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Forest Service

Southwestern
Region



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Cibola National Forest

2006 Monitoring and Evaluation Report



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Forest Supervisor Certification

I certify that the Cibola National Forest Plan (Forest Plan) as amended is sufficient to guide future management of the Cibola National Forest until the plan revision process is completed.

This Monitoring and Evaluation Report meets regulatory requirements for completing an annual report for the fiscal year of 2006, based on the 1982 planning rule at 36 CFR 219.

Nancy Rose

Nancy Rose, Forest Supervisor

5/7/07

Date

Executive Summary

This section summarizes some of the lessons learned from the monitoring table on pages 6 to 22. It primarily includes lessons learned that are anticipated to be relevant to future management.

The fire program monitored several prescribed burns and wildland fire areas in 2006. Drought was observed to be a major contributor to more intense fire behavior. However, drought conditions were mitigated during the 2006 fire season by a heavy summer rain season. Most prescribed burning took place in the fall and winter. Minimal fire behavior and tree mortality was observed from prescribed fires because of greater than average winter snow.

Fire prevention monitoring in this area has shown that outreach to local communities, technical assistance and training need to be enhanced to carry out an effective program.

The most pressing need in the forestry program has been the spread of insects and disease and their associated effects. Monitoring has shown that tree mortality by tussock moth and bark beetle are at epidemic levels throughout the Cibola National Forest and continued high mortality is expected in the coming year. On the Sandia Ranger District, high mortality from tussock moth infestation has left many hazard trees in recreation sites and few have fallen on the Sandia Crest highway. Elsewhere on the Forest, it has been observed that pine beetle mortality in unthinned ponderosa pine stands adjacent to thinned stands has increased and that slash from mechanical thinning may need to be monitored more closely for infestation.

Hazard trees in and around the Sandia recreation sites are felled by Forest Service volunteers and can be gathered under fuelwood permits. The demand for fuelwood in this area exceeds the supply of felled trees in the campgrounds.

Weather and climate have shown to be the most frequent reasons for adjusting grazing strategies through adaptive management processes. Increased permittee knowledge of these factors and familiarity with the adaptive management process has resulted increased permittee compliance. Range specialists need to evaluate range readiness accurately to be able to effectively use the adaptive management process. Monitoring has shown that conditions can change rapidly from when range readiness was assessed and when cattle are put onto the grazing unit. Monitoring has also shown that compliance problems occur more frequently when new Allotment Management Plans (AMPs) are implemented; especially with new permittees. When these circumstances arise, range specialists should monitor compliance more closely.

The spread of invasive species continues to be a trend of concern on the Forest. Bull and musk thistle treatments have shown that cutting seedheads was a more effective treatment method than digging the plants up. Monitoring of invasive plants on the Forest has shown that even after successful treatment, invasives may reappear along roads due to continued disturbance. In 2006, some invasives spread faster than expected due to higher than

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expected runoff, which spread seeds from invasive plants into previously un-recorded areas.

Most monitoring designed to prevent impacts to heritage resources during ground disturbing activities has been observed to be effective in 2006. Site vandalism and pot-hunting are a continuing concern and monitoring has shown they are ongoing. Monitoring heritage sites has also shown that thinning projects in and around housing subdivisions for Wildland Urban Interface protection may be causing increased damage to sites in these areas because thinning increases accessibility by off-highway vehicles.

The concern brought about by monitoring in the engineering program is that as maintenance issues continue to arise, they need to be properly recorded in Forest Service databases and communicated to the right people on a regular basis. The Recreation Facilities Master Planning process will help resolve some of these concerns. However, disposing of deteriorating administrative buildings should also be a priority because it will remove the burden of continuing to monitor these facilities and will allow for better monitoring and maintenance of the rest of the Forest's facilities.

In the lands program, monitoring of electronic sites has shown that more technical inspections are needed to reduce noncompliance with the special use permit issued for the site.

In the recreation program lack of funding resulted in lack of maintenance on some trails which caused the trails to become incised resulting in channelization of water and sedimentation into nearby intermittent streams. Also, the National Visitor Use Monitoring survey was completed. Due to extreme weather (very dry through June, heavy rains in July and August) use figures will likely be lower than expected.

Monitoring of projects for wildlife habitat improvement has led to several observations about their effectiveness. First, second growth snags left for wildlife purposes have been observed to stand for 3-5 years after death. Some snags that were originally intended to remain for wildlife habitat are dropped during harvesting for safety concerns. Also, it has been observed that burning under hot prescriptions in the spring can be done without damaging constituent elements of Mexican spotted owl habitat. Another project that was attempting to revegetate an area for wildlife habitat restoration demonstrated that after a heavy rainfall heavier seeding may be necessary.

Several unique birds and their habitat are also monitored by the Forest. For Mexican spotted owl, at least one territory reported as unoccupied in 2006 was found to be occupied later. Thus, surveying to protocol does not always lead to finding birds in occupied territories. In monitoring raptor migration, passage rate trends were above average only for peregrine and merlins, and were below average for 11 other species especially northern harriers, bald eagles and kestrels. This trend was correlated to widespread drought throughout the interior west. In one area that is a potential southwestern willow flycatcher habitat, monitoring of the cattle exclosures has shown

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that a cattle lane in the area may need to be closed from May 15 to July 15 if the flycatchers were to reoccupy the habitat, in order to prevent cowbird parasitism.

Forest Plan Background and Amendments

The Forest Plan and associated EIS were published in 1985. Preliminary Forest staff recommendations for updating the Forest Plan were developed in 1996-1999 and are contained in the Geographic Area Assessments produced by the Interdisciplinary Team.

The following amendments were made to the 1985 Forest Plan:

Amendment Number	Decision Date	Amendment Description
Amendment #1	01/09/87	Clarified language throughout all five chapters
Amendment #2	05/25/89	Added electronic site near Boise City, OK for the Coast Guard's Long-Range Aid to Navigation (LORAN-C)
Amendment #3	06/30/89	Changed timber projections based on projects in Las Huertas Canyon near Placitas, NM
Amendment #4	05/29/90	Revised the 10-year timber sale schedule, amended fire management S&Gs, added black bear and curlew to the MIS list, changed ROS for MAs 8 and 13, RATM
Amendment #5	06/27/90	Designated Oso Ridge Lookout as an electronic site
Amendment #6	09/06/91	Established S&Gs for capital investment priorities and Sandia winter use; added the grasshopper sparrow to the MIS list; and established S&Gs for Aberts squirrel
Amendment #7	09/09/96	Added Regional direction for management of Mexican spotted owl, northern goshawk, grazing, old growth
Amendment #8	12/20/96	Returned federal lands near Kirkland Air Force Base from DOE back to the National Forest System
Amendment #9	09/18/97	Established Bernalillo Watershed Research Natural Area
Amendment #10	10/17/02	Identified eligible wild and scenic rivers and added direction for protecting their values

Table of Monitoring Activities and Lessons Learned for FY 2006

ABBREVIATIONS

BLM – Bureau of Land Management
 D2 – Mount Taylor Ranger District
 D3 – Magdalena Ranger District
 D4 – Mountainair Ranger District
 D5 – Sandia Ranger District
 GIS – Geographic Information System

GPS – Global Positioning System
 INFRA – Infrastructure database
 NEPA –National Environmental Policy Act
 RD – Ranger District
 RO – Regional Office
 SO – Supervisor’s Office

	RESOURCE	MONITORING ACCOMPLISHED	RECORD LOCATION	DISTRICT	LESSONS LEARNED
1	Engineering	Monitored for facility maintenance needs and accomplishments	INFRA database	Forestwide	<ul style="list-style-type: none"> - Maintenance needs and accomplishments are continually arising, and need to be recorded in the database. - District staff needs to communicate with the SO about projects and the needs of all facilities on a regular basis.
2	Engineering	Monitored drinking for compliance with the health standards as set in the Safe Drinking Water Act (SDWA) or FSM 7420 (for non-public water systems).	SO-Engineering Water System Files; INFRA database	Forestwide	<ul style="list-style-type: none"> -Tight budgets continue to cause maintenance (including decommissioning) from being performed - Water system operators/oversights need additional training on regulations and forest procedures

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3	Fire	Monitored tree damage and mortality from wildfire based on fire intensity effects Anderson fire area (D4) Sedgwick fire area (D2)	D4 forestry and fire files	D2, D4	<ul style="list-style-type: none"> - Drought conditions contributed to more intense burning (D4) - Better to wait until 2 years post fire to access fire damage for reforestation needs. (D2, D4) First order fire effects of mortality is apparent, (D4)
4	Fire	Monitored for pre-treatment fuel loading and stand densities in Manzanos and Sandias	SO-INFRA	D3, D4, D5	The data gathered will be analyzed in the future in FARSITE models.
5	Fire	Monitored for initial fire size up parameters included topography, climate, vegetation, fire behavior, etc. All FY 2006 wildfires	Fire Reports-District FMO/AFMO files; SO, KCFAST database	Forest-wide	<ul style="list-style-type: none"> - No direct link to GIS - At times, only required fields are filled in - Some districts are not providing the SO with the required data within recommended timeframes

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6	Fire prevention	Monitored fire hazard condition/defensible space of residences in wildland urban interfaces; 425, Lobo Canyon, Bluewater WUI (D2)	RD-K drive; hardcopy prevention files	D2, D5	<ul style="list-style-type: none"> - Despite fire prevention education efforts, there will continue to be people who do not know about those programs or information or do not choose to follow those guidelines - Fire hazard levels indicate a need to increase efforts to assist communities in developing Firewise program - Developed comprehensive Communication Plan to provide better public communication. - FS employees could use more training in working with the public on controversial issues.
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7	Fire/fuels	<p>Monitored during and after treatment conditions including smoke, weather, fire behavior, fire effects on residual vegetation and other resources.</p> <p>Ranch Supply Rx (D3), Sherwood and Bean Field (D4) Jamestown pile burn, 425 prescribed burn, DR and various Ecologists 425 post mechanical implementation and a wildfire event inside post treatment area.(D2)</p>	RD files – burn plan file	D2, D3, D4	<ul style="list-style-type: none"> - Browns transect was effective method for monitoring fuel loading - The person hours and funds required for these types of projects are extensive. Need to make sure we have a good balance between data collection, analysis and actual work accomplished on the ground. - There needs to be a Region 3 fuels monitoring protocol created for standardization across Forests. - A low intensity burn during the fall months in red slash from mechanical treatment caused very little residual tree mortality. - Sherwood - Pile burning, smoke monitored according to NM Air Quality Standards, fire behavior minimal due to most burning occurring during winter snow. Saw no effects to residual vegetation. - Bean Field - Burned Nov 2005, weather became dry and stayed dry until August 2006. After rain area flourished with grasses. Smoke monitored according to NM Air Quality Standards.
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8	Forestry	Monitored compliance with silvicultural prescriptions including post-treatment basal areas, canopy cover, stand densities, snag retention, and implementation of mitigation measures. Timber sale and CFRP thinning grants administered in FY06	RD – Forestry Records. Located in individual District Project files	D2, D4	- Timely inspections are key to achieving desired results when implementing Designation by Description on commercial contracts (D4).
9	Forestry	Monitored for insect or disease damage to forest stands. By RO through aerial survey and ground sampling	Forestry files	Forestwide	<ul style="list-style-type: none"> - Increased ips and western pine beetle mortality in dense, unthinned ponderosa pine stands, adjacent to thinning units (D4). - Slash from mechanical thinning needs to be monitored more closely for insect infestations and outbreaks. (D2) - Mortality continues at epidemic levels of Douglas-fir tussock moth and various bark beetles. Prescribed burn areas and tree scorch are not as visible by aerial surveys as predicted.

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10	Forestry	Hazard tree monitoring survey at all developed sites, some undeveloped sites; post-wildfire burn areas; roads	RD -Recreation files	Forestwide	<ul style="list-style-type: none"> - Coordinate with wildlife on the timing of hazard tree removal to reduce the impact on cavity nesters. Generally the fall is the best time of the year (D4). - Recreation areas in Oklahoma and Texas need to be inspected for hazard trees. - There is continued mortality, mostly white fir, in Sandia Districts developed recreation sites. (D5) - Public demand for fuelwood in the summer and fall exceeds the supply of hazard trees available at developed sites. (D5) - Bucking of fallen trees is not necessary to ensure removal; fuelwood permittees do it and carry bucked sections over 100 feet to parking areas. Little unauthorized off-road travel has occurred. (D5) - Hazard trees on the Sandia Crest Highway and Las Huertas Road: Very few dead trees reached the highway in winter '05-06. More trees are predicted to die by the Zone entomologist in summer '07. 25% of hazard trees were felled. Loading was very slow with a front end loader with forks. An LEO is needed to enforce traffic stoppages. (D5)
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11	Heritage Resources	Monitored fire effects of 2 heritage resource sites located within the Ranch Supply Canyon Prescribed Burn project area	RD/SO- Heritage Resource files	D3	Active monitoring is effective in protecting wooden heritage resource sites with combustible materials from the effects of prescribed fire.
12	Heritage Resources	Monitored mitigation effectiveness & site protection for 2 sites located within the Strauss Easement Road Reroute project area.	RD/SO - Heritage Resource files	D3	Monitoring was successful at ensuring that mitigation was implemented to protect the site from ground disturbing activities
13	Heritage Resources	Monitored for site inspection/ disturbance of 12 National Register eligible sites and 1 National Register listed site, within the western portion of the Gallinas Mountains area	SO-Heritage Resource files	D3	Necessary to prevent pot-hunters from damaging heritage resources.
14	Heritage Resources	Monitored for protection of archaeological sites during or after ground-disturbing projects. Lobo WUI - thinning by force acct crews. Jamestown WUI - thinning by force acct crews; personal use firewood gathering by public. (D2) Hop/Patterson Emergency Evacuation Route project area. (D3)	RD Heritage Resource files	D2, D3	- Occasional inspection of sites in WUIs should be done after all treatment is completed. Thinning the trees in areas around subdivisions or inhabited private land makes more of the area accessible to ATVs and trucks and increases the likelihood of the formation of trails/user roads. Impacts to sites from off road driving could increase as a result. - Monitoring was successful at ensuring that mitigation was implemented to protect the site from ground disturbing activities. (D3)

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15	Heritage Resources	Monitored for damage or vandalism from unauthorized activities. 5 areas	D2 Heritage Resource files	Mt. Taylor RD	Site vandalism is occurring on private land adjacent to NF land, as well as on NF land.
16	Heritage Resources	Monitored for archaeological site condition (pro-actively). 158 sites	D2 Heritage Resource files	Mt. Taylor RD	
17	Invasive Plants	Monitored (post-treatment) for effectiveness	GIS Invasive Species database	D2	<ul style="list-style-type: none"> - For bull and musk thistle, digging up plants didn't help but cutting seedhead was more effective - Musk thistle spread much faster than expected due to heavy rains and snow runoff. Manual treatments are not cost-effective compared to herbicides due to the repeated treatments needed - Thistle control may appear effective at first, but along roads they usually reappear due to continued disturbance (seed still in the ground); so we should keep monitoring treated areas
18	Invasive Plants	Monitored (pretreatment) for occurrence and spread of invasive plants in the southern Manzanos Mts. for salt cedar control project (D4) and in Bluewater and Cottonwood creek; Sedgwick fire area as well as McGaffey campground. (D2)	RD- Range GIS Invasive Species database	D2, D4	- Initiate weed control as quickly as possible. Musk thistle can move upstream as well as downstream.

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19	Lands Special Use Permits	Monitored for compliance with permit terms and conditions, including environmental effects, during special use permit administration; includes lands special use permits	SO RD	Forest-wide	<ul style="list-style-type: none"> - Permits are being issued for longer terms so the burden of re-issuance is reduced. - Electronics sites need more technical inspections to reduce noncompliance and increase fee collections. - Compliance inspections are severely reduced due to limited personnel
20	Range	District monitored post-treatment effectiveness of grasses and shrub reseeded. Anderson Fire Area (D4) Sedgwick fire (D2)	D2 Range Files	D2	<ul style="list-style-type: none"> - Grass seeding on the Anderson fire has not had enough time to recover. Need to assess in spring/summer 07 - Because the Sedgwick fire area was seeded just before the late snows and got copious amounts of summer monsoonal moisture, the seeding was the extremely effective
21	Range	Inspection/ inventory of 136 range improvements on 19 grazing allotments on D4 and 117 improvements on 21 allotments on D3 and D2	RD- range SO- range IWEB	D2, D3, D4	<ul style="list-style-type: none"> - Permittees now have a better understanding of drought cycle and are adjusting cattle numbers accordingly. (D2)

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22	Range	Monitored for AOI compliance on 60 pastures on 19 grazing allotments on D4, 25 pastures on 12 allotments on D2 and 27 pastures on 9 allotment for D3	RD- range SO- Range IWEB	D2, D3, D4	<ul style="list-style-type: none"> - Confirmed that drought, wind, or other climatic conditions cause the most need for adjusting grazing strategy (D2) - Some permittees were held back for a month or two because of the drought or voluntary non-use was requested and given. (D2) - Adaptive management has enhanced permittee compliance (D2) - Permittees are aware of the effects of drought condition on grazing. (D2) - Majority of pastures were in compliance.(D3)
23	Range	Monitored for range condition readiness during drought in 12 pastures on 12 grazing allotments on D4,13 pastures on 13 allotments on D2 and 24 pastures on 8 allotments on D3	RD- range SO-range IWEB	D2, D3, D4	<ul style="list-style-type: none"> - Drought conditions can change rapidly as demonstrated by the summer rains. - Range readiness was determined and livestock were turned out onto pastures in most cases.
24	Range	Monitored for watershed/soil/range condition, forage production/ utilization, ecological status: 18 allotments for 2007 NEPA analysis (D4), established 96 long-term monitoring plots on 12 allotments. Monitored 43 existing plots on same 12 allotments (D3)	RD- range SO-range IWEB	D3, D4	<ul style="list-style-type: none"> - Data has not been analyzed. No conclusions as to current condition or trend. (D3)

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25	Range	Monitored for ecological status, forage production, and utilization on 8 allotments for 2008 NEPA analysis.	RD- range SO-range IWEB	D2, D4	- Implementation of new AMPs need to be monitored closely (especially with new permittees). (D2)
26	Range	Monitoring of 19 Mexican Spotted Owl Key Use Areas for grazing utilization on 5 grazing allotments.	RD- range SO- range IWEB	D2, D3	- Cattle aren't using owl PACs because the canopy is too heavy for adequate forage and because of steep terrain. (D2) - Livestock utilization was either non-existent or minimal. All areas were in compliance. (D3)
27	Recreation – Developed sites	Campsite condition monitoring at all developed recreation sites resulted in rehab of Lobo Canyon campground caused by vandalism.	D2 Recreation Files	D2	Coalmine campground use has changed and existing facilities are outdated.
28	Recreation – Developed sites	Monitoring of 24 days at developed day use sites, overnight use day sites, and Geographic use areas for the National Visitor Use Monitoring survey.	D2 Recreation Files	D2	
29	Recreation – Developed sites	Fee collection compliance monitoring at Coalmine, Quaking Aspen, and McGaffey campgrounds	D2 Recreation Files	D2	

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30	Recreation – Developed sites	Hazard tree monitoring at all developed recreation sites (Coalmine, Lobo Canyon, Ojo Redondo, Quaking Aspen, & McGaffey) resulted in hazard tree removal at Coalmine, Quaking Aspen & McGaffey campgrounds.	D2 Recreation Files	D2	
31	Recreation - Trails	Trail effectiveness monitoring on Trail 76 (Gooseberry Canyon), Continental Divide Trail, 5 mile of maintenance of ski/snowmobile trail by a volunteer and FS Staff person.	D2, GIS, INFRA	D2	<ul style="list-style-type: none"> - Lack of maintenance is causing trails to be incised. - Snow mobile trails are becoming trails used by ATV's during non snow months which resulted in resource damage. - Snow mobiles can go into non motorized areas - ATV's follow.
32	Recreation,	NVUM	RD-Recreation files & NVUM	Forestwide	The monitoring survey was completed, the report will be available 2/2007. Due to extreme weather (very dry through June, heavy rains in July and August) use figures will likely be lower than expected.
33	Summer Home permits	Monitored for compliance with permit terms and conditions, including environmental effects, during summer home compliance checks and issued letters to permittees for summer homes requiring compliance (D2).	SO RD	D2	

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34	Vegetation, Forestry	Stocking survey, Crest Aspen V Timber Sale, aspen regeneration and residual stocking of live and dead trees.	Forestry files	D5	Overall-adequate aspen regeneration is doing well with light browsing from wildlife. There is no grazing. The non-merchantable overstory is not reducing aspen regeneration below acceptable levels. These trees are being used for miscellaneous products, including Native American ceremonial uses. Some areas have conifer and other hardwood advance regeneration. Forty-four percent of sample plots (5 BAF) had one or more conifer or aspen snags over 12" dbh.
35	Water Quality	Water Quality monitoring through water samples for McGaffey campground and Wingate Work Center.	D2		McGaffey campground water supply needs to be evaluated.
36	Watershed	Proper Functioning Condition on 1 allotment- pre-NEPA condition inventory.	RD-range files		
37	Wildlife	Monitored number of quality snags per acre as required by Forest Plan. Monitored during and after timber sale contracts.	D2/D4/D5 Timber Files	All	Second-growth snags stand for only 3-5 years after death. Some are dropped during harvest for safety concerns for loggers.

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38	Wildlife Species & Habitat	Monitored dead and down woody debris for Mexican spotted owl habitat Ranch Supply Rx Burn, 2,100 acres.	RD-Wildlife files	D3	Burning under hot prescription can be done and still enable us to retain constituent elements of MSO habitat.
39	Wildlife, vegetation	Forage grass seeding effectiveness and shrub recovery monitoring on the Sedgwick Fire (D2).	RD-Wildlife files	D2	Excess seed needs to be applied for severe rainfall events. Better to seed on top of snow preferably before future snowfalls.
40	Wildlife, vegetation	Monitored for exclosure effectiveness of Hudson Canyon, West Red Canyon, and Beartrap Canyon riparian exclosures (10 sites).	RD-Wildlife files	D3	Fencing out livestock from riparian plots in these areas is not sufficient to enable recovery of these sites. Other causes are impacting the riparian resource.
41	Wildlife	Monitored for goshawk occupancy and reproductive success in 21 territories.	SO wildlife files	D2, D3, D4, D5	More entries than required by protocol may be needed to determine occupancy
42	Wildlife	Monitored for peregrine falcon occupancy and reproductive success at six eyrie locations.	SO wildlife files	D2, D3, D4, D5	

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43	Wildlife	Monitored for reproductive success and occupancy of threatened and endangered animals (MSO and Southwestern willow flycatcher-SWWF)	SO Wildlife files	SWWF D2, D4 MSO-D2 and D3,	<ul style="list-style-type: none"> - SWWF-Even though much of the Bluewater SWWF territory is fenced there is still a cattle lane allowing livestock to enter near this unoccupied territory. To prevent cowbird parasitism to SWWF (if they ever return to the area) the cattle lane should be closed from May 15 to July 15—or an alternate water source could be provided. - The western fence of the “A” enclosure was completely blown out in 2006 by summer flood waters. - MSO—at least one territory reported as unoccupied in 2006 was found to be occupied later. Surveying to protocol does not always lead to finding birds in occupied territories.
44	Wildlife	Monitored occurrence and population trend of migratory and resident birds on about 140 miles of transects including 7 USGS BBS routes, 2 two mile routes on D2, 1 two mile route on D4, 1 one mile transect on D5	SO Wildlife files		USGS Breeding Bird Survey has accumulated enough data during the last forty years to delineate state level population trends. Population trends on 1 and 2 mile Cibola routes can be used to compare trends at the state and National level.
45	Wildlife	Aplomado falcon survey and prey survey at Deep Canyon and San Juan Canyon	SO and D3 Wildlife files		14 prey species available with average relative abundance of 8.3.

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46	Wildlife	<p>Monitored trends of migrating raptor populations on the Sandia and Manzano Mountains.</p> <p>Monitored occurrence of migrating passerine birds on Manzano Mountains</p>	SO and D4/5 Wildlife files	D4 and D5	<p>- Raptor migration-Passage rate trends above average only for peregrine and merlins, and below average for 11 other species especially northern harriers, bald eagles and kestrels correlating to widespread drought throughout the interior west.</p> <p>- Passerine bird trapping-18 species, 174 individuals.</p>
47	Wildlife	Monitored population and habitat trend of non-game Management Indicator Species.	SO Breeding Bird Survey Report	Forestwide	
48	Wildlife	Monitored population and habitat trend of game Management Indicator Species. Data collected by New Mexico Department of Game and Fish on some Game Management Units.	SO Forest MIS report	Forestwide	