Overall, aspen snags are increasing on the Forest. Flagstaff Ranger District - Presence/absence surveys were conducted during NOGO surveys totaling 12,838 acres.
Plain (Juniper) Titmouse				
Amount of Mature and Old-Growth, Pinyon-Juniper	Maintain habitat capability	Habitat capability model/habitat capability	Annually	The most recent FIA data available (2001-2005) indicates that approximately 391,630 acres (65.2%) of the forest type is in the late seral stages. Overall, the Forest-wide trend in late seral stage is stable, and stands are trending towards more even-aged conditions.
Snag Densities and Sizes of Pinyon-Juniper	Maintain habitat capability	Compartment exams, snag inventories, and project reconnaissance/acres	Annually	The most recent FIA data available (2001-2005) show there are an average of 2.4 snags per acre in the 12-17.9 inches diameter at root collar (drc) size range, and 1.4 snags per acres that are 18+ inches drc. Overall, the density of pinyon-juniper snags in all age classes is increasing, but the quality and longevity of snags is decreasing.
Pronghorn antelope				
Forage Availability	Maintain habitat capability	Production-Utilization surveys, habitat capability model/habitat capability	Annually and 9-13 years on each grazing allotment	Condition and trend of grasslands can be determined from at least two primary data sources: 1) information being used in the Draft EIS for Forest Plan Revision on vegetation (PNVTs) and soils, and 2) Range Allotment Analysis and NEPA documents. Given high soil departure and vegetation and fire trends that are moving away from reference conditions, the Forest-wide trend for grasslands is stable to declining.
Population Trends	Meet population goal	AZFGD surveys/ Numbers	Annually	AGFD evaluates trends in pronghorn populations based on 1) annual surveys, and 2) model-derived population estimates. The two best indicators for pronghorn population trend come from the annual surveys and are 1) the number of pronghorn observed number of fawns per 100 does observed. Pronghorn population indicators have fluctuated since the late 1980's, with fawn:doe ratios showing greater fluctuation than number of pronghorn observed per hour. Within the range of fluctuations, the population trend appears to be relatively stable, with fawn:doe ratios increasing somewhat over approximately the last 10 years. Flagstaff Ranger District - Presence/absence surveys were conducted during NOGO surveys totaling 12,838 acres.

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	The current amount of wetland/cienega habitat is estimated to be 9,859 acres.
Nesting Success	Maintain habitat capability	Systematic field sampling, cooperative survey with AZGFD/numbers	Every 5 years on selected wetlands	None completed in 2012.
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	Overall, high elevation riparian habitat trend is stable, but a majority is highly departed from reference conditions. Low elevation riparian habitat trend is stable to improving.
Aquatic-Macro Invertebrates - Species Diversity and Biomass	Maintain aquatic habitat effectiveness	Systematic field sampling (modified surber sampling)	Every 5 years on selected streams	The Forest-wide trend for macroinvertebrates is stable.
Threatened And Endangered Species				
Habitat	Meet Federal regulation	Field surveys/ Acres	Annually	**Mexican Spotted Owl (MSO)** The current amount of acreage in Protected Activity Centers (PACs) is 118,314. The acres surveyed in FY12 below include PAC acres. Flagstaff Ranger District – 11,072 acres surveyed The Mogollon Rim Ranger District surveyed 40,646 acres (including project inventory and PAC monitoring) in Mahan, Clints, UBC, Jones Timber Sale, and Tule timber sales.
				Chiricahua Leopard Frogs (CLF) (*Rana hiricahuensis*) In 2012, there were 7 known, occupied sites, which has since increased to 14. In addition, the drainage above Middle tank was inventoried for dispersing frogs in August 2012; 18 juveniles and 2 adults were detected. On the Mogollon Rim Ranger District, 12 stock tanks, one spring and one roadside area were surveyed in Mahan project, and 2 stock tanks in UBC project for Leopard frogs. Only N. Leopard frogs were detected. Three drainages and 9 stock tanks were surveyed in Tule TS, 3 tanks in the Clints project, and 2 roadside tanks to be cleaned had no Leopard frog observations.

				Listed Fish: Gila Topminnow (*Poeciliopsis occidentalis occidentalis*), Spikedace (*Meda fulgida*), and Loach Minnow (*Tiaroga cobitis*) Gila topminnow sampling was done in Fossil Creek. The species was observed. Surveys of Sheepshead and Holly Springs were conducted. Both sites were found suitable for Gila topminnow reintroduction. Loach minnow were also observed in Fossil Creek in 2012. Over 3,000 spikedace were stocked into lower Fossil Creek by AGFD and USFWS (below the temporary barrier at Sally May Wash). Stocking of spikedace in the recently renovated stretch of stream below the temporary barrier in Fossil Creek provides the species with several miles of open habitat. Future monitoring will determine if the species is able to occupy the niche.
				Little Colorado Spinedace (*Lepidomeda vittata*): C.C. Craigen Reservoir posesses illegally introduced sport fish: largemouth bass, green sunfish, and bullhead catfish. Sampling of tributaries to C.C. Craigen Reservoir by AGFD in 2012 produced no green sunfish, largemouth bass, or bullhead catfish. However, the East Clear Creek system is in jeopardy, with green sunfish being detected downstream of C.C. Craigen Reservoir in 2011. Green sunfish will become established over time. Therefore, treatment of the entire reservoir and downstream (East Clear Creek) is essential towards protecting Little Colorado spinedace critical habitat.
				Arizona cliffrose (*Purshia subintegr*): The Forest Botanist assisted The Arboretum at Flagstaff with their annual revisits to a series of demographic plots to monitor Arizona cliffrose and its associated Region 3 sensitive species; Verde Valley sage (*Salvia dorrii* ssp. *mearnsii*), heath-leaf wildbuckwheat (*Eriogonum ericifolium* var. *ericifolium*), Ripley's wild buckwheat (*Eriogonum ripleyi*) and Rusby milkwort (*Polygala rusbyi*). This is a long-term monitoring effort conducted by The Arboretum. Data are in draft form and will eventually be published by The Arboretum.
				San Francisco Peaks Ragwort (*Packera franciscana*): The Flagstaff District and Supervisors Office personnel surveyed 50 acres of habitat in response to concerns over Snowbowl improvements approved in the Snowbowl EIS. This resulted in a better information on the number of plants in the affected area of habitat that would potentially be covered by man-made snow. In addition to fulfilling Forest Plan monitoring objectives, the survey was used in preparation of a Biological Assessment to address concerns of the effects of man-made snow on San Francisco Peaks ragwort and its habitat. The number of plants in the 50 acres was higher than expected. The survey determined that about 4 acres of the total area surveyed were occupied by San Fransisco Peaks ragwort. The Zone Botanist and Forest Botanist assisted ecologists from the Rocky Mountain Research Station with remeasurement transects to collect data on density of San Fransisco Peaks ragwort along the Weatherford Trail. These transects had been previously established and represent a repeated measurement with the goal of detecting a better estimate of the total number of plants in the alpine tundra habitat the species occupies. This information was used in the preparation of the Biological Assessment for snowmaking.

				Verde Valley Plant T&E: The Plant Atlas Project (PAPAZ), a volunteer project to conduct floristic surveys in sensitive areas of the forest is ongoing. One area is the Verde Valley Botanical Are, which focuses on Arizona cliffrose and associated Region 3 sensitive species; Verde Valley sage (*Salvia dorrii* ssp. *mearnsii*), heath-leaf wildbuckwheat (*Eriogonum ericifolium* var. *ericifolium*), Ripley's wild buckwheat (Eriogonum ripleyi) and Rusby milkwort (*Polygala rusbyi*). Volunteers have contributed hundreds of hours and contributed substantially to the knowledge of the local flora in the area.
Population	Meet recovery plan goals	Field surveys, U S Fish and Wildlife Service surveys/numbers	Annually	**Mexican Spotted Owl:** Total # Protected Activity Centers (PACs) on the Forest = 187 (Total # with Coconino NF PAC numbers; includes those shared with other landowners.) # PACs Monitored = 47 # PACs Known Occupied = 33 % PACs Monitored Occupied = 70 # PACs w/ Pairs = 19 # PACs w/ Known Young = 10 # New PACs = 1 (Bridge PAC, Flagstaff Ranger District) **Chiricahua Leopard Frog:** See previous section for survey information. **San Francisco Peaks Ragwort (*Packera franciscana*):** The survey area above included about 45 acres of designated critcal habitat for San Francisco Peaks Ragwort. The survey resulted in an increased number of plants. Affects to critical habitat were addressed in the Biological Assessment. **Little Colorado Spinedace (*Lepidomeda vittata*)**: On August 8 Forest Fisheries Biologists and Red Rock Ranger District employees and volunteer electroshocked East Clear Creek by Poverty Draw to determine if Little Colorado Spinedace were present; no spinedace were present, but 39 fathead minnows (nonnative) and 33 speckled dace (native, non-sensitive) were detected.

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** Wintering: The Bald Eighteen routes were surveyed during the annual Bald Eagle Midwinter Survey. Fifty-one bald eagles, and 3 unidentified eagles were counted. Nesting: All or a portion of 7 Breeding Areas occur on the Forest. Arizona Game and Fish Department survey results were: Beaver: 1 Young Fledged Coldwater: 1 Young Fledged Ladders: Nest Failed Lower Lake Mary: 2 Young Fledged Oak Creek: 2 Young Fledged Tapco: Nest Failed Tower: Unoccupied Ten documented and 13 potential bald eagle winter roost sites were surveyed covering approximately 1,946 acres. Habitat assessments were conducted for all areas surveyed. In addition to field surveys, analysis was used to identify areas that shared similar characteristics with documented roost sites. A model was developed to identify areas that contained the preferred characteristics bald eagles commonly use for their night roosts. Approximately 1500 acres of potential habitat were identified.
				Sunset Crater Beardtoungue: The habitat for Sunset Crater Beardtongue within a wildfire, the Schultz Fire (2010), was monitored. Numerous plants were detected during surveys for noxious or invasive weeds. Data were entered into the Natural Resource Manager system for threatened, endangered, and sensitive plants, and invasive species inventories.

				Bebb's willow (*Salix bebbiana*) and Blumer's dock (*Rumex orthoneurus*): The Forest and The Nature Conservancy Hart Prairie Preserve monitored exclosures established for Bebb's willow and Blumer's dock. One set of exclosures monitors growth of a Bebb's willow cohort which was established through natural regeneration in the mid 1990's and was protected from grazing by the construction of fences. There are two exclosures, one on Forest Service land and one on The Nature Conservancy land. One of the challenges of assuring persistence of the unique high elevation riparian forest community formed by Bebb's Willow in Hart Prairie area is the lack of regeneration. Through protection and monitoring, we have been able to follow the establishment and growth of the young plants. The Blumer's dock benefitted from the protection of the exclosure. It was absent from the area but appeared in the exclosure once the area was protected. The total acreage of these two exclosures is less than one acre. The second set of enclosures was constructed to facilitate the establishment of additional young Bebb's willow plants. Two were constructed, and one existing one was repaired. Young Bebb's willow plants were planted in the newly constructed exclosures, which are approximately two acres. The old exclosure protects plants that had been damaged in a fire. No additional young plants were added to this exclosure, but natural regeneration may occur and succeed if grazing pressures are removed. The existing exclosure is approximately 4 acres.
				Arizona bugbane (*Actaea arizonica*): Three Arizona bugbane sites were monitored. The plants were in good condition with no impacts observed. Monitoring is a requirement of the Conservation Assessment and Strategy for the species, which was prepared in 1995 and incorporated into the Forest Plan as part of amendment 12. The Conservation Assessment and Strategy and the accompanying Conservation Agreement mitigated the threat of listing the species as threatened or endangered.
				Northern Goshawk (NOGO) Flagstaff Ranger District: 5 Post Fledgling Family Areas (PFAs) were monitored and found to be occupied by 3 pairs and 1 single individual. There were a total of 7 young. 12,838 acres were surveyed in the NOGO inventory Mogollon Rim Ranger District: 3 PFAs were formally monitored, and 1 PFA was informally monitored with no response. Of the 3 formally monitored, 1 had a pair, 1 was on a nest, and the 3rd was unoccupied.

				Lowland leopard frog (*Rana yavapaiensis*) Herpetological surveys of areas with potential habitat for Arizona toad, lowland leopard frog and/or Mexican gartersnake habitat were conducted at the following sites: Dry Beaver Creek at Stagestop, Red Tank Draw, Wet Beaver Creek between Soda Spring and Montezuma Well, Borrow Pit tank, Verde River at Tissaw/Bignotti, Red Rock Ranger Station, Verde at Child's powerplant, and Fossil Creek above waterfall trailhead. Unidentified gartersnakes were detected at Wet Beaver Creek btw Soda Spring and Montezuma Well and Tissaw Bignotti. No lowland leopard frogs or Arizona toads were detected during these surveys. Red Rock Ranger District employees and volunteer conducted a fish sampling effort on the Mogollon Rim Ranger District at Poverty Draw. During that survey one Arizona toad (a sensitivie species) was detected. Volunteers monitoring stock tanks observed northern leopard frogs at Seven's tank on the Mogollon Rim Ranger District.
				Northern Leopard Frog The Mogollon Rim Ranger District surveyed 12 stock tanks, 1 spring, and one roadside flooded are in Mahan project, and 4 of the sites had Northern Leopard Frog observations. In the Tule timber sale, 9 tanks and 3 drainages were surveyed, and in Clints project area, 3 tanks were surveyed, and 2 tanks to be cleaned outside of large projects were surveyed, and no leopard frogs were found. Incidental surveys in the UBC project found 2 new sites at tanks. Flagstaff Ranger District - 8 sites (4 in Turkey/Barney and 4 in Hwy 89A widening project) were surveyed, but no Northern Leopard frogs were detected.
				Rare Invertebrates No surveys were conducted on the Red Rock Ranger District.
				Mexican Garter Snake (*Thamnophis eques*) See lowland leopard frog above
				Narrow-headed Garter Snake (*Thamnophis rufipunctatus*) Flagstaff Ranger District - Surveyed West Fork/Call of the Canyon w/ E. Nowak Aug 7. 1 Day Survey. No narrow-headed garter snakes were found; however, multiple terrestrial garter snakes located and pit tagged. Northern Arizona University conducted narrow-headed garter snakes surveys on the Forest and were assisted by Forest Service volunteer Jim Starkey.

				Bats Mogollon Rim Ranger District conducted mist net bat surveys in the Mahan project at one tank, and captured 3 individuals of one species. On June 21, 2012, Janie and volunteers, Rachael Greer and Jim Starkey, conducted a roost inspection and exit count at the Spring Creek/89A bridge. Daytime inspection detected guano at the southbound bridge on north end abutments. No cracks were suitable for day roosting bats indicating guano present was from night roosting activity. A few bats were detected entering and leaving the roost, and a total of 9 bats were observed that night. On July 19, the Flagstaff wildlife crew performed a bat mist net survey at West Fork Tank. They used four mist nets and caught eighteen bats. Of the eighteen caught, there were seven different types of bats. In early August, a photo of a canyon pipistrelle was taken at Palatki. That brings the known species diversity of bats using Palatki up to five species (red bat, Townsend's big ear bat, Mexican freetail bat, unidentified freetail thought to be a big free-tailed bat, and canyon pipistrelle). On August 16, Janie and volunteers, Rachael Greer and Jim Starkey, set up mist nets at Borrow Tank off of Beaverhead Flat Road. Due to light, but steady precipitation, mist netting yielded no bats. On August 22, they also conducted a roost inspection of the Child's powerplant. An approximate count of 800 bats of varying species was made. Flagstaff Ranger District - 1 survey at West Fork Tank on July 19, 2012. 18 bats captured and released, yielding 6 different species.
				Peregrine Falcon (*Falco peregrinus*) One eyrie on the Mogollon Rim Ranger District was opportunistically monitored during marshbird surveys, but no occupancy was confirmed. AZGF annually conducts peregrine falcon monitoring. Janie and volunteer Rachel Greer surveyed the Valhalla site on June 27, 2012 and observed the adult pair and one fledgling, confirming reproductive success. This site is located on a cliff face east of Hangover trail. On September 4, 2012, Rachel Greer heard and saw at least two peregrine falcon and a roost with white wash at Cathedral Rock.

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 Ranger District:** total of 9,350 acres of stand exams were conducted (935 stand exams @ 10 acres per plot) **Mogollon Rim Ranger District**: total of 15,100 acres of stand exams were conducted (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 _____	**Botany:** Two exclosures to protect Bebbs willow were constructed in the Fern Mountain Botanical Area, and young willows were planted in them. One old exclosure was reconstructed in the Fern Mountain Botanical Area. This work was completed with Forest Service employees, volunteers from Friends of Northern Arizona Forests, and volunteers from the Nature Conservancy's Hart Prairie Preserve. **Fossil Creek Fish Barrier:** The Fossil Creek Fish Barrier was inspected after initial work to remove boulders and rocks flood-deposited below the barrier. It was determined that additional boulder removal was necessary. Mogollon Rim Ranger District: Several exclosures that protect headwater meadows, aspen and maple stands were inspected by Forest Service and volunteers. Two dilapidated exclosures were completely rebuilt, 1 new exclosure was constructed for a new spring enhancement project, and 3 were maintained. Flagstaff Ranger District: Wildlife: Maintained 1 Wildlife Protection Area and 3 Quiet Areas including: Anderson Mesa Wildlife Protection Area, Pine Grove, Woods Canyon and Rattlesnake Quiet Areas. This included maintaining signs and posting signs and barricades during the closure time period. Wildlife and Plants: Maintain and repair 52 aspen exclosure fences across the Flagstaff District. This work was completed with Forest Service employees, volunteers from Friends of Northern Arizona Forests and other adopt-a-fence volunteers. Howard Springs Fence project: A fence was removed and new fence built around Howard Springs for Turkey Habitat. 4 acres improved. Volunteers included Turkey Foundation and local boy scout troops. Kelly Trails Project - Approx. 3.47 miles of roads were obliterated in MSO Restricted and Protected habitat.

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.	There are currently no thermometers for recording stream temperatures, but work towards establishing some are in progress.
Range O&M				
Permitted Use	Meet Federal regulation, check for term grazing permit and Plan compliance.	Annual Grazing Statistical Report/ Animal Unit Months (AUMs) Forest-wide	Annually	AUMs permitted for the grazing year: • Flagstaff Ranger District: 37,925 • Red Rock Ranger District/Mogollon Rim Ranger District: 65,487
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	AUMs authorized for the grazing year: • Flagstaff Ranger District: 35,973 • Red Rock and Mogollon Rim Ranger Districts: 46,479
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). Flagstaff Ranger District = 1 allotment (approx. 64,000 ac.) and at 23 permanent monitoring locations. Utilization monitoring and range inspections were conducted on 28 allotments Flagstaff Ranger District = 19 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. Utilization monitoring and range inspections were conducted on Red Rock Ranger District/ Mogollon Rim Ranger District = 8 allotments, approximately 281,072 acres. 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.

Range Condition and Trend	Meet Federal regulation, identify changes in range condition and trend, recommend 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 in 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.
Range Improvements				
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 were inventoried or inspected. However, 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.

Timber Reforestation				
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 Database/Acres	Annually (plantation survival surveys are 1st, 3rd & 5th growing seasons) or as scheduled. **Annual stand certification for natural regeneration stands (5th & 10th years).**	No survival surveys were conducted as there was no reforestation to survey. No stand certification for natural regeneration was conducted because no regeneration harvests have been implemented in the last 5 years.
Timber Stand Improvement				
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 Database/Acres	Annually	350+ acres of timber stand improvement (TSI) prescriptions developed on the Flagstaff Ranger District. 450+ acres of TSI completed in FY2012. 626 acres of planting accomplished. 338 acres of TSI accomplished on Mogollon Rim Ranger District as planned. All accomplishments are reported in the FACTS database.

Timber				
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	3,000+ acres of commercial silviculture prescriptions were developed on the Flagstaff Ranger District. No timber or fuels vegetation management EAs were signed on the Flagstaff Ranger District (Flagstaff Ranger District) in FY12. No formal project reviews were conducted on Flagstaff Ranger District. 7,898 acres of silviculture prescriptions completed on Mogollon Rim Ranger District, of which the majority is Four Forest Restoration Initiative (4FRI) shelf stock, so many prescriptions were revisited, checked and confirmed.
Timber Assumptions: Volume, Productivity, 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	All Forest Supervisor authority timber sales were reviewed, and standard Forest Service timber cruising software programs and reporting databases, including TIM and FACTS, were used.

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	Flagstaff Ranger District: All openings created follow prescription guidelines and are verified by GPS or site visits. Mormon Lake Ranger District: No interspace or regeneration openings were created in 2012 on Mogollon Rim Ranger District. Where prescribed in prescriptions, openings are generally up to 1 acre in size, and never more than 4 acres. Where prescribed openings are >1 acre, 3-5 seed trees are retained. 28 acres of meadow restoration was accomplished in 2012, consisting of thinning conifers from Buck Springs Meadow.
Acres of Overstory and Final Removal Harvests	Meet Federal regulation, measure prescriptions and effects	TMIS, Staff review of 5% of treatment projects **(at least 2 projects)** /Acres	Annually	No overstory removal of final removal harvests were performed on the Forest in 2012
Acres of Intermediate Harvest	Meet Federal regulation, measure prescriptions and effects	TMIS, Staff review of 5% of treatment projects **(at least 2 projects)** /Acres	Annually	No intermediate harvests were performed on the Forest in 2012. The Good Enough Timber Sale utilized this system, but was completed in 2008.
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/million board feet (mbf)	Annually	**Offered:** 15,176 mbf/ 32,945 ccf **Sold:** 8,237 mbf/ 14,951 ccf **Harvested:** ~11,700 mbf/ 23,400 ccf The target was set at ~20,000 mbf and 40,000 ccf. However, the target was not accomplished due to no bids. Reasons for no bids are extremely poor markets, and minimal contractors with ample contracts. These amounts did not exceed the allowable sale quantity.

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. No Commercial firewood was sold in FY2012. **Personal Use Paid:** • 17,289 cords • 8,681 mbf/ 13,606 ccf **Personal Free Use:** • 2,373 cords • 1,191 mbf/ 1,867 ccf 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 trees/acre	First decade	Not applicable
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)	Re-evaluation of unsuitable timber lands is done as each large-scale fuels reduction EA is completed. No large scale EA was completed in FY2012. This process, however, has been incorporated as part of the forest plan revision process.

Watershed/Soil/Air				
Watershed Condition of Forest Lands	Meet Federal regulation, ensure that Forest watersheds in satisfactory condition by 2020, assure productivity of the land is maintained.	Standard Watershed Condition Inventory according to R3 Hydrology Note 14 Photo points, ocular estimates to determine trends/acres.	10% annually	Baseline watershed condition assessments (step A) were completed on all (100%) of the 101 6th HUC watersheds following the Watershed Condition Framework (WCF) process in 2011, so no more are needed at the 6th HUC level. The majority of 6th HUC watersheds (65%) are in Functional at Risk condition followed by Properly Functioning (21%) and Impaired Function (14%). Five watersheds were re-prioritized for treatment, and 1 watershed restoration action plan was completed for the Lower Fossil Creek. Implementation and monitoring began in FY 2012. Barbershop watershed implementation monitoring occurred, and all treatments were successfully implemented with some meadow and wetland restoration to occur in 2013 that will complete the entire essential project list and move watershed to an improved condition. Dozens of person days of range monitoring (permit/AOI compliance, forage utilization, forage production, condition and trend monitoring) occurred.
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.	Minimum of 1 project per District per year	BMPs were identified and implementation monitoring occurred on the following projects, Mazatzal use area restoration and social trails along Fossil Creek, camping and campfire restrictions along Fossil Creek, Greasy Spoon and Wickiup Watershed Restoration project on the Red Rock Ranger District, Walker Basin and Fossil Creek range EA, road decommissioning, meadow and wetland restoration on Barbershop Canyon watershed. BMPs were included and implementation monitoring occurred in the prescriptions for mechanical thinning and prescribed burning to retain adequate large woody debris, burn under proper moisture conditions and to protect soil organic material in the Beaver Creek, Oak Creek, Upper Clear Creek, Walnut Creek and Rio de Flag Oak Creek, Mountainair and East Clear Creek projects.
	Monitor watershed condition in project areas.	Standard watershed condition transects (per Hydro Note 14)/Project	1 Project/year Forest-wide	Soil condition assessments were completed in several pastures and ecological units on the 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.

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 quality changes, effectiveness of and compliance with recommendations	Standard watershed condition transects, ocular, estimates and professional judgment/ Project	1 Project/year Forest-wide	**Fossil Creek Riparian Area Projects:** Forest personnel were on site and monitored to assure treatments were implemented correctly. Operation and cleanout of temporary latrines in highly used recreational sites for reduction of *E.coli* pathogen contamination. One toilet was replaced at Fossil Springs trailhead. Additional social trails accessing Fossil Creek were blocked with boulders at Old Coral and Purple Mountain to reduce impacts causing accelerated erosion and sedimentation into Fossil Creek. **Spring Creek Riparian Area:** Constructed approximately 0.5 miles of riparian exclosure fencing along Spring Creek to protect critical habitat for Gila Chub.
Riparian Areas	Monitor condition and trend of riparian areas photo points.	Standard watershed condition transects, Proper Functioning Condition assessments, ocular, estimates, photo points	5 percent annually	The Spring Institute and Northern Arizona University graduate student conducted spring inventory (about 25% of forest springs) in the Rio de Flag, West Clear Creek, and other Forest watersheds using proper functioning condition assessments, chemistry and some flow data on unknown and known (but non GPS located) springs. 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 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.
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)	27.7 miles of road were decommissioned forest-wide.

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 using Arizona Department of Environmental Quality's (ADEQ) method were 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 water quality improvement grant, Northern Arizona University (NAU) conducted fecal coliform water quality monitoring using the U.S. Environmental Protection Agency (EPA) method in FY 2012 one time/month for 3 months. Results of monitoring can be obtained through contact with NAU and the Red Rock Ranger District. Water quality by stream types monitored by ADEQ can be found at this link http://www.azdeq.gov/environ/water/assessment/assess.html. ADEQ monitors several streams on forest in 3 year cycles.
MINERALS				
Compliance with Terms of Minerals Operating Plans	Meet legislative mandate and Agency guidelines.	Field checks/ Plans	Annually	At least 12 personal use permits or activities were administered in existing pits. A review and inspection on 13 personal use pit/collection sites were completed.
Non-patented Mining Claim Compliance	Minimize illegal mining activity.	Field checks, Bureau of Land Management (BLM) file checks	Annually	One review of a plan of operation for mining claim activity was completed. There is little mineralization and, therefore, little mineral activity on the Forest. Claims are reviewed when reviewing land adjustment cases only if there is activity observed.
SPECIAL USE PERMITS				
Special Use Permits	Process and administer special use permits in accordance with established guidelines.	Land Uses Report (LUR), field inspections/ Permits	Annually	98 lands permits and 97 recreation permits were administered to standard in FY 12. Administered to standard includes required field inspections. 62 lands permits were processed in FY 12. The forest has 524 permits in the issued status at the end of FY12. Communication site management plans are being prepared for 2 sites. Backlog of expired permits is being reduced through use of cost recovery fees.
Land Purchase, Acquisition, and Exchange	Consolidate Forest lands and meet public needs.	Forest Land Adjustment Plan, Management Accomplishment Report (MAR) target/ Cases	Annually	No land adjustment cases were completed in FY12. Work continued on the Camp Verde Education Land Grant Act case for 20 acres of conveyance as well as the Show Low South Land Exchange project.
Occupancy Trespass	Minimize Forest trespass problems.	Field checks, landline location/ Cases resolved vs. new cases	Annually	2 encroachment cases were resolved. Several new encroachment cases were found as a result of boundary line maintenance and posting. On-going coordination on legislation to resolve the Mountainare Encroachments continued. New cases continue to add to a backlog list of older encroachment cases.

Landline Location	Maintain Forest boundary.	Landline location, MAR target/ Miles	Annually	10.5 miles of boundary line were maintained to standard in FY 12, primarily around the Schultz Fire area. Additional boundary survey was initiated around the Fox Ranch private property but not completed in FY 12.
ROADS				
Arterial/Collector, Construction/ Reconstruction	Ensure compliance with identified needs for arterial/collector reconstruction. Forest Issue related	Work accomplishment reports/Miles	Annually	Improvements to existing ML 3, 4, and 5 roads - 44 miles ML 2 Road Maintenance - 508.8 miles ML 3 Road Maintenance - 366.5 miles Road Decommissioning - 27.7 miles As per the current Forest Plan, “Roads not needed for effective use and administration of Forest resources are obliterated as funding becomes available…The remainder of the road system will be reconstructed on a rotational cycle based on a needs and benefit/cost analysis. Others are maintained for user safety and resource protection.” The Forest has utilized current funding to provide and maintain a servicable transportation system that meets the needs for public access, land management, resource protection and user safety.
Purchaser Credit Roads	Ensure compliance with identified needs for P/C construction/ reconstruction	Work accomplishment reports/Miles	Annually	none
PROTECTION				
Growth Reduction and Mortality Caused by Insect and Disease Infestations	Ensure endemic and introduced infestations do not become epidemic. Reduce adverse effects of dwarf mistletoe.	Integrated Pest Management aerial observation by regional entomologists, compartment exam, project inspections and reviews/Acres, Forest-wide	Annually	Forest insect and disease surveys are conducted at the regional level. Survey results found that bark beetle activity in Arizona increased statewide from 6,400 acres with damage mapped in 2011 to 34,500 acres in 2012. Approximately 98% of bark beetle damage occurred in ponderosa pine forests with the majority of activity taking place on the Coconino and Kaibab National Forests. Much of this beetle-caused tree mortality was related to recent disturbance events such as fires and tornados. Only small portions of the Coconino National Forest were identified to have significant forest damage as detected through aerial survey. More information, including the 2012 report on forest insect and disease conditions in the Southwestern Region may be found on the U.S. Forest Service’s Southwest Region, Forest Health and Scientific Publications web site at: http://www.Forest Service.usda.gov/detail/r3/maps-pubs/?cid=stelprdb5176419

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: Prescribed Fire. Daily prescription (Rx) requests are submitted for approval from ADEQ.
Fuel Treatment Outputs	Ensure balanced fuel treatment outputs, emphasizing utilization.	Accomplishment reports/Acres	Annually	2,479 acres were treated with pile burns 5,236 acres were broadcast burned within Wildland Urban Interface (WUI). 5,221 acres were broadcast burned within areas identified as Non-WUI. 646 acres were identified as having met land management objectives. 727 acres were mechanical integrated treatments FY12 Totals: The Forest's fuel treatment target was 6,000 acres. The COF treated a total of 13,014 acres as core target, and 1,373 acres as integrated target.
Wildfire Acre PAR's	Ensure wildfire acres are within projected annual burned acres period and by Fire Management Zone where acres are not specific to Management Areas (MA).	Reports/Acres	Annually	A Fires 152 (Class A - one-fourth acre or less) B Fires 36 (Class B - more than one-fourth acre, but less than 10) C Fires 2 (Class C - 10 acres or more, but less than 100 acres) D Fires 1 (Class D - 100 acres or more, but less than 300 acres) E Fires 0 (Class E - 300 acres or more, but less than 1,000 ac) F Fires 0 (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: 193 (71 Human caused, 122 Lightening) Total Acres Burned*: 107 Human / 8,971 Lightning *Note: Wildfire Acre PARs represent old Forest Plan standards/guidelines that are outdated and no longer based upon best available science and national program direction. Only 646 wildfire acres were claimed for meeting land management objectives in FY12 due to interim direction that discouraged this type of wildfire management.. However, many additional acres that burned did meet fuel management objectives (were beneficial).

Cost of Suppression, Protection, Organization, and Net Value Change	Keep fire management program cost effective.	PAMARS/Dollars	Annually	Suppression costs were minimized as much as possible to meet objectives in maintaining resource effectiveness and safety guidelines during suppression activities. Larger and long duration fires were managed under the Wildland Fire Decision Support System (WFDSS) process where costs were tracked and objectives were created to keep costs commensurate with the Values At Risk. Suppression costs are tracked through the use of wildfire suppression funds; a summary of total suppression costs for 2012 is not currently available. Pre-suppression costs have remained flat or have decreased slightly due to lower budget levels in 2012. NOTE: Net Value Change – represents old forest plan language that is no longer appropriate or easily attainable without extensive resource area analysis stating the net present value of every resource on the Forest. In addition, national policy/direction supports the idea that fire is beneficial on the landscape and that fire does not cause permanent detriment to resources.
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 process to determine fire management efficiency; and reviews of selected fires. Annual inspections, periodic reviews, and use of fire budget analysis process as needed.	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. The Forest still continues to maintain a minimum of 98% effective suppression of all unwanted fires within the initial attack period (first 24 hrs.). Line officers review suppression effectiveness through on-site inspection of a minimum of 10% of all fires per fiscal year. Pre-season preparedness reviews are conducted and safety discussions held. After Action Reviews are held after each operational period. 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 conducted to project funding needs and/or potential savings in the Preparedness Budget through the end of the Fiscal Year. Spring and Fall fire leadership meetings are conducted to confirm fire program needs to meet operational objectives for fire suppression.

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, dollar cost of vandalism and trends in user protection. Update monthly using Law Enforcement & Investigations Management Attainment Report System (LEIMARS)	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. Number of contacts and warnings are up from last year due to educating the public on TMR. FY 2012 statistics include: Fines collected: $124,142 Damage to Government property and resources: $37,772 Public contacts: 10,137 Violations issued: 773 Warnings issued: 396 Arrests: 36 Cannabis plants eradicated: 6 Cannabis plots eradicated: 1
GENERAL ADMINISTRATION				
Citizen Participation Plans Public Affairs Standards	Measure responsiveness to potentially affected interests.	Citizen Participation Plan and Public Affairs Plan review/ Completed contacts and actions	Quarterly	Based on quarterly Schedule of Proposed Actions (SOPA) reports from October 2011 – September 2012, public contacts were made with respect to: **Forest-wide and Multi-District** • Coconino National Forest Motorized Travel Management Plan EIS • Flagstaff to Pinnacle Peak Transmission Line Vegetation Management EA • Plan Revision for the Coconino National Forest EIS • Reissuance of Transmission Line Permits CE • Dahl FLPMA Forest Roads Special Use Permit CE • I-17 Telecommunications Connections CE • NPG Cable of Arizona Issuance of 10 Year Permit CE

				Mogollon Rim Ranger District • C.C. Craigin (Blue Ridge) Reservoir Fish Restoration EA • Clint's Well Underground Powerline Replacement CE • Clint's Well Forest Restoration Project EA • Improvements at Blue Ridhe (C.C. Craigin) Reservoir CE • Long Valley Experimental Forest Restoration Project EA • Permit Reissuances CE • Year-round Recreation Site Access Points EA • Yellow Jacket Rock Pit #2 Use 2011 CE • Conch Hook Rock Pit Use CE • Mahan Landmark Forest Restoration Project EA • TDS Blue Ridge Buried Fiber Optic Cable CE • Bill Dick Spring Enhancement Project CE • Blue Ridge Community Fire Risk Reduction Project CE • Mogollon Monster 100 Mile Run CE • TDS Blue Ridge Telephone Cable Project CE
				Flagstaff Ranger District • Anderson Mesa Lowell Observatory Permit CE • Bar M Snotel Site CE • Grapevine Interconnect (Grapevine Canyon Wind Project) EIS • Hitchin Post Stables Special-Use Permit Reauthorization CE • TDS Mormon Lake Buried Line CE • 742 Road Power Line Installation CE • APS Sandvig-Youngs Powerline CE • Highway 180 Motorized Trails EA • Inner Basin Water Pipeline Reconstruction CE • Kelly Motorized Trails EA • Logan's Crossing Watchable Wildlife Project EA • McCormick Pit Native Material Site CE • Turkey Butte/Barney Pasture Forest Health and Fuels Reduction Project EA • Windmill West Range Allotment EA • Wing Mountain Fuels Reduction and Forest Health Restoration EA • Mt. Elden/Dry Lake Hills Recreation Planning Project EA • Mt. Elden/Dry Lake Hills Recreation Project EA • Permit Reissuance CE • Girls Ranch Road Berm Project CE • Schultz Sediment Reduction Project EA

				Red Rock Ranger District • Apache Maid Rangeland Management Analysis EA • Arizona Water Company Water Storage Tanks EA • Camp Verde ELGA Apache Trail Site EA • Cave Springs Bank Stabilization CE • Chavez Ranch Road Improvements EA • Cornville Non-Motorized Trail System EA • Cornville Multi-Use Path CE • Fossil Creek Temporary Fish Barrier and Repair of Permanent Barrier CE • Middle Schroeder Butte Rain Gauge CE • Montezuma Rim Rock – McGuireville (MRM) Multi-Use Motorized Trail System EA • Oack Creek Water Co Pipeline CE • Outfittter/Guide Permits for Mountain Biking CE • Page Springs Road Association Access CE • Palatki Site Improvements CE • Sedona Trail Enhancements CE • Soldier's Wash Trails CE • Tobias/Flynn Road Access EA • V-V Site Improvements CE • Honanki Improvements CE • Pronghorn Habitat Improvements CE • Red Rock Trails Additions Phase II CE • Road Closures for Threatened, Endangered and Sensitive Species CE • Brian Michelson Memorial Rum CE • Camp Verde Park and Sanitary District Roads CE • Fossil Fish Barrier Clearing of Boulders CE • Fossil Fish Barrier Repairs CE • Greasy Spoon Road Maintenance CE • M-Diamond Trail Route Addition CE • Outfitter Guide Permits for Metaphysical Activities CE • Reissuance of Outfitter/Guide Use in Broken Arrow CE • Soldiers Pass Motorized Use EA • Trail Bound Trips CE
				Heritage Public Enhancement Activities: Although Heritage Section activities are mostly oriented on providing cultural resource clearances for projects, the Forest also has a very active professional and public archaeological component, probably the largest in the Region and one of the largest in the United States. A total of 25 tours, talks, and presentations at local and state-wide events were conducted in FY 2012. These included participation in Arizona Heritage Appreciation Month and the Flagstaff Festival of Science. The Forest Archaeologist and Tribal Relations Specialist prepared a display for Hopi Earth Day. At that same event, the Forest Supervisor presented the Hopi Tribal Chairman with a Sikyatki Polychrome jar that had been stolen from Hopi land. The jar was seized during a Forest Service law enforcement case and, at the request of the Hopi Tribe, had been taking care of it for them until they were ready to have it brought back to Hopi. The Forest Archaeologist presented three papers at the Arizona Centennial Conference and two papers at the Arizona Historical Society Convention. The Forest Archaeologist also toured Dr. David Vogt, Museum of Cultural History, University of Oslo, Norway to various pictograph sites

Verification of Unit Cost Used in Plan Compared to On-the-Ground Cost	Acquire accurate cost data.	Actual costs from a representative sample of projects and programs including both force account and contract. Discount to 1982 dollars for comparison to Plan costs/Dollars	Annually	Due to a change in budgeting process, this can no longer be tracked in the same manner.
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.