



United States  
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Forest  
Service

Southwestern  
Region



# Prescott National Forest

## Forest Plan Monitoring and Evaluation Report Fiscal Year 2011



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# Table of Contents

<b>Section 1: Introduction</b> .....	<b>1</b>
<b>Section 2: Monitoring Summary</b> .....	<b>2</b>
Fire Management.....	2
Law Enforcement.....	7
Heritage Resources.....	7
Insects and Disease.....	9
Lands.....	9
Noxious Weeds.....	9
Range Management.....	9
Recreation.....	11
Roads and Facilities.....	13
Soil and Water.....	14
Timber.....	14
Wildlife.....	16
<b>Section 3: Progress toward Desired Condition</b> .....	<b>19</b>
Fire Management.....	19
Law Enforcement.....	19
Heritage Resources.....	20
Lands.....	20
Noxious Weeds.....	20
Range.....	21
Recreation.....	22
Roads and Facilities.....	23
Soil and Water.....	24
Timber.....	27
Wildlife.....	28
<b>Section 4: Barriers to Effective Monitoring</b> .....	<b>30</b>
Heritage Resources.....	30
Noxious Weeds.....	30
Range Management.....	30
Recreation.....	31
Soil and Water.....	31
Wildlife.....	31
<b>Section 5: Emerging Issues</b> .....	<b>31</b>
Fire Management.....	31
Heritage Resources.....	33
Noxious Weeds.....	34
Range.....	34
Recreation.....	34
Roads and Facilities.....	35
Soil and Water.....	35
Timber.....	36
Wildlife.....	36
<b>Section 6: Recommendations</b> .....	<b>37</b>
<b>Section 7: Certification of Forest Plan Sufficiency</b> .....	<b>39</b>

## List of Figures

Figure 1. WUI Prescribed burn near Groom Creek.....	4
Figure 2. FY 2011 Energy Release Component for the PNF.....	7
Figure 3. Law enforcement trend on the PNF.....	10
Figure 4. Range monitoring for ecological status on the Wagoner Allotment March 2011.....	18
Figure 5. Longfin dace in Milk Creek.....	18
Figure 6. Juniper stand after a mechanical fuels reduction and fuelwood harvest treatment.....	28
Figure 7. Petroglyphs on the PNF.....	30
Figure 8. Smoke emissions in the Verde Valley following a prescribed burn.....	32

## List of Tables

Table 1. Moisture levels recorded at the PNF weather stations during FY 2010.....	5
Table 2. Moisture levels recorded at the PNF weather stations during FY 2011.....	5
Table 3. Wildfires on the PNF during FY 2010 and FY 2011.....	5
Table 4. Wildfires greater than 100 acres on the PNF during FY 2010 and FY 2011.....	6
Table 5. Annual acres treated by vegetation type 1987-1999.....	6
Table 6. Annual acres treated by vegetation type 2000-2011.....	6
Table 7. Allotments monitored for effectiveness of management plan in meeting desired conditions.....	11
Table 8. Allotments with data collection for management plan revision.....	11
Table 9. 2011 Campground Occupancy Rates.....	12
Table 10. Approximate Wilderness Visitation (Number of People).....	13
Table 11. Harvest history in pine vegetation types FY 1987-1998.....	15
Table 12. Harvest history in pine vegetation types FY 1999-2011.....	15
Table 13. Harvest history in piñon-juniper vegetation types FY 1987-1998.....	16
Table 14. Harvest history in piñon-juniper vegetation types FY 1999-2011.....	16
Table 15. Fuelwood sold on the PNF FY 2006-2011.....	16
Table 16. Management Indicator Species Trends.....	18
Table 17. FY2011 Range Structural Improvements.....	22
Table 18. Allotments and soil/water resources assessed in FY 2011.....	25
Table 19. Impaired or non-attaining waters on or adjacent to the PNF.....	27



## Section 1: Introduction

### *What is Forest Plan monitoring?*

Forest Plan monitoring is an ongoing process that assesses the response of the forest environment to management activities undertaken to move the Prescott National Forest (PNF) from an existing condition to a desired condition, as described in the 1987 Prescott National Forest Land and Resource Management Plan ("Forest Plan," as amended, and as republished in December, 2004). As required by the 1982 planning rule, national forests must monitor and evaluate how well their forest plans are being implemented. This process includes opportunities for modifying the forest plan to respond to monitoring results.

### *What is the purpose of monitoring?*

The purpose of monitoring and evaluating the implementation of the Forest Plan is to inform the decision maker of the progress that has been made toward achieving the goals and objectives and following standards and guidelines.

This report documents and evaluates the results of the monitoring that occurred during fiscal year (FY) 2011 (October 2010 through September 2011) and describes the rationale for any changes to the Forest Plan recommended by the monitoring team.

It also meets the intent of chapter 5 of the Forest Plan to "analyze and evaluate the significance of the results of the monitoring

action plan" (p.73)<sup>1</sup>. Monitoring requirements included in the Forest Plan specify the effect(s) to be monitored, the measurement technique(s) to be used, and the expected future condition(s) to be met for each activity or project. They also establish a frequency for measuring and reporting the monitored item and the expected precision and reliability of that measurement. These monitoring requirements are available on the PNF website<sup>2</sup>.

Lastly, it provides an important communication link with the public and within the agency. By disclosing the effectiveness of the Forest Plan, the PNF is able to better identify future research needs and to shift monitoring activities to more effectively measure overall forest health. In general, monitoring determines:

- If the PNF is achieving its objectives.
- If standards are being followed.
- If management prescriptions are responsive to public issues and management concerns.
- If management prescriptions are applied as directed.
- If the effects of implementing the Forest Plan are as predicted.
- If management practices on adjacent or intermingled non-national forest lands are affecting goals and objectives.

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<sup>1</sup> References to Forest Plan page numbers are for the 2004 republished version of the 1987 Forest Plan, as amended (version 1.1), available at: <http://www.fs.usda.gov/detail/prescott/home/?cid=stelprdb5122087>.

<sup>2</sup> <http://www.fs.usda.gov/detail/prescott/home/?cid=stelprdb5122087>

*How are monitoring results used?*

Based on the evaluation of the monitoring results, the monitoring team makes recommendations to the forest supervisor. These can include:

- **No action is needed.**  
Monitoring indicates goals and objectives are being reasonably achieved and standards are being followed.
- **Make a recommended action.**  
Refer recommended action to the appropriate line officer(s) for improvement or application of management prescriptions.
- **Make a Forest Plan amendment.**  
Modify the management prescription or assignment of a prescription as a Forest Plan amendment.
- **Revise the Projected Schedule of outputs.**
- **Identify research needs.**

It is important to note that this is not a monitoring report on individual projects; however, results of some individual projects have been considered in the preparation of this report.

## Section 2: Monitoring Summary

### Fire Management

*Fire Preparedness*

Periodic inspections and readiness reviews were used during FY2011 to validate that the fire management organization could function in a safe and effective manner.

*Ground Conditions*

Fall 2010 was at or above average for moisture, but winter and spring 2010-2011 were well below average for moisture. The fall moisture supported some initial growth of all types of plant life including grasses, shrubs, and trees but discontinued when precipitation diminished and spring temperatures began to rise. Also, some mortality of mid-elevation vegetation occurred in portions of Arizona and New Mexico due to frost damage. Some of this did occur in the chaparral vegetation type on the PNF, but was not as prevalent as some parts of Arizona.

The PNF implemented Stage 1 campfire and smoking restrictions on June 8, 2011. Timely and adequate monsoon moistures permitted restrictions to be lifted on July 11. Moisture amounts and the lack of heavy lightning during the summer monsoon season was enough to restrict potential wildfire starts and spread. As a result, suppression efforts were successful for most wildfires after the start of the monsoon period. There were no complete closures on any area on the PNF during FY2011 due to fire danger levels.

*Moisture Levels*

Below average winter moisture (January through March) caused elevated wildfire indices during the spring (May), but late spring moistures provided some relief. Wildfire indices again elevated to above normal conditions during June 2011, but time and adequate monsoons tempered conditions from the first week of July forward. By the latter part of July, the average to above average monsoon moisture levels carried the energy release components ERCs to well below average until September (Figure 1).<sup>3</sup> This resulted in a below

<sup>3</sup> The Energy Release Component is an index related to how hot a fire could burn. The ERC can serve as a good

average wildfire season in both the number of starts and acres burned.

Large wildfire activity throughout much of the Nation was light during most of the summer. From the first part of May until monsoons began in July, the Southwestern Region experienced one of the most intensive and severe wildfire seasons on record. Millions of acres burned in multiple large fire events throughout the Southwestern Region. This situation moderated significantly when monsoon moistures set in and average daily relative humidity began to rise. Tables 1 and 2 show moisture amounts received at various weather stations across the PNF during the course of FY2010 and FY2011.

Monsoon activity resulted in 45 lightning-caused wildfires (Table 3). Moisture amounts overall were about normal, and they occurred periodically which supported low-intensity fire behaviors throughout most of the summer months.

#### *Resource Objectives*

There were no opportunities to manage wildfires for resource objectives other than full suppression. This was due to a lack of ignitions (lightning) where and when suitable conditions existed. During FY2009, periodic moisture and moderate fire behaviors supported decisions to manage two lightning-caused fires (Hyde and Woodchute) with objectives other than full suppression. These wildfires successfully accomplished resource benefit objectives and functioned in a manner similar to pre-European settlement wildfires. These conditions and

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characterization of fire season as it tracks seasonal fire danger trends well. The ERC is a function of the fuel model and live and dead fuel moistures.

opportunities did not occur during FY 2010 and FY 2011.

Tables 3 and 4 display the number, size, and cause of wildfires that occurred during FY 2010 and FY 2011. The majority of these fires were less than one acre in size.

#### *Fire Assignments*

The Southwestern United States experienced a high level of wildfire occurrences beginning in May 2011. The result was a record number of acres burned in wildfires for Arizona and New Mexico. Each of these states experienced wildfires that were the largest in their recorded histories. New Mexico had three wildfires that each exceeded all size records. As a result of these fires, most fire management resources in the southwest were engaged in management of wildfire with a focus on suppression, protecting homes, and minimizing impacts to the natural resources throughout most of the summer. Monsoon moisture and lightning-caused wildfires did begin within their historic occurrence period. This caused an increase in the numbers of wildfires but helped to lessen the fire intensities and severities. As a result, management of many of these fires included considerations for resource benefits. Most fire management resources within the southwest, including those on the PNF, experienced above average time supporting management and suppression of wildfires during FY2011.

#### *Mechanical Treatments and Prescribed Fire*

Both mechanical and prescribed fire treatments were used to reduce fuel loadings.

Mechanical treatments that were contracted during FY2010 continued into FY2011. These treatments were conducted in stands of ponderosa pine, chaparral, and the woodland vegetation type to manage brush species, improve the fire regime condition class,

enhance the ecosystem, and construct fuelbreaks to support future prescribed fire activities. Approximately 3,000 acres of mechanical treatments were completed.

Prescribed fire was implemented on approximately 13,800 acres. This includes 6,000 acres in areas of ponderosa pine and chaparral within the wildland-urban interface (WUI). There was also 7,800 acres of prescribed fire in areas considered non-WUI. The objectives for all prescribed fire treatments included maintenance or restoration of fire as a natural process within fire-adapted ecosystems. Within the WUI areas, objectives also included reducing the risk of wildfire to life and property.



**Figure 1. WUI prescribed burn near Groom Creek, October 2010 (FY 2011)**

Tables 5 and 6 display the number of acres treated by year and vegetation type since the PNF Forest Plan was approved.

#### *Fuels Crew*

All fuels management treatments on the PNF are monitored for before and after conditions. The PNF Fuels Crew established pre-treatment plots in areas proposed for prescribed burning and mechanical treatments. These plots included live and dead fuel loadings and pictures from the plot in each of the primary directions (north, east, west, and south). These same plots were re-measured and re-photographed immediately following the treatment and will be done again one year later. This information is stored in individual project records.

**Table 1. Moisture levels recorded at the PNF weather stations during FY 2010**

Weather Station	2009	2010			Totals
	Oct 1-Dec 31	Jan 1–Mar 31	Apr 1-Jun 30	Jul 1-Sep 30	
Iron Springs	2.72"	8.55"	0.48"	2.79"	<b>14.54"</b>
Crown King	3.20"	16.46"	0.92"	7.97"	<b>28.55"</b>
Verde	1.39"	8.28"	0.10"	5.68"	<b>15.45"</b>
Cherry	3.26"	11.39"	0.23"	6.55"	<b>21.43"</b>

**Table 2. Moisture levels recorded at the PNF weather stations during FY 2011**

Weather Station	2010	2011			Totals
	Oct 1-Dec 31	Jan 1–Mar 31	Apr 1-Jun 30	Jul 1-Sep 30	
Iron Springs	6.22"	1.65"	1.08"	4.28"	<b>13.23"</b>
Crown King	6.99"	2.78"	1.56"	4.66"	<b>15.99"</b>
Verde	4.57"	1.20"	0.41"	5.97"	<b>12.15"</b>
Cherry	6.63"	2.70"	1.41"	3.65"	<b>14.39"</b>

**Table 3. Wildfires on the PNF during FY 2010 and FY 2011**

Wildfire size in acres	2010		2011		Totals
	Human caused	Lightning caused	Human caused	Lightning caused	
< 1 acre	29	10	24	41	104
1 – 100 acres	3	2	3	4	12
> 100 acres	0	0	0	0	0
<b>Totals</b>	32	12	27	45	116

**Table 4. Wildfires greater than 100 acres on the PNF during FY 2010 and FY 2011**

Year	Name	Size	Cause
2010	- None -	0 acres	N/A
2011	- None -	0 acres	N/A

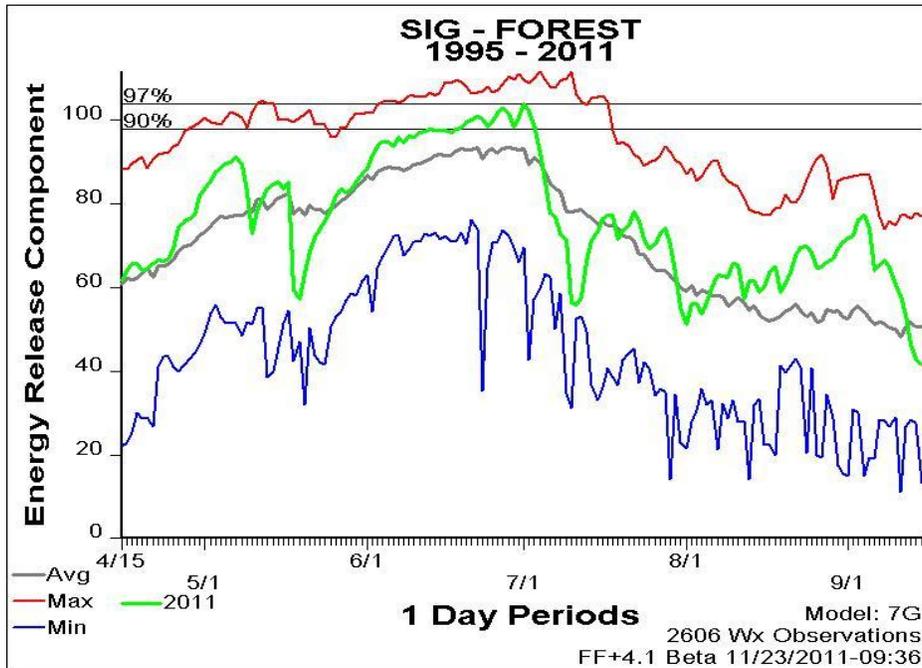
**Table 5. Annual acres treated by vegetation type 1987-1999**

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Grass	5,000	3,500	6,000	3,500	2,344	2,500	2,000	1,500	3,200	0	0	0	0
Chaparral	11,930	9,358	1,000	0	1,800	0	1,200	4,800	2,100	1,200	3,492	6,000	7,500
Pine	0	984	910	1,150	0	75	96	150	110	241	768	0	0
Woodland	0	0	152	270	410	1,176	0	0	0	0	0	0	0

**Table 6. Annual acres treated by vegetation type 2000-2011**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Grass	3,000	6,000	0	0	0	0	0	0	0	0	0	0
Chaparral	2,500	8,000	300	7150	4071	5,483	4,300	3,866	5,885	6,383	9,700	9,850
Pine	1,100	100	288	500	1800	667	5,500	4,518	7,236	3,016	3,800	2,650
Woodland	0	1,000	0	0	0	0	0	0	0	301	500	500

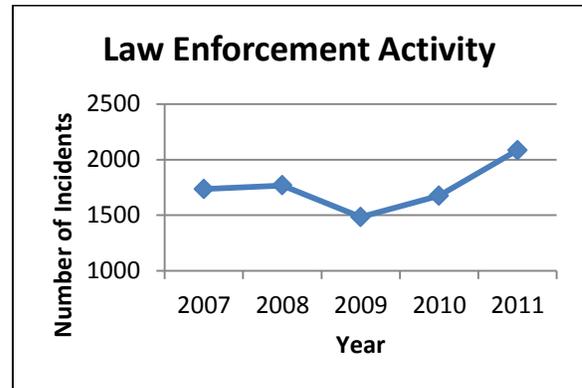
Figure 2. FY 2011 Energy Release Component for the PNF



## Law Enforcement

During Fiscal Year 2011 there were a total of 2,084 recorded law enforcement activities that occurred on the PNF. Of those activities, there were: 1,246 warnings; 571 incident reports; 59 mandatory court appearances; and 208 citations. The majority of law enforcement activities involved fuelwood related offenses (such as violating conditions of a fuelwood permit or off road travel violations), off highway vehicle related offenses (such as cross country travel off of designated routes or natural resource damage) or residential use of National Forest Lands. Figure 3 depicts the trend of law enforcement activities from 2007 through 2011.

Figure 3. Law Enforcement Trend on the PNF.



## Heritage Resources

### National Register Sites

The PNF manages 36 sites that are listed as National Register Properties. Since a number of these are Forest Service administrative sites that are actively being used, many are visited throughout the year by heritage resource management personnel. Those National Register properties that are not used on a day-

to-day basis are visited less regularly. The less-visited sites are customarily checked as the opportunity arises, which usually occurs every few years. All 36 properties experience little overall change from year to year. Since most of these sites are historic properties, the primary activity involves routine maintenance. Forest maintenance funds for these sites are practically non-existent. Those that are visited continuously typically receive more maintenance. Prehistoric sites that are listed as National Register properties are more affected by natural processes than direct acts of vandalism. Overall, prehistoric sites appear to have remained in fairly stable condition in 2011.

#### *Heritage Projects/Reports*

There were 52 heritage resource projects and corresponding reports completed in FY2011 on the PNF. The breakdown for the projects by Ranger District is as follows: Chino Valley 12; Bradshaw 25; and Verde Valley 15. Of the 52 projects and reports that were completed, 18 did not have archaeological properties and 34 did. Of these 34, 27 projects had sites that were either in or directly adjacent to archaeological sites where there was a “no effect” determination or consultation with the Arizona State Historic Preservation Office (SHPO) resulted in a “no adverse effect.”

Fifty-eight new archaeological properties were recorded. Many sites were monitored as part of project activities. There were 84 previously recorded sites accounted for in FY2011 proposed projects. Any pre-project monitoring that was done consisted of assuring that sites were properly identified and marked for avoidance by project activities. It is not uncommon that sites are visited more than once during the life of a project to ensure that they are protected.

Monitoring also consisted of checking sites during non-project opportunities. About 50 sites were checked during non-project-related fieldwork. These prehistoric and historic sites are located throughout the Forest.

#### *Natural Deterioration and Vandalism*

Monitoring identified two ways that sites are impacted. The first involves environmental factors, typically related to weather events. Rain in the form of "downpours" creates sheet and rill erosion, causing artifacts to be displaced and archaeological features to be compromised. Although no quantitative data exist as to the seriousness of this problem, sites are being impacted when heavy rains occur. The second issue that affects site integrity is direct and indirect vandalism. During FY2011 several incidences of vandalism were noted. Vandalism is typically represented by digging in pueblos, moving rock walls, removing rock art, camping and building campfires on sites, riding off road vehicles through sites and other various and sundry acts. Vandalism is documented and filed with our archaeological site data and with the State of Arizona as part of the Arizona Site Steward Program.

#### *Other Projects*

In addition to monitoring National Register Properties, monitoring efforts included checking a number of archaeological sites that fell within timber and fuelwood harvesting areas, mechanical fuels reduction units, and Arizona Public Service line maintenance vegetation clearing. This work included locating and flagging archaeological sites for avoidance.

Monitoring occurred on several smaller projects as well, including trails projects, road improvement projects, mining projects, historic site improvements, and others. Some monitoring efforts do not get reported because

they involve quick “spot checks” of known heritage resources when the opportunity arises. Overall, monitoring has been effective and helpful in our continuing efforts to protect prehistoric and historic resources.

## **Insects and Disease**

### *Desired Condition*

The PNF monitors insect and disease conditions annually in order to better predict future impacts. The desired condition is that insect and disease problems will not have serious adverse effects on the PNF due to an appropriate mix of silvicultural activities, treatment of slash, and various other control methods.

### *Ips Beetle*

The PNF and adjacent State and private forested lands were surveyed for insect activity on August 22 and 23, 2011. Bark beetle activity decreased from 1,158 acres in 2010 to 85 acres in 2011. Of the 85 acres, Ponderosa Ips activity was mapped on 70 acres followed by 7 acres of Douglas-fir beetle, 7 acres of western pine beetle, and only 1 acre of piñon Ips activity. Bark beetle activity showed a significant decrease throughout Arizona.

## **Lands**

A right-of-way was acquired in FY 2011 associated with an acquisition known as Mt. Union Lookout.

## **Noxious Weeds**

### *Surveys*

Noxious and invasive weed species surveys are conducted yearlong across the PNF by trained personnel from various resource programs. Once these species are located, they are plotted and identified with GPS coordinates and added to the PNF’s Weed Atlas and GIS noxious weed

layer. This data is loaded into the Weed Atlas and is shared statewide in Arizona.

### *Treatments*

The PNF accomplished 758 acres of noxious weed treatments in FY 2011: 123 acres on the Bradshaw Ranger District, 245 acres on the Chino Valley Ranger District, and 390 acres on the Verde Ranger District. Among the many weeds treated were tamarisks along the Verde River, Dalmatian toadflax, and sweet resinbush. Both biological (e.g., insect releases) and mechanical (e.g., hand-labor) treatments were used, depending on the prescribed need for each individual weed. These treatments will help protect the biodiversity within each respective ecosystem and allow native species to thrive.

### *Community Involvement*

The PNF continues to be involved in the Southwestern Vegetation Management Association and Yavapai Weed Management Areas. Participation in these weed management programs provides a networking of information on noxious weed species presence and eradication treatments with other Federal and State agencies and private entities.

## **Range Management**

### *Drought Conditions*

Forest research and range scientists have documented for years that climatic cycles of drought and wet periods often have more effect on vegetative ground cover than resource management (i.e., livestock grazing). The monitoring assessment noted that the climatic drought conditions in the last 15 years have reduced the frequency and density of vegetation particularly in the graminoids (grass-like vegetation). In 2011, the PNF had portions

that were drier than normal, with moderate drought indicators present in its southern and eastern portions. Some localized areas had near normal yearly precipitation levels.



**Figure 4. Range monitoring for ecological status on the Wagoner Allotment March 2011**

*Livestock Numbers*

Permitted numbers of grazing livestock on the PNF’s range allotments was variable, with an overall stocking level of about 62% of permitted livestock numbers being authorized. The latest information from the forest database on livestock authorizations showed 137,014 Head Months of livestock use permitted (a Head Month is one month’s use and occupancy of rangeland by a single animal, regardless of class of livestock, i.e. bull, cow and calf, or yearling all count as one “head”). The authorized use for 2011 shows 84,306 Head Months were authorized, or about 62% of the permitted number of livestock. This reduction in authorized numbers is in response to the detrimental effects of the prolonged drought conditions experienced across the PNF from 1996 to 2011. Range research has shown that maintaining conservative stocking levels is advised when drought conditions are present or likely. Grazing permittees have been cooperative in managing rangelands to promote drought recovery through reduced stocking and

voluntary removals during all or part of the grazing season. Maintaining adequate vegetative groundcover on rangelands facilitates rainfall absorption into the soil, thereby promoting further plant growth.

*Range NEPA*

Three range National Environmental Policy Act (NEPA) decisions were completed in 2011: Goat Peak, Walnut Grove, and Horsethief Allotments.

*Grazing Capacity*

Grazing capacity and management success of grazing operations is monitored in numerous ways:

- **Effectiveness Monitoring.** Evaluating how well grazing management actions are meeting the desired conditions that were established through the planning process and incorporated into Allotment Management Plans. Vegetation and watershed health attributes that may be evaluated include plant frequency, species composition, canopy cover, and surface ground cover.
- **Annual range allotment inspections.** These determine the short-term needs for adjusting the authorized livestock numbers stocked within each allotment. The amount of forage removed by livestock after the use period, or grazing intensity, is evaluated to determine if the stocking level and amount of time in a pasture is in need of adjustment. Overall forage utilization is determined after the growing season. Yearly evaluations of forage production and plant vigor are used to guide future stocking determinations.

- **Allotment Management Plan revisions.**

Data collected by various monitoring methods for the assessment of existing resource conditions and the determination of desired conditions within allotments. This data is used to determine future courses of allotment management, and is part of the NEPA analysis process.

Effectiveness monitoring to determine plant frequency, ground cover, and plant species composition was conducted on the allotments listed in Table 7 in 2011. Allotments where data was collected in 2011 to determine existing conditions for the revision of allotment management plans are shown in Table 8.

Range permit compliance monitoring for range allotments “administered to standard” evaluated a total of 477,890 acres of rangeland. This monitoring included: accounting for the authorized/actual use livestock on the allotment; monitoring the livestock use on forage vegetation; ensuring pasture rotations were timely and followed; monitoring the maintenance of structural range improvements.

**Table 7. Allotments monitored for effectiveness of management plan in meeting desired conditions**

Allotment name	Acres analyzed
Antelope Hills	8,603
China Dam	7,469
Horseshoe	6,530
Muldoon	17,765
Yavapai	1,523
West Bear/Del Rio	23,696

**Table 8. Allotments with data collection for management plan revision**

Allotment name	Acres analyzed
K Four	18,667
Wagoner	30,470

## Recreation

### *Camping*

Campground use was significantly lower in fiscal year 2011 compared to FY2010. There was a decrease in annual occupancy rates by fourteen percent in 2011. Lynx Campground continues to be the most popular recreation site on the PNF with a 42.3% occupancy rate.

Horse Campground usually maintains a steady occupancy rate; however, use dropped when the site was closed for 25 days in late May and early June. This was a precautionary measure to prevent spread of a deadly neurologic form of Equine Herpes Virus that causes a serious illness for horses. The virus was never detected at the campground, but the potential affects impacted the campground for the remainder of the operating season.

Concentrated developed recreation usage occurs on weekends during the spring, summer and early fall. In FY2011, there were approximately 73,010 overnight camping visits, including group sites, and 107,605 day-use visits. The overall recreation visitor day (RVD) is based on a RVD multiplier of 6 for an average 2-day camping stay. In 2011, the RVD total was 87,612. Currently the PNF LMP provides 380,000 RVD's or 52% of the demand. During the peak recreation summer months of June and July, campground occupancy averages 80 –

100% on weekends. However, occupancy over the seven month operating season is considerably less.

**Table 9. 2011 Campground Occupancy Rates**

<i>Campgrounds</i>	<i>2011 % Annual Occupancy</i>
Groom Creek Horsecamp	13.7
Hilltop	29.6
Yavapai	11.8
Lower Wolf Creek	20.0
Lynx	42.3
Mingus Mountain	28.8
White Spar	27.0
Alto Pit OHV	9.0
Hazlett Hollow	11.7

*“Approximately 14,602 camping days, including group campsite days were used in 2011. Recreation statistics use 5.0 people/overnight visits in developed campsites.” -Monte Richardson, Developed Recreation Program Manager*

*Designated Dispersed Camping*

There are 109 designated dispersed campsites within the Prescott Basin. These sites do not have any facilities (trash, toilets, water, etc.) and no fee is required. Forest-wide dispersed site monitoring is conducted from April through October each year by fire prevention, forest protection officer and recreation technician patrols. From November to March there are little or no patrols of dispersed camping sites.

Volunteers are assigned the responsibility of inventorying, monitoring and maintaining each site throughout the year. When Fire Prevention and Forest Patrol Officer patrols and monitor these sites, they concentrate on fire prevention, camping limits/compliance and education. Volunteers clean and maintain these camp areas and report anything they feel is unusual about the use of dispersed camp areas and the condition of the specific area.

*Off-Highway Vehicle Use*

The PNF has two developed off highway vehicle (OHV) areas: Alto Pit (in the Prescott area) and Hayfield Draw (in the Camp Verde area). Based on an analysis of fees collected for both OHV areas visits totaled about 5,929 in 2011.

*Shooting Areas*

Dispersed shooting areas have been observed forest wide by Forest personnel, volunteers and forest visitors every year. Some dispersed shooting sites are lightly used while others are heavily used and are very popular for gun enthusiasts. Often in the more popular sites, trash is dumped and used for target shooting. Heavily impacted dispersed shooting sites have been cleaned up and are monitored by the Community Forest Trust, a sponsored volunteer group that works in the PNF.

*Verde Wild and Scenic River*

The PNF manages 41 miles of the Verde Wild and Scenic River in cooperation with the Tonto and Coconino National Forests. Fourteen river patrols were conducted in FY 2011.

*Trails and Wilderness*

In 2011, Forest Service personnel, the Community Forest Trust, and volunteer groups and individuals worked on projects and Adopt-A-Trail programs to maintain approximately 165 miles of trail to Forest Service standards on general forest lands and wilderness.

Table 10 displays the approximate number of visitors to the PNF’s eight wilderness areas during FY 2010 and FY 2011.

Wilderness is categorized as “Primitive” in the Recreation Opportunity Spectrum rating. Only visits recorded at a trailhead register are included in these totals. This likely underestimates actual use because:

- Some visitors do not register.
- There is not a register at every trailhead.

- There are gaps in the data.
- Emergency situations (e.g., fires and illegal activities) prohibit visitation on some or all trails in wilderness.

A register box was added to the Graver’s Wash Trail #9904 close to Apache Creek Wilderness in FY 2011, which will enable FS wilderness staff to more accurately track usage for that area.

**Table 10. Approximate Wilderness Visitation (Number of People)**

<b>Wilderness</b>	<b>2010</b>	<b>2011</b>
Granite Mountain	2,572	4,185
Pine Mountain	265	424
Sycamore Canyon	34	32
Juniper Mesa	260	265
Castle Creek	154	355
Woodchute	2,035	1,869
Cedar Bench	n/a	n/a
Apache Creek	n/a	n/a
<b>TOTAL</b>	<b>5,320</b>	<b>7,130</b>

## Roads and Facilities

### *Road Improvements*

Within the PNF, 108 miles of National Forest System (NFS) roads were maintained to the desired maintenance standard, and two miles of system and user created routes were

decommissioned. Efforts continued to implement the Travel Management Rule, by inventorying and signing NFS roads and installing signs to prohibit cross country motorized travel.

*Facility Improvements*

The PNF awarded contracts to decommission and demolish two buildings at the Mingus Mountain Lookout Administrative site and three buildings at Verde Ranger Station Administrative site. Improvements include the complete remodel of the engine bay at Willow Administrative Site, and improved security measures at the Chino Valley Ranger District Office, including the addition of secure parking, security fencing and lighting, and upgrading the security locks for the main office.

**Soil and Water**

*Administrative Monitoring*

Monitoring of soil and water resources was predominantly connected with project work that was not necessarily affiliated with watershed targets.

Administrative monitoring of best management practices affiliated with mining operations, prescribed fire and fuel management, range allotment NEPA, rangeland management, timber harvests, roads, and recreation sites continue to be implemented. Findings from this monitoring are ongoing and are used to make adjustments to ensure the protection of the watershed resources.

*Soil Condition*

Soil condition monitoring occurred on approximately 23,444 acres. Approximately 13 miles of stream/riparian corridor were assessed. This occurred during the soil and watershed resource analysis for NEPA decisions involving range allotments.

*Burned Area Emergency Response*

No wildland fires greater than 500 acres occurred on the PNF; thus, no Burned Area

Emergency Response (BAER) activities were conducted.

*Water Quality/Quantity*

In-stream flow measurements were temporarily suspended in 2011 on five perennial stream reaches in order to plan and implement continuous stage recorders. These streams include Apache Creek and Walnut Creek in the Verde River sub-basin and Big Bug Creek, Cienega Creek, and Turkey Creek in the Agua Fria sub-basin. The continuous flow recorders are anticipated to provide a superior data set on which to establish in-stream flow rights. The program is expected to expand to several of the Watershed Condition Framework (WCF)<sup>4</sup> priority watersheds in 2012, and include: Upper Ash Creek and Cherry Creek.

*Watershed Based Community Partnerships*

The PNF continued to participate in a number of federal, municipal, and local watershed working groups and partnerships which focus on watershed management and water quality/quantity issues.

**Timber**

*Timber Harvest*

The acreages of intermediate harvest, regeneration harvest, and removal harvest is monitored to measure the attainment of treatment prescriptions and the effects of implementation. The desired condition is a more balanced age-class distribution, appropriate growing stock levels, and provision for wildlife habitat needs. All harvesting that

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<sup>4</sup> The Watershed Condition Framework is a process for prioritizing and improving the health of watersheds on national forests and grasslands. The framework helps to focus efforts in a consistent and accountable manner and facilitate new investments in watershed restoration that will provide economic and environmental benefits to local communities.

occurred in both the ponderosa pine and piñon-juniper vegetation types in FY 2011 were considered intermediate harvests. The number of harvested acres for pine and piñon-juniper vegetation type from FY 1987 through FY 2011 is depicted in Tables 11 through 14.

*Sawtimber and Fuelwood*

Federal regulation requires the Forest Service to annually measure and report the amount of

sawtimber offered for sale. In FY 2011, the PNF offered and sold approximately 4,700 CCF (CCF =100 cubic feet) of sawtimber and 5,617 CCF of fuelwood. Sawtimber sales allowed for reduced stand densities and improved forest health on 485 acres. The Forest Plan identifies that the amount of fuelwood made available each year will be reported every five years (Table 15).

**Table 11. Harvest history in pine vegetation types FY 1987-1998**

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Regeneration Harvest (acres)	0	8	256	42	0	0	12	20	0	0	92	0
Intermediate Harvest (acres)	116	604	931	570	146	304	0	92	0	0	478	0

**Table 12. Harvest history in pine vegetation types FY 1999-2011**

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Regeneration Harvest (acres)	0	162	0	0	0	0	5	13	0	0	0	0	0
Intermediate Harvest (acres)	0	1,082	530	0	0	613	738	451	504	1,065	328	279	485

**Table 13. Harvest history in piñon-juniper vegetation types FY 1987-1998**

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Regeneration Harvest (acres)	0	0	32	0	0	0	0	0	0	0	0	0
Intermediate Harvest (acres)	0	0	47	166	0	0	0	0	0	0	0	0
Removal Harvest (acres)	0	239	211	44	70	202	240	120	212	247	256	256

**Table 14. Harvest history in piñon-juniper vegetation types FY 1999-2011**

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Regeneration Harvest (acres)	0	0	0	0	0	0	0	0	0	0	0	0	0
Intermediate Harvest (acres)	0	0	0	0	0	0	0	0	45	120	80	314	599
Removal Harvest (acres)	256	250	255	250	55	55	40	67	0	0	0	0	0

**Table 15. Fuelwood sold on the PNF FY 2006-2011**

	2006	2007	2008	2009	2010	2011	Total
Fuelwood sold (cords)	5,307	7,811	6,568	7,644	7,768	5,617	<b>40,715</b>

## Wildlife

### *Bald Eagle*

In January 2011, PNF employees and volunteers monitored bald eagle winter roosts in the Prescott area, including one site on the PNF and three sites on surrounding areas. The nesting

pair was not seen near Lynx Lake, three adult and one immature bald eagle was seen at Willow Lake, two immature eagles were seen at Watson Lake, and two bald eagles were seen at Goldwater Lake. For breeding bald eagles in FY 2011, two separate, but simultaneous, efforts

occurred to monitor nesting bald eagles on different parts of the PNF.

The PNF continued with their annual Challenge Cost Share Agreement with the Arizona Game and Fish Department to implement seasonal closures around the bald eagle breeding areas on the Verde River and to monitor their progress. In FY 2011, the TAPCO and Ladders breeding areas were monitored through the Nestwatch program. The TAPCO area was active but was not successful in fledging any young. In FY2011, no eagles were fledged from the Towers nest site due to an unoccupied breeding area. The Ladders and Perkinsville territories each fledged one offspring while the Coldwater territory fledged two offspring. In FY 2011, breeding bald eagles near Lynx Lake successfully hatched and fledged one young eagle from the nest.

#### *Mexican Spotted Owl*

The PNF surveyed Mexican spotted owl restricted habitat within the Prescott Basin and on Mingus Mountain in 2011 and did not detect any new territories. None of the MSO PACs (protected activity centers) were monitored for occupancy in 2011.

#### *Northern Goshawk*

The PNF did not monitor any goshawk habitat or post-fledging areas.

#### *Peregrine Falcon*

The three remote territories on the Chino Valley RD were not monitored in 2011. The Thumb Butte and Granite Mountain territories on the Bradshaw RD were informally monitored in 2011 by volunteers with the Community Forest Trust with no conclusive results.

#### *Southwestern Willow Flycatcher*

The PNF did not monitor any populations or habitat for the Southwestern willow flycatcher;

however, population monitoring may have occurred off the PNF by the U.S .Geological Survey and the U.S .Fish and Wildlife Service.

#### *Yellow-billed Cuckoo*

The PNF did not monitor any populations or habitat for the Yellow-billed Cuckoo.

#### *Spikedace*

As part of a program started with Rocky Mountain Research Station in 1994, and as required in the Biological Opinion for the Amended Forest Plans in the Southwestern Region, all seven permanent sites on the upper Verde River were monitored in spring of 2011 for fish community structure and information on habitat conditions. Fish sampling methods included backpack electro-fishing and seining of habitats. Habitat conditions were documented with photos.

Spikedace surveys were conducted in 2011 by the Arizona Game and Fish Department in the upper Verde River. Spikedace continued to be absent in fish surveys, as has been the situation since 1999. Monitoring of livestock river crossings at Perkinsville determined that effects to the habitat are minimal.

#### *Gila Chub*

Aquatic habitat conditions in Upper Water Spring and Middle Water Spring (Indian Creek), Little Sycamore Creek, and a portion of Sycamore Creek were altered by sediment and ash runoff due to the Cave Creek Complex Fire in summer of 2005. Gila chub habitat conditions were monitored by PNF personnel in portions of Indian, Sycamore, and Little Sycamore Creeks in FY 2011.

Aquatic conditions are altered in all occupied Gila chub habitat affected by the Cave Creek Complex Fire. Visual observations of the Gila chub populations revealed the typical

distribution of fish has decreased due to loss of pool habitat.

*Gila Trout*

In fall 2009, the Arizona Game and Fish Department (AZGFD) stocked Gila trout into Grapevine Creek, a tributary to Big Bug Creek in the Agua Fria River drainage. Two site visits were made by AZGFD to Grapevine Creek in 2011 (April and June). Only a few fish were observed in April, but 15 trout were observed in June. A habitat survey (BVET) was conducted in June. The water levels were extremely low, so stocking planned for 2011 was postponed. No reproduction has been documented.



**Figure 5. Longfin dace in Milk Creek.**

*Mexican and Narrow-headed Gartersnakes*

Surveys were conducted for Mexican and narrow-headed gartersnakes in the upper Verde River in August and September of 2011 under an agreement with Northern Arizona University. Two sampling trips were conducted of the river near Prospect Point. Sampling sessions consisted of four to five days and three to four nights at this location. Sampling methods included trapping with minnow traps and visual encounter surveys.

One sub-adult and one neonate (newborn) narrow-headed gartersnakes were captured in the Prospect Point sampling location along the river. No specimens of Mexican gartersnakes were seen or captured at the sampling location.

*Management Indicator Species*

A Management Indicator Species Report was completed in FY 2011.

**Table 16. Management Indicator Species Trends**

Species	Habitat Trends	Population Trends
Aquatic macroinvertebrate	Riparian, aquatic, late seral - Stable	Stable
Goshawk	Ponderosa pine, late seral - Decreasing	Decreasing
Hairy woodpecker	Ponderosa pine, snags - Increasing	Stable
Juniper (Plain) titmouse	Piñon/juniper snags - Stable	Decreasing
Lucy's warbler	Riparian, late seral - Increasing	Increasing
Mule deer	Piñon/juniper, early seral - Stable Chaparral, early seral - Increasing	Decreasing

Species	Habitat Trends	Population Trends
Pronghorn antelope	Grassland, desert shrub - Stable	Decreasing
Pygmy nuthatch	Ponderosa pine, late seral - Decreasing	Stable
Spotted (Rufous-sided) towhee	Chaparral, late seral - Decreasing	Decreasing
Tassel-eared squirrel	Ponderosa pine, early seral - Increasing	Stable
Turkey	Ponderosa pine, late seral - Decreasing	Increasing

### Section 3: Progress toward Desired Condition

#### Fire Management

*"Provide for fire management support services necessary to sustain resource yields while protecting improvements, investments, and providing for public safety. In as much as possible, return fire to its natural role in the ecosystem."* (Forest Plan, p. 14)

##### Resource Objectives

Prior to August 2006, the PNF Forest Plan allowed naturally occurring wildfires to be managed for the objective of resource benefits only in designated wilderness areas. During August 2006, the Forest Plan was amended (Amendment #16) to include additional areas outside of designated wilderness to allow this.

During FY 2009, two lightning-caused wildfires were managed with objectives that included resource benefits. These were the Hyde Fire (255 acres) located south of Hyde Mountain on the Chino Valley Ranger District and the Woodchute Fire (779 acres) located in and adjacent to the Woodchute Wilderness Area on the Chino Valley and Verde Ranger Districts. During FY 2010 and FY 2011, there were no opportunities to manage wildfires for resource benefit objectives. This was due to a lack of

ignitions (lightning) where and when suitable conditions existed.

##### Natural Role of Fire

The PNF is becoming successful in returning wildfire to its natural role in various ecosystems, even with the complexity of implementing this strategy at a larger scale. Use of prescribed fire is expected to continue with success in vegetation and fuels management to restore wildfire-adapted ecosystems.

#### Law Enforcement

*"Improve the forest's law enforcement program by taking an aggressive posture that emphasizes good public education, better employee training, more employee field presence, increased line manager accountability, and increased public assistance."* (Forest Plan, p. 14)

Law Enforcement employees on the Forest have a substantial amount of field presence and emphasize education through the use of the Forest Protection Officer program and with Fire Prevention Technicians. Law Enforcement has improved on the Forest as evidenced by the increasing trend in Law Enforcement activities on the forest for the past two years (2009-2011).

## Heritage Resources

*"Heritage resources represent an opportunity for research, education, understanding and enjoyment that enhances their stewardship and protection." (Forest Plan, p. 12)*

### *Agency and Tribal Consultation*

In general, budgets and staffing for heritage resources management are focused on project implementation. This involves direct on-the-ground fieldwork as well as consultation with federal and state agencies, and Native American Indian tribes, communities, and nations. On-the-ground work includes the inventory, documentation, and protection of prehistoric and historic sites. Consultation typically concerns the Arizona State Historic Preservation Office and, to a much lesser extent, the Advisory Council on Historic Preservation (ACHP). For 2011, no consultation took place with the ACHP.

Consultation with Native American tribes, communities, and nations occurs on a regular basis by the Forest Archaeologist, designated as the Forest's Tribal Liaison. The Prescott National Forest Consults with 6 Native American Tribes.

### *Constraints on Meeting Desired Condition*

Due to pressing matters concerning project implementation and consultation, and a lack of discretionary heritage resource funding, heritage resource personnel were not able to spend as much time as desired working on research, outreach, education, and enhancement activities. PNF personnel did participate in several presentations and tours. In addition, the PNF has a very active volunteer corps and through these dedicated individuals the forest has been able to focus our efforts on several research topics. These include rock art recording, oral histories, and site documentation.

### *Interpretation*

The PNF has numerous archaeological sites that are extremely visible and easily accessed. While the vast majority of sites are important from a research and traditional cultural property standpoint, most do not lend themselves to capital investment for the purposes of interpretation. Nevertheless, opportunities for interpretation do exist, particularly for some of the larger sites and those that fit into a particular thematic category. Clearly, the opportunity for interpretation does not need to rely on a single location, but can focus on some broad pattern of history or prehistory as it relates to the PNF.

## Lands

*"Conduct landownership adjustment, right-of-way acquisition, landline location, and special-uses programs to promote efficient management." (Forest Plan, p. 14)*

The PNF lands staff continues to implement efficient land management practices through the effective use of land exchanges, special-use permits, small tracts, and when necessary, encroachment resolution with the help of law enforcement. The forest acquired 0.5 acres known as the Mt. Union Lookout.

## Noxious Weeds

*"Prevent any new noxious or invasive weed species from becoming established, contain or control the spread of known weed species, and eradicate species that are the most invasive and pose the greatest threat to biological diversity and watershed condition." (Forest Plan Amendment #14, Final Environmental Impact Statement for Integrated Treatment of Noxious or Invasive Weeds, January 2005, p. 265)*

*Coconino, Kaibab, and Prescott National Forests*

The completion of the Environmental Impact Statement for the Coconino, Kaibab, and Prescott National Forests has been beneficial to continue managing the ever-increasing invasive weed species populations.

There are 27 noxious weed species found within the three national forests and 4 additional species on other adjacent lands. Currently, no other invasive species have been identified. The desired condition is to prevent any new plants from becoming established on national forest lands. Controlling these plants would promote ecosystem health and prevent losses in the productive capacity of the land.

#### *Treatments*

The Coconino and Prescott National Forests have focused weed eradication efforts on the middle reaches of the Verde River (from Camp Verde south to Childs) to sustain and protect the wild and scenic river designations.

The PNF treated a total of 758 acres of invasive weed species. Monitoring in 2011 revealed that biological treatments (e.g. insect releases) have been only moderately successful, while herbicidal and hand-labor treatments were effective and successful.

## **Range**

*"Provide forage to grazing and browsing animals to the extent benefits are relatively commensurate with costs, without impairing land productivity, in accordance with management area objectives. Cooperate with other agencies and private range landowners to reduce impacts of livestock grazing. Identify and manage areas that contain threatened and endangered species of plants."* (Forest Plan, p.12).

*Healthy Forests Restoration Act*

In 2011, the PNF completed approximately 14,000 acres of vegetative treatments, as part of the Nation's Healthy Forests Restoration Act (HFRA), to improve vegetation and watershed conditions and reduce the risk of catastrophic wildfires. The primary purpose of these treatments was to reduce fuel loading and potential wildfire hazards, and secondary, to improve forage production, vegetative ground cover, and watershed conditions.

#### *Drought Conditions and Indicators*

Adjustments were made to stocking and grazing management that corresponded with changing climatic conditions. Authorized livestock numbers in FY 2011 was 62 percent of term permitted numbers. This is in response to the dry summer in some locations and is also an extension of the ongoing 15-year drought. Monitoring of vegetation on a yearly basis is used to adapt stocking levels so supply and demand of forage remains in balance while sustaining productive capacity. Grazing permittees are actively involved in range inspections and surveys.

Forest research and range scientist have documented for years that climatic cycles of drought and wet periods often have more effect on vegetative ground cover than resource management activities (i.e., livestock grazing). The monitoring assessment noted that the climatic drought conditions over the last 15 years have reduced the frequency and density of vegetation particularly among the grasses and grass-like plants.

In 2011, drought indicators for the climatic region containing the PNF showed that the region overall was very dry for the 12 month period through December 2011, with precipitation levels at 50-70 percent of average. Monsoonal moisture was spotty and localized

across the forest. There were generally below-average rainfall totals in July and August, with average or better widespread rain in September that aided in warm-season grass production.

Range structural improvements listed below in Table 17 will improve livestock distribution and healthy watersheds to sustain and improve productivity of rangelands.

*Structural Improvements*

**Table 17. FY2011 Range Structural Improvements**

Description	Allotment
Cherry Creek fence, 0.5 miles	Cienega
Grapevine fence, 0.5 miles	Grapevine
Big Flat pipeline from Reimer Spring, 1 mile	Horner Mountain
Clean and bentonite 2 stock tanks	Peck Canyon
Install UTV cattleguard on forest trail 545	Copper Canyon
Install UTV cattleguard	Brown Springs
Additional pipeline (1 mile) and storage from Deer Tank	Yavapai
Reconstruct exclosure and development at Indian Spring	K Four
Reconstruct interior division fence, 2.0 miles	Hitt Wash
Replace storage tanks and troughs at Sampson Well	Hitt Wash
Gully restoration at Red Flat– structure repairs	Horseshoe
Cleaned Flood Dam Tank	Juniper
Reconstruct South Trick Tank	Walnut Grove
Lower MC Pasture pipeline and storage tanks	West Bear/Del Rio

**Recreation**

*“Recreation users enjoy a full spectrum of experiences and benefits in appropriately managed facilities and other forest settings. All recreation sites are managed at a capacity of use level that ensures that the natural resources will be maintained at a desirable condition over*

*the expected life of the project and/or activity.”*  
(Forest Plan, p.12)

*National Visitor Use Survey*

Based on the 2007 PNF National Visitor Use Monitoring Survey (NVUM), completed every 5 years, visitors surveyed gave the PNF high marks for visitor satisfaction in all major

categories: Developed Day Use and Overnight Sites, Wilderness, and General Forest Areas.

*Recreation Opportunities*

The PNF continues to actively upgrade developed facilities infrastructure and has a strong construction/reconstruction program in place for camping facilities and trails. The recreation team continues to rely heavily on volunteer help.

Diverse camping opportunities exist throughout the PNF at designated dispersed, undesignated dispersed, and developed sites.

Managing 41 miles of the Verde Wild and Scenic River in cooperation with the Coconino and Tonto National Forests provides additional recreation opportunities for those visitors who wish to float the Verde River.

*Recreation Planning*

Recreation planning efforts seek to provide diverse recreation experiences. A mix of multiple uses and motorized and non-motorized trail opportunities is the primary focus for the next few years.

The PNF recreation team has been involved with the development of a Sustainable Recreation Strategy. The team has collaborated with different agencies (e.g., Yavapai County, Bureau of Land Management, public interest groups) to include future recreational opportunities that “overlap” county, city, and forest boundaries. These multi-agency recreation opportunities would benefit Yavapai County community members.

*Interpretation*

Considerable progress has been made in providing interpretation of the PNF through environmental education, both within the trail program as well as through partnerships (e.g., Highland Center for Natural History).

*Patrols and Volunteers*

An agreement was developed with a volunteer group, the Community Forest Trust, which has helped to reduce the maintenance backlog on trails, designated dispersed campsites and at developed sites such as trailheads and picnic areas.

In the eight wilderness areas of the PNF, 94 staff patrols were completed by the wilderness ranger March through October. Volunteers contributed 1,178 hours of service in designated wilderness areas.

Developing an agreement with the sponsored volunteer group, Community Forest Trust, has helped reduce the maintenance backlog on trails, designated dispersed campsites, and developed sites (e.g., campgrounds, trailheads, and picnic areas).

**Roads and Facilities**

*“Maintain a transportation system to support resource goals. Construct, maintain and regulate use of Forest Service facilities to protect natural resources, correct safety hazards, reduce disinvestments, and support management activities.” (Forest Plan, p.14)*

*Road Maintenance and Improvement*

Budgets for roads continue to decline. The PNF manages to maintain level three, four, and five roads to meet highway safety standards. In general, the available budget only allows the PNF to address safety and the most critical resource protection needs.

*Facilities Maintenance and Improvement*

Budgets for facilities continue to decline. The PNF reduced some deferred maintenance and made progress to reduce operating costs, by decommissioning five buildings, upgrading HVAC units, and replacing a dated

Uninterruptible Power Supply Unit at the Fire Center. Water systems are a priority and are safe and maintained to standard. All of the occupied buildings are safe for employee use.

## Soil and Water

*“Protect and improve the soil resource. Provide for long-term water flow needs through improved management technology. Avoid adverse impacts to the public, Government facilities and all uses in floodplains and wetlands. Restore all lands to satisfactory watershed condition.”* (Forest Plan, p. 13-14)

*“Give riparian-dependant resources preference over other resources. Improve all riparian areas and maintain in satisfactory condition.”* (Forest Plan, p. 14)

### Best Management Practices

Consistent with the Forest Plan, best management practices (BMPs) were developed and implemented at the project-level to minimize impacts to soil, riparian, and water resources. Some of the BMPs implemented in 2011 included:

- Mineral Plan-of-Operations BMP’s have been reviewed and prescribed along with identifying soil and water conservation specifications and design measures. Compliance monitoring has occurred and rectification measures are ongoing.
- Prescribe fire operations were completed in a mosaic pattern to maintain vegetative cover and established special burn prescriptions for streamside management zones.

- Rangeland management strategies incorporated utilization standards and other management tools to maintain/improve vegetative ground cover and overall watershed condition.
- Erosion control measures were implemented for those areas disturbed by mechanical timber harvest operations.
- Road and trail maintenance focused on improving drainage by out-sloping travel surfaces and creating rolling dips.
- Reclamation efforts in the form of seeding and erosion control have occurred at new and existing recreation sites.

### Field Inventories and Analyses

In support of other resource programs, the PNF’s soil scientist and hydrologist conducted soil and water resource inventories and analysis (resource specialist reports) for all projects requiring NEPA analysis. Soil condition inventory/ monitoring utilized Terrestrial Ecosystem Unit Inventory (TEUI) and other Southwestern Region protocols. Riparian conditions were analyzed using the proper functioning condition (PFC) to regional standards. The results of these field inventories and analysis were utilized to document existing resource conditions, develop desired resource conditions, and develop proposed actions or design features.

Table 18 lists the projects for which soil and water resource condition inventory and analysis was conducted in FY 2011.

**Table 18. Allotments and soil/water resources assessed in FY 2011**

Year	Project	Ranger District	TEUI (Soil) Acres	Stream/ Riparian Corridor (miles)
2011	Wagoner	Bradshaw	22,419	12
2011	K-4	Chino Valley	1,025	1

*Watershed Condition Framework*

The forestwide WCF assessment was conducted with an interdisciplinary. A WCF Action Plan for the Cherry Creek Watershed was conducted which identified Essential Projects as a means to improve the the WCF score from “Fair” to “Good”.

*Burned Area Emergency Response*

In 2011, the PNF did not have any wildland fires greater than 500 acres; thus, no Burned Area Emergency Response (BAER) monitoring and evaluation occurred.

*Water Quality and Quantity*

Every two years the Arizona Department of Environmental Quality (ADEQ) is required by the Federal Clean Water Act (CWA) to conduct a comprehensive analysis of water quality data associated with Arizona’s surface waters to determine whether State surface water quality standards are being met and designated uses are being supported. This report is submitted to the Environmental Protection Agency (EPA) for approval. Once approved, it is used to guide water resource management decisions. The objective of the analysis is to:

- Compile descriptive information about the surface water.
- Determine whether each designated use assigned to an assessment unit is “attaining” or “impaired.”

- If impaired, determine the pollutant(s) causing impairment.
- Provide future monitoring priorities (the planning list).

If water quality is impaired and development of a Total Maximum Daily Load (TMDL) is needed, the surface water is placed on the Federal 303(d) list. Impaired water is not placed on this list if: (1) alternative pollution control requirements are in place that will bring the surface water into compliance with its standards (e.g., a consent decree), (2) an approved TMDL is being implemented, or (3) the impairment is solely due to natural conditions. Further information on this assessment is included in Surface Water Assessment Methods and Technical Support which is available online<sup>5</sup>.

A number of waters within the PNF are included in the 2009 Status of Ambient Surface Water Quality in Arizona – Arizona’s Integrated 305(b) Assessment and 303(d) Listing Report which is available online<sup>6</sup>. The water bodies listed in Table 19 are included on the 2009 Arizona Status List for not attaining beneficial uses or for impairment. ADEQ has posted a 2010 Draft

<sup>5</sup> <http://www.azdeq.gov/environ/water/index.html>

<sup>6</sup> <http://www.azdeq.gov/environ/water/assessment/assess.html>

listing, which has not yet been approved by EPA. The 2010 Draft has some changes in the status of streams in or near PNF, and will be reviewed by the hydrologist and soil scientist when finalized.

TMDLs are one of many tools in the CWA to help achieve the Act's main objective to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (CWA Section 101 (a)). When pollutants impair the use of water, a study may be completed to determine how to reduce them and restore water quality. A TMDL establishes the maximum amount of a pollutant allowed in the water while maintaining all of its designated beneficial uses. Arizona is required by law to identify polluted waters and to develop TMDLs to help address these problems.

TMDLs were completed for waters on or adjacent to the PNF including Turkey Creek, the Verde River, and the upper Hassayampa River. These are available online<sup>7</sup>.

#### *Watershed Instream Flow*

PNF in-stream flow (ISF) measurement methods are currently being upgraded. Continuous monitoring stations are scheduled to be implemented in 2012 on seven perennial stream reaches, including: Apache and Walnut Creeks in the Verde River sub-basin and Big Bug, Upper Ash, Cherry, Turkey and Cienega Creeks in the Agua Fria River sub-basin.

#### *Watershed Based Community Partnerships*

PNF line officers and resource specialists are members or participants in a number of local, state, and federal organizations or working groups focusing on watershed and water issues. The PNF continues its participation with the

Verde Watershed Association, Yavapai County Water Advisory Committee, Yavapai County Water Technical Advisory Committee, Prescott Creeks – Watershed Improvement Council, and Upper Agua Fria Watershed Partnership.

The Verde District Ranger continues to serve as the PNF representative on the Verde River Basin Partnership. The Bradshaw District Ranger and the PNF hydrologist are on the Watershed Improvement Council (WIC) sponsored by Prescott Creeks, a local non-profit organization. The goal of the WIC is to monitor and assess the nature of pollutants in the Granite Creek watershed above Willow and Watson Lakes. To complete this work, the Prescott Creeks organization applied for and was awarded a grant through the ADEQ Water Quality Improvement program.

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<sup>7</sup><http://www.azdeq.gov/envirom/water/assessment/tmdl.html>

**Table 19. Impaired or non-attaining waters on or adjacent to the PNF**

Water	Pollutants for Listing	Status
upper Hassayampa River	Cadmium, Copper, Zinc, and low pH	Impaired
Cash Mine Creek and unnamed tributary (headwaters of Hassayampa River)	Cadmium, Copper, Zinc, and low pH	Not Attaining
Granite Creek	Dissolved Oxygen, Fecal Coli-form, Nutrients	Not Attaining
Watson Lake	Nitrogen, Dissolved Oxygen, pH	Impaired
Verde River (from Perkinsville to confluence with East Verde River)	Sediment/Turbidity	Not Attaining

**Timber**

*"Provide for non-declining sustained yield of timber. Establish improved balance in age-class distribution through silvicultural prescribed stand management. Focus on reducing constraining components of stand strata. Protect existing old-growth stands. Improve stand productivity through management. Provide green and dead firewood and other forest products on a sustained yield basis. Timber harvest will be used as a tool to accomplish multiple resource objectives when it is identified as the optimum method through site-specific environmental analyses."* (Forest Plan, p. 13)

*Fuelwood and Timber Harvest*

In general, the PNF is moving towards desired conditions for age class distribution and productivity, although this is occurring at a rate that is slower than it could be. The PNF continues to supply fuelwood sufficient to meet existing demand.

During the first six years of Forest Plan implementation, the number of ponderosa pine acres treated by intermediate and regeneration harvests was relatively constant. From 1992 until 2000, treatments were sporadic, and only the Maverick, Schoolhouse, Dearing, and Goldwater Timber Sales were offered. Since 2000, the PNF has offered and sold one timber sale each year.

The 1987 Forest Plan identifies 130,350 acres within the Pine Management Area (Management Area 4 or MA 4).

Approximately 61,651 acres are tentatively suitable lands and 30,653 are considered commercial timberlands. An estimated 2,962 acres of commercial timberland in the Woodland and Chaparral Management Areas (MA 2 and MA 3) is also listed. Between 1987 and 2011, approximately 40 percent of the commercial timberlands have been treated.

*Forest Health Emphasis*

In 2006, the timber program moved toward a green tree harvest program that is typically found within the region. The objectives of a

green tree harvest program are to improve forest health and wildlife habitat by thinning overstocked timber stands and to move the forest toward a more balanced age-class distribution.

The shift in management emphasis from harvesting timber for commodity production to harvesting timber for the purpose of restoring or improving forest health has facilitated the protection and recruitment of old growth trees.



**Figure 3. Juniper stand after a mechanical fuels reduction and fuelwood harvest treatment.**

## Wildlife

*"Manage for a diverse, well distributed pattern of habitats for wildlife populations and fish species in cooperation with states and other agencies. Cooperate with Arizona Game and Fish Department to meet or exceed management goals and objectives in the Arizona Cold Water Fisheries Strategic Plan.*

*Maintain and/or improve habitat for threatened or endangered species and work toward the eventual recovery and delisting of species through recovery plan implementation.*

*Integrate wildlife habitat management activities into all resource practices through intensive*

*coordination. Support the goals and objectives of the Arizona Wildlife and Fisheries Comprehensive Plan, as approved by the Southwestern Regional Forester and the Director of the Arizona Game and Fish Department."* (Forest Plan, p. 13)

### *Benefits of Forest Health Treatments*

Impacts to wildlife habitat from forest health projects are beginning to be realized as residual stands of trees begin to respond to treatments with healthier canopies, more open understories, and increased herbaceous vegetation.

Wildlife populations are expected to shift accordingly to reflect these changed habitat conditions; wildlife species composition will shift toward those species that favor open forests and younger aged stands of trees. The shifting habitat conditions are moving toward a better balanced age-class distribution and structure that inherently supports a more diverse array of species.

Habitats in ponderosa pine and piñon-juniper vegetation communities will become more patchy and diverse than before, with open areas on south aspects and ridges. The open areas provide a greater diversity of understory vegetation and habitat for small mammals, birds, reptiles, and insects.

By improving the plant species diversity in the understory, the increased habitat diversity provides a greater abundance of prey species for larger predators from flycatchers to bats to owls to bobcats. Pockets of dense forest will remain in protected canyons and on north facing slopes. These areas provide habitat for those species needing older more developed habitats.

*Wildlife and Project Work*

Wildlife habitat considerations are incorporated into the design and implementation of many projects including fuels reduction, forest health, livestock grazing, road use permits, small tracts acts, and recreation special use permits.

*Threatened and Endangered Species*

The recent delisting of the bald eagle is encouraging and suggests that management practices are meeting the needs of the species.

Progress toward improving habitat for threatened and endangered (T&E) fish species on the PNF is uncertain. Habitat for threatened spikedace and other native fish in the upper and lower Verde River has been protected for several years from impacting activities, specifically livestock grazing and OHV recreation.

Beneficial effects to native species have not been observed in locations where established populations of non-native predatory fish are present. This is also the case in the lower Verde River where reintroductions of Colorado pikeminnow and razorback sucker have not been successful in spite of annual stockings since the early 1990s. Other streams on the PNF, such as Sycamore Creek and Little Sycamore Creek, with Gila chub populations have also experienced diminished populations and less occupied habitat due to the presence of non-native predatory fish.

The greatest short-term need for improving habitat for T&E fish species is the control and/or removal of non-native fish species from historical and current habitat, a task which would fall under the jurisdiction of the Arizona Game and Fish Department. Another major concern is the increasing human population

growth in the areas surrounding the PNF and the expected increase in water demand. Long-term efforts to managed fish habitat should focus on maintaining a natural water flow regime in key streams on the PNF.

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## Section 4: Barriers to Effective Monitoring

### Heritage Resources

Budget constraints, workload, and a lack of personnel have prevented comprehensive monitoring of all sites eligible for and listed as National Register sites. The overall number of sites monitored in FY2011 was above that of FY2010. Criteria used to determine which projects will be monitored include the density of sites in or near a project area, the magnitude of the project, the likelihood of vandalism, and the National Register eligibility of the sites.

Forest Plan monitoring has been effective in showing that overall protective actions have worked well; however, some mishaps have occurred in the past, chiefly due to a lack of communication or the failure of a site to be identified. In a related topic, when protective site markers such as flagging (or any markings, for that matter) are encountered by the public they may sometimes remove these, including those that mark archaeological resources. In FY2011 this problem seemed to have been slightly below what was observed in 2010. Certain forest users believe that the removal of markers or flagging will impede the project. In addition, it probably serves as a form of protest. This is a problem that will likely remain for some time to come, which will require heritage resource personnel to continue to check sites several times until a project is completed.

Funding has, and will probably continue to be, an issue associated with monitoring. As project work plans are developed at the beginning of each Fiscal Year, monitoring funds should be figured into the plans. Significant time and effort have been focused on pre-project planning, coordination with the project manager, consultation with SHPO and Native

American tribes, communities and nations, and follow-up record keeping. Individually these items are not barriers to effective monitoring, but taken together, they have created a significant impact on the time available for monitoring activities and our proactive efforts to manage heritage resources. Monitoring is recognized on the Forest as an important, even vital, activity, though this reality is not reflected in current funding mechanisms, staffing, or project prioritization.



Figure 4. Petroglyphs on the PNF

### Noxious Weeds

#### *Administrative Barriers*

Budget constraints and a lack of a full-time PNF weed program manager position have prevented extensive monitoring and more effective treatment of the noxious and invasive weeds.

### Range Management

#### *Administrative Barriers*

Budget constraints limit the number of range management specialist personnel that are available to conduct monitoring of range conditions. The Southwest Region and the PNF has made range Rescission Act NEPA for permit reissuance a priority and, consequently,

administration and monitoring have not been as extensive as desired.

## Recreation

### *Time Interval for Visitor Monitoring*

The establishment of the National Visitor Use Monitoring (NVUM) program as a national standard has provided and continues to provide consistent data for day-use developed areas, overnight use developed areas, wilderness, general forest area use, and view corridors. As each national forest completes more NVUM surveys, the quality and accuracy of the data improves. The PNF completed its second NVUM survey in 2007 and will participate in NVUM's third survey starting in the fall of 2011 and ending in the fall of 2012.

## Soil and Water

### *Administrative Barriers*

Budget and workload constraints, other PNF resource program priorities, and understaffing of the watershed and soils program continue to limit the full effectiveness of the watershed and soils program, specifically in regards to supporting analysis, implementation, monitoring, and maintaining a self-efficient soil and water program.

## Wildlife

### *Ineffectiveness of the Forest Plan*

As in previous years, the items identified in the Forest Plan for monitoring are not always relevant to determining progress in meeting Forest Plan goals. Monitoring non-game birds, as a measure of determining the health of riparian associated species, is probably not useful in measuring the accomplishment of PNF goals.

Wildlife population monitoring is a challenging task as cause and effect relationships are hard to determine because of extrinsic factors (e.g., neo-tropical migratory bird populations may be influenced by factors in other states or countries). Such an undertaking needs to be closely coordinated with State and other agencies.

To be effective, monitoring needs to be simple and easily implemented while providing a true picture of progress toward an objective. There is a need to adapt monitoring so that changes can be made in on-going programs/projects as soon as potential problems are identified.

### *Legal Requirements*

The requirements for environmental documentation have become very complex for wildlife and are changing frequently. In addition, litigation-inspired legal interpretations of the requirements for Management Indicator Species analysis and migratory bird analysis (added by Executive Order in 2001) continue to add to the environmental analysis workload.

### *Alternatives for Accomplishing Monitoring*

Barriers to effective monitoring primarily include lack of funding. Effective ways to accomplish monitoring include incorporating monitoring into project designs. Another possible tool for accomplishing monitoring is partnering with those groups or entities with the skills and resources to do the monitoring.

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## Section 5: Emerging Issues

### Fire Management

#### *Widespread Issues*

A combination of circumstances has made the public very aware of fire management actions and practices on lands managed by Federal and

state agencies across the Nation. This level of awareness has been extremely prevalent in all communities within and adjacent to the PNF.

These circumstances include:

- an increase in vegetation and fuel loads resulting from the lack of wildfire in its natural role in fire-adapted ecosystems
- the effects of a long-term drought
- an increase in the number of homes and human access (wildland-urban interface) in and adjacent to national forest lands
- recent, high-profile catastrophic wildfires in Arizona and across the Nation where lives and homes have been threatened and lost (e.g., Indian Wildfire in Prescott in 2002 and Lane 2 Wildfire in Crown King in 2008)

*Challenges to Managing Wildfires*

The threat of large, high-severity wildfires has substantially increased public awareness of fire management practices and actions with an expectation that efforts will be made to protect lives and homes. This increased interest has provided many opportunities to work with individuals, groups, and other agencies to reduce these threats, but it has also created many challenges. These challenges include:

- increased treatment opportunities and needs with a limited budget
- varying levels of expectation by the public with some wanting aggressive treatments adjacent to their neighborhoods and others wanting little or no treatment
- reduced numbers and types of resources that are available for wildfire

suppression and fuels management actions

*Smoke Emissions*

Smoke generated by prescribed fires has become one of the most challenging issues. Smoke emissions from all prescribed burns during FY 2011 were permitted and monitored by the Arizona Department of Environmental Quality (ADEQ).



**Figure 5. Smoke emissions in the Verde Valley following a prescribed burn**

Prescribed burns in FY 2011 were managed with objectives and techniques designed to reduce smoke intensities and the length of time that smoke was present. These techniques included size and locations of burns and timing and days of continuous burning in any single airshed; however, smoke issues did and will continue to persist.

Prescott sits in a low-lying area (Prescott Basin) that attracts and holds smoke as do the communities located within the Verde Valley. This smoke can come from various and multiple locations and smoky conditions can linger for several days following the completion of a prescribed fire or unplanned wildfire

Even at low concentrations, smoke can reduce visual qualities and may cause health problems, especially to those with breathing disorders or

hypersensitivity to smoke. Smoke in the air or even notification through the media that burning is planned generates numerous phone calls to local Forest Service offices. Keeping the public informed about fire activities and potential smoke concerns is a major part of managing both prescribed burns and wildfires.

*Resource Objectives*

In FY2009 smoke columns were visible throughout most of the summer months from some location within the greater Verde Valley and often there were multiple columns. Most of this smoke was high elevation smoke with minimal physical impacts to the population within the Verde Valley. The increase in low-intensity fire during FY 2009 exposed residents and visitors of the Verde Valley to the effects of more historic smoke conditions.

During FY 2011, the national forests within central and northern Arizona were prepared to move forward with management of wildfires and the associated smoke impacts to the Prescott Basin and Verde Valley based on what was learned from the active FY 2009 fire season. However, the opportunities to manage wildfires in a similar fashion were very limited due to the lack of ignitions (lightning) and precipitation from the summer monsoons. The result was few and only minor impacts to sensitive airsheds across this area.

**Heritage Resources**

*Sensitivity to Tribal Values*

Native American tribes, communities, and nations receive notices of PNF projects and occasional meetings. Native Americans have not only shown interest in specific sites where their ancestors lived, but also in large areas where certain cultural practices took place. A future challenge for the PNF is to work effectively with

tribes, communities, and nations so that these areas can be identified and managed in such a way as to show PNF sensitivity to tribal values. It behooves the Forest to move toward completing ethnographic studies for those tribes, communities, and nations that claim affiliation with lands contained within the PNF boundary in order to better understand where these areas exist.

*Impacts from People*

Another emerging issue is the general increased population of Yavapai County and use of the forest from Phoenix visitors and its effect on the archaeological resources of the PNF. As more people use the Forest, the chances become greater that sites will be impacted. There is increased use of all-terrain vehicles (ATV). These allow people to access more remote locations of the PNF, thereby allowing them to visit sites that were once protected by their inaccessibility.

In addition to providing greater access to heritage sites, ATV use and mountain biking has spawned new, user-created trails (also called social trails) around the Forest and, in some cases, has altered existing trails. When new social trails are created or when existing trails are altered, heritage resources are in danger of being affected by direct impacts. Travel Management Regulations may help improve this.

*Need for Increased Public Awareness*

As the population of Yavapai County rises and public use of the PNF increases, there will be a greater need to augment our interpretation of heritage resources and to spread the message about the protection of prehistoric and historic resources. Disseminating information to the public about heritage resources can be a key

component for protecting against direct and indirect impacts to prehistoric and historic sites.

## Noxious Weeds

### *Increased Spread*

Noxious weed populations continue to expand annually over the PNF, and the expansion of weeds over small areas also continues. Additionally, critical habitats, wilderness areas, and wild and scenic river designations across the PNF are threatened by the spread of noxious weeds.

The 2011 Watershed Condition Classification of the PNF found 6 percent of the Groom Creek watershed to be infested with noxious weeds, whereas forestwide estimates of noxious weed infestations are about 2 to 3 percent of the entire PNF. Currently, the area with the greatest increase is the Prescott Basin or the lands immediately south and west of the city of Prescott.

## Range

### *Drought Conditions*

Effects of the extended 15-year drought on PNF rangeland conditions are still present, although recovery from the severe impacts witnessed in 2002 is evident. Drought recovery in plant density, frequency, and cover requires time and prudent management in the arid Southwest environment. Adaptive range management practices, effective communication, and timely actions between the agency and livestock producers have been critical in managing drought issues and managing the impacts on range conditions and annual livestock stocking capacity across the PNF.

## Recreation

### *Increased Demand and Use*

Population increases in Yavapai County continue to create additional pressures for diverse recreation use. There is a need in the north Williamson Valley area for more developed recreation opportunities in the Walnut Creek/Camp Wood area. Similarly, rapid population growth in the Paulden, Chino Valley and Verde Valley communities is impacting the Verde River ecosystem through increased dispersed recreation activities in these areas, including camping, picnicking, and off-highway vehicle use. Several roads that were frequently used by motorized recreationists to or along the Verde River have been closed and patrolled. These efforts have been successful in dramatically reducing illegal motorized use in this area.

### *Wilderness Concerns*

As the population in Yavapai County and adjacent counties increases, the number of visits to the eight PNF wilderness areas is expected to increase as well. Impacts to natural resources within wilderness areas are documented, monitored, and maintained. The presence of noxious weeds in wilderness areas is also documented. Wilderness education has been recognized as a way to help prevent negative impacts to wilderness, and a wilderness education plan has been established to address this need.

### *Motorized Travel*

Travel Management continues to be a major focus in recreation. The PNF already complies with the National Travel Management direction to prohibit cross-country travel across its entire area. The PNF continues to sign and map the open roads and motorized trails and to provide the public with the required Motor Vehicle Use

Map (MVUM) which complies with the National Travel Management program.

*Noxious Weeds*

Noxious weeds are found in most recreation areas (e.g., campgrounds, trails, day-use areas, and dispersed recreation areas). Recreation personnel and volunteers map and document these areas. Recreation management efforts should take an active role treating noxious weeds and preventing their spread.

**Roads and Facilities**

*Decreased Funds*

Trends in the roads budget indicate that the PNF will do less maintenance for resource protection on level one and level two roads. Most of the funding will be used to maintain levels three, four, and five roads to highway safety standards and to only address critical safety concerns on the remainder of the inventory.

Trends in the facilities budget indicate that the PNF will be challenged to maintain facilities in a safe manner. Given the aging infrastructure, the deferred maintenance may increase faster than the capability to make improvements.

*Motorized Travel*

Efforts continue to enforce, educate, and engineer the implementation of the MVUM, it is expected that there will be increased use of the designated road and trail system and decreased cross-country travel and resource damage.

**Soil and Water**

*Improve WCF Score*

To ensure watershed conditions improve and healthy watersheds are maintained an integrated approach with all disciplines needs to be implemented.

*Best Management Practices*

Forest level BMPs will be developed and integrated with local resource issues and new National BMP protocols. Local monitoring protocols for some management activities will be integrated with national guidance and expanded to other management activities.

Identifying project specific conservation practices and conducting implementation and effectiveness monitoring will be essential for maintaining healthy watershed. Budget constraints limit our ability to conduct monitoring and rectify compliance issues.

*Groundwater Dependent Ecosystems*

Proper management and conservation of groundwater-dependent ecosystems<sup>8</sup> is moving to the forefront of soil and water resource concerns. The southwest regional water development policy is a critical element in PNF's program for protection of groundwater dependent ecosystems.

These key natural resources are of high value to the public and the PNF for the ecosystem and wildlife habitat functions that they provide. More often than not, these water resources are a source of conflict for planning, assessing, and implementing management activities.

*Impaired Water Quality*

Water quality sampling completed by the Arizona Department of Environmental Quality (ADEQ) and partners in the Prescott Basin is showing impairments in Granite Creek and Watson Lake. Further studies are currently being conducted to define the impairment and sources of pollution. Concurrently, a TMDL for Watson Lake is under development by ADEQ.

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<sup>8</sup> Groundwater ecosystems include natural springs, seeps—groundwater that flows onto the land surface through natural processes, or groundwater emerging in stream channels that supports perennial reaches of streams.

While Watson Lake itself is not within the borders of the PNF, the TMDL may prompt the creation of additional resource management considerations or recommendations for managing the Granite Creek watershed.

## Timber

### *Excessive Fuels*

The most critical resource issue facing the PNF is the density of overstocked ponderosa pine stands. There is an urgent need to treat these stands to prevent extensive insect infestation, reduce the potential for crown fires, and improve overall forest health. The existing timber industry infrastructure has allowed for the purchase, removal, and utilization of the wood that has been offered for sale, and it is critical that this infrastructure remain intact.

### *Public Awareness*

Cultivating public awareness and acceptance of the need to use timber sales as a way to treat hazardous fuels and improve forest health in the wildland-urban interface continues to be a vital aspect of the timber program. As such, the wildland-urban interface is an increasingly important geographic area for natural resource interpretation and public information efforts.

## Wildlife

### *Pronghorn*

Pronghorn are receiving increasing attention statewide as their habitats decline. Habitats on the PNF are becoming more important as threats continue to increase across their range. These threats include:

- Housing development on private land, with subsequent roads and fences, continues to take place in places that are optimum habitat.
- Human disturbance is increasing.

- Forage conditions are affected adversely by drought.

Pronghorn are indicators for the suite of species that occupy grasslands. Grasslands are being lost due to urbanization. This makes conservation of the remaining grasslands very important. The PNF manages only a small proportion of the grasslands; it is important that these areas be managed to benefit pronghorn.

Restoration of fire-dependent ecosystems (including the grasslands) is a high priority for the PNF. Future plans for the grasslands include the removal of juniper and the use of prescribed fire to keep grasslands open and free of invasive woody species.

### *Native Fish and Stream Habitats*

The conservation and restoration of native fishes throughout the Southwest is a controversial issue. Restoration efforts have focused on: (1) construction of fish barriers and/or (2) chemical renovation of streams with non-native fish populations and restocking with native species. The management for native fish, which for most species represents a non-sport fish, and the potential loss of sport fishing opportunities usually is divided amongst advocates and users. Another continuing issue is the increased population and urbanization on private lands surrounding the PNF and inholdings within the PNF and how this has led to increasing pressure on threatened and endangered species' habitats (e.g., groundwater pumping and recreation activities), especially in and along the Verde River. Collaboration with city, county, state, and other federal agencies is ongoing and needed to prevent impacts to stream systems on the PNF. Increased public awareness and outreach is also critical for keeping the non-consumptive, historical values

that native fish and flowing streams provide to the arid West.

*Other Issues*

Other emerging wildlife issues include:

- Noxious weeds are expanding and could eventually impact a variety of wildlife habitats.
- Timing and intensity of potential wildfires, as a result of increases in fuel levels, could threaten Mexican spotted owl and Northern goshawk habitat and populations on the PNF.
- Designing and implementing projects is a challenge because of the complexity of land ownership patterns in the wildland-urban interface and the increased resource objectives for fuels, vegetation, and forest health.
- The pumping of groundwater on private lands may impact flows in the Verde River.
- Unmanaged recreation, including illegal off-highway vehicle use, on some areas of the PNF threatens wildlife and fish species and their habitats.

management to respond to citizen concerns related to smoke emissions.

2. Maintain and improve watershed integrity to provide desired water quality, quantity, and timing of delivery.
3. Provide sustainable, diverse recreation experiences that consider population demographic characteristics, reflect desires of local communities, avoid overcrowding and user conflicts, and minimize resource damage.
4. Provide desired habitat for native fish species.
5. Enhance the value of PNF-provided open space by defining visual character within areas near or viewed by those in local communities

*Other Analysis for Forest Plan Revision*

In addition to addressing the Needs for Change, the revised Forest Plan must also:

- evaluate areas as potential wilderness
- update wild and scenic eligibility of the upper Verde River
- evaluate eligibility for recommended research natural areas
- evaluate species viability
- review Management Indicator Species
- evaluate effects of climate change
- determine suitability for timber, range, and recreation
- complete the long term sustained yield calculations

*Alternative Methods to Monitoring*

Budget limitation was the item listed most often as a barrier to effective monitoring. The

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## Section 6: Recommendations

*Five “Needs for Change” Topics*

Of the topics listed in Section 5 (Emerging Issues), five were identified as “Needs for Change” during the revision of the 1987 Forest Plan:

1. Restore vegetation structure, composition, and desired characteristics of fire to selected ecosystems while using adaptive

PNF should expand its efforts at monitoring by increasing involvement of volunteers in the monitoring program. This could be especially effective in the area of noxious weed identification and inventory if training and assistance were provided by Forest Service personnel.

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## Section 7: Certification of Forest Plan Sufficiency

I have reviewed this annual Forest Plan Monitoring and Evaluation Report for Fiscal Year 2011 and determined that:

- While management activities on the Prescott National Forest continue to lead toward desired conditions, Forest Plan Needs for Change should be addressed during the revision of the 1987 Forest Plan.
- The report is responsive to monitoring information as identified in chapter 5 of the 1987 Forest Plan. The monitoring plan and monitoring activities conducted by the Prescott National Forest are based on National Forest Management Act regulations and Forest Service Manual guidance.

Therefore, I have determined that the 1987 Forest Plan, as currently amended, remains sufficient (although in need of further change) to guide implementation activities over the next fiscal year.

/s/

Betty Mathews, Forest Supervisor

April 6, 2012

Date