Kaibab National Forest

Forest Plan Monitoring Report

Fiscal Year 2007

Forest Supervisor Certification

I certify that the Kaibab National Forest Plan as amended is sufficient to guide management of the forest over the next year. Changes that should be considered over time to maintain the viability of the Plan are identified in this document.

/S/ _____

Edward E. Armenta
Acting Forest Supervisor

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Date

Introduction

The Monitoring Plan for the Kaibab National Forest Plan identifies 58 items to be tracked as measures of the effectiveness of the forest plan. These items are reported and evaluated every five years. This report provides information on current and recent accomplishments by resource or concern area. A detailed monitoring report was prepared for Fiscal Year 2005 in an effort to organize the forest's initial thinking about the needs for change to be considered in a Comprehensive Evaluation Report (CER). For more information about tracked items, see previous year monitoring reports at http://www.fs.fed.us/r3/kai/management/efoia/documents/planning.shtml#MR .

Timber (Timber 1, 2, 3, 4, 8, 9)

The timber sale program on the Kaibab National Forest is administered as a tool to accomplish vegetation management desired conditions to meet various land management objectives including fuels reduction, forest health, wildlife habitat improvement and watershed improvement.

South Zone: Four large timber contracts were offered and awarded that will accomplish treatments on the Spring Valley Fuels Reduction Project, the Elk/Lee Project, the Government Vegetation Treatment Project, and the Frenchy Vegetation Management Project. Total wood volume awarded was 21,507 CCF (hundred cubic feet). This is equivalent to 11 million board feet and is an increase of 8 percent over 2006.

Additionally, the South Zone had other acres already under contract from fiscal year 2006, for a total accomplishment of 42,782 CCF of wood under contract at the end of fiscal year 2007. The removal of this wood will thin or otherwise treat 6,063 acres of forest to desired prescriptions (3,103 acres for sales sold in fiscal year 2007).

The South Zone sold 343 CCF of pinyon/juniper fuelwood to accomplish range, wildlife and watershed objectives on 172 acres. Another 4,171 cords of fuelwood were provided for personal use to meet local home heating needs. Permits were also sold for Christmas trees (1,200 permits), fence posts, pine poles, decorative wood, wilding transplants and pine cones.

North Zone: Despite the continuing decline of forest product markets in the area, the North Zone timber program strived to provide wood products to the local community, improve public safety and perform sustainable ecosystem management, including the improvement of wildlife habitat. The district completed an environmental assessment and began implementation on the "Hazard Tree Removal along Highways and Forest System Roads and Trails in the 2006 Warm Fire." The project removes roadside hazard trees on more than 50 miles of National Forest Service system roads accessible to the public, including several miles of burned hazard trees along highways 67 and 89A.

Table 1. Timber resource outputs and accomplishments for FY07.

Resource	Monitoring Item	Unit of Measure	FY07 Output
Precommercial Thinning	Timber 1	Acres	2,951
Commercial Thinning	Timber 2	Acres	3,359
Regeneration cutting	Timber 3	Acres	687
Shelterwood Removal Cutting	Timber 4	Acres	0
Sanitation Cutting	NA	Acres	282
Sawtimber and Roundwood	Timber 8	CCF	25,850
Pinyon-Juniper Fuelwood	Timber 9	CCF	2,190
Christmas Trees	NA	Each	1,200

No shelterwood seed cutting or other even aged tree regeneration was completed; however, there were 687 acres of un-even aged (group selection) regeneration cutting. The Kaibab Forest plan was amended in 1996. Since then, most harvests have been commercial thinning or group selection cuts rather than shelterwood cuts. The thinning projects and group selection cuts planned since 1996 were designed to improve the size-class distribution of ponderosa pine and reduce the fuel loads that resulted from the decades of fire suppression.

Insect and Disease (Protection 1)

Destructive insects and disease levels were assessed by the Forest Service-Arizona Zone Office, Forest Health (FH) staff. Below are the acres of bark beetle incidence and defoliation detected from aerial detection surveys. There has been no "buildup" of insect or disease from management activities, although small outbreaks of *Ips* have been observed following thinning activity in the past. Some insect and disease buildup may be present due to high tree densities as a result of lack of management and drought.

Table 2. Bark beetle incidence from aerial detection surveys on the Kaibab National Forest.

	Western Pine Beetle	Ponderosa Ips	Piñon Ips	Douglas-fir Beetle	True fir beetles Beetle	Bark Beetle Totals
Acres	410	6,850	20	850	100	8,230

Table 3. Defoliation incidence from aerial detection surveys*.

Defoliation	Aspen Damage	Drought	Defoliation Total
Acres	28,420	210	28,620

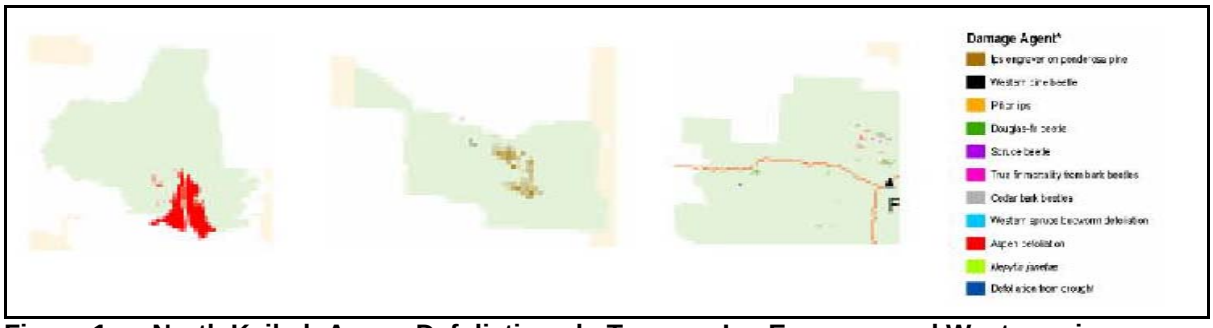

Figure 1. a. North Kaibab Aspen Defoliation b. Tusayan Ips Engraver and Western pine beetle, c. Williams District, drought, Douglas fir (Bill Williams), true fir (Kendrick)

Fuels Management

The fuels management goal is to use prescribed fire and wildland fire use as resource management tools where they can effectively accomplish resource objectives. Areas approved for wildland fire use implementation and their prescriptive criteria are identified in the fire management plan. Fire management, prevention, and control are used to protect life, property, and resources.

The fuels treatment target for 2007 for the Kaibab National Forest was 13,700 acres. The fire organization exceeded this target, treating 14,270 acres. Fuels treatments included broadcast burning, thinning, piling, and pile burning.

Broadcast burning was conducted on 10,418 acres. Over half of these acres (5,687) were within the wildland urban interface (WUI). All WUI treatments were on the Tusayan and Williams districts. Thinning was accomplished on 775 acres; slash was piled on 316 acres; and 2,783 acres of piles were burned using hazardous fuels reduction funding. Almost all of the thinning took place in the urban interface where values at risk justify the increased cost of these treatments. Over 2,500 additional acres were thinned using funding from other resource areas.

In addition to target acres, fire managers also treated 498 acres with Wildland Fire Use by allowing three naturally ignited wildfires to burn on the Williams and Tusayan Ranger Districts. The Pomeroy Fire burned in October of 2006 and grew to 260 acres. The Radio Fire (175 acres) and the Watson Fire (63 acres) burned at the onset of summer monsoons.

Wild Burro Population

Monitoring was not completed in FY07, but is scheduled to be completed in FY08. Incidental observations indicate that the population is probably more than double the desired range, which is 22 to 35 burros.

Permitted Grazing Use and Capacity (Range 2)

The Kaibab National Forest has grazed at or below capacity for several years and has essentially balanced use with capacity in the first planning period (1988-1998). Grazing capacity is listed as 71,000 AUM in the Forest Plan. Authorized grazing in FU07 was 55,650.

Table 4. Permitted and authorized grazing on the Kaibab National Forest FY07.

	NO.of PMTEES	CATTLE NO.	CATTLE HMS AUMS	HORSES & BURROS NO.	HORSES & BURROS HMS AUMS	SHEEP & GOATS NO.	SHEEP & GOATS HMS AUMS	TOTAL NO.	TOTAL HMS AUMS
NFS PERMITTED COMMERCIAL LIVESTOCK	28	9,001	62,617 58,416	20	141 169	14,383	58,855 14,288	23,404	121,613 72,873
NFS AUTHORIZED COMMERCIAL LIVESTOCK	28	6,537	37,916 41,170	20	161 193	14,383	58,855 14,287	20,940	96,932 55,650
NFS AUTHORIZED LIVESTOCK USE	0	0	0 0	0	0 0	0	0 0	0	0 0
***TOTAL NFS AUTHORIZED**	**28**	**6,537**	**37,916 41,170**	**20**	**161 193**	**14,383**	**58,855 14,287**	**20,940**	**96,932 55,650**
NFS UN-AUTHORIZED/ EXCESS USE	0	0	0 0	0	0 0	0	0 0	0	0 0
PRIVATE LANDS	1	0	0 0	0	0 0	400	592 118	400	592 118

Public Sector Developed Recreation Use (Recreation 1)

The KNF completed the national requirement for Developed Site Recreation Facility Analysis in 2007. The purpose of the process was to display the tasks needed over the next 5 years to bring the forest's developed site recreation infrastructure into alignment with the resources available to operate and maintain it to standard. Many of Forest Service facilities were built 30 to 50 years ago and have reached the end of their useful life without significant deferred maintenance investment. Other facilities receive no or little use. The fundamental premise of the program of work is to create an inventory which is sufficiently sustainable and flexible to be adapted annually to any changes in available resources. This analysis prioritizes maintenance needs given limited maintenance budgets. The program of work has been developed to meet the following objectives:

- Operate and maintain sites to standard within available revenue stream.
- Reduce deferred maintenance by 20% over the 5 year life of the program of work.

- Focus available resources on sites which conform most closely to the Forest Recreation Program Niche.
- Maintain and enhance customer satisfaction with available sites.

The analysis for the KNF developed recreation sites identified four facilities that are scheduled to be closed as funding is available, these are listed in Table 5. Many other actions will be taken at developed recreation sites to improve site functioning, remove fixtures that are not utilized, and reduce the deferred maintenance burden.

Table 5. Developed Recreation Sites on the KNF to be closed.

Ranger District	Site Name	Comment
North Kaibab	Indian Hollow Campground	Located in association with a trailhead. Receives little use. Site will be available for dispersed camping, but facilities will be removed.
Tusayan	Charlie Tank Group Site	Site was decommissioned when the new Ten-X Group Campground was constructed. Will be closed except for permitted uses.
	Ten-X Amphitheatre	Site is in very poor condition. No longer used because Grand Canyon National Park provides a variety of interpretive programming that most campers attend. A self-guided nature trail was installed in 2006.
Williams	Garland Prairie Vista Picnic Ground	Site is in poor condition, and receives very little use. Facilities will be removed.

Table 6. Recreation Site Type Capacity by District on the Kaibab NF.

Developed Recreation Site Type	District			Capacity Offered 2007 In PAOT
	Williams	Tusayan	North Kaibab	
Campground	X	X	X	2,009
Day Use Areas	X	X	X	112
Fishing Sites	X	X		483
Group Campground	X	X	X	402
Interpretive Sites	X	X	X	512
Rental Cabins	X			22
Observation Sites	X		X	87
Snowplay Area	X			53
Picnic Areas	X		X	186
Trailheads	X	X	X	1,124

In addition to these developed sites, there are a number of dispersed recreation sites on the forest. These are sites where there is no substantial capital investment in facilities; usually just a parking lot and/or signs.

Private Sector Developed Recreation and Private Sector Site Construction

The KNF does not have any privately developed recreation sites. There are no sites planned in the future under this heading.

Dispersed Recreation Site Investments - PAOT Offered (Recreation 5)

There are currently 14 dispersed recreation sites that receive some maintenance in order to have a place marker or other signs, sometimes a parking lot, or trailhead registry. These include historic cabins, view points, trailheads and other sites of interest. At this time, a capacity has not been set for these areas as they receive light use.

Wildlife and Fish Recreation

The forest does not track this measurement any more. There is some information available on the Arizona Game and Fish website on state-wide fishing and hunting. The website reports that there are 255,000 fishermen and 135,000 hunters who are participating in these activities.

Recreation Sites Fees Collected Under the Recreation Enhancement Act of 2005 (PL-108-447)

Ten-X Campground $37,717
Spring Valley Cabin (195 rented nights) $23,355

About 95 percent of fees collected under authority of the Recreation Enhancement Act are returned to the Kaibab and used to maintain the sites. In addition to these sites, there are six campgrounds that are concessionaire operated. A portion of these funds are returned to the forest for annual maintenance.

Heritage (Heritage 1, 2, 3)

During fiscal year 2007, Section 106 compliance (National Historic Preservation Act) was conducted for seventy projects in support of forest functions such as special uses, minerals, timber, range and fire. As a result, more than 26,000 acres were surveyed and 233 new heritage resource sites were recorded. Of the newly recorded resources, 37 sites were evaluated as eligible for inclusion on the National Register of Historic Places. Also, 74 previously recorded sites were re-evaluated and 341 sites received protection measures or were monitored.

Table 7. Heritage accomplishments of the Kaibab NF for FY07

Acres Inventoried	New Sites Recorded	New Eligible NRHP Sites	Known Sites Monitored
26,000 acres	233	37	341

The Heritage staff provided support and resource counsel on nine prescribed fires, three wildland fire use fires, and two wildfires and conducted a Burned Area Emergency Response analysis for the Slide Fire on the North Kaibab Ranger District. The Heritage program monitored 206 sites, along with 22 National Register eligible sites managed as

Heritage Priority Assets; conducted four site protection and site stabilization projects; erected one display; conducted four training classes for Site Stewards and fire managers; and provided 36 outreach/interpretation programs.

Camera equipment was used to view the interior of the historic Anita Mine shaft. The mine, which was abandoned in 1905, was reported to be 540 feet deep. The original timber lining for the shaft was in excellent shape as was the ladder the miners used to descend to work. As the camera reached the 133 foot depth, the timber gave way to bare rock and the ladder ended. The camera continued descending and at the 233 foot depth showed several adits (horizontal mine openings) that the light could not penetrate. At 460 feet the camera touched bottom. Bits of support timber, broken rock and ventilation pipe were piled on the ground.

Land Management Planning (LMP1)

The database being maintained and is being centralized nationally in *I-Web*. The forest continues to collect and update information of resource inventories and accomplishments. In FY07 the Kaibab conducted stand exams on 902 acres.

Forest Plan Amendments

No Forest Plan Amendments were completed in FY 2007.

Amount of Old Growth (Wildlife 3, 5, 17)

Measuring amount of old growth has changed since the Forest Plan's monitoring plan was written. When the 1996 amendment incorporated the Management Recommendation for the Northern Goshawk old growth acres were no longer measured in acres at the stand level, but as a component within uneven-aged stands. Although "acres of old-growth" is no longer meaningfully reported, the number of large trees is. Large trees have been harvested since the 1996 amendment; however the average number of large trees per acre, 18 to 24 inches, 24 to 30 inches, and over 30 inches has slightly increased due to annual growth.

Mexican Spotted Owls (Wildlife 4)

There are 6 spotted owl Protected Activity Centers (PACs) on the Kaibab NF, all of which are located on the Williams District: Tule PAC, Big Springs PAC, Bill Williams PAC, Sitgreaves PAC, Pumpkin PAC, and Kendrick PAC. There are no PACs, designated Critical Habitat, or known spotted owl records on the Tusayan District. There is designated critical habitat on the North Kaibab Ranger District, but there are no PACs.

Each of the 6 PACs was surveyed at least twice using the 2003 U.S. Fish and Wildlife Service Mexican spotted owl survey protocol. All surveys were call surveys conducted by Jeff Waters or Roger Joos, wildlife biologists for the South Zone of the Kaibab NF. Surveyors imitated the spotted owl four-note call for all surveys. All surveys were night surveys that began at sunset. Surveys were conducted at a total of 123 call points on 32 nights.

At least 1 spotted owl was detected at 5 of the 6 PACs. Spotted owls responded to calls on the earliest survey date (March 3) and the latest survey date (July 18). Spotted owls were detected in 2 types of habitat: dry mixed conifer forest in steep canyons (Big Springs PAC and Tule PAC) and moist mixed conifer forest on higher elevation mountains (Sitgreaves PAC and the 2 Kendrick Mountain PACs). Spotted owls detected in the steep canyon habitats of Sycamore Canyon were at elevations of 5,600 to 6,300 feet. Spotted owls detected on Sitgreaves Mountain and Kendrick Mountain were at elevations of 7,900 to 8,500 feet.

In addition to spotted owls, other owls detected while conducting spotted owl surveys were flammulated owl, great horned owl, northern pygmy-owl, northern saw-whet owl, western screech-owl, and long-eared owl. Barn owls also were detected on parts of the Williams District but not during spotted owl surveys.

Three project areas also were surveyed: McCracken Vegetation Management Project, Bellemont and Chalender Grazing Allotments, and Flag Tank Aspen Restoration Project. No spotted owls were detected in any of the 3 project areas.

Goshawks

Nest occupancy surveys were conducted on all three ranger districts. Seven territories on the Tusayan District and 15 on the Williams district were surveyed. On the North Kaibab Ranger District, nest monitoring has been conducted by Richard Reynolds of the Rocky Mountain Research Station for almost 20 years.

Table 8. Goshawk territories on the Kaibab NF south zone monitored in FY 2007.

	Williams	Tusayan
Total # Territories	37	9
Total Number Surveyed	15	7
Total Occupied	3	3

Other MIS species (Wildlife 6, 8, 24)

In 2007, Rocky Mountain Bird Observatory (RMBO), in conjunction with Kaibab National Forest (KNF) conducted bird monitoring on the Kaibab National Forest through a partnership using a protocol similar to other RMBO monitoring programs as delineated by Panjabi (2006). RMBO has designed this program to provide statistically rigorous long-term trend data for populations of most diurnal, regularly breeding bird species in the Kaibab National Forest, including some U.S. Forest Service Region 3 Sensitive Species and KNF Management Indicator Species (MIS). In the short term, this program provides information needed to effectively manage and conserve bird populations in KNF, including the spatial distribution, abundance, and relationship to important habitat characteristics for each species. This cooperative project supports KNF's efforts to comply with requirements set forth in the National Forest Management Act and other statutes and regulations. It also contributes to RMBO's broader landscape-scale breeding

bird monitoring program, which currently includes 11 states in the Rocky Mountain and Great Plains regions.

In 2007, RMBO staff conducted 73 point transect surveys (815 point counts) in three habitats (Woodland / Grassland, Mixed-Conifer, and Ponderosa Pine) within KNF. RMBO staff averaged 11.2 point count stations per transect and recorded 101 breeding bird species distributed throughout KNF. Many species were observed on only a few occasions. Density estimates were made for those species with a minimum of 60 detections with the exception of Juniper Titmouse (n=54). Density estimates were calculated for three MIS species: Hairy Woodpecker, Juniper Titmouse, and Pygmy Nuthatch. One hundred and one species were recorded in 2007 and density estimates were obtained for 38 species.

Table 9. Population density estimates for MIS species.

Species	Habitat	D	LCL	UCL	%CV	n
Juniper Titmouse	Woodland / Grassland	79.79	50.08	127.13	28	56
Hairy Woodpecker	Mixed-Conifer	20.22	12.36	33.08	30	32*
Hairy Woodpecker	Ponderosa Pine	18.82	11.84	29.90	28	52*
Pygmy Nuthatch	Ponderosa Pine	102.49	74.89	140.25	18	159

D = estimated density (birds/km2); *LCL* and *UCL* = lower and upper 90% confidence limits on *D*; *%CV* = percent coefficient of variation of *D*; *n* = number of observations used to estimate density.
* Mixed Conifer and Ponderosa Pine data were combined to fit the detection function; sample size of combined data was _ 60.

The total number of species detected on point counts in each habitat in 2007 ranged from 63 in Mixed-Conifer to 82 in Woodland / Grassland. While these totals reflect the spectrum of possible species across a range of sites within a habitat type, it should be understood that some species included in each total were largely peripheral to the habitat in which they were recorded. Thus, species richness measures reflect both the within- and between-habitat diversity of the sites surveyed in each habitat category.

Species detections were insufficient to reasonably make population estimates for Turkey, -Red-naped sapsucker, Lincoln's sparrow, or Yellow-breasted chat. Additional transects would need to be added to increase the number of detections of Wild Turkeys and Red-Naped sapsuckers to produce reliable annual estimates. Program Distance allows the user to pool years to increase the number of detections of the species to generate a robust detection function if the data collection continues over several years. Due to the very limited amount of riparian habitat on the Kaibab NF, different methodologies would need to be used to estimate populations of Yellow-breasted chat and Lincoln's Sparrow.

Aquatic Macro invertebrates (Wildlife 25)

Invertebrate sampling by USFWS was conducted at North Canyon Creek, on the North Kaibab Ranger District. Significant findings include a new formerly undescribed species of Stonefly (*Sweltsa sp.)* and a newly recorded species in AZ *(Alloperla sp.).* Also a

species of Mayfly (*Callibaetus falsus)* was recorded that had previously only been recorded from a creek near Greer Arizona, a significant range extension of the species.

Other Wildlife Research

1) West side habitat improvement project. Shrub monitoring and deer reproductive success are the main emphases – NKRD

2) Allen's lappet-browed roost research (a sensitive sp.) included netting, tagging, radio-tracking, and investigating caves for sign of bat use – South Zone.
3) Bald eagle winter roost investigations based on telemetry locations provided by G&F site characteristics were quantified at the local level and are being analyzed at the landscape level -- sites were forest wide.

4) Grazing intensity monitoring, North Kaibab Ranger District. Grand Canyon Trust and Northern Arizona University.

Minerals

There are no objectives for minerals in the Plan. There is one goal statement: Administer the mineral laws and regulations to minimize adverse surface resource impacts. Support sound energy and minerals exploration and development.

Sandstone contracts* 75,472 tons $452,832
Cinder contracts 35,200 tons $35,200

Sandstone quarries on the Kaibab NF account for approximately 45-50 percent of national production. The stone is used for building material in the construction industry.