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# Prescott National Forest Draft Land Management Plan

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# **Draft Land Management Plan**

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# Chapter 1. Introduction

## Location

The Prescott National Forest (Prescott NF) is one of six national forests in Arizona (figure 1). It covers approximately 1.2 million acres in west-central Arizona and is located in Yavapai and Coconino Counties. The Prescott NF consists of two geographically separate land areas (eastern and western) that are administered as three ranger districts: the Chino Valley Ranger District, which covers the areas east and west of Chino Valley; the Bradshaw Ranger District, which covers the area near Prescott and south into the Bradshaw Mountains; and the Verde Ranger District, which covers the area just north of Jerome and Clarkdale and along the southern side of the Verde Valley. The Prescott NF shares boundaries with: the Coconino, Kaibab, and Tonto National Forests; the Agua Fria National Monument; and Bureau of Land Management—Hassayampa Field Office; Arizona State Trust lands; and several communities including Prescott, Camp Verde, and Cottonwood.

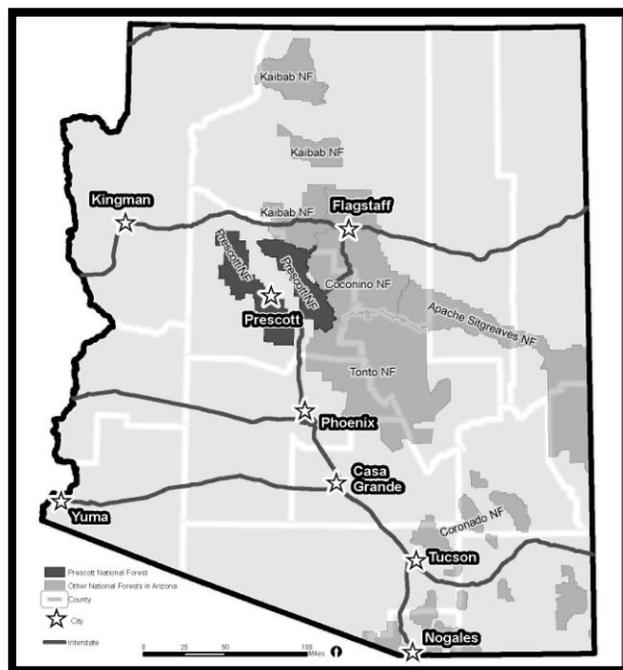
## Role and Contributions of the Planning Area

The Prescott NF is located in a comparatively mountainous section of central Arizona between the forested plateaus to the north and the arid desert region to the south. Elevations range between 3,000 feet above sea level along the lower Verde Valley to 7,979 feet at the top of Mount Union, the highest natural feature on the national forest.

The purpose of the original forest reserves, now part of the Prescott NF, was to protect and conserve water supplies for central Arizona. The rugged topography of the Prescott NF provides important watersheds for both the Verde and Colorado River systems. Within these watersheds are many important continuously or seasonally flowing stream courses and drainages. Portions of the Verde River have been designated as part of the National Wild and Scenic Rivers System.

The vegetation on the Prescott NF is complex and diverse. South of the Bradshaw Mountains there is Sonoran Desert dominated by saguaro cacti and paloverde trees. Less than 10 miles upslope from the desert, there are cool mountain forests where conifer trees grow. In between, there are a variety of plant and animal habitats including grasslands, chaparral, piñon-juniper woodlands, and ponderosa pine forests.

Figure 1. Vicinity Map of the Prescott NF



A variety of year-round recreational opportunities exist on the Prescott NF. Visitors and local citizens alike enjoy having such opportunities nearby, and during the summer, recreate in the Prescott NF where temperatures are moderate. In the winter, people visit the Verde Valley and other snow-free areas to recreate where temperatures are mild. Increases in population have led to increased demand for trails and other recreational opportunities. If climate changes include continuing increases in temperatures, it is likely that there will also be increases in recreational visitors from hotter areas such as Phoenix.

## **Prescott National Forest Mission and Vision**

The nation-wide mission of the Forest Service is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations. The overall goal of managing National Forest System lands is to sustain the multiple-uses of its resources in perpetuity, while maintaining the long-term productivity of the land.

The Prescott NF's mission is to effectively and efficiently manage National Forest System lands and resources to meet the needs and desires of the public, while enhancing the environment.

The general vision for the Prescott NF includes the following: forest ecosystems are healthy with an abundant and diverse flora and fauna; a variety of high-quality outdoor recreational opportunities are provided and serve as an important part of the rich Southwestern scenic and cultural heritage; watersheds provide for good water quality and the timing and volumes of water meet community and resource needs; and historic uses such as mining, livestock grazing, fuelwood cutting, and timber harvest continue within sustainable levels.

## **Planning Framework**

The Prescott National Forest Land Management Plan (hereinafter referred to as the Plan) is intended to produce responsible land management for the Prescott NF based on useful and current information and guidance. The Plan guides the Forest Service in carrying out its responsibilities for stewardship under the sustainable multiple-use management concept—which is to meet the diverse needs of people, while also protecting the resources of the Prescott NF. Land management plans are required by the National Forest Management Act of 1976 (NFMA) and the Multiple Use Sustained Yield Act of 1960 (MUSYA).

Sustainable multiple use management, for the purposes of this document, means that various activities that have social or economic value may take place, while ecosystem processes and biological characteristics continue to fulfill their natural rhythm of change over time. In order to do that, management needs to be adaptable. As activities take place, awareness of trends helps to determine needed modification of management actions.

The Plan provides broad guidance and information for project and activity decision-making on the Prescott NF. The Plan has these characteristics:

- The Plan is strategic in nature. It does not include project level decisions. Those decisions are made later, only after specific proposals are identified and analyzed and there is the opportunity for public involvement.
- The Plan includes the following plan components: desired conditions (or goals), objectives, suitability of areas, special areas, standards, guidelines, and a monitoring strategy.

- The Plan is intended to be adaptive, in that new knowledge and information can be analyzed and the Plan changed, if appropriate, at any time. Changes to plan components are made by an amendment process.
- The Plan honors the continuing validity of private, statutory, or pre-existing rights.

## Plan Consistency

As required by the National Forest Management Act and the National Forest System Land Management Planning Rule, all projects and activities authorized by the Forest Service must be consistent with the Plan. Projects and activities cover all actions under 16 U.S.C. 1604(i). A project or activity must be consistent with the Plan by being consistent with applicable plan decisions.

Where a proposed project or activity would not be consistent with a plan component the responsible official has the following options:

- To modify the proposal so that the project or activity will be consistent;
- To reject the proposal; or
- To amend the plan contemporaneously with the approval of the project or activity so that the project or activity is consistent with the plan as amended. The amendment may be limited to apply only to the project or activity.

Additional information regarding plan consistency can be found in appendix X.

## Needs for Change

In the 2009 Analysis of the Management Situation (AMS), the Prescott NF evaluated how management under its existing land management plan (the 1987 Plan), as amended, was affecting conditions and trends related to sustainability of ecological, economic, and social factors. The AMS integrated key findings from the Ecological Sustainability Report (2009) and the Economic and Social Sustainability Assessment (2008)—two detailed reports which were developed previously by the Prescott NF to identify current conditions and probable future trends. These documents, and all documents associated with the revision of the Plan can be viewed and downloaded from the Prescott NF website.

The AMS identified five areas where there are priority needs for change:

- Restore vegetation arrangements, plant species, and fire to selected ecosystems, while using adaptive management to respond to citizen concerns related to smoke emissions.
- Maintain/improve watershed integrity to provide desired water quality, quantity, and timing of delivery.
- Provide sustainable, diverse recreational experiences that consider population demographic characteristics, reflect desires of local communities, avoid overcrowding and user conflicts, and minimize resource damage.
- Provide desired habitat for native fish.
- Enhance the scenic value of Prescott NF-provided open space by defining the value of the visual character within areas near or viewed by those in local communities.

Other needs for change have been and will continue to be identified. New information and changing conditions will call for changes in management. As these needs become ripe for action, iterative and adaptive planning will facilitate the incorporation of new information into potential plan amendments. This adaptive planning approach is in accordance with the National Forest Management Act, which requires the Forest Service to amend the Plan, if necessary, every 10 to 15 years to reflect changing land management needs. This document represents the revised Prescott National Forest Land Management Plan (revised Plan), and it focuses on the identified needs for change thus far.

The revised Plan was completed using direction from the 2000 planning rule; the transition provisions of that rule allow use of the provisions of the 1982 planning rule to revise forest plans. The Prescott NF elected to use the provisions of the 1982 planning rule.

### **1987 Plan Amendments Included in the Revised Plan**

The direction from the following amendments to the 1987 Plan were incorporated into the revised Plan essentially unchanged. The associated documents related to these amendments are located in the Plan Record for the revised Plan.

- Amendment #4 (1989) provides direction for motor vehicles on trails, roads, and area along either side of roads. Big game retrieval as defined in Amendment 4 was modified in the revised plan.
- Amendment #8 (1996) defines opportunity classes for the Granite Mountain Wilderness.
- Amendment #10 (1997) provides management direction for the Grapevine Botanical Area.
- Amendment #11 (1999) provides specific direction for access in the Prescott Basin.
- Amendment #13 (2004) incorporates the Verde Wild and Scenic River Comprehensive River Management Plan.
- Amendment #14 (2005) provides management direction on the treatment of non-native and invasive weeds.

### **1987 Plan Direction Not Included in the Revised Plan**

Some components of the 1987 Plan are still adequate and timely; these have been carried forward into the revised Plan. Other components of the 1987 Plan have been modified or removed, for reasons including: they describe a purely administrative or procedural function; they duplicate direction that can be found in existing law, regulation, or Forest Service policy; they are based on outdated policies, science, or information; or they include out-of-date terminology. In addition, some standards and guidelines in the 1987 Plan will not be included in the revised Plan because: they were unnecessarily prescriptive about how to accomplish a project; they did not support attaining desired conditions or accomplishing objectives; or they were duplicative. Finally, much of the monitoring and evaluation guidance in the 1987 Plan focuses solely on outputs rather than overall progress towards the desired conditions (or goals).

## Wilderness Management

The Plan guidance covers National Forest System (NFS) lands within the Prescott NF boundary, with the exception of two wilderness areas: Sycamore Canyon and Pine Mountain Wilderness Areas. Sycamore Canyon Wilderness is located within and is managed by three national forests—the Coconino, Kaibab, and Prescott; however, its management direction is found within the Coconino National Forest Land Management Plan. Pine Mountain Wilderness is located within and managed by two national forests—the Prescott and Tonto; however, its management direction is found within the Prescott National Forest Land Management Plan. Information in this land management plan is a substitute for wilderness management plans for designated wilderness in the Prescott NF.

## Inventoried Roadless Area Management

The Plan includes management direction for Inventoried Roadless Areas (IRAs) identified in the 2001 Roadless Area Conservation Rule (RACR). There is currently a legal dispute regarding the status of the RACR, with two Federal courts having issued conflicting rulings. Pending resolution of that legal question, the Plan includes guidance (see chapter 2, DC-IRA-1) for retaining the undeveloped character of these areas based on analyses completed to date and public involvement for the RACR. The decision for the final Plan will be consistent with the legal status of the RACR at the time the Plan is signed.

## Decisions Made in the Plan

Plan decisions include: goals/desired conditions, objectives, guidelines, standards, suitability of uses, special areas, and monitoring.

**Desired conditions** (or goals) describe the picture for the future of the Prescott NF. They are the social, economic, and ecological attributes toward which management of the land and resources of the plan area are directed. They are aspirations and are not commitments or final decisions approving projects and activities and may only be achievable over a long period. “Goals,” as required by the 1982 planning rule provisions, are articulated as “desired conditions” in this Plan.

**Objectives** describe how the Forest Service intends to achieve desired conditions for the Prescott NF. Objectives are concise projections of measurable, time-specific intended outcomes. Objectives are the work that we think needs to be done and the means of measuring progress toward achieving or maintaining desired conditions.

**Guidelines** are guidance or constraints that should apply when an action is being taken that helps to make progress towards desired conditions. A guideline allows for deviation in direction, if the result of the deviation would be equally effective. Deviation from a guideline must be addressed in the decision document with the supporting rationale.

**Standards** are guidance or constraints that apply when an action is being taken to make progress towards desired conditions, but they differ from guidelines in that standards do not allow for deviation without a Plan amendment.

**Special Areas** are lands within the National Forest System (NFS) which have designations by Congress or other delegated authority. “Special areas” are designated because of their unique or

special characteristics. Examples include wilderness, wild and scenic rivers, research natural areas, botanical areas, and national recreation trails.

**Suitability of Areas** refers to NFS lands which are identified as “suitable” for various uses. An area may be identified as suitable or not suitable for certain uses depending on its compatibility with desired conditions and objectives for the area. This Plan describes the processes for determining suitability for timber and grazing in **appendices XX**. Suitable acreages for timber and range in this Plan as well as recreation opportunity suitabilities are found in the desired conditions under the heading “Social and Economic Factors.”

**Monitoring** is the part of the adaptive management strategy used to determine the degree to which on-the-ground management is maintaining or making progress toward desired conditions. The monitoring plan includes questions and performance measures designed to inform implementation and evaluate effectiveness.

## Plan Organization

This Plan is organized into the following major divisions:

**Chapter 1:** Introduction briefly describes the planning area, the analysis of the management situation, the purpose of this Plan, the plan components, and how they are distributed throughout the Plan. This chapter does not contain plan decisions.

**Chapter 2:** Goals/desired conditions that apply to all of the Prescott NF include descriptions of desired outcomes as a result of Forest Service management.

**Chapter 3:** Objectives are a list of measurable, time-specific actions intended to help the Prescott NF achieve desired conditions described in chapter 2.

**Chapter 4:** Standards and guidelines are included that apply to all Prescott NF lands including guidance or constraints that are expected to be applied as site specific projects are carried out.

**Chapter 5:** Management area direction provides desired conditions and standards and guidelines that apply to specific geographic areas of the Prescott NF.

**Chapter 6:** Monitoring and evaluation provides the adaptive management strategy for determining the degree to which on-the-ground management is maintaining or making progress toward desired conditions.

## Management Approaches

Management approaches are not part of the plan components or decisions but are expressions of intent for how the Prescott NF will likely apply aspects of future management. Management approaches are also based on public feedback the Prescott NF received on the draft Plan regarding suggested methods for carrying out activities. Therefore, this section has been added to reflect our intent and those suggestions.

## Collaboration/ Volunteers

There are many who have suggested that they would like to assist with aspects of national forest management. The Prescott NF intends to create increasing opportunities for volunteers and partners to be more active as part of national forest management. One area where this approach

could work well is in natural resource and heritage education and interpretation. Citizen involvement would also benefit the Prescott NF by increasing contact with recreation visitors to encourage appropriate behavior. Assistance with Plan monitoring is also a possibility. Finally, collaborative methods with interest groups and volunteers are ideally suited to addressing the problem of dumping trash, appliances, etc. on the Prescott NF, including the collecting and disposing of dumped material.

## **Cooperation with Tribal Groups and Agencies**

### **Heritage**

Most heritage resource management is guided by laws, existing regulations, and Forest Service policy. For that reason, few plan components are found in the revised Plan that relate to such management. However, heritage resources management will be consistent with the State Cultural Resource Plan and planning activities of the State Historic Preservation Officer, as well as coordination with other Tribal, State, and Federal agencies. This could include periodic meetings, data sharing, coordination on National Register nominations, interpretation, site protection, and participation in the State heritage resources planning process. In addition, Native American tribes, communities, and Nations will be consulted when heritage resources having religious or traditional cultural values for living communities of American Indian tribes may be present. These communities or tribes will be consulted concerning location and importance of those resources and alternatives for protecting them.

### **BLM**

Arizona is 1 of 19 states where one may locate mining claims or sites. The Forest Service manages minerals found on the surface of National Forest System (NFS) lands and the Bureau of Land Management (BLM) is responsible for subsurface minerals on NFS and BLM lands. Therefore, if the Forest Service desires to have an area withdrawn from mineral entry, it requests such a closure from the BLM. Examples of areas which are withdrawn from mineral entry include: a designated wilderness, a portion of a designated wild and scenic river, or a designated recreation area. For areas not withdrawn, the Forest Service may apply mitigations for mining, but it may not prohibit mining.

### **AZGFD and USFWS**

The Arizona Game and Fish Department (AZGFD) directly manages wildlife populations, while the Forest Service manages wildlife habitat. The U.S. Fish and Wildlife Service (USFWS) is the agency that oversees direct management of animals and fish across the Nation, including administration of the Threatened and Endangered Species Act. The Prescott NF will cooperate with one or both of these agencies in order to carry out management activities. For example, management of native fish could involve removal of non-native species, as well as adjustments in habitat, which could require working with AZGFD or USFWS. The Prescott NF also expects to coordinate with AZGFD in development of wildlife linkages (movement corridors) within the Prescott NF so that local populations of species, such as the pronghorn antelope, remain viable where habitat is being fragmented. Finally, the Prescott NF intends to facilitate partnerships that lead to maintenance of year-round water structures for wildlife.

### **Watershed Management**

In several Plan components, high-priority watersheds or high-risk riparian areas are referenced (see objective O-18 in chapter 3). The intent of the Plan is to address the needs of these priority watersheds by: 1) classifying watershed condition across the Prescott NF including the determination of potentially high-risk riparian areas and 2) implementing integrated enhancement activities with emphasis on priority watersheds. In addition, partnership opportunities to cooperate with others to accomplish monitoring are expected to be explored.

### **Open Space**

The Forest Service intends to participate in meetings hosted by the Verde Valley Land Preservation Institute regarding the East Mingus Land Exchange Task Force. The Verde Valley Land Preservation Institute was formed after the Verde Valley Forum on Open Space took place. The purpose of the group is to acquire, manage, and enhance the natural open space in the Verde Valley. East Mingus lands occur on steep slopes approximately between Jerome and Clarkdale and south of Jerome.

## **Concept Descriptions to Improve Reader Understanding in the Revised Plan**

This section was placed in this introduction in an effort to respond to questions and feedback we have received related to technical terminology and concepts that were used in preparation of this Plan. By gaining some understanding of those concepts early on, Plan clarity may be improved. The concepts are organized according to the five areas identified in the Need for Change statement.

### **1. Restore vegetation, structure, composition, and desired characteristics of fire to selected ecosystems, while responding to citizen concerns related to smoke emissions.**

In order to improve ecological health and sustainability within several plant communities, the arrangement of vegetation, types of vegetation species, and frequency of disturbances (such as fire) need to be modified.

### **Concepts for Understanding**

**Potential Natural Vegetation Types (PNVTs):** During forest plan revision efforts a framework was needed to classify and map areas on the Prescott NF based on associations of ecological factors. In order to determine needs for change, the Prescott NF used Potential Natural Vegetation Types (PNVTs) as a means of classifying and mapping similar units of vegetation, soil, climate, and disturbance on a forestwide scale. Thirteen PNVTs were identified in 2007 and then consolidated into eleven major PNVTs. PNVTs were derived from information contained in the Terrestrial Ecosystem Survey (2000). Terrestrial Ecosystem Survey map units were originally identified for the whole Prescott NF based on field inspection. They classify lands according to similarities in vegetation, local climate, geology, topography, and soils. Each PNVT is described by its unique set of ‘states’ and ‘movements.’ The ‘states’ describe the life forms, composition, age or size, and relative density of the vegetation at different life stages. The ‘movements’ between states describe two types of pathways: changes driven by probabilistic transitions (e.g., fire, drought, insect outbreaks, and management activities like tree thinning) and deterministic changes due to the passage of time (e.g., regeneration, succession, growth, self-thinning). A ‘states and movements’ framework allows for simulating and testing vegetative dynamics using computerized models.

A reference condition that identified relative amounts of each state and the frequency of movements between states was estimated based on scientific literature (Schussman and Smith, 2006) or Forest Service experiences within the western United States (Hann and others, 2008). Comparisons of the current situation to reference conditions were made to identify needed changes and thus produced acreages found in chapter 3, Objectives. A map (map D, appendix A) has been created that displays the 11 PNVTs found on the Prescott NF.

**NNIS:** Native plants and wildlife species are those that have evolved or adapted to their environment, including other species and ecological process. Non-native invasive species (NNIS), in this document, are those that are not native to Arizona ecosystems; and because there is a lack of checks and balances within the ecosystem to control their spread, they out-compete native species and easily expand or spread over large areas. For plants, NNIS can choke out native species, changing habitat for insect life, animals that feed on that insect life, and ultimately changing the availability of habitat for wildlife. Additionally, NNIS may alter the natural fire patterns, which then affect native species. For fish, non-natives can dominate native species' habitat and food sources, and some types of non-native fish predate or eat native fish.

There are also non-native species that are not invasive and can be beneficial to the ecosystem. Examples include introduced insect species that inhibit or feed on certain invasive plant species or non-native plants such as filaree, an annual plant that provides forage to cattle and wildlife and food and cover for quail and other birds on rangeland.

**Resilience:** For the purposes of the desired conditions described in this document, the term resilience refers to the capacity of an ecosystem to absorb disturbance and reorganize, so that it retains essentially the same function, structure, and identity as before the disturbance. In other words, resilience is the ability of an ecosystem to rebound from disturbances.

## **2. Retain or improve watershed integrity to provide desired water quality, quantity, and timing of delivery.**

Watershed integrity is the completeness of watershed function in providing water quality, quantity, and timing of delivery. It is influenced by soil function, biological function and the physical shape of the land, including steepness and geological factors. Vegetative structure and composition, ecological disturbance patterns, and recreation activities all can affect watershed integrity.

### **Concepts for Understanding**

During any discussion of watersheds, scale needs to be identified. When discussing the watershed characteristics of the Verde River, for example, we need to differentiate between the 1.6 million acre Upper Verde River Watershed including multiple streams that drain into the river or the 28,700 acre Upper Granite Creek-Watson Lake watershed that covers only one stream (and its tributaries) and drains into the Upper Verde River?

The means of determining scale in a watershed is the **Hydrologic Unit Code** as developed by the U.S. Geologic Survey. In this system, the larger the watershed is, the smaller the Hydrologic Unit Code (HUC). For example, the system creates a hierarchy where many smaller watersheds are nested within the next level watershed; then many at that level are included in a larger watershed.

Watersheds were analyzed at the 4<sup>th</sup> and 5<sup>th</sup> HUC level in preparation for plan revision (see maps **XX** in appendix A). At this scale, only a portion of most 5<sup>th</sup> HUC watersheds overlap with

Prescott NF land ownership. Therefore, while 5<sup>th</sup> code watersheds that overlap the Prescott NF range from about 150 to 360 square miles in size, watershed integrity objectives primarily refer to the 1 to 230 square mile portions of those watersheds that are part of the Prescott NF.

**3. Provide sustainable and diverse recreation experiences that consider population demographic characteristics, reflect desires of local communities, avoid overcrowding and user conflicts, and minimize resource damage.**

With increasing populations and numbers of visitors to the Prescott NF, conflicts between types of activities, over-crowding, and over-use leading to resource impacts need to be addressed.

**Concepts for Understanding**

The **Recreation Opportunity Spectrum (ROS)** is a classification system that identifies a continuum of setting, activities, and recreation experiences. It is used to inventory and classify large areas based on national criteria involving physical, social, and managerial attributes. The ROS map C can be found in appendix A. For the most part, it classifies recreation opportunities as they exist. The classifications range from the most remote and undeveloped (primitive) to the most developed settings (urban) based on access, remoteness, social encounters, amount of visitor management, and type of recreational development, and visitor impacts. ROS classifications found on the Prescott NF are as follows:

- Primitive (P)—the experience includes isolation from man-made sights, sounds, and management controls in an unmodified environment. Motorized use is not present.
- Semi-Primitive Non-Motorized (SPNM)—there is some isolation from man-made sights, sounds, and management controls in a predominantly unmodified environment. Few visitors are present, but some evidence of use is expected. Motorized use is rare or not present.
- Semi-Primitive Motorized (SPM)—is very similar to Semi-Primitive Non-Motorized except that both motorized and non-motorized use is present.
- Roaded Natural (RN)—there are about equal opportunities for isolated experiences and opportunities to interact with other groups. The landscape is generally natural. On-site managerial controls are subtle. Both motorized and non-motorized use is present. The expectation is that visitors will drive to facilities.
- Roaded Modified (RM) – the natural environment is substantially modified by management activities such as mining and utility corridors. Some evidence of other users is likely.
- Rural (R)—the natural environment is substantially modified. Interactions with other visitors prevail. Sights and sounds of people are readily evident and user numbers are moderate to high.
- Urban (U)—a substantially urbanized area is present, although the background may have natural elements. There are high levels of human activity, concentrated development, and developed sites and roads are designed for high use.

**4. Provide desired habitat for native fish species.**

Native fish and other aquatic species are in decline within several watersheds. Native aquatic species are no longer found in five watersheds that overlap with the Prescott NF. The Prescott NF can provide habitat and watershed characteristics that will support native fish species. The Forest Service can also cooperate with the State of Arizona in addressing control of non-native species.

**Concepts for Understanding**

The Forest Service is required to plan for retaining **species diversity** and to provide for habitat needed to maintain **viable, well-distributed populations** of existing native and desired non-native species (FSM 1926.15). A list of species was identified including: a) federally-listed or candidate species, b) those species for which management actions could be needed to prevent federal listing, and c) those species for which management actions could be necessary to achieve ecological or other multiple-use objectives. The list included birds, mammals, fish, amphibians, reptiles, invertebrates, and plants. Species were screened to determine whether or not they occurred in the plan area and were affected by Forest Service management. For species affected by Forest Service management, potential threats that could impact species' distribution and abundance were identified and screened to determine which species warrant more detailed consideration in the Plan. For many species, trending toward aquatic and vegetative desired conditions listed in chapter 2 will maintain species diversity and viability. For others, specific plan components, such as objectives, or standards and guidelines were developed to respond to diversity or viability concerns.

**5. Enhance the value of open space provided by the Prescott NF by defining the value of visual character within areas near or viewed by those in local communities.**

The Forest Service has an opportunity, via the Plan, to ensure that open space and scenic values are taken into consideration on Prescott NF lands as population density is expected to increase on other ownerships.

**Concepts for Understanding**

The **Scenery Management System** provides a systematic approach for determining the relative value and importance of scenery on National Forest System lands. It is a method of analyzing national forest lands using attractiveness, visibility, and level of public value of scenery to determine the scenic integrity objective for areas on the Prescott NF. Map A in appendix A has been created that classifies the Prescott NF into Scenic Integrity Objectives of high, medium, or low. An area of high scenic integrity objective is one that has highly-valued scenic qualities and whose integrity should be maintained. Within areas of high or medium Scenic Integrity Objective, guidelines were developed to help retain scenic qualities.

# Chapter 2. Forestwide Desired Conditions

## Introduction

The desired condition sets forth the desired attributes and goals of the Prescott NF. In some cases, a desired condition matches the current condition; so our goal is to retain existing characteristics. In other cases, the desired condition is not identical to the current condition, and future management is expected to help Prescott NF trend toward the desired condition. Desired conditions are timeless in that they have no specific date by which they are to be completed. Desired conditions are the focus of the Plan and are the basis for developing objectives and other plan components. A project or activity must be consistent with or help trend towards desired conditions. The glossary in appendix B provides more detailed definitions of terms.

Forestwide desired conditions apply across the plan area. Desired conditions are described at multiple, nested scales. Descriptions at various scales are designed to provide detail and guidance for the design of future projects and activities that help achieve the desired conditions over time.

Descriptions at the landscape scale provide the “big picture” desired conditions for terrestrial-based resources across the larger land area and may be composed of variable elevations, slopes, landforms, and soils. Descriptions at the mid-scale level represent areas of 100 to 1,000 acres and become more specific about characteristics such as species composition and habitat features. Descriptions at the fine scale relate to areas less than 100 acres in size and provide even more detailed information, such as desired vegetation patterns like groups of trees or clumps of vegetation. For instance, in descriptions for mixed conifer forest, landscape scale descriptions identify trees separated by open area. However in the fine scale description, some of the groups of trees between the open areas are described as tight clumps with interlocking tree crowns. A combination of fine scale units add up to the mid-scale and a combination of mid-scale units add up to the landscape scale.

Desired conditions for aquatic resources and watershed integrity are described using watershed scales to help provide their relative importance or niche. Conditions for larger land areas are described under 4<sup>th</sup> to 5<sup>th</sup> level hydrologic unit codes (HUC)<sup>1</sup> watershed scale. More detailed descriptions for site-specific conditions are described at the 6<sup>th</sup> level HUC watershed scale. Not all resources (e.g., scenery, heritage, recreation facilities) require a description at more than one scale.

Desired condition descriptions are divided into three sections:

Physical, Biological, and Social/Economic Factors.

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<sup>1</sup> US Geological Service created hydrologic unit codes (HUC) to describe the hierarchy of watersheds within the country. As the unit code increases, the size of the watershed referenced decreases e.g., several 6th HUC watersheds can be combined to make up a 5th HUC watershed.

## Physical Factors

Physical factors include ecosystem components such as climate, airsheds, watersheds, landforms, and soil conditions.

### Climate

#### Background and Existing Conditions for Climate

The climate of the southwestern United States is often referred to as dry and hot; however, it is very complex. While low deserts of the Southwest experience heat and drying winds in the early summer, forested mountain areas and plateaus may experience cold and drifting snow during winter. Climate variability is the norm within this region, as temperature and precipitation fluctuate on time scales ranging from seasons to decades. Monsoon thunderstorms in July and August are often accompanied by flash flooding, while from fall to spring, the weather can be warm with clear skies. The Southwest also experiences periods of short- and long-term drought. Precipitation patterns are characterized by two peaks each year; winter precipitation is produced primarily from large frontal systems moving over the region, whereas summer precipitation results largely from thunderstorms within the North American monsoon circulation.

Climate scientists agree that average air temperatures across the globe are rising (IPCC 2007), and it is expected that continued warming will accentuate or exacerbate interactions among ecosystem components. For example, observed temperature increases across the western U.S. have been linked to: increases in fire season length and severity, increases in total area burned, decreases in air quality, and the creation of new fire regimes (Forest Service, August 2009).

Looking forward, there is general agreement among climate modelers that by the end of the 21st century, the Southwest is likely to experience (Forest Service, 2010):

- Temperature increases of five to eight degrees Fahrenheit (or about 0.5°F/decade on average)
- An increase in the number of hot days, with summer heat waves lasting two weeks or longer
- Warmer winters and reduced snowpack, and a later monsoonal season
- A five percent drop in precipitation in most of Arizona and New Mexico
- An increase in extreme flood events following an overall increase in tropical storms

Changes in water distribution, timing of precipitation, availability, storage, watershed management, and human water uses, may present some of the most important challenges of climate change and national forest management in the Southwest. Terrestrial and aquatic ecosystems and all human socioeconomic systems in the Southwest depend on water. The prospect of future droughts becoming more severe because of global warming is also a significant concern.

Climate may influence the distribution and abundance of plant and animal species through changes in resource availability, species productivity, and survivorship. The potential ecological implications of climate change trends in the Southwest indicate:

- More extreme disturbance events, including wildfires, intense rain, flash floods, and wind events (Swetnam, et al., 1999).
- Greater vulnerability to invasive species, including insects, plants, fungi, and vertebrates (Joyce, et al., 2007).

- Long-term shifts in vegetation patterns (Westerling, et al., 2006, and Millar, et al., 2007).
- Cold-tolerant vegetation moving upslope, or disappearing in some areas. Migration of some tree species to the more northern portions of their existing range (Clark, 1998).
- Potential decreases in overall forest productivity, due to reduced precipitation (U.S. Forest Service, 2005).
- Shifts in the timing of snowmelt (already observed) in the American West, which, along with increases in summer temperatures, have serious implications for the survival of fish species, and may challenge efforts to reintroduce species into their historic range (Joyce, et al., 2007, and Millar, et al., 2007).
- Effects on biodiversity, pressure on wildlife populations, distribution, viability, and migration patterns, because of increasing temperatures, water shortages, and changing ecological conditions..

The following conditions are desired to assist with building ecosystem resilience and capacity for plant and animal communities to accommodate expected changes imposed by future climate trends for the Southwest.

**Desired Conditions for Ecosystem Resilience to Climate Change**

*Landscape Scale (10,000 acres or greater)*

DC-Ecosystem Resilience-1	<ul style="list-style-type: none"> <li>• Ecosystems retain all of their components, processes, and functions under changing and uncertain future environmental conditions. These resilient ecosystems provide a wide range of ecosystem services<sup>2</sup> for local and regional needs.</li> <li>• Prescott NF landscapes retain capacity to survive natural disturbances and threats to sustainability such as those driven by climate change and an increasing human population.</li> <li>• Ecosystem functions (such as nutrient cycling, water infiltration, carbon sequestration, etc.) are sustained as forests, woodlands, grasslands, and desert communities adapt to warmer, drier conditions.</li> <li>• Ecosystems are resilient to changing natural disturbance regimes (e.g., drought, wind, fire, insects, and pathogens), allowing for shifting of plant communities, structure, and ages across the landscape.</li> <li>• Ecological conditions for habitat quality, distribution, and abundance contribute to self-sustaining populations of terrestrial and aquatic plant and animals. Conditions provide for the life-history, distribution, and natural population fluctuations of the species within the capability of the ecosystem.</li> <li>• Contiguous blocks of habitat are interconnected, support a wide array of native species, and allow for genetic and behavioral interactions. Ecological processes allow connectivity of predator-prey relationships, metapopulations, and interactive wildlife species throughout the landscape.</li> <li>• Habitat quality distribution and abundance exist to support recovery and/or stabilization of federally listed and other species.</li> </ul>
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<sup>2</sup> Ecosystem services are benefits that people obtain from ecosystems. The Prescott NF provides clean water and air, productive soil, riparian and aquatic resources, diverse wildlife habitats, educational and cultural values, scenery, recreation, timber, forage, and forest products.

## Airsheds

### Background and Existing Conditions for Airsheds

In addition to establishing standards for national ambient air quality for airsheds within the United States, the Clean Air Act (CAA) established special goals for visibility in many national parks, wilderness areas, and international parks. Through the 1977 amendments to the CAA, Congress set a national goal for visibility as “the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I Federal areas<sup>3</sup> which impairment results from manmade air pollution.” The amendments required EPA to issue regulations to assure “reasonable progress” toward meeting the national goal.

Through the 1999 Regional Haze Rule, the EPA directed States to establish goals for each affected Class I area to 1) improve visibility on the haziest days and 2) ensure no degradation occurs on the clearest days over the period of each implementation plan.

Two mandatory Class 1 Federal areas occur within or adjacent to the Prescott NF: Sycamore Canyon Wilderness (47,757 acres) and Pine Mountain Wilderness (20,061 acres). Baseline visibility data collected for these two areas (2001-2004) indicate increasing visibility and a trend towards the desired goal of 6.68-6.96 deciviews by the year 2064.

Fire management activities have the potential to impact airsheds of the Prescott NF. State air pollution agencies recognize that fire of all kinds (i.e. wildfire, prescribed fire) contributes to regional haze, and there is a complex relationship between what is considered a natural source of emissions versus a human-caused source of emissions. For example, the increased use of prescribed fire in some areas may lead to particulate emissions levels lower than those that would be expected from an uncharacteristically severe wildfire. Given that in many instances the purpose of prescribed fires is to restore natural fire patterns across the landscape, State air pollution agencies work with Federal land managers to support the development of enhanced smoke management plans to minimize the effects of emissions on public health and welfare.

For the Prescott NF, air quality resulting from fire is monitored by Arizona Department of Environmental Quality (ADEQ) Air Quality Division for potential human health impacts using data recorders usually located in local communities including Prescott, Prescott Valley, Cottonwood, and Camp Verde.

To minimize air pollution and smoke impacts, the Prescott NF works with ADEQ Air Quality Division and follows Arizona’s Forest and Rangeland Management Burn Rule (A.R.S. 18-15-1500). The Prescott NF also employs emission reduction techniques to avert smoke impacts to mandatory Class 1 areas.

Under warmer and dryer climate conditions, airsheds are susceptible to increased levels of pollutants (particulates and aerosols) resulting from longer, more severe fire seasons, increased occurrence of warmer air masses that can suspend higher concentrations of pollutants, and frequent or intense wind storms that can transport pollutants short and long distances.

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<sup>3</sup> The CAA defines mandatory Class I Federal areas as certain national parks (over 6000 acres), wilderness areas (over 5000 acres), national memorial parks (over 5000 acres) and international parks that were in existence as of August 1977.

**Desired Conditions for Airsheds**

*Landscape Scale (10,000 acres or greater)*

DC-Airshed-1	<ul style="list-style-type: none"> <li>• Fire as a natural disturbance process occurs across the landscape.</li> <li>• Smoke or dust levels meet national ambient air quality standards (NAAQS). Conflicts between smoke aversion and improvement of ecosystems using fire are minimized and smoke impacts to communities are minimized. Citizens are aware of timing, ignition sources, and benefits of fires and their resulting smoke.</li> <li>• Forest Service management activities do not contribute to diminished visibility or increased atmospheric deposition of pollutants within the Sycamore Canyon Wilderness and Pine Mountain Wilderness.</li> </ul>
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**Watersheds**

**Background and Existing Conditions for Watersheds (Watershed Integrity)**

Watershed condition is defined as the state of a watershed based on physical and biological characteristics and processes affecting hydrologic and soil functions (Forest Service Manual). Watershed condition integrity, for the purposes of this Plan, is a wholeness or completeness of the watershed function in providing water quality, quantity, and timing of delivery. It is influenced by soil function, biological function, and geomorphology. In addition, vegetation structure and composition, disturbance regimes, and recreation activities can all affect watershed integrity.

The hierarchy of hydrologic units places the Prescott NF within the Lower Colorado River region and within three subregions. The U.S. Geological Survey has created a hierarchical method of mapping and identifying watersheds. The method uses hydrologic unit codes (HUC), where, as the unit code increases, the size of the watershed decreases. Therefore, within the Prescott NF, 22 fifth level HUC watersheds help to make up 8 fourth level HUC watersheds that overlap the forest to some degree (see maps **XX** in appendix A).

At a fine scale, the Prescott NF overlaps with portions of 127 6<sup>th</sup> level HUC watersheds. The 127 6<sup>th</sup> level HUC watersheds vary from about 7,000 to 39,000 acres in size, although in many cases, only a portion of a watershed covers the Prescott NF.

While the updated National Hydrologic Database identifies 79.4 perennial or perennial intermittent<sup>4</sup> stream miles on the Prescott NF, there is only one major perennial stream with continuous flow from headwaters to mouth—the Verde River.

Current natural disturbances of droughts and floods continue to be within the range of historic variation in all 4<sup>th</sup> level HUC watersheds. Water yield varies by 4<sup>th</sup> level HUC watershed. In general, the watersheds associated with the Bradshaw Mountains receive proportionately more precipitation per acre than areas at lower elevations. Instream flow, critical to maintenance of aquatic ecosystems, has been impacted to varying degrees by diversions and groundwater withdrawals. Water quality has been influenced by past mining activities. For example, about 19.7

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<sup>4</sup> Streams where flow is discontinuous; perennial flowing segments are separated by reaches that have intermittent flow.

miles of Turkey Creek was classified as Category 5 impaired waters due to copper and lead levels. Remediation was completed in 2007.

For the most part, acreage of riparian and wetland areas on the Prescott NF is proportional or exceeds that found within each of the eight sub-basins that partially overlap the forest. The exception is the Santa Maria 4<sup>th</sup> level HUC watershed, where the majority of watershed area occurs off of the Prescott NF.

Under warmer and dryer climate conditions, watersheds are susceptible to changes in the frequency, intensity, timing, and spatial extent of extreme weather events (e.g., droughts, flash flooding, landslides, wind storms, and ice storms). These events, coupled with increased ambient air and soil temperatures, can create corresponding shifts in plant evapotranspiration rates, water infiltration, overland flow, erosion, sediment delivery, and loss of organic ground cover.

**Desired Conditions for Watershed Integrity**

*4<sup>th</sup> to 5<sup>th</sup> Level HUC Watershed Scale*

<p>DC- Watershed-1</p>	<ul style="list-style-type: none"> <li>• Adequate quantity and timing of water flows are maintained in streams, seeps, springs, and wetlands to retain or enhance ecological functions.</li> <li>• Water quality is sustained at a level that retains the biological, physical, and chemical integrity of the aquatic systems and benefits survival, growth, reproduction, and migration of native and desired non-native aquatic and riparian species. Characteristics include:             <ul style="list-style-type: none"> <li>o Water quality meets Arizona water quality standards and supports designated beneficial uses and native and desired non-native aquatic species.</li> <li>o Short-term exceedance of water quality standards, (temporary period of declining water quality), due to management activity occurs only in the anticipation of long-term improvement of watershed condition and water quality.</li> </ul> </li> <li>• Soil and vegetation functions in upland and riparian settings are retained or enhanced. Resilient landscapes provide forage for browsing and grazing animals, timber production, and recreation opportunities, without negatively impacting soil and water productivity.</li> </ul>
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<p>DC- Watershed-2</p>	<ul style="list-style-type: none"> <li>• Riparian corridors are intact and functioning across the landscape.</li> <li>• Depending on natural flow regimes and associated landforms, stream channels and associated floodplains are sustained.</li> <li>• Herbaceous vegetation and other ground cover are present in sufficient quantity to filter sediments, stabilize streambanks, mitigate effects of flooding, and provide for groundwater recharge within their natural potential.</li> <li>• In the floodplains and channels of deciduous forest dominated riparian corridors, large woody debris is found in sufficient quantities to provide instream transitory pool-like habitat; shading from intense solar radiation; and organic particles for use as food by fish and aquatic invertebrates.</li> <li>• Links between aquatic and upland components are maintained, providing access to food, water, cover, nesting areas, and protected pathways for aquatic and upland species.</li> </ul>
<p>DC- Watershed-3</p>	<ul style="list-style-type: none"> <li>• Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport. Erosion and sediment regimes are within the natural range of variability consistent with current technical guides for soil.</li> <li>• At a landscape scale, soil productivity, function, and inherent physical, chemical, and biological processes remain intact or are enhanced.</li> <li>• Elements necessary to sustain soil productivity and function include:             <ul style="list-style-type: none"> <li>o Logs and other woody material are distributed across the soil surface to maintain soil productivity within the limitations of vegetation types.</li> <li>o Soil loss does not exceed soil formation rates. Limited soil compaction does not affect ecological and hydrological functions.</li> <li>o Relatively undisturbed biological soil crusts (consisting of cyanobacteria, lichens, mosses, and algae organisms) occur in the interspaces of vascular plants, providing stability and fertility to desert soils.</li> <li>o Soil productivity is not inhibited by proliferation of non-native invasive plant species.</li> <li>o Vegetative ground cover is distributed across the soil surface in sufficient proportions to meet or trend toward “natural” conditions listed for each map unit in the Terrestrial Ecosystem Survey.</li> <li>o Soils are stable within their natural capability.</li> <li>o Soil condition rating is at or trending toward ‘satisfactory’<sup>5</sup></li> </ul> </li> </ul>
<p>DC- Watershed-4</p>	<ul style="list-style-type: none"> <li>• The watersheds contributing to the Verde River municipal supply watershed<sup>6</sup> provide vegetation and soil conditions that lead to desired water quality and quantity for the municipality of Phoenix .</li> </ul>

<sup>5</sup> See Terrestrial Ecosystem Survey of the Prescott NF, p.76

<sup>6</sup> For this plan, municipal supply watersheds are generally those where agreements have been approved between the Forest Service and the municipality.

*6<sup>th</sup> Level HUC Watershed Scale*

DC- Watershed 5	<ul style="list-style-type: none"> <li>The municipal watershed surrounding Goldwater Lakes provides a supply of clean water for the city of Prescott (from Granite Creek and Groom Creek) based on a 1924 agreement, should the need arise. (Agreement covers portions of Upper Granite Creek-Watson Lake and Groom Creek-Upper Hassayampa 6<sup>th</sup> level HUC watersheds.)</li> </ul>
DC- Watershed-6	<ul style="list-style-type: none"> <li>Wetlands, seeps, springs, wet meadows, and associated wetlands or riparian systems develop and support stable herbaceous and woody vegetative communities with root masses that stabilize streambanks, floodplains, shoreline, and soil surfaces.</li> <li>The natural hydrologic, and geomorphic processes inherent to these groundwater dependent ecosystems function at a level that allows retention of their unique physical and biological properties.</li> </ul>

**Biological Factors**

Biological factors relate to living, growing things, such as wildlife, fish, invertebrates, or vegetation.

**Vegetation**

**Background and Existing Conditions for All Vegetation Types**

At least eleven vegetation types occur across the Prescott NF landscape. They include a variety of forms from cactus and shrub communities to grasslands, woodlands, and forest. The vegetation patterns found on the Prescott NF are responsive not only to natural and human disturbances, but also to the local abiotic features of the landscape (e.g., topography, aspect, slope, soil texture, and water infiltration rates).

The desired conditions in this section pertain to all eleven major vegetation types found on the Prescott NF. Conditions for vegetation communities that are dependent on groundwater or surface flows (e.g., riparian areas, seeps, and springs) are addressed in the Watershed section of this chapter.

Ranges of values presented in desired conditions account for natural variation in the composition, structure, and disturbance patterns within a vegetation type. Desired conditions may differ within a vegetation type due to spatial variability in soils, elevation, aspect, or varying multiple-use needs. Site-specific areas may be managed for different aspects of desired conditions because of particular resource and species needs.

Desired conditions for vegetation reflect our best understanding of the ecological interactions (physical and biological) resulting from warmer and drier climate conditions.

## Desired Conditions for All Vegetation Types

*Landscape Scale (10,000 acres or greater)*

DC-Veg-1	<ul style="list-style-type: none"> <li>• Each vegetation type contains a mosaic of vegetative conditions, densities, and structures. This mosaic occurs at a variety of scales across landscapes and watersheds. The distribution of physical and biological conditions is appropriate to the natural disturbance regimes affecting the area.</li> <li>• Vegetative conditions are resilient to the frequency, extent, and severity of disturbances, especially fire. Natural and human disturbances (e.g., planned and unplanned fire, and mechanical vegetation treatments) provide desired overall plant density, structure, species composition, coarse woody debris, and nutrient cycling. Desired disturbance regimes are restored where practical.</li> <li>• Native plant communities dominate the landscape, while invasive species are non-existent or in low abundance. Establishment of invasive plant species new to the Prescott NF is prevented. Existing invasive plant species are prioritized for eradication, containment, or control.</li> <li>• Vegetation, including appropriate densities, provides favorable conditions for water flow and quality.</li> <li>• The composition, abundance, and mosaic of organic ground cover and herbaceous vegetation protects soil provides moisture infiltration, and contributes to plant and animal diversity and ecosystem function.</li> <li>• Diverse vegetation structure, species composition, and densities, provide quality habitat for native and desirable non-native plant and animal species throughout their lifecycle and at multiple spatial scales. Landscapes provide for the full range of ecosystem diversity at multiple scales, including habitats for those species associated with old growth conditions.</li> </ul>
DC-Veg-2	<ul style="list-style-type: none"> <li>• Vegetation provides sustainable amounts of products, such as wood fiber or forage, for local and regional needs.</li> <li>• Herbivory (the act of feeding on plants) aids in sustaining or improving native vegetation cover and composition. Livestock grazing and wood fiber harvest activity contribute to aspects of the social, economic, and cultural structure and stability of rural communities.</li> </ul>
DC-Veg-3	<ul style="list-style-type: none"> <li>• Vegetation conditions for federally listed species are consistent with existing recovery plans.</li> <li>• Southwestern Region Sensitive Species<sup>7</sup> and species identified as culturally important<sup>8</sup> are valued and therefore enhanced and protected.</li> <li>• Ecological conditions provide habitat for associated federally-listed species. Habitat conditions generally contribute to survival and recovery, and contribute to the de-listing of species under the <i>Endangered Species Act</i> (ESA).</li> </ul>

<sup>7</sup> Southwestern Region Sensitive species are those plant and animal species identified by a regional forester for which population viability is a concern as evidenced by: a) significant current or predicted downward trends in population numbers or density, or b) significant current or predicted downward trends in habitat capability that would reduce a specie’s existing distribution (FSM 2670.5 Definitions)

<sup>8</sup> Rare or culturally important plant species are those that either have specific requirements for survival and are found in few locations, or are those that have importance to Native American tribes, communities, and nations.

*Mid Scale (1,000 acres or greater)*

DC-Veg-4	<ul style="list-style-type: none"> <li>• The composition, density, structure, and mosaic of vegetative conditions reduce the threat of uncharacteristic wildfire hazard to local communities and ecosystems.</li> <li>• Snags are present in adequate numbers to provide habitat features including cavities, loose bark, etc.</li> <li>• Improved habitats for Proposed or Candidate species help preclude species listings as Threatened or Endangered under the <i>Endangered Species Act</i> (ESA).</li> <li>• Potentially suitable habitat for sensitive plant species helps retain functional stability of the species.</li> </ul>
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*Fine Scale (less than 100 acres)*

DC-Veg-5	<ul style="list-style-type: none"> <li>• Locally endemic<sup>9</sup> plant communities are intact and functioning.</li> <li>• Unique plant community habitats (e.g., limestone cliffs, margins of seeps and springs, Verde Valley Formation, basalt-lava flows/cinders, calcareous soil/alkaline clay, canyons/cliffs and ledges, granitic soils/igneous rocks, sandstone rocks/soils and riparian forest) are present to maintain well-distributed populations of associated native plant species.</li> <li>• Native plants provide nectar, floral diversity, and pollen throughout the seasons that pollinator species are active. Desired habitat conditions promote pollinator success and survival.</li> </ul>
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**Desired Conditions by Potential Natural Vegetation Type**

Vegetation conditions are described as a whole in the previous section and by Potential Natural Vegetation Type (PNVT) in this section. PNVTs are coarse-scale groupings of non-contiguous land that share similar aspect, elevation, vegetation, soil parent material, and natural disturbances such as fire or drought cycles. Identification of PNVTs is based on the Terrestrial Ecological Unit Inventory<sup>10</sup>. It is possible that vegetation characteristics currently found in a PNVT are not the same as those described in the desired condition. The expectation is that future site-specific projects could produce a trend toward the desired conditions that are described. Wildlife and plant species are often associated with a PNVT. As conditions trend toward those that are desired, we intend that habitat for associated species will improve as well.

<sup>9</sup> Endemic refers to a population that has unique genetic characteristics and likely exists in a very limited geographic area.

<sup>10</sup> The Terrestrial Ecosystems Unit Inventory (also called Terrestrial Ecosystem Survey) identifies ecological units for the Prescott NF that are distinct from each other in terms of their soil, vegetation, and climate components. The ecological units (TEUI or TES units) are mapped at the scale of 1:24,000. There are 147 TES units mapped for the Prescott NF. TES units were aggregated into 11 PNVTs for the purposes of assessing vegetation and soil characteristics across the Prescott NF.

## Background for Juniper Grasslands, Piñon-Juniper Evergreen Shrub, and Piñon-Juniper Woodlands

At roughly 636,800 acres, piñon-juniper communities cover a majority of the Prescott NF landscape and represent one of the most extensive vegetation types in the Southwest. These cold-adapted evergreen woodlands are characterized by piñon and/or juniper species at elevations ranging from 4,500 to 7,500 feet. The piñon component includes Colorado and single leaf species. The juniper component is a variable mix of alligator, oneseed, Utah, and Rocky Mountain. Annual and perennial grasses, forbs, and shrubs can be found beneath the woodland overstory. Species composition, stand structure, and density vary by location primarily due to precipitation, elevation, temperature, and soil type. On erosive soil types within these communities, shrub, tree, and herbaceous ground cover help to lessen raindrop intensity and soil movement.

Under warmer and dryer climate conditions, piñon-juniper communities are expected to be susceptible to decreases in plant productivity from water limitations and increased heat; increases in insect attacks; colonization of invasive species; longer and more severe fire season; and altered frequency, intensity, timing, and spatial extent of disturbance events (e.g., droughts, flash flooding, landslides, wind storms, and ice storms). It is possible that there may be some shifts in aerial coverage between the three piñon-juniper PNVTs depending on amount and timing of precipitation and site specific conditions such as terrain and soils. In addition, piñon trees may decrease in number due to possible increased insect attack and lack of moisture.

The piñon-juniper vegetation communities on the Prescott NF have been subdivided into three distinct vegetation types: juniper grassland, evergreen shrub, and woodland. Each are described in more detail in the following sections.

### Existing Conditions for Juniper Grasslands

The juniper grassland type, with a grass and forb-dominated understory and scattered overstory trees, generally occurs on flats, basins, gentle sloping foothills, and transitional valleys at generally lower elevations. The soils associated with juniper grasslands are generally deep and productive. Juniper grasslands cover about 137,300 acres of the Prescott NF.

Current conditions within juniper grasslands are moderately departed from that expected based on estimates of historic conditions. Fire has been excluded from this type for most of the last century, allowing for increases in the age, density, and canopy cover of trees and shrubs, and a reduction in fire-stimulated re-growth and germination of perennial grasses and forbs.

### Desired Conditions for Juniper Grasslands

#### *Landscape Scale*

DC-Veg 6	<ul style="list-style-type: none"> <li>• The juniper grasslands are generally uneven-aged and open in appearance. Trees occur as individuals or in smaller groups and range from young to old. Juniper species are always present while piñon species are usually absent. Tree canopy cover may range from a low of 5-10 percent to as high as 30 percent. A continuous herbaceous understory, including native grasses and forbs, are present, with incidental occurrence of shrubs that support a natural fire regime.</li> <li>• Snags (dead standing trees) are scattered across the landscape. Coarse woody</li> </ul>
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	<p>debris occurrence, including logs, generally averages 1 to 2 tons per acre.</p> <ul style="list-style-type: none"> <li>• Fires occur every 1 to 35 years with high severity favoring regrowth and germination of native grasses and forbs.</li> </ul>
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**Existing Conditions for Piñon-Juniper Evergreen Shrub**

The evergreen shrub type, with an understory dominated by a mix of shrub species, generally occurs on elevated and lowland plains, hills, and lower-mountain slopes. The soils associated with the evergreen shrub type are variable and include those derived from granite, limestone, basalt, sandstone, and alluvium. Covering more than 463,000 acres, this is the most common piñon-juniper type on the Prescott NF.

Current conditions within the piñon-juniper evergreen shrub type are somewhat departed from that expected based on estimates of historic conditions. For example, within-group tree and shrub density is higher than expected, and shrub canopy cover lacks variability. Current fire frequency and severity are similar to historic conditions.

**Desired Conditions for Piñon-Juniper Evergreen Shrub**

*Landscape Scale*

DC- Veg-7	<ul style="list-style-type: none"> <li>• The piñon-juniper evergreen shrub type is a mix of trees and shrubs and herbaceous vegetation occurring on the landscape as discrete groups. Trees occur as individuals or in smaller groups ranging from young to old. Juniper species are always present while piñon trees are occasionally absent. Typically, there is a mosaic of groups of trees that are even-aged in structure with all ages represented across the landscape.</li> <li>• The understory is dominated by low to moderate density shrubs. Shrub canopy cover is variable (10 to 65 percent). The shrub component consists of one or a mix of evergreen shrubs including oak, manzanita, mountain mahogany, cliffrose, and other shrub species, which are well-distributed. Native perennial grasses and annual and perennial forbs are present in the interspaces.</li> <li>• Snags (dead standing trees) and old trees with dead limbs/tops are scattered across the landscape. Coarse woody debris is present.</li> <li>• Fires are typically of mixed severity while some evergreen shrub types exhibit occasional high severity fires. Regardless of the level of severity, fires occur with an average frequency of 35 to 100 years.</li> </ul>
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*Mid-Scale*

DC-Veg-8	<ul style="list-style-type: none"> <li>• To reduce wildfire behavior and hazards to life and property:             <ul style="list-style-type: none"> <li>o Vegetation conditions within the wildland urban interface (WUI) may be composed of younger and more widely-spaced shrub patches and tree groups.</li> <li>o The frequency of disturbance (e.g., prescribed fire, vegetation treatments) within the wildland urban interface (WUI) may be more often than for the</li> </ul> </li> </ul>
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	same vegetation types located outside of WUI areas.
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**Existing Conditions for Piñon-Juniper Woodlands**

Covering about 36,000 acres of the Prescott NF, the woodland type has a persistent tree overstory and a sparse discontinuous understory of some grasses and/or shrubs. It generally occurs on flats, ridge tops, rugged uplands, and steep slopes at various elevations and on soils that are shallow and rocky.

Current vegetative conditions and fire regimes within the piñon-juniper woodlands are similar to historic conditions. Fire in this vegetation type is less frequent than in the juniper grassland and evergreen shrub types and variable due to differences in ground cover.

**Desired Conditions for Piñon-Juniper Woodlands**

*Landscape Scale*

DC-Veg-9	<ul style="list-style-type: none"> <li>• The piñon-juniper woodland is a mosaic of even-aged patches of juniper and variable amounts of pinion that are persistent across the landscape. Piñon trees are occasionally absent, but one or more juniper species is always present. Old growth is dynamic in nature and occurs as patches on the landscape that shift across the landscape over time. Very old trees (&gt; 300 years old) are present.</li> <li>• Tree density is variable and mid-to-old age groups of trees have greater than 40 percent canopy cover, shrubs are sparse, and herbaceous cover is low and discontinuous.</li> <li>• Snags and older trees with dead limbs and/or tops are scattered across the landscape. Coarse woody debris generally averages two to five tons per acre.</li> <li>• Fire in this vegetation type is less frequent than in the juniper grassland and evergreen shrub types and variable due to differences in ground cover. The fires that do occur have mixed to high severity effects and return intervals that range from 35 to 200+ years.</li> </ul>
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*Mid-Scale*

DC-Veg-10	<ul style="list-style-type: none"> <li>• To reduce wildfire behavior and hazards to life and property:             <ul style="list-style-type: none"> <li>o Vegetation conditions within the wildland urban interface (WUI) may be composed of younger and more widely-spaced shrub patches and tree groups.</li> <li>o The frequency of disturbance (e.g., prescribed fire, vegetation treatments) within the wildland urban interface (WUI) may be more often than for the same vegetation types located outside of WUI areas.</li> </ul> </li> </ul>
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**Background and Existing Conditions for Interior Chaparral**

Interior chaparral extends over 315,600 acres, and represents the second-largest vegetation type on the Prescott NF. Interior chaparral occurs at mid-elevations (3,400 to 6,600 ft) on foothills and lower mountain slopes. It is bordered by ponderosa pine or piñon-juniper woodlands at the upper elevations, and semi-desert grasslands at the lower elevations. Interior chaparral has a uniform

dense structure dominated by shrubs with thick, stiff, waxy evergreen leaves. Mixed shrub associations include: shrub live oak, manzanita, desert ceanothus, mountain mahogany, silktassles, Stansbury cliffrose, evergreen oaks, sumacs, and various cacti. Grasses are a minor component in chaparral and may include grama, threawn, and muttongrass species.

Current interior chaparral composition, structure, and fire regime are similar to reference conditions; however, some non-native invasive species, such as yellow star thistle and Dalmatian toadflax, are infesting portions of the chaparral type.

Under warmer and dryer climate conditions, interior chaparral ecosystems are susceptible to decreases in plant productivity from water limitations and increased heat; increases in insect attacks; colonization of invasive species; longer and more severe fire seasons; and altered frequency, intensity, timing, and spatial extent of disturbance events (e.g., droughts, flash flooding, landslides, wind storms, and ice storms).

**Desired Conditions for Interior Chaparral**

*Landscape Scale*

DC-Veg-11	<ul style="list-style-type: none"> <li>• During young stages, chaparral contains a grass and forb component in the understory. The mid-to-late development stages are dense, nearly impenetrable thickets with considerable shrub litter. Standing dead material may accumulate in areas that have not burned for several decades. Ground cover consists primarily of shrub litter (e.g., small stems, leaves). Greater than 70 percent of chaparral is closed canopy with some openings of grasses and forbs.</li> <li>• Chaparral is in a constant state of transition from young to older stages and back again, with fire being the major disturbance factor. High severity fires occur with a frequency of once every 35 to 100 years.</li> </ul>
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*Mid-Scale*

DC-Veg-12	<ul style="list-style-type: none"> <li>• To reduce wildfire behavior and hazards to life and property:             <ul style="list-style-type: none"> <li>o Vegetation conditions within the wildland urban interface (WUI) may be composed of younger and more widely-spaced shrub patches and tree groups.</li> <li>o The frequency of disturbance (e.g., prescribed fire, vegetation treatments) within the wildland urban interface (WUI) may be more often than for the same vegetation types located outside of WUI areas.</li> </ul> </li> </ul>
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**Background and Existing Conditions for Ponderosa Pine-Evergreen Oak Forest**

Ponderosa Pine - Evergreen Oak forests cover more than 63,500 acres of the Prescott NF at elevations ranging from approximately 6,000 to 7,500 feet. It is dominated by ponderosa pine and can be distinguished from the Ponderosa Pine-Gambel Oak PNVF by one or more well-represented evergreen oak species (e.g., Emory oak and Arizona white oak), juniper species, piñon pine species, and Arizona cypress in some locations. This forest type on the Prescott NF has an understory of primarily evergreen shrubs including manzanita, turbinella oak, sumac species, and mountain mahogany species.

This forest type is currently severely departed from reference conditions. It has too many young and mid-aged trees and shrubs growing closely together. There are not enough old trees. The natural fire regime is severely departed from historic conditions. Historically, fire burned relatively frequently (every 6 to 12 years) and at low intensities maintaining an open pine forest with a mix of young evergreen oaks and shrubs underneath. Approximately two thirds of this PNVF occurs within the wildland urban interface<sup>11</sup>.

Under warmer and dryer climate conditions, ponderosa pine-evergreen oak ecosystems are susceptible to decreases in plant productivity from water limitations and increased heat; increases in insect attacks, colonization of invasive species; longer and more severe fire seasons; and altered frequency, intensity, timing, and spatial extent of disturbance events (e.g., droughts, flash flooding, landslides, wind storms, and ice storms). High risk occurrences could include uncharacteristically intense wildfire, increased rate of insect or disease attack due to warming temperatures, and increasing challenges to regeneration of ponderosa pine, especially on warmer, dryer areas such as south facing slopes.

**Desired Conditions for Ponderosa Pine – Evergreen Oak Forest**

*Landscape Scale*

DC-Veg-13	<ul style="list-style-type: none"> <li>• At the landscape scale, the ponderosa pine-evergreen oak forest is a mosaic of structural stages ranging from young to old trees. Forest structure is variable but generally uneven-aged and open in appearance. The forest arrangement consists of small clumps and groups of trees interspersed within variably-sized openings of moderate to high density shrubs and limited grass cover. The size, shape, and number of trees per group and the number of groups per area vary across the landscape. Tree density may be greater in some locations, such as north-facing slopes and canyon bottoms.</li> <li>• Vegetation composition resembles historic situations including ponderosa pine overstory. Evergreen oaks are well represented and juniper, piñon pine and Arizona cypress can be found in the lower tree canopy. Understory species consist of evergreen shrubs (manzanita, turbinella oak, sumac species, mountain mahogany species) and grass as scattered ground cover.</li> <li>• Old growth occurs as groups of old trees mixed with groups of younger trees or occasionally as a patch composed mostly of old trees. Some large contiguous patches (100-300 acres) of old growth, with all its components<sup>12</sup> (snags, logs, and dense canopies), are present. Old growth is dynamic in nature and the location of these patches tends to shift across the landscape over time.</li> <li>• The ponderosa pine-evergreen oak forest is composed predominantly of vigorous trees and shrubs, but declining, top-killed, lightning-scarred, and</li> </ul>
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<sup>11</sup> The wildland urban interface includes those areas of resident populations at imminent risk from wildfire, as well as human developments having special significance. These areas encompass not only the sites themselves, but also the continuous slopes and fuels that lead directly to the sites regardless of the distance involved.

<sup>12</sup> Old Growth is usually described as groups of trees that show signs of aging such as large diameters, dead standing trees (snags), fallen trees (logs) or those with broken tops, and large tree tops (canopies) that interlace with each other (dense canopies).

	<p>fire-scarred trees provide snags and coarse woody debris (greater than 3 inch diameter). A variety of snag species and coarse woody debris are well-distributed throughout the landscape. Snags are typically 18 inches or greater diameter at breast height (DBH) and average 1 to 2 per acre. Logs (greater than 12 inch diameter at mid-point and greater than 8 feet long) average 3 per acre within the forested area of the landscape. Coarse woody debris, including logs, ranges from 3 to 10 tons per acre.</p> <ul style="list-style-type: none"> <li>• Where it naturally occurs, Emory oak and Arizona white oak are present with all age classes represented. Old trees occur as dominant individuals or small groups in openings.</li> <li>• Limited grasses, forbs, and a moderate density of shrubs, and needle cast (fine fuels), support the natural fire regime.</li> <li>• Fires of low severity and occasionally mixed severity, occurring every 6 to 12 years, are characteristic of this PNVT including throughout the range of northern goshawks.</li> </ul>
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*Mid Scale*

<p>DC-Veg-14</p>	<ul style="list-style-type: none"> <li>• Ponderosa pine-evergreen oak forest is characterized by variation in the size and number of tree groups depending on elevation, soil type, aspect, and site productivity. The more productive<sup>13</sup> sites contain more trees per group and more groups per area. Desired tree density within forested areas generally ranges from 40 to 80 square feet basal area<sup>14</sup> per acre. In occasional marginal sites, basal area could be as low as 20 square feet basal area per acre. Openings surrounding tree groups are variably shaped and comprised of shrub, grass, forb mixture. Openings typically range from 10 percent in more productive sites to 70 percent in the less productive sites. Occasionally, patches of even-aged forest structure are present.</li> <li>• Fires burn primarily on the forest floor, with some spread between tree groups as crown fire. Crown fires occur in small patches.</li> <li>• Basal area per mature tree group in northern goshawk post-fledging family areas (PFAs) is 10 to 20 percent higher than northern goshawk foraging areas and the general forest. Northern goshawk nest areas have multi-aged forest structure, dominated by large trees with relatively dense canopies consistent with current technical guides for northern goshawk in the southwestern U.S.</li> </ul>
<p>DC-Veg-15</p>	<ul style="list-style-type: none"> <li>• To reduce wildfire behavior and hazards to life and property:             <ul style="list-style-type: none"> <li>o Vegetation conditions within the wildland urban interface (WUI) may be composed of younger and more widely-spaced shrub patches and tree groups.</li> </ul> </li> </ul>

<sup>13</sup> Productive sites are those that provide needed nutrients, light, and moisture that allow for vigorous growth of trees.

<sup>14</sup> Basal Area is an indicator of density of trees with spacing dependent on diameter of trees. The larger the diameter, the more widely spaced the trees. At 80 square feet of basal area, if all trees were 16 inches in diameter, spacing would be approximately 25 -30 feet between trees. At the same basal area, if all trees were 12 inches in diameter approximate spacing would be 15 to 20 feet between trees.

	<ul style="list-style-type: none"> <li>o The frequency of disturbance (e.g., prescribed fire, vegetation treatments) within the wildland urban interface (WUI) may be more often than for the same vegetation types located outside of WUI areas</li> </ul>
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*Fine Scale*

<p>DC-Veg-16</p>	<ul style="list-style-type: none"> <li>• Trees typically occur in irregularly-shaped groups and are variably-spaced with some tight clumps. Openings surrounding tree groups are composed of shrubs and limited grass cover. Some openings contain a high density of shrubs and/or individual trees.</li> <li>• Trees within groups are of similar or variable ages and may contain species other than ponderosa pine. Tree groups are typically less than 1 acre, and at the mature and old stages, consist of approximately 2 to 40 trees.</li> </ul>
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**Background and Existing Conditions for Ponderosa Pine-Gambel Oak Forest**

Ponderosa pine-Gambel oak is a minor vegetation type on the Prescott NF, covering approximately 49,000 acres. This forest type generally occurs at elevations ranging from 5,500 to 9,000 feet on hills, mountain slopes, and some elevated plains. It is dominated by ponderosa pine and Gambel oak and commonly includes other species such as New Mexico locust, juniper, and piñon. Occasionally, species such as aspen, Douglas-fir, white fir, and blue spruce may be present, especially in relatively moist or shady areas. There is typically an understory of grasses and forbs with occasional shrubs.

This forest type is currently severely departed from historic conditions. It has too many young and mid-aged trees and not enough old trees. The natural fire regime is severely departed from historic conditions. Historically, fire burned relatively frequently (every 1 to 15 years) and at low intensities that kept the forest open with abundant herbaceous cover.

Under warmer and dryer climate conditions, ponderosa pine-Gambel oak forest ecosystems are susceptible to decreases in plant productivity from water limitations and increased heat; increases in insect attacks; colonization of invasive species; longer and more severe fire seasons; and altered frequency, intensity, timing, and spatial extent of disturbance events (e.g., droughts, flash flooding, landslides, wind storms, and ice storms). Similar to the ponderosa pine-evergreen oak PNVT, high risk occurrences could include uncharacteristically intense wildfire due to less moisture, increased rate of insect or disease attack due to warming temperatures, and increasing challenges to regeneration of ponderosa pine following disturbance, especially on warmer dryer areas such as south facing slopes.

**Desired Conditions for Ponderosa Pine-Gambel Oak Forest**

*Landscape Scale*

<p>DC-Veg-17</p>	<ul style="list-style-type: none"> <li>• At the landscape scale, the ponderosa pine-Gambel oak forest is a mosaic of structural stages ranging from young to old trees. Forest structure is variable but generally uneven-aged and open in appearance.</li> <li>• The forest arrangement consists of small clumps and groups of trees interspersed within variably-sized openings of grasses, forbs, and shrubs. The size, shape, and number of trees per group and the number of groups per area vary across the landscape. Tree density may be greater in some locations, such</li> </ul>
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	<p>as north-facing slopes and steep-sided valleys at higher elevation.</p> <ul style="list-style-type: none"> <li>• Vegetation composition resembles historic situations including ponderosa pine overstory with Gambel oak occupying the lower tree canopy. Aspen or Gambel oak patches occur. There is typically an understory of grasses and forbs with occasional shrubs. Where it naturally occurs, Gambel oak is present with all age classes represented. It is reproducing to maintain or expand its presence on suitable sites across the landscape.</li> <li>• Old growth occurs as groups of old trees mixed with groups of younger trees or occasionally as a patch composed of mostly of old trees. Some large contiguous patches (100-300 acres) of old growth, with all its components (snags, logs, and dense canopies), are present. Old growth is dynamic in nature and the location of these patches tends to shift across the landscape over time.</li> <li>• The ponderosa pine-Gambel oak forest is composed predominantly of vigorous trees, but declining, top-killed, lightning-scarred, and fire-scarred trees provide snags and coarse woody debris (greater than 3-inch diameter). A variety of snag species and coarse woody debris are well-distributed throughout the landscape. Snags are typically 18 inches or greater DBH and average 1 to 2 per acre. Logs (greater than 12-inch diameter at mid-point and greater than 8 feet long) average 3 per acre within the forested area of the landscape. Coarse woody debris, including logs, ranges from 3 to 10 tons per acre.</li> <li>• Grasses, forbs, shrubs, needle cast (fine fuels), and small trees support the natural fire regime. The greater proportion of ground cover is composed of grasses and forbs as opposed to needle cast.</li> <li>• Frequent, low severity fires, occurring every 1 to 15 years, are characteristic of this forest including throughout the range of northern goshawks and Mexican spotted owls.</li> </ul>
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*Mid Scale*

<p>DC-Veg-18</p>	<ul style="list-style-type: none"> <li>• Ponderosa pine-Gambel oak forest is characterized by variation in the size and number of tree groups depending on elevation, soil type, aspect, and site productivity. The more productive sites contain more trees per group and more groups per area. Tree density within forested areas generally ranges from 20 to 80 square feet basal area per acre. The openings surrounding tree groups, containing grass, forb, and shrub vegetation, are variably-shaped and typically range from 10 to 70 percent of the mid-scale area. Patches of even-aged forest structure are present.</li> <li>• Fires burn primarily on the forest floor and do not spread between tree groups as crown fire.</li> <li>• Basal area per mature tree group in northern goshawk post-fledging family areas (PFAs) is 10 to 20 percent higher than northern goshawk foraging areas and the general forest. Northern goshawk nest areas have multi-aged forest structure, dominated by large trees with relatively dense canopies consistent with current technical guides for northern goshawk in the southwestern U.S.</li> </ul>
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DC-Veg-19	<p>To reduce wildfire behavior and hazards to life and property:</p> <ul style="list-style-type: none"> <li>• Vegetation conditions within the wildland urban interface (WUI) may be composed of younger and more widely-spaced shrub patches and tree groups.</li> <li>• The frequency of disturbance (e.g., prescribed fire, vegetation treatments) within the wildland urban interface (WUI) may be more often than for the same vegetation types located outside of WUI areas</li> </ul>
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*Fine Scale*

DC-Veg-20	<ul style="list-style-type: none"> <li>• Trees typically occur in irregularly-shaped groups and are variably-spaced with some tight clumps. Crowns in the mid- to old-aged stages are interlocking or nearly interlocking. Openings surrounding tree groups are composed of a grass, forb, and shrub mix. Some openings contain individual trees. Trees within groups are of similar or variable ages and may contain species other than ponderosa pine. Tree groups are typically less than 1 acre, and at the mature and old stages consist of approximately 2 to 45 trees.</li> </ul>
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**Background and Existing Conditions for Grasslands**

There are two types of grasslands found on the Prescott NF: Semi-desert and Great Basin. Grasslands are characterized by less than 10 percent tree cover.

The semi-desert grassland encompasses roughly 126,000 acres at elevations ranging from 3,000 to 4,500 feet. They are bounded by desert communities at the lowest elevations and piñon-juniper woodlands or interior chaparral at higher elevations. Species composition and dominance varies based on soils and topography. The more common grass species include black grama, blue grama, hairy grama, tobosa, and giant sacaton. Various shrubs species also inhabit these grasslands including: creosote bush, catclaw acaccia, mimosa, burroweed, broom snakeweed, and mesquite.

The Great Basin grassland encompasses almost 38,500 acres and intermingles with piñon-juniper ecosystems adjacent to the Chino Valley. It is higher in elevation (approximately 4,700 to 7,600 feet) and climatically cooler and moister than semi-desert grasslands. Vegetation consists mostly of grasses and forbs with interspersed shrubs. Grass species may include, but are not limited to, Indian ricegrass, threeawns, blue grama, needle grass, bottlebrush squirreltail, James’ galleta, dropseed, and tobosa grass. Shrub and half-shrub species may include, but are not limited to, saltbush, snakeweed, winterfat, buckwheat, and juniper.

Healthy grasslands are important habitat for a variety of wildlife species and are essential to maintain pronghorn antelope populations. Grasslands of the Prescott NF have undergone dramatic changes over the last 130 years. Changes include encroachment by trees and shrubs, loss of perennial grass cover, loss of cool season plant species, increase in exposed soil surface, and the spread of non-native annual grasses. Fire plays a key role in the maintenance of grasslands. Fire historically occurred every 10 to 30 years in the Great Basin and 2 to 10 years in the semi-desert.

Currently, the Great Basin grasslands show minimal departure from historic conditions in structure and composition; however, without periodic disturbance (such as fire) conditions are expected to trend away from historic conditions. The semi-desert grasslands show severe departure from historic conditions in both structure and fire regime.

Under warmer and dryer climate conditions, grassland ecosystems are susceptible to decreases in plant productivity from water limitations and increased heat; increases in insect attacks; colonization of invasive species; longer and more severe fire seasons; and altered frequency, intensity, timing, and spatial extent of disturbance events (e.g., droughts, flash flooding, landslides, and ice storms). Grasses make use of moisture in the upper soil layers. Intense precipitation events may lead to increased run-off, but decreased effective water infiltration. This could decrease vigor of native plants and lead to increased colonization of non-native invasive plant species.

**Desired Conditions for Grasslands**

*Landscape Scale*

DC-Veg-21	<ul style="list-style-type: none"> <li>• Perennial herbaceous species dominate and include native grasses, grass-like plants (sedges and rushes), and forbs and, where appropriate, a diversity of shrubs. Woody (tree and shrub) canopy cover is less than 10 percent. Grass communities are a diverse mix of cool and warm season species.</li> <li>• Composition, structure, and cover provide for the full suite of native animals associated with grasslands.</li> <li>• On average, fine fuels provide for and maintain the desired fire regime. In semi-desert grasslands, the desired fire return interval is approximately every 10 to 15 years. In Great Basin grasslands the desired fire return interval is approximately every 10 to 30 years.</li> </ul>
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**Background and Existing Conditions for Desert Communities**

The Desert Communities vegetation type covers approximately 5,900 acres of the lowest elevations of the Prescott NF. Desert communities most often have the appearance of a scrubland or low woodland of leguminous trees with intervening spaces held by one to several open layers of shrubs, cacti and perennial succulents. This vegetation type is found on slopes, broken ground, and multi-dissected sloping plains.

Current vegetation composition and structure are similar to historic conditions. Non-native grasses have invaded and have provided fuel for uncharacteristic and more frequent fire. The natural disturbance regime has also been altered by the frequent occurrence of human-caused wildfires.

Under warmer and dryer climate conditions, desert communities are susceptible to increases in insect attacks; colonization of invasive species; longer and more severe fire seasons; and altered frequency, intensity, timing, and spatial extent of disturbance events (e.g., droughts, flash flooding, landslides, and wind storms).

In desert communities, warming and drying could enhance the invasion of non-native plant species that are adapted to fire. These species grow quickly in the spring and then dry and cure so that wildfire risks increase. The natural vegetation within this community is not adapted to fire and can require long time periods to reproduce. Fire can greatly change the plant composition and thus change the desert plant communities so that birds and other wildlife species may be affected.

## Desired Conditions for Desert Communities

### *Landscape Scale*

DC-Veg-22	<ul style="list-style-type: none"> <li>• Desert communities generally have a sparse to dense vegetation cover of cacti, succulents, trees and shrubs. Grass cover is inherently low. Non-native grass species coverage is controlled.</li> <li>• Dominant plants include giant saguaro, palo verde trees, cholla and prickly pear cacti, ocotillo, velvet mesquite, catclaw acacia, and jojoba.</li> <li>• Natural disturbances are infrequent from drought, frost and wind. Fire is very rare or absent.</li> <li>• Damage to vegetation composition, density, and structure from human-caused fires is minimal.</li> <li>• Saguaros, mesquite trees and other vegetation large enough to sustain cavity nesting birds are present.</li> </ul>
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## Background and Existing Conditions for Terrestrial Wildlife Species

Species diversity and distribution are important to retaining natural components of ecosystems. A species screening process was described in the Ecological Sustainability Report (Forest Service, 2009) to understand and address species diversity. The list of species that remained after applying the screening process was analyzed to determine which species were associated with PNVTs and which have requirements for a specific habitat feature. If vegetative conditions are trending toward Desired Conditions, habitat conditions for species associated with that community are expected to be improving as well. Where associations to a PNVT cannot be made, where species require structural characteristics common to several habitats, or where protection from disturbance during nesting or winter hibernation are most important, additional guidance or site specific activities were identified to improve habitat where necessary. In addition an analysis of species distribution has been done and additional guidance added, as necessary.

The Prescott NF evaluated 222 bird and 98 mammal species (Forest Service, 2009). Species were not considered further if: a) management activities did not affect the species; b) there was so little information known that management direction could not be identified; or c) species appeared to be secure and well-distributed. Thirty-three birds and 11 mammals were considered further. The majority of those species' habitat requirements could be associated with one or more Potential Natural Vegetation Types. Therefore, desired conditions for PNVTs and for Ecosystem resilience provide for conditions that most species require. For a smaller group of species, additional guidance was developed, including desired conditions, objectives (chapter 3), standards and guidelines (chapter 4), or all three.

Viability analyses were also carried out for terrestrial and aquatic vertebrates, invertebrates, and plant species. The process for viability analysis is documented in 'Viability Procedures for Use in Forest Plan Revision' (Forest Service 2010). It includes identification of species for which there is a viability concern, collection of information on species for which there is a viability concern, identification of species groups, and description of conservation approaches. Plan components were identified to mitigate management actions for those species or species groups where conservation approaches indicated a need.

**Desired Conditions for Terrestrial Wildlife Species in addition to those related to Vegetation Desired Conditions**

DC-Wildlife-1	<ul style="list-style-type: none"> <li>• Locations of sensitive flora and fauna species are known and secure. Habitats that support these populations are enhanced to facilitate protection of sensitive flora and fauna species.</li> <li>• Wildlife and aquatic movement corridors are maintained, restored, and promoted at the local and regional scales.</li> <li>• Avian and mammal mortality and habitat alteration associated with existing and proposed power lines, corridors, energy development (i.e., wind and solar), and cell towers is minimized.</li> <li>• Terrestrial habitats are free of or minimally impacted by non-native or feral species.</li> </ul>
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**Background and Existing Conditions for Fisheries and Aquatic Species**

In this document, aquatic species include not only fish but reptiles and amphibians (herps), and invertebrate species such as insects or springsnails. Aquatic habitats occur in perennial and perennial intermittent rivers<sup>15</sup> and streams, as well as ground water dependent systems, such as springs and seeps. A similar process as that described above for terrestrial species was applied to determine species that may need guidance in the forest plan. Of 183 species considered, 2 reptiles, 2 amphibians, 12 fish and 3 invertebrates are thought to exist on the Prescott NF and required development of plan guidance. Aquatic species are addressed separately and as part of watershed integrity desired conditions, objectives (chapter 3), and standards and guidelines (chapter 4).

Under warmer and dryer climate conditions, aquatic species are susceptible to increased water temperatures, altered seasonal discharge events, increases in drought severity during summer flows, and increased predation pressure. Concerns include decreases in water flow and, possibly, a shorter period of sustained flows in the spring due to reduced winter snowpack. Sustained flows and desired temperatures in the spring are needed for successful spawning. Another concern is the potential for fragmentation of habitat with resulting increases in competition and predation in pools, due to little or no water flow in some stream segments.

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<sup>15</sup> Streams other than the Verde River on the Prescott NF are predominantly discontinuous, meaning that there are perennial flowing segments separated by reaches that have intermittent flow; or that they cease to be perennial prior to confluence with a larger stream, with flow sinking into the underlying porous soil or fault/fracture conditions.

## Desired Conditions for Fisheries and Aquatic Species

### 4<sup>th</sup> Level HUC watershed scale

DC-Aquatic-1	<ul style="list-style-type: none"> <li>• Streams, springs, and wetlands that have potential to support native fish and/or other aquatic species provide quality and quantity of aquatic habitat within the natural range of variability.</li> <li>• Quantity and timing of water flows<sup>16</sup> are maintained in streams, seeps, springs, and wetlands to retain or enhance aquatic habitat and ecological functions.</li> <li>• Water quality is sustained at a level that retains the biological, physical, and chemical integrity of the aquatic systems and benefits survival, growth, reproduction, and migration of native aquatic species.</li> <li>• Riparian vegetative communities within these aquatic habitats are intact and functioning.</li> <li>• Aquatic habitats are free of or minimally impacted by non-native plant and animal species.</li> </ul>
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### 5<sup>th</sup> Level HUC Watershed scale

DC-Aquatic-2	<ul style="list-style-type: none"> <li>• Desired non-native fish<sup>17</sup> species are present only where recreational fishing opportunities are emphasized.</li> </ul>
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## Social and Economic Factors

Social factors include various recreational and transportation opportunities; cultural characteristics of communities, such as ranching; as well as, visual beauty and open space. Economic factors include the impact of Prescott NF activities on the economy of the area. The recreation program produces the largest indirect influence on economies by providing features that draw tourists to the area. Tourists then spend money on food and lodging. On the other hand, of all programs on the Prescott NF, the livestock grazing program has the highest direct impact on individuals living within Yavapai County. That is, changes in the program could directly affect jobs or income. Some desired conditions that relate to social or economic factors are also referenced in desired conditions for vegetation. In particular, see [DC-Veg 2](#).

## Recreation, Transportation, and Facilities

### Background and Existing Conditions for Recreation, Transportation, and Facilities

The mild climate of the Prescott NF encourages year-round recreational activity. Trail and day use are primary types of activity including: off-highway vehicle riding, horseback riding, hiking, biking, hunting, fishing, and wildlife viewing. Most visitors live in Yavapai County. Maricopa

<sup>16</sup> Generally, sustained spring water flows as well as cooler water temperatures are needed by fish for spawning. Therefore the time of year of flows, as well as the stream depth are important.

<sup>17</sup> Non-native fish species include bass, sunfish, certain trout species, and other fish that anglers enjoy. Many of these fish have been planted in streams or lakes, provide a fishing experience, but can act as predators to native fish species. The desired condition indicates that places where recreational fishing opportunities are emphasized should be separated from places where native fish habitat is emphasized.

County residents are the next most abundant with portions of the Prescott NF located less than 90 miles from the Phoenix metropolitan area.

There are 18 developed sites on the Prescott NF; those with highest use include: Thumb Butte, Lynx Lake Recreation Area, and Granite Basin Recreation Area. The area surrounding the city of Prescott – the Prescott Basin – has the highest concentration of recreational activity on the Prescott NF and limits primitive camping to designated sites.

The Prescott NF recreational niche identifies trail and day use as primary uses by visitors; 50 percent of these visitors are from within a 20-mile radius. The Prescott NF had 1,230,500 annual visitors in 2007. Top recreational activities listed as a primary activity by visitors on the Forest include hiking and walking, viewing natural features, and driving for pleasure (Forest Service, 2008).

Under warmer and dryer climate conditions, recreation and transportation facilities are susceptible to increased use for relief from increased temperatures in urban areas and to damage from altered frequency, intensity, timing, and spatial extent of disturbance events (e.g., fire, droughts, flash flooding, landslides, and wind storms).

**Forest Recreation Niche Statement:**

*Prescott National Forest – Where the Desert Meets the Cool Pines*

The Prescott’s unique mix of climate zones provide for “cool zone” heat relief from the Arizona sun in the summer and a “warm zone” in the winter. The Forest offers short-duration, day-use recreation on trails supported by development that provides staging areas and resource protection. Adventure activities are strategically managed to be compatible with one another to preserve the natural setting and the ecosystems of the forest.

**Desired Conditions for Recreation, Transportation, and Facilities**

<p>DC-Rec-1</p>	<ul style="list-style-type: none"> <li>• A wide variety of recreational experiences and benefits exist across the Prescott NF landscape, emphasizing opportunities for those of current and future demographics, as well as all abilities, to discover and enjoy.</li> <li>• The number and location of recreation facilities respond to changing demographics and demand and are strategically located to concentrate use at key locations so that visitors enjoy the cultural and biophysical resources while protecting those resources.</li> <li>• Forest users learn from their experience on the Prescott NF and have a better understanding of the ecology of the area.</li> <li>• Conflicts between different recreational uses are infrequent.</li> <li>• Employees and volunteers present a friendly, knowledgeable, and positive image of the Forest Service.</li> <li>• Recreation sites are safe, clean and sanitary and provide a quality experience.</li> <li>• Recreational facilities and constructed features (trails, trailheads, etc.) minimize resource impacts, especially those related to watershed integrity. Characteristics of trails or facilities that qualify them for inclusion in state or national specialized management designations are generally retained.</li> <li>• Vegetation within developed recreation areas is diverse, healthy, and free from hazards to public safety. Vegetation contributes to scenic, healthy, natural, and sustainable recreation areas and enriches the visitors' experience.</li> <li>• Designated dispersed recreation occurs in areas that can accommodate concentrations of use, while impact to natural and cultural resources of the setting is minimal or absent.</li> <li>• Visitors are aware of and comply with forest regulations.</li> </ul>
<p>DC-Rec-2 Trails</p>	<ul style="list-style-type: none"> <li>• Trail opportunities are available in a variety of settings that provide differing levels of challenge and seclusion.</li> <li>• Trail routes include both point-to-point trails that connect communities and interconnected loops of varying lengths.</li> <li>• On designated Maintenance level 2 roads, motorized vehicles and their operators comply with State motor vehicle regulations.</li> <li>• Trails and trailheads meet the needs of the intended recreational use. For example, trailheads to be used by horseback riders provide adequate parking and turning space for vehicles with trailers.</li> <li>• Trail systems meet the needs of a growing population of a variety of recreationists.</li> <li>• Conflicts between various types of trail activities are minimized.</li> <li>• Resource impacts due to trail location and use is minimized.</li> <li>• Signage is accurate, effective, and in appropriate numbers for the desired experience. Information provided matches that found in brochures and other printed material.</li> <li>• Alternate access is available where changes in land ownership or increased development have eliminated historic access to the national forest.</li> <li>• Trails and trailheads are utilized to the extent that they meet the desired recreation experience for the trail or area.</li> </ul>

DC-Wild and Scenic-1	<ul style="list-style-type: none"> <li>• The designated wild and scenic portion of the Verde River and its adjacent areas retain their free-flowing character and outstandingly remarkable values and classifications.</li> <li>• For the portion of the Verde River that is eligible for wild and scenic rivers designation: outstandingly remarkable values (archeological, scenic, fishery, wildlife, recreational, and botanical) and recommended classifications remain intact until further study is conducted or designation by Congress.</li> </ul>
DC-Wilderness-1	<ul style="list-style-type: none"> <li>• Designated wilderness provides outstanding opportunities for exploration, solitude, risk, and challenge; natural processes with little or no human intervention continually influence ecosystems; and wilderness character is preserved and meets the intent of the designation.</li> <li>• The wilderness characteristics of each recommended wilderness remain intact until further action is initiated by the Forest Service to forward recommended wilderness areas to the Congress for designation. Characteristics include such attributes as scenic beauty, natural conditions, solitude, and identified special features.</li> <li>• Within designated wilderness and on related trails and trailheads, native plant communities dominate the landscape, while invasive species are non-existent or in very low abundance.</li> </ul>
DC-Transportation and Facilities-1	<ul style="list-style-type: none"> <li>• A safe, sustainable, and economical transportation system (roads and trails) exists at a level commensurate with use and need, and balances desire for public access with potential for ecological impacts.</li> <li>• A system of sustainable, well-maintained and marked roads and trails provides diverse opportunities to safely explore the forest and does not impede wildlife and fish movement.</li> <li>• Transportation and trail systems and their classifications are clearly understood by forest visitors.</li> <li>• Recreation sites, buildings, dams, and other infrastructure, operate as intended and provide a safe environment for people, while minimizing negative impacts to natural resources.</li> <li>• Energy efficient and economical facilities incorporate emerging technologies and are placed when and where they can be used effectively.</li> </ul>
DC-IRA-1	<ul style="list-style-type: none"> <li>• Pending resolution of existing legal disputes, the undeveloped character of Inventoried Roadless Areas identified in the 2001 Roadless Area Conservation Rule is retained by restricting the occurrence of road construction and timber harvest activities within their existing boundaries.</li> </ul>

## Open Space, Lands, and Scenic Values

### Background and Existing Conditions for Open Space, Lands, and Scenic Values

The high rate of population growth within Yavapai County combined with limited lands for development raises awareness of impacts due to land development, land exchange, and land use issues. The Prescott NF provides scenery to those who live in communities near the Forest. In other situations, the Prescott NF provides lands near communities that provide desired undeveloped scenery and wild character to citizens. Scenery management on the Prescott NF

utilizes the Forest Service Scenic Management System, a tool for inventory and management of scenic resources. The Lands program oversees permits for individual uses, such as power line corridors, and responds to opportunity for acquiring or exchanging land within the national forest.

Under warmer and dryer climate conditions, open space and scenery values are susceptible to changes in landscape vegetation patterns from altered frequency, intensity, timing, and spatial extent of wildfire, insect and disease outbreaks, drought-induced vegetation die-off, and extreme weather events (e.g., flash flooding, landslides, wind storms, and ice storms).

**Desired Conditions for Open Space, Lands and Scenic Values**

DC-Open Space-1	<ul style="list-style-type: none"> <li>Open-space values including those related to naturally appearing landscapes, wildlife habitat, recreational opportunity, riparian/wetland character and community needs are retained.</li> </ul>
DC-Lands-1	<ul style="list-style-type: none"> <li>Rights of way are in place for legal access needs for private land, public access, administrative access needs, or to resolve legal status deficiencies<sup>18</sup> at a level that is commensurate with need. Roads that provide access to multiple properties are well maintained. All affected areas are developed to minimize effects to natural and cultural resources, and recreational opportunities.</li> <li>Electronic sites help fulfill public and government need for adequate communication. Day-to-day commercial frequency management is accomplished and road maintenance and snowplowing to sites occur. Electronic sites are co-located where possible to minimize visual, wildlife, recreational and other natural resource impacts.</li> <li>Towers are non-reflective, self supporting, and less than 199 feet in height to reduce visual impacts. They do not interfere with fire detection or cause radio frequency interference with senior uses<sup>19</sup>; and are not a source of unacceptable human exposure to radio frequency radiation<sup>20</sup>.</li> <li>Power lines and pipelines are located and co-located within existing energy corridors when compatible. Distribution lines (less than 69 kV) are generally underground and rights of way for all above-ground lines have low growing plant communities that do not interfere with overhead lines growing within the corridors.</li> <li>Existing recreation residences<sup>21</sup> are stable in number and blend into a natural forest setting.</li> </ul>
DC-	<ul style="list-style-type: none"> <li>The natural visual character, free-flowing water, and habitat for federally listed</li> </ul>

<sup>18</sup> An example is gaining a right of way to cross private land on a road or trail that previously was located on public land.

<sup>19</sup> Senior communication uses predate later communication applications. The most senior uses form the basis for the communications site designation.

<sup>20</sup> High-powered radio broadcast towers must have radio frequency radiation studies by the Federal Communications Commission or licensed contractor to determine need for mitigation such as fencing and hazard signage around the tower to prevent public exposure.

<sup>21</sup> The recreation residence program as we know it today began in 1915 with an Act that allowed summer homes to be constructed in certain parts of Forest Service lands with multiyear occupancy permits. The Forest Service retains ownership of the underlying land.

Lands-2	and sensitive species along and within the Verde River are retained or enhanced.
DC- Scenic-1	<ul style="list-style-type: none"> <li>• The visual landscape generally appears natural within the context of native vegetation and landforms. A high degree of scenic integrity occurs where naturally appearing landscapes predominate.</li> <li>• Evidence of prescribed fire, such as black char on the bases of trees, or evidence of thinning activities, such as slash piles, may be visible but are generally present for a relatively short duration.</li> </ul>

## Minerals

### Background and Existing Conditions for Minerals

While mining gold and copper were important historically, current mining activities on the Prescott NF include 5 mineral material contracts for removal of flagstone, 1 contract for schist removal, and 1 contract for removal of decomposed granite. One limestone operation exists. Today, gold mining is limited to placer and/or lode mining. Placer operations involve mining from alluvial deposits such as panning. Lode operations, also known as hard rock mining, consist of mining a vein bearing gold or a rock in-place valuable mineral deposit. Most placer mining is recreational use or small commercial operators.

### Desired Conditions for Minerals

DC- Minerals-1	<ul style="list-style-type: none"> <li>• Mineral exploration and development has minimal impact on natural and cultural resources.</li> <li>• Past and present mine facilities are sufficiently reclaimed to provide for public safety and minimize impacts to cultural and natural resources.</li> <li>• When closing mines or caves, a pre-closure inspection by qualified individual should be done to determine if bat populations are present. If bats are present, closure methods that allow bat access should be considered.</li> <li>• Mining activity is withdrawn within Recreation Areas such as the Lynx Lake Recreation Area or within administrative sites located within the Prescott National Forest Boundary.</li> </ul>
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## Heritage

### Background and Existing Conditions for Heritage

The Prescott NF Heritage program manages a multitude of known historic and cultural sites, providing protection from human impacts. Federal law provides direction for most archeological and historic survey and protection including survey for sites before any ground disturbing activity may take place. Once sites are discovered, they must be protected until they are evaluated and further management is approved by the State Historic Preservation Officer. That direction is not repeated in this plan.

**Desired Conditions for Heritage**

DC- Heritage-1	<ul style="list-style-type: none"> <li>• Historic and prehistoric sites, including known American Indian sacred places and traditional cultural properties, are preserved and protected for their cultural importance and are generally free from adverse impacts.</li> <li>• Opportunities for interpretation, research, stewardship, and enjoyment of our cultural past are available.</li> <li>• Site integrity is protected and maintained on sites listed or eligible for listing on the National Register of Historic sites.</li> </ul>
DC- Heritage-2	<ul style="list-style-type: none"> <li>• Use of forest products by affiliated Native American Indian nations, tribes, and communities continues to be available for traditional practices.</li> </ul>

**Timber, Range, and Recreation Suitability**

As stated in chapter 1, the provisions of the 1982 planning rule calls for identification of lands that are suitable for timber production<sup>22</sup>, lands suitable for producing forage for grazing animals, and the characteristics that make land suitable for recreation opportunities. Suitability<sup>23</sup> determinations are one of the decisions made as part of revising the plan.

**Timber Suitability**

Not all forested lands are suitable for timber production due to biophysical, socio-economic, or legal constraints. Information on the process used to identify acreage of suitable timber lands are found in appendix XX of this Plan. Suitable acreage for timber management for the proposed Forest Plan is XXXX.

**Grazing suitability**

Provisions of the 1982 planning rule state that suitability and potential capability of National Forest System lands to produce forage for grazing animals and to provide habitat for management indicator species shall be determined. The process used to determine range suitability is described in appendix XX of this Plan. Suitable acreage for the proposed Forest Plan is XXXX.

**Recreation suitability**

A broad spectrum of outdoor recreation opportunities are provided on the Prescott NF. Opportunities provided are to be consistent with needs and demands for all major resources. The following table indicates the suitability of recreational activities within different identified

<sup>22</sup> Timber production is defined as the purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use. This definition does not include production of fuelwood (provisions of the 1982 planning rule, 219.3).

<sup>23</sup> Suitability is the appropriateness of applying certain resource management practices to a particular area of land as determined by an analysis of economic and environmental consequences and the alternative uses foregone. A piece of land may be suitable for a variety of individual or combined management practices(provisions of the 1982 planning rule, 219.3)

settings. Definitions have been provided in appendix **XX** to clarify the meaning and intent of each setting and activity.

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**Table 1. Recreation Suitability on the Prescott National Forest**

		Activities					
		Developed Recreation	Dispersed Camping	Non-Motorized Dispersed Recreation	Motorized Recreation	Water-based Recreation	Education / Interpretation
<p>Suitable – the area or site is appropriate for the activity, whether the opportunity is available or not.</p> <p>Not Suitable – the area or site is not appropriate for the activity or the activity is not allowed by law or regulation within the area.</p>		<p>– recreation that is dependent upon facilities provided by the Forest Service. Examples include developed camping, picnicking, or group activities.</p>	<p>– camping outside of a developed campground, including designated dispersed camping, dispersed car camping, and back-country camping.</p>	<p>– a wide range of activities which are not dependent upon developed facilities or motorized equipment, including hiking, backpacking, hunting, wildlife viewing, rock climbing, or mountain biking.</p>	<p>– the operation of motorized vehicles such as All Terrain Vehicles, Off-Highway Vehicles, or motorcycles for recreation as opposed to transportation.</p>	<p>– on-water and water adjacent activities such as rafting, tubing, kayaking, swimming, wading, and fishing.</p>	<p>– recreation based on the pursuit of knowledge and understanding. Ranges from formal displays and programs sponsored by the Forest Service, to outdoor classrooms, interpretive field trips, and citizen-scientist projects.</p>
<b>Settings</b>	Developed Recreation Facilities	Suitable	Not Suitable	Not Suitable	Not Suitable	Suitable	Suitable
	Heritage Interpretive Area e.g. Lynx Creek Ruin	Suitable	Not Suitable	Suitable	Not Suitable	Not Suitable	Suitable
	Wilderness	Not Suitable	Suitable	Suitable Non-mechanized only	Not Suitable	Suitable	Suitable
	Wild & Scenic River	Suitable Recreation Classification	Suitable	Suitable	Not Suitable	Suitable	Suitable
	Grapevine Botanical Area	Not Suitable	Not Suitable	Suitable	Not Suitable	Suitable	Suitable

	Forest System Trails – Non-motorized	Not Suitable	Suitable	Suitable	Not Suitable	Not Suitable	Suitable
	Forest System Trails – Motorized	Not Suitable	Suitable	Suitable where allowed	Suitable	Not Suitable	Suitable
	Designated OHV Area	Suitable	Not Suitable	Not Suitable	Suitable	Not Suitable	Suitable
	Administrative Facilities	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Suitable

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# Chapter 3. Objectives

## Introduction

Objectives are measurable and time-specific outcomes or accomplishments that contribute to maintaining or trending toward Desired Conditions during the planning period. They represent proposed projects or activities intended to be accomplished. While objectives are not considered to be targets, they should be feasible and set the priorities for the planning period. If an objective is no longer appropriate, or relevant to achieving desired conditions, the responsible official may determine that a plan amendment or revision is necessary to remove or replace that objective. Objectives are not required for every desired condition; however, every objective relates to a desired condition. Desired Conditions that are linked to each objective are shown in parentheses following each objective statement. Objectives provide the strategy for trending toward desired conditions and are expected to be realistic; however, accomplishment of objectives can be influenced by ecological events, current staffing levels, climatic conditions, and anticipated near-term budgets.

Objectives are also closely related to the monitoring strategy described in chapter 6 of this plan. Questions we ask ourselves in that strategy include, ‘Did we accomplish the objective?’ and ‘Did that accomplishment create the outcomes we desired, that is, trending toward Forestwide or Management Area Desired Conditions?’

The objectives below are the numbered statements that are displayed in italic typeface. The paragraphs below each objective are examples, estimates, or additional detail to help understand the intent of the objective.

## Vegetation

Vegetation in the Plan is organized by Potential Natural Vegetation Type (PNVT). PNVTs are coarse-scale units of non-contiguous land that share similar climate components, soil types, vegetation, and natural disturbances. Map D in appendix A shows where the various PNVTs are found across the planning area. The vegetation Need for Change statement reads as follows: Restore desired vegetation structure, composition, and desired characteristics of fire to selected PNVTs considering citizen concerns related to smoke emissions. The following objectives (O-1 through O-5) and associated desired conditions (chapter 2), and standards and guidelines (chapter 4) for vegetation are intended to respond to that need for change.

*O-1. Within the semi-desert grassland PNVT, allow or introduce 25,000 to 85,000 acres of wildland fire over a 10-year period following plan approval. ([DC-Wildlife-1](#), [DC-Veg-1](#), [DC-Ecosystem Resilience-1](#))*

Background and Rationale:

- There are approximately 125,750 acres in this PNVT. The treatments could affect 12 to 67 percent of the PNVT over a 10-year period. Encroachment by trees and shrubs is taking place within this PNVT due to past fire suppression. While ‘natural’ fire frequency is estimated at once every 2 to 10 years, current fire frequency averages once every 94 years in this PNVT.

Benefits of increasing the frequency of fire disturbance include inhibition of woody species and certain types of non-native invasive plant species.

- It may be more beneficial to use prescribed fire (as opposed to managed wildfire) along with pre-treatment of non-native invasive species to provide a natural disturbance agent with fewer risks of non-native plant species invasion and fewer unintended impacts to fences and pastures.
- Accomplishing this objective is expected to provide benefit to pronghorn in most locations and may lead to meeting the intent of Objectives 26 and 27 as well as this objective.
- The wide range in acreage to be accomplished reflects uncertainty in being able to time prescribed fires so that: a) precipitation is adequate to encourage grass recovery and restore ground cover for inhibition of invasive species and b) pre-fire preparation is done to avoid spread of non-native invasive plant species, and c) coordination with grazing permittees leads to desired fuel levels and understanding on needs for fence protection or post fire fence repair.

*O-2. Within great basin/ Colorado plateau grasslands PNVT use 1,000 to 5,000 acres of fire and/or mechanical treatments to enhance wildlife habitat, during the 10 years following plan approval. ([DC-Wildlife-1](#), [DC-Veg-1](#))*

Background and Rationale:

- Historically, frequent (10 to 30 years) high severity fires maintained these open grasslands dominated by perennial bunchgrasses, forbs, and few shrubs. Current vegetation species and arrangement is generally at desired levels. The amount of activity stated in the objective reflects the need to maintain that situation using fire.
- Approximately 38,000 acres has been classified as Colorado Plateau grasslands on the Prescott National Forest. Only 5,000 acres or 13 percent of the PNVT was included in the objective.
- Accomplishing this objective is expected to provide benefit to pronghorn in most locations and may lead to meeting the intent of Objectives 26 and 27 as well as this objective.
- Because portions of this PNVT fall within the checkerboard area of the Prescott NF; the intermixture of National Forest and non-Federal ownership could limit size of treatment areas.

*O-3. During the 10 years following plan approval, treat 20,000 to 90,000 acres in juniper grasslands, piñon-juniper evergreen shrub, and piñon-juniper woodlands PNVTs using mechanical treatments, fire, or browsing by domestic livestock to improve watershed and rangeland conditions, vegetation structure, and wildlife habitat. Give high priority to watershed improvement, specifically to increasing herbaceous ground cover. ([DC-Ecosystem Resilience-1](#), [DC-Veg-1](#), [DC-Veg-2](#), [DC-Veg-4](#), [DC-Veg-5](#), [DC-Veg-6](#), [DC-Veg-7](#), [DC-Wildlife-1](#), [DC-Watershed-1](#) (resilient landscapes), [DC-Watershed-3](#))*

Background and Rationale:

- Juniper grasslands and piñon-juniper evergreen shrub PNVTs tend to be highly intermixed, especially where there is an elevation gradient. Therefore the two PNVTs were combined in the objective. Piñon-juniper woodlands PNVT was included in this objective to respond to needs for wildlife habitat improvement.
- Using gross acreage from Terrestrial Ecosystem Units, treatment would range from 3 to 16 percent of the total area classified as juniper grasslands, piñon-juniper evergreen shrub, and piñon-juniper woodlands.

- Evidence of erosion has increased in some areas due to less herbaceous ground cover. Lack of herbaceous ground cover can also decrease infiltration of water into the soil.
- Within the piñon-juniper evergreen shrub PNVT, increasing density of juniper trees and shrubs leads to increased competition for water, especially if climate predictions of warmer drier conditions take place. By removing some trees or shrubs, the remaining vegetation would have less competition for water and better survival. In some locations, depending on site conditions, herbaceous ground cover may expand.
- Within the juniper grasslands, past fire suppression has allowed encroachment of juniper trees. Reintroducing fire as a disturbance will increase the vigor of grasses and will kill some trees and bushes. Mechanical tree removal will decrease density of juniper trees in locations where fire is not desired or will not carry. The result will be healthier grasslands and enhanced pronghorn habitat including the creation of a more open environment, a trend toward fewer trees and shrubs, and maintenance of the desired open environment within relevant Arizona Game and Fish Department linkages.
- Meeting this objective is expected to provide benefit to pronghorn in many locations and may lead to accomplishment of Objectives 26 and 27 as well as this objective.
- Natural fire would be expected to occur once in 30 years within juniper grasslands and once in 60 years within piñon-juniper evergreen shrub. The wide range of acreage to be treated in this objective is based on uncertainty of being able to get fire to spread in these PNVTs, given reduced coverage of herbaceous ground cover. Mechanical treatments could vary due to uncertainties in demand for biomass. A third source of uncertainty includes the potential for climate warming along with more intense precipitation activity during the summer season. The net effect would be more run-off and less effective water infiltration due to precipitation intensity. If juniper or woody plant encroachment in grasslands increases as a result of response to changing climate conditions, juniper removal might be effective only in the short term.

*O-4. During the 10 years following plan approval, use 40,000 to 100,000 acres of fire, mechanical treatments, or domestic goats to maintain current conditions in the interior chaparral PNVT. ([DC-Ecosystem Resilience-1](#), [DC-Veg-1](#), [DC-Veg-5](#), [DC-Veg-11](#), [DC-Veg-12](#))*

Background and Rationale:

- Treatments in interior chaparral are designed to maintain this fire-adapted system (fire frequency in any one location of once every 35 to 100 years) and to protect communities at the wildland urban interface. While the objective acreage figures predict that up to 30 percent of the PNVT could be treated, many of these activities would take place near wildland urban interface areas such as in the vicinity of Cherry, Crown King, or within the Hassayampa River Watershed. Desired Conditions (DC-Veg-12) allow for shortened fire return intervals in such areas.
- Mechanical treatments were included with the fire acreage to allow response to the possible demand for biomass and to allow treatment near structures at the wildland urban interface.
- If warmer and drier conditions occur, timing of prescribed fire treatments could be adjusted to later fall and winter to find time periods when fuel moistures are such that fires can be controlled, safety goals can be met, and management objectives can be achieved.

*O-5. Thin/Harvest 2,500 to 8,000 acres and introduce or allow 25,000 to 50,000 acres of fire in ponderosa pine-Gambel oak and ponderosa pine-evergreen oak PNVTs during the 10 years following plan approval. ([DC-Ecosystem Resilience-1 to 5](#), [DC-Veg-13 to 20](#), [DC-Wildlife-1](#))*

Background and Rationale:

- The ponderosa pine PNVTs (ponderosa pine-Gambel oak and ponderosa pine-evergreen oak) were combined for this objective because they have similar unnatural structural characteristics due to past wildland fire suppression. These characteristics include an increase in young forest with dense canopy cover as well as older forest with dense canopy cover. Both PNVTs have 'natural' fire frequencies of every 6 to 15 years.
- Multiple treatments in the same locations could be carried out, especially at the wildland urban interface near Prescott and on Mingus Mountain. An example might be thinning, then burning on the same site.
- Dense young and mid-age forests with more than 30 percent tree canopy cover predominate in these PNVTs. This is due to several factors but is primarily attributed to past fire suppression. The density of trees leads to uncharacteristic crown fires when wildfires do occur. This type of fire is unnaturally severe, can burn so intensely that post fire natural conifer regeneration is inhibited, and can threaten lives and property.
- The relatively low number of acres shown for mechanical treatment is due to limitations such as steep slopes, lack of access, and fewer acres that are suitable for timber harvest. If a demand for biomass increased, it is possible that the acreage of mechanical treatments of small woody vegetation could increase, however, slopes and access limitations could still prevent large scale mechanical treatments. Mechanical treatments could be emphasized in the vicinity of Prescott to decrease smoke impacts.

*O-6. During the 10 years following plan approval, use treatment methods to control or eradicate at least 75 to 95 per cent of recently located non-native invasive plant species populations within 1-2 years of identification. ([DC-Veg-1](#) native plant communities, [DC-Veg 4](#), [DC-Veg-5](#))*

Background and Rationale:

- With the future possibility of warmer, drier climatic conditions; and with the Prescott National Forest location in a transitional elevation between warm desert and the Mogollon Rim, it is likely that higher numbers of non-native invasive species will begin to be found in the area.
- The 1 to 2-year period between location and treatment allows for treating plants at the stage of their development where methods used can be most effective and allows for doing environmental analysis related to treatment methods. If the opportunity arises to do treatments sooner than 1 to 2 years, this objective should not be viewed as a reason to delay.

## Recreation

The recreation Need for Change statement reads as follows: Provide sustainable, diverse recreation experiences that consider population demographic characteristics, reflect desires of local communities, avoid overcrowding and user conflicts, and minimize resource damage. The following objectives (O-7 through O-17), as well as related desired conditions (chapter 2) and standards and guidelines (chapter 4) for recreation, transportation, wilderness, and wild/scenic rivers are intended to respond to that need for change.

*O-7. Add 2-5 developed recreation areas within 10 years of plan approval. ([DC-Rec-1](#), [DC-Wild&Scenic-1](#))*

Background and Rationale:

- The Upper Verde River is eligible for Wild/Scenic Rivers designation. Motorized access is limited, due to past decisions related to protection of Threatened and Endangered Species habitat. People want to get to the river; some find locations with legal access to be unacceptable where trash and human waste spoil the recreation experience. Some drive to the river illegally in order to bring their families to enjoy a less spoiled portion of the river, or to enjoy the challenge of finding a way to get there.
- The Prescott NF proposes to develop campgrounds and other recreational sites where conditions are clean, sanitary, and can be legally accessed. Possible locations could include the vicinity of Bear Siding, Perkinsville Bridge, Forest Road 638, Camp Wood, or other locations. Such development could provide a desired recreation experience as well as a Forest Service presence to discourage illegal activity.
- There may be an opportunity to coordinate with the Verde River communities and add developed recreation sites in a location within the Verde Valley.

O-8. Within 10 years of plan approval, create up to 4 designated dispersed camping areas where impact to natural resources can be controlled, and use can be restricted to the designated areas. ([DC-Rec-1](#), [DC-Watershed-3](#))

#### Background and Rationale:

- Lacking any specific restrictions, a person can generally camp in any location that is not a developed recreation site; this is often called dispersed camping. However, on the Prescott National Forest, areas that are suited for camping can be limited by steep slopes, uninviting vegetation, distance to water, and lack of access. Those areas that are desirable receive high use, especially near any water and on weekends or holiday periods. Compaction of soils, trampling ground vegetation and site expansion can occur. Therefore, the Prescott NF proposes to restrict dispersed camping in certain areas and designate specific dispersed campsites that have fewer amenities than developed campgrounds, in an effort to decrease resource impacts. This has already been done within the Prescott Basin. The Forest now wants to designate dispersed camping in other areas where resource damage is occurring to prevent further damage and to restore natural vegetation.
- Designated dispersed camping would be located in areas where extreme resource impacts could be minimized; possible locations could include selected areas near Crown King, on Mingus Mountain, Camp Wood, the Upper Verde River, or in the vicinity of Yellow Jacket Creek.

O-9. Reduce the backlog of needed maintenance (deferred maintenance) with the 10-year planning period by 80% to 90% for developed sites and 50% to 75% for trails. ([DC-Rec-1](#), [DC-Rec-2-Trails](#), [DC-Transportation and Facilities-1](#))

#### Background and Rationale:

- A backlog of maintenance activity can build up as visitor numbers increase; this is sometimes called deferred maintenance. The Prescott NF wants to work toward clearing this backlog by the percentages shown. The slower progress toward improving trail maintenance is due to a need for development of a comprehensive trail plan in several areas of the Forest (see chapter 1, Management Approaches for more information). Once the desired locations and types of use are determined, maintenance can be better matched to amount and type of use.

*O-10. Within 10 years of plan approval, develop a partnership with Arizona Game and Fish Department to create and operate 1 designated target shooting area. Restrict recreational target shooting where recreational shooting has potential to create safety problems. ([DC-Rec-1](#) variety of safe recreation experiences, [Agua Fria Management Area](#) Desired Conditions)*

Background and Rationale:

- The Prescott NF has a history of providing a designated target shooting experience operated by others through permit. Such a situation has been located west of Prescott for about 50 years, but with population expansion and developments near the range, this permit will not be re-issued in the same location. Recreational target shooting is a recreational activity that is desired by many.
- Uncontrolled recreational target shooting surfaced as a source of conflict in meetings in several locations. These conflicts include concerns for personal safety and trash accumulation as targets. The communities of Jerome and Castle Hot Springs referenced the need to control recreational target shooting in their community vision statements.

*O-11. Improve or construct 5-20 trailheads within 10 years of plan approval. ([DC-Rec-1](#),[DC-Rec-2-Trails](#),[DC-Transportation and Facilities-1](#))*

Background and Rationale:

- Trailheads may lack adequate signage, parking, or cause erosion from the parking area due to poor location or inadequate planning for drainage.

*O-12. Maintain 10-20 percent of signage annually. ([DC-Rec-1](#), [DC-Transportation and Facilities-1](#))*

Background and Rationale:

- During Recreation Strategy meetings, people from all three zones (Verde Valley, Agua Fria/Crown King, and Prescott/Drake) consistently referred to lack of signage or lack of effective signage along trails and at trailheads. Adequate signage was especially needed if more than one type of trail began at the same trailhead. Most thought that improved signage could improve unmanaged recreation.

*O-13. Work with partners to maintain and enhance recreational fishing opportunities in 2 lake/pond sites, within 10 years of plan approval. ([DC-Aquatic-2](#))*

Background and Rationale:

- Likely locations would be Lynx Lake and Granite Basin Lake and activities could involve providing enhanced opportunities for shoreline fishing as well as activities such as lake dredging.

*O-14. Develop 2-5 additional methods for providing visitor information and education over the 10 years following plan approval. ([DC-Rec-1](#) visitors learn from experiences and the Prescott NF responds to changing demographics)*

Background and Rationale:

- In order to ‘provide sustainable, diverse recreation experiences that consider population demographic characteristics and reflect desires of local communities,’ better communication with visitors and potential visitors is needed. In order to increase communication and gather

feedback, the Prescott NF expects to increase and improve effectiveness of visitor contacts through multiple avenues.

- Possible methods could include, but are not limited to, increased interpretation opportunities, information kiosks, improved use of website opportunities, or social media.

*O-15. Mark boundaries of portions of 2 to 5 wilderness areas where risk of motorized access is high, during the 10 years following plan approval. ([DC-Wilderness-1](#))*

Background and Rationale:

- Wilderness boundaries are important, since the recreation experience to be found there depends on the type of activities and number of people that are in the area. The most obvious is that no mechanized use is allowed within Wilderness, including bicycles or motorized vehicles.

*O-16. Over a 10-year period following Plan approval, relocate, add protective measures or rehabilitate 2 to 5 recreation areas or locations (including trails ) that show evidence of resource damage. ([DC-Ecosystem Resilience-1](#), [DC-Rec-1](#), [DC-Watershed 2](#), [DC-Watershed-3](#), and [DC-Watershed-5](#))*

Background and Rationale:

- The areas or locations could include (but are not limited to) a) areas where soils are compacted and vegetation is nearly non-existent; b) sites or areas that are located too near streams or watercourses where visitor use adds to problems, such as stream bank erosion and sedimentation; c) areas needing treatment of invasive species along trails or within developed sites; d) sites that are located near Region 3 sensitive plant species where recreational patterns lead to trampling these plants, or e) sites that are too near cultural resource locations.
- Possible activities that could fulfill this objective include closing and rehabilitating a dispersed site that is located at a spring source, locating camping farther away from Yellow Jacket Creek, or locating a recreation site out of the Upper Verde River flood plain and hardening the pathway to the river to prevent stream bank erosion.

*O-17. During the 10 years following plan approval, implement 5 to 10 management actions on trails to meet Desired Conditions listed as part of DC-Rec-2-Trails.*

Background and Rationale

- The Prescott NF would like to improve current trails before adding more trail mileage. This implies that more comprehensive trail planning needs to be completed to provide improved recreational experiences for all.
- The Prescott National Forest provides approximately 800 miles of trails, equally divided between motorized and non-motorized recreation opportunities. Portions of these trails receive high use, especially near the Prescott Basin. Other trails have relatively little use. Recreation managers would like to do comprehensive trail planning to determine which trails need improvement in order to provide the desired trail experience and attract more recreationists, as well as which trails may not be providing the desired recreation experience and are not needed.
- Conflicts occur between different types of recreationists. In order to minimize these, some multi-use trails may be limited to fewer types of recreational opportunities.

## Watershed Integrity

The Watershed Integrity need for change reads as follows: Maintain/improve watershed integrity to provide desired water quality, quantity, and timing of delivery. Watershed condition is defined as the state of a watershed based upon physical and biological characteristics and processes affecting hydrologic and soil functions (FSM 2521.05). Watershed condition integrity is having all parts (soils, vegetation, stream flow, aquatic species) interacting as they should to provide healthy watershed function that produces desired water quality, quantity, and timing of delivery. The following objectives (O-18 through O-23), as well as desired conditions (chapter 2), and standards and guidelines (chapter 4) for Watershed Integrity respond to the need for change.

*O-18. Following plan approval, implement 20 to 50 distinct projects that improve watershed conditions within high priority watersheds over a ten year period. ([DC-Ecosystem Resilience-1](#), [DC-Watershed-1 to 5](#))*

Background and Rationale:

- High priority watersheds are those identified through an interdisciplinary process based on resource value, and estimated costs, as well as National and Regional policy for watershed condition.
- Activities could include, but would not be limited to, range improvements to distribute grazing, treatments to increase vegetative ground cover, stream stabilization, and mining restoration.
- A project is defined as work that is done in one contiguous area, such as a 1,000-acre prescribed fire, fixing 0.1 miles of road to resolve a drainage problem, or installation of 100 feet of fencing.

*O-19. During the 10 years following plan approval, use treatment methods to improve 10 to 40% of recently identified improperly functioning and at-risk riparian areas within 1 to 5 years of detection, ([DC-Watershed 2](#), [DC Watershed-5](#))*

Background and Rationale:

- This objective refers to riparian areas found near stream corridors and seasonally flowing water that is not overland flow.
- Properly functioning riparian areas include those that have the desired assemblages of vegetation, appear to be within acceptable limits for sediment deposit in floodplains, are not eroded or compacted due to recreational or other uses, and are able to support aquatic related species associated with habitat present. At risk riparian areas are those that are functioning, but are experiencing influences (such as low flows, compaction, and non-native species invasion) that could soon change them into an improperly functioning status.
- While proper functioning condition methodology is implied here, other national or regional protocols to determine riparian function may be adopted.
- Activities could include, but are not limited to, vegetation re-establishment, non-native invasive plant treatments, erosion control, in-stream habitat improvement, adjusting the timing and season of grazing, or fencing.

*O-20. During the 10 years following plan approval, maintain or repair 20 to 100 miles of Forest designated motorized roads or trails that impact watershed integrity. ([DC-Ecosystem Resilience-1](#), [DC-Watershed-1to5](#))*

Background and Rationale:

- Projects could include but are not limited to, the following activities related to roads and trails: relocation, decommissioning, recontouring, revegetating, or improving to standard,
- Adverse impacts to watershed integrity could include, but are not limited to, adding sediment to streams, damaging riparian vegetation, stream bank erosion, production of gullies, and floodplain soil compaction.

*O-21. For the 10 years following plan approval, obliterate, close, recontour, or revegetate a minimum of 10 miles of unauthorized routes that are impacting watershed integrity. ([DC-Ecosystem Resilience-1](#), [DC-Watershed-1to5](#), [DC-Transportation and Facilities 1](#))*

Background and Rationale:

- A route is a former road or trail that is not designated for motorized use, or a user-created route that was never designated for motorized use.
- Evidence of adverse impacts to watershed integrity include but are not limited to, directly or indirectly adding sediment to streams, damage to riparian vegetation, stream bank erosion, production of gullies, or floodplain soil compaction.

*O-22. During the 10 years following plan approval, improve 15 to 25 stream or drainage crossings by roads and/or trails to facilitate flow and sediment transport. ([DC-Ecosystem Resilience-1](#), [DC-Watershed-1to5](#), [DC-Rec-1](#))*

Background and Rationale:

- Examples of activities that could be done to fulfill this objective include ensuring that culvert sizes match what is needed to handle flood flows and avoid washouts that deposit road material into a stream, adjusting culvert height to ensure aquatic species are not prevented from moving along the stream, or installing drainage structures across roads, where needed.

*O-23. Maintain or enhance 25 to 55 ground water dependent ecosystem sites (seeps and springs), within 10 years of plan approval. ([DC-Ecosystem Resilience-1](#), [DC-Watershed-5](#))*

Background and Rationale:

- Ground water dependent ecosystem sites include seeps and springs where ground water emerges at the ground surface. They serve as habitat to sustain a variety of plant and animal species. Emergent riparian areas within these systems typically include a combination of sedge species, cattails, bull rushes, and various forbs or woody species.
- Animals, both native and livestock, are attracted to these water sources. Sometimes, the spring source is fenced and a portion of the flowing water is piped to a trough a distance from the spring. Motorized travel within groundwater dependent ecosystems, can cause compaction, disturbance to vegetation, or interruption of water flow. Travel in these locations would generally be restricted.
- Types of activities that could be completed to fulfill this objective include relocation or closure of designated roads or trails, or obliteration of illegal routes that are located too near a

spring or seep. Maintaining or improving fencing around ground water dependent systems, pasture rotation, or seasonal grazing use could also be applied.

## **Aquatic and Terrestrial Wildlife Habitat**

The Need for Change related to aquatic habitats states that the Prescott NF will provide desired habitat for native fish species. The following objectives along with desired conditions (chapter 2), and standards and guidelines for vegetation, terrestrial wildlife habitat, and aquatic habitat (chapter 4) are intended to respond to the need for change and federal requirements.

*O-24. During the 10 years following Plan approval, work with the Arizona Game and Fish Department to restore native fish species to selected stream reaches. ([DC-Ecosystem Resilience-1](#), [DC-Veg-3](#), [DC-Watershed-2](#), [DC-Watershed-5](#), [DC-Aquatic-1](#))*

Background and Rationale:

- One of the major threats to species in the Upper Verde river is the presence of non-native predator fish. The intent of the fish barrier would be to: 1) provide a barrier to upstream movement of non-native fish species, and 2) allow for renovation above the barrier to remove non-native fish species.
- Examples of species that could benefit by work on the Upper Verde River include:
- Southwestern Region Sensitive Species: lowland leopard frog, Arizona toad, desert sucker, Sonora sucker, roundtail chub, longfin dace, and narrowheaded garter snake.
- Federally endangered razorback sucker, federally threatened spinedace and candidate Mexican gartersnake.
- A possible location for restoration of native species on a river other than the Upper Verde River could be Sycamore Creek, downstream from the Pine Mountain Wilderness.
- While the Forest Service manages habitat, work that directly changes fish populations or species composition must be done by the Arizona Game and Fish Department. In addition, any work involving Federally Threatened or Endangered fish species could only proceed via consultation with the U.S. Fish and Wildlife Service. Therefore any direct removal or transplant of fish species would need to be accomplished as a partnership effort with the agencies listed and others.

*O-25. Modify or remove at least 3-5-miles of fence to prevent impacting pronghorn antelope movement within 10 years of plan approval. ([DC-Wildlife-1](#) movement corridors)*

Background and Rationale:

- Pronghorn are species that are associated with grasslands. They are highly dependent on moving long distances in order to retain genetic diversity and to escape predators. Fences can be modified to allow pronghorn to pass under them. A possible location where fence modification is needed is along the southwest corner of Yavapai Ranch.

*O-26. Treat 15,000 to 90,000 acres of habitat during the 10 years following plan approval to improve pronghorn habitat quality. ([DC-Ecosystem Resilience-1](#), [DC-Veg-6](#), O-1, O-2)*

Background and Rationale:

- Arizona Game and Fish Department pronghorn habitat evaluations<sup>24</sup> indicate that the grasslands are shrub invaded and lack species richness. Shrub diversity in the open woodland areas is good, although most are so tall that they obstruct pronghorn vision and favor predation of pronghorn. The evaluation further suggests that juniper and tall shrub encroachment has reduced the amount of open grassland, and these areas would benefit from removal of juniper and shrubs. The Central Arizona Grasslands Conservation Strategy is an ongoing interagency effort to prioritize and fund grassland restoration projects in the central Arizona landscape and may be used to determine areas needing treatment.
- Prescribed burning, mechanical tree removal, or other treatments included as part of Objectives 1, 2 and 3 may help to fulfill the intent of this objective.

*O-27. Treat 2-3 areas to enhance pronghorn migration, within 10 years of plan approval. ([DC-Ecosystem Resilience-1](#), [DC-Wildlife-1](#), movement corridors)*

Background and Rationale:

- The importance of pronghorn migration is referenced in Arizona Game and Fish Department, Game Management Unit plans. Doing this habitat improvement activity focuses on providing open habitat that allows pronghorn to avoid predators and move across the landscape. An example of one area is the ¼ - ½ mile wide corridor along Forest Road 677.
- Prescribed burning, mechanical tree removal, or other treatments included as part of Objectives 1, 2 and 3 are expected to help fulfill this objective.

*O-28. Cooperate with Arizona Game and Fish Department to improve 3 to 15 water developments for wildlife over 10 years following plan approval. ([DC-Ecosystem Resilience-1](#))*

Background and Rationale

- Trick tanks are structures that provide sources of water for wildlife that inhabit the area. They catch precipitation that is then directed to a storage tank. From the storage tank, the water is distributed to drinking troughs.
- The tank structures would be refurbished, so that they function as desired.

## Open Space, Land Adjustment, and Scenic Values

The Need for Change related to open space states that the Prescott NF will enhance the value of Prescott NF-provided open space. This can be done by maintaining the visual and “wild” character of Prescott NF lands within the viewshed or within and near communities. In addition, during land adjustment activities, open space and scenic quality are considered to be a community need.

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<sup>24</sup> Ockenfels, R.A., C.L. Ticer, A. Alexander, and J.A. Wennerlund. 1996. A landscape-level pronghorn habitat evaluation model for Arizona. Arizona Game and Fish Department Technical Report 19, Phoenix. 50pp.

Ockenfels, R.A., C.L. Ticer, A. Alexander, J.A. Wennerlund, P.A. Hurly, and J.L. Bright. 1996. Statewide evaluation of pronghorn habitat in Arizona. Arizona Game and Fish Department Federal Aid Wildlife Restoration Project W-78-R Final Report, Phoenix. 296 pp.

*O-29. Over the 10 years following plan approval act on up to 10 opportunities, as presented and feasible, to acquire lands within selected areas in the Verde Valley, along both the middle and upper Verde River, and in other portions of the Prescott National Forest to retain open space values and protect and enhance riparian habitat. ([DC-Aquatic-1](#) and [Verde Valley Open Space Desired Conditions](#).)*

#### Background and Rationale

- Open space is an important factor in the Verde Valley as evidenced by the following excerpts from the Verde Valley Regional Management Plan:
  - o “Open space is possibly the most prized asset of the Verde Valley Region’s residents.”
  - o “Concerns include . . . preventing the loss of openness, which epitomizes the sense of place in the Verde Valley” (Yavapai County, 2006).
- The Verde Valley Land Preservation Institute has produced maps of areas where retaining or adding to public land ownership is desired.
- Opportunities may exist for extending the Verde Greenway along the Verde River.
- Riparian and aquatic habitats are highly valued for their wildlife, recreational, and scenic benefit.

# Chapter 4. Standards and Guidelines

## Introduction

Standards and Guidelines provide sideboards and guidance for project and activity decision making to help achieve Desired Conditions and Objectives. Standards must be followed and can only change with a Forest Plan Amendment. Guidelines must be followed, but may be modified somewhat for a specific project if the intent of the guideline is followed and the deviation is addressed in the decision document with supporting rationale.

Neither standards nor guidelines restate existing law or policy—you may notice few related to Heritage Resources, because the majority of guidance already exists in law or policy direction. They also do not include statements that recommend an analysis, inventory, or monitoring. Management direction not included in the Forest Plan is found in numerous laws, regulations, executive orders, Forest Service policies, and additional guidance documents. These relevant laws regulations, policy, plans, and agreements are listed in appendix C.

The standards and guidelines in this chapter apply to all parts of the Prescott National Forest. In chapter 5, management area standards and guidelines are listed that apply to only a subset of the Prescott NF—that is, an individual management area.

Similar to desired conditions (chapter 2), standards and guidelines have been divided into three sections, Physical, Biological, and Social/Economic Factors. Standards and guidelines related to watershed and soils are found in the Physical Factors section. Vegetation standards and guidelines including those for plants, fire as a disturbance process, and wildlife standards and guidelines are found in the Biological Factors' section. Finally, standards and guidelines related to the following areas are found in the Social/Economic Factors' section: management of recreation, management of landownership, energy and communication sites, permits, recreation residences, scenic values, minerals management, management of heritage values, range management, and management for forest health.

Associated maps are attached in appendix A.

## Physical Factors

### Watershed

Watershed integrity standards and guidelines provide guidance for trending toward or achieving the following Desired Conditions labeled as [DC-Ecosystem Resilience-1](#), DC-Watershed-1 through 5, and DC-Veg-1, DC-Aquatic-1, and DC-Transportation and Facilities-1 in chapter 2 of this document.

Watershed Integrity (See also <a href="#">Range</a> Std.-2 and Guidelines-1, 5; <a href="#">Minerals</a> Guidelines-2.3.4.12; <a href="#">Wildland Fire</a> Guidelines-10,12; and <a href="#">Transportation</a> Guidelines-1,2,3,4,5,11.)	
<b>Std-WS-1</b>	<b>Construction or maintenance equipment service areas shall be located to prevent gas, oil, or other contaminants from washing or leaching into streams.</b>

<b>Std-WS-2</b>	<b>Equipment working on open water and wetlands shall be cleaned prior to entry into such areas to remove gas, oil, and other contaminants.</b>
<b>Std-WS-3</b>	<b>Containment measures shall be employed for storage of fuels and other toxicants.</b>
Guide-WS-1	As the cumulative effects of land disturbing projects on stream channel and water quality are determined for 6th or 7th level HUC watersheds, the following should be considered: <ul style="list-style-type: none"> <li>• Level of disturbance</li> <li>• Type of activity</li> <li>• Soil, geologic, streamflow characteristics, and expected recovery periods</li> </ul>
Guide-WS-2	Watershed projects should be designed and implemented in a manner that promotes long-term productivity and ecosystem integrity.
Guide-WS-3	Watershed projects that provide surface water for municipal use should be given high priority.
Guide-WS-4	Riparian dependent resources should be managed to maintain and improve productivity and diversity of riparian dependent species. Riparian communities should provide for or enhance habitat for aquatic species and riparian plants.
Guide-WS-5	Adverse impacts to stream channel features (e.g., stream banks, obligate riparian vegetation) should be minimized by modifying management actions. Examples of modification could include, but are not limited to, adjusting timing and season of grazing, limiting use and location of heavy machinery, or avoiding placing trails or other recreational structures where recreation use could negatively affect stream channel features.
Guide-WS-6	Ground cover sufficient to filter run-off and prevent detrimental erosion should be retained in riparian corridors, <sup>25</sup> seeps, and springs.
Guide-WS-7	New infrastructure or facilities (e.g., roads, trails, parking lots, trailheads, energy transmission lines) should be located outside of riparian corridors. If crossing such areas with transmission lines is unavoidable, design features should be used to maintain hydrologic function and minimize impacts on riparian habitats.
Guide-WS-9	In general, infrastructure or facilities locations that lead to erosion or negative impacts to riparian systems should be mitigated/corrected. If no permanent correction is possible, they should be relocated outside of riparian corridors as opportunities arise.
Guide-WS-10	Operation of heavy equipment, such as dozers, backhoes, or vehicles, in stream channels, seeps, and springs should be avoided. If use of equipment in such areas is required, site specific design features should be implemented to minimize impact to watershed integrity. Restoration or stabilization should occur immediately following disturbance.

<sup>25</sup> For this document, a riparian corridor consists of the stream and an adjacent area of varying width where management practices that might affect water quality, fish, or other aquatic resources are modified. It is an area that acts as an effective filter and absorptive zone for sediment; protects aquatic and terrestrial riparian habitats; protects a channel and stream banks; and promotes floodplain stability.

Guide-WS-11	Along perennial streams, perennial intermittent streams, and spring ponds, mitigations such as off-site water for livestock, should be provided to minimize impact on riparian communities and sensitive sites.
Guide-WS-12	Measures that restrict use should be considered to mitigate recurring negative to aquatic species and riparian plant systems. These could include but are not limited to installation of barriers, road closures, area closures, or seasonal restrictions.

## Soils

Soil guidelines provide guidance for trending toward or achieving Desired Conditions labeled as DC-Watershed-1, DC-Watershed-3, DC-Veg-6 through 8, DC-Veg-13, 14, 17, 18, 19, 21, and DC-Transportation and Facilities-1 in chapter 2 of this document.

Soils	
Guide-Soils-1	Projects should be designed to minimize long and short-term impacts to soil and water resources in all ground-disturbing activities. Where disturbance cannot be avoided, project-specific soil and water conservation practices should be developed.
Guide-Soils-2	Down logs and coarse woody debris should be maintained at the appropriate tonnage per vegetation type as outlined in the vegetative desired condition sections to retain soil productivity.

## Biological Factors

### Plants

Plant standards and guidelines provide guidance for trending toward or achieving Desired Conditions labeled as DC-Ecosystem Resilience-1, DC-Watershed-3, DC-Veg-4, 5, and 22, DC-Aquatic-1, DC-Transportation and Facilities-1, and DC-Minerals-1 in chapter 2 of this document.

Plants (See also <a href="#">Range</a> Guidelines-4,5; <a href="#">Minerals</a> Guidelines-11,12,13,14,15; <a href="#">Lands</a> Guideline-5,6; and <a href="#">Rec</a> Guideline-5)	
Std-Plants-1	<b>Collection of Southwestern Region Sensitive Plants shall occur for research or scientific purposes only.</b>
Std-Plants-2	<b>When treating non-native and invasive plant species to protect endangered, threatened, proposed, and candidate wildlife and plant species and their habitats, design features in appendix B of the Final Environmental Impact Statement (FEIS) for Integrated Treatment of Noxious or Invasive Weeds (2005) must be followed.</b>
Guide-Plants-1	Design features and/or mitigation measures should be incorporated in all Forest Service projects as needed to insure that Southwestern Region Sensitive Plant Species do not trend toward listing as threatened or endangered species.

Guide-Plants-2	Applicable design features in appendix B—Design Features, Best Management Practices, Required Protection Measures and Mitigation Measures—from the FEIS for Integrated Treatment of Noxious or Invasive Weeds (2005) should be followed in treating non-native invasive plant species and for managing site disturbing projects and maintenance.
Guide-Plants-3	Efforts to improve severely disturbed sites, especially those within the vicinity of occupied Southwestern Region Sensitive Plant Species habitat, should be undertaken to reduce non-native invasive plant species colonization, protect soils, and improve watershed condition.
Guide-Plants-4	In choosing materials to use for revegetation, consider the following: <ul style="list-style-type: none"> <li>Plant or seed materials should be used that are appropriate to the site, capable of becoming established, and are not invasive.</li> <li>Certified weed free seed and weed free erosion control materials should be used.</li> </ul>
Guide-Plants-5	In cases where plant collection permits are issued, collecting seeds or cuttings should be encouraged, while digging or physically removing whole plants should be discouraged.

### Fire as a Disturbance Process

Fire standards and guidelines provide guidance for trending toward or achieving Desired Conditions labeled as DC-Ecosystem Resilience-1, DC-Watershed-1, DC-Veg-4, 6 through 9, 11 through 15, 17 through 19, 21, and 22, in chapter 2 of this document.

Wildland Fire (See Also <a href="#">Wilderness</a> Standards. 2 -4 and Guidelines 8 -12)	
<b>Std-Wildland Fire-1</b>	<b>During response to wildland fire<sup>26</sup>, risks to firefighters and the public shall be mitigated<sup>27</sup>. Protection of human life overrides all other priorities.</b>
<b>Std-Wildland Fire 2</b>	<b>Fire shall not be used as a tool for management and wildfires shall be suppressed within the Potential Natural Vegetation Type called Desert Communities (see map D, appendix A).</b>

<sup>26</sup> Wildland fire is any non-structural fire that occurs in vegetation or natural fuels. It includes both prescribed fires. Wildfires are fires with unplanned ignitions including lightning or unauthorized and accidental human-caused actions. Prescribed fires are intentionally ignited by the Forest Service under an approved plan to meet specific objectives.

<sup>27</sup> Mitigation such as early detection, evacuations, or indirect suppression tactics can be used to minimize risks to firefighters and the public; however, risks are always present to a varying degree depending on weather, terrain, and fuel conditions.

Guide-Wildland Fire-1	<p>Determinations of responses to wildfire should be based on risk assessments that include pre-season analysis and review as-well-as on-scene and immediate risk assessments by those initially responding to the wildfire incident. Such assessments should be on an appropriate scale and timeline relative to the time of the assessment and the time available during the incident. Such risk assessments should include, but are not limited to the following:</p> <ul style="list-style-type: none"> <li>• Evaluation of the threats to firefighter and public safety</li> <li>• Evaluation of the threats to both natural and human-made resource values</li> <li>• Evaluation of seasonal and/or climatic conditions</li> <li>• Evaluations of cost-effective strategies that contribute to the success of the appropriate wildfire objective(s)</li> </ul>
Guide-Wildland Fire-2	In general, strategies to manage wildland fire (wildfire and prescribed fire) that restore and maintain the natural fire regime, should be encouraged.
Guide-Wildland Fire-3	Within the shaded areas of map B (see appendix A), a management objective of protection should be used to manage wildfires that occur to minimize the risk of loss or damage to human life and property.
Guide-Wildland Fire-4	In non-shaded areas of map B (see appendix A), responses to naturally-ignited fire should consider including other objectives beyond a single objective of suppression or protection.
Guide-Wildland Fire-5	Mechanical or manual treatment of hazardous fuels should be considered where the use of wildland fire (wildfire and prescribed fire) may cause unacceptable damage to other resources or pose an unacceptable risk to life and private property.
Guide-Wildland Fire-6	For fires managed for resource benefits and prescribed fires, amount of scorch and char should be minimized on trees in areas with a High Scenic Integrity Objective that are visible from Concern Level <sup>28</sup> 1 and 2 roads, unless risk to firefighters and public make this impractical.
Guide-Wildland Fire-7	Slash piles should not be placed in sensitive areas <sup>29</sup> and should be located in places and burned at times that will minimize scorching of adjacent trees.
Guide-Wildland Fire-8	Project-specific design features to avoid undesired impacts should be used if fire is implemented within or near riparian corridors or seeps and springs.

<sup>28</sup> Concern level 1 roads are travel routes where forest visitors have a high interest in scenic qualities. Concern level 2 roads are travelways where forest visitors have a moderate interest in scenic qualities. These routes are displayed on **map XX** in appendix A.

<sup>29</sup> Examples of sensitive areas are important wildlife habitat, waterways, visually unique areas, heritage, occupied Southwestern Region Sensitive Species habitat, and recreation areas.

Guide-Wildland-Fire-9	Give Wildland Urban Interface areas high priority for fuel reduction treatments <sup>30</sup> .
Guide Wildland Fire 10	Prescribed fires should be excluded from all developed recreation sites including a 100 to 300-foot no fire treatment buffer around sites using existing fire barriers when possible. Normally, shrubs should be retained in these sites for screening purposes, such as between campsites.

### Terrestrial Wildlife

Terrestrial wildlife standards and guidelines provide guidance for trending toward or achieving Desired Conditions labeled as DC-Ecosystem Resilience-1, DC-Veg-1, 3, 4, 6 through 22, DC Wildlife 1, DC-Transportation and Facilities-1, DC-Lands-2, and DC-Minerals-1 in chapter 2 of this document.

Terrestrial Wildlife (See also: <a href="#">Wildland Fire</a> Guidelines-2,5,7,10; <a href="#">Minerals</a> Guideline-11; <a href="#">Lands</a> Guideline-2,4,6; <a href="#">Forest Health</a> Guideline-2; <a href="#">Range</a> Std-1 and Guideline-2; <a href="#">Wildland Fire</a> -Guidelines 2,5,7,10,12; and <a href="#">Transportation</a> -Guidelines-2,4,6,8,9,10)	
Std-WL-1	<b>Requirements included in current recovery plans and conservation strategies for Federally listed Threatened, Endangered, Proposed and Candidate Plant and Wildlife Species shall be incorporated into management activities. Recovery plans and conservation strategies can be found at the following link: <a href="http://www.fws.gov/endangered/">http://www.fws.gov/endangered/</a></b>
Guide-WL-1	Design features and/or mitigation measures should be incorporated in all Forest Service projects as needed to insure that Southwestern Region Sensitive Species do not trend toward listing as threatened or endangered species.
Guide-WL-2	For Pronghorn antelope the following should occur: <ul style="list-style-type: none"> <li>• Consider pronghorn fawning needs when scheduling activities in pronghorn fawning areas, such as by providing adequate cover and timing of activities to minimize disturbance.</li> <li>• Consider opportunities to enhance pronghorn migration routes when identifying priorities for vegetation treatments within grassland PNVTs.</li> <li>• Use fencing that allows pronghorn passage when replacing fences or building new fences. Most recent AZGFD fencing guidelines related to wire heights, distance between posts, and distances between strands of fence wire should be considered.</li> <li>• As pronghorn habitat improvements are proposed, work done by AZGFD and other partners should be considered to maintain pronghorn travelways across all lands.</li> </ul>

<sup>30</sup> Wildland Urban Interface includes those areas of resident populations at imminent risk from wildfire, as well as human developments having special significance. These areas encompass not only the sites themselves, but also the continuous slopes and fuels that lead directly to the sites regardless of the distance involved.

	<ul style="list-style-type: none"> <li>• Within identified pronghorn habitat, juniper trees that have been cut down should be treated so that pieces lie no higher than 18 inches above the ground.</li> </ul>
Guide-WL-3	<p>For cavity nesting birds:</p> <ul style="list-style-type: none"> <li>• Snags should be retained at levels indicated in Desired Conditions, if available, and replaced at natural recruitment rates.</li> </ul>
Guide-WL-4	<p>For raptors as each stick nest and “nest stand<sup>31</sup>” is identified:</p> <ul style="list-style-type: none"> <li>• Size and structure of raptor species’ nest stands should be maintained.</li> <li>• Disturbance at nest sites during the breeding season should be minimized.</li> </ul>
Guide-WL-5	<p>For bats the following should occur:</p> <ul style="list-style-type: none"> <li>• Where known bat use and concentrations of bats occur (such as maternity colonies, hibernacula or seasonal roosts), measures to maintain habitat and reduce disturbance by human activities through use of seasonal or permanent access restrictions should be used. These habitats generally include abandoned mines, caves, bridges, rock crevasses, old buildings, or tree snags.</li> <li>• Bat occupancy should be assessed when considering closing abandoned mines (and caves).</li> <li>• When closing mines occupied by bats, utilize appropriate closure protocols, and consider the installation of bat-friendly closure devices.</li> <li>• Containment and decontamination procedures should be used to avoid spread of white-nose syndrome (<i>Geomyces destructants</i> fungus). Forest Service guidance dated July 21, 2010 or most recent decontamination procedures should be used.</li> </ul>
Guide-WL-6	<p>Where Goshawks exist:</p> <ul style="list-style-type: none"> <li>• A minimum of 3 nest areas and 3 replacement nest areas should be located per territory. Goshawk nest and replacement nest areas should generally be located in drainages, at the base of slopes, and on northerly (NW to NE) aspects. Nest areas should generally be 25 to 30 acres in size.</li> <li>• Goshawk PFAs (Post-fledging Family Areas) of approximately 420 acres in size should be designated surrounding the nest sites.</li> <li>• Human presence should be minimized in occupied goshawk nest areas during nesting season of March 1 through September 30.</li> <li>• In goshawk foraging areas and PFAs, groups of 3-5 reserve trees should be retained within management-created openings greater than 1 acre, in</li> </ul>

<sup>31</sup> A nest stand includes the nest site and surrounding area that provides nest protection, and desired vegetative structure, to enhance reproductive success of the species using the nest.

	<p>ponderosa pine and dry mixed conifer, except where the strong potential for wind-throw prevents the possibility of viable reserve trees, or insect and/or disease prevent the eventual development of regeneration into large trees.</p> <p>Management activities and human uses for which the Forest Service issues permits (excluding livestock permits) should be restricted within active nest stands during the active nesting period unless disturbance is not likely to result in nest abandonment.</p>
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### Aquatic-Related Wildlife

Aquatic wildlife standards and guidelines provide guidance for trending toward or achieving Desired Conditions labeled as DC-Ecosystem Resilience-1, and DC-Aquatic-1 in chapter 2 of this document.

Aquatic-Related Wildlife (See also Guideline <a href="#">Minerals</a> 11, 12 and Guidelines <a href="#">Transportation</a> 4,6,8,9)	
Guide-Fish/ Aquatics-1	Design features, mitigation, and project timing considerations should be incorporated into ground disturbing projects that may affect Southwestern Region Sensitive Species' occupied habitat near streams, seeps, and springs. Examples include but are not limited to: undisturbed areas, timing restrictions, adjusted intensity of use, and avoiding use of large equipment.
Guide-Fish/ Aquatics-2	Water developments (such as a diversion or well) should be avoided near streams or seeps and springs where there is high risk of dewatering aquatic habitats.
Guide-Fish/ Aquatics-3	<p>To prevent the spread of invasive species and fungal disease within aquatic habitats, the following should be cleaned of plant, animal, and mud material before coming into the Prescott National Forest:</p> <ul style="list-style-type: none"> <li>• Mechanized equipment and tools used for projects</li> <li>• Equipment (including suction dredges and hoses)</li> <li>• Watercraft, boating equipment, and personal gear (e.g., personal flotation devices, waders, wading boots/shoes) used for projects, surveys,</li> <li>• Gear used for permitted activities such as events</li> </ul> <p>Items should again be cleaned at takeout and suction devices should be drained and cleaned prior to leaving the project site</p>

### Social and Economic Factors

#### Management of Recreation, Transportation, Wilderness, Wild/Scenic Rivers, Education and Interpretation

Recreation management includes providing a variety of recreation opportunities, such as camping, hiking, or driving. It also includes management of wilderness, wild and scenic rivers, and education and interpretation. Standards and guidelines related to recreation management provide guidance for trending toward or achieving DC-Aquatic-1, DC-Rec-1, DC-Wild & Scenic-

1, DC-Wilderness-1, DC- Transportation and Facilities-1, and Minerals-1 in chapter 2 of this document.

Recreation (See also <a href="#">Minerals</a> std 3; <a href="#">Lands</a> Guideline 2)	
Std-Rec-1	<b>Only designated roads, motorized trails, and motorized use areas as depicted and described on the Motorized Vehicle Use Map are open to public motorized vehicle use.</b>
Std-Rec-2	<b>Only areas specifically depicted and described on the Motorized Vehicle Use Map are open for motorized big game retrieval. Motorized big game retrieval is precluded in areas where motorized travel is prohibited, such as wilderness.</b>
Guide-Rec-1	<p>Within areas open for motorized big game retrieval:</p> <ul style="list-style-type: none"> <li>• Use of motor vehicles should be limited to within one mile of designated system roads to retrieve a legally hunted and tagged elk during elk hunting seasons as designated by the Arizona Game and Fish Department, and for 24 hours following the end of each season.</li> <li>• Only one vehicle (one trip in and one trip out) should be used for motorized big game retrieval per harvested animal.</li> <li>• Hunters should use the most direct and least ground disturbing route in and out of the area to accomplish the retrieval.</li> <li>• Motorized big game retrieval should not occur when conditions are such that travel would cause damage to natural and/or cultural resources.</li> <li>• Motorized vehicles should not cross riparian corridors, streams, and rivers except at hardened crossings or crossings with existing culverts.</li> </ul>
Guide-Rec-2	<p>When projects are carried out, they should meet the minimum characteristics for recreation experience and settings as classified in the Recreation Opportunity Spectrum (ROS) inventory and displayed in map C, appendix A.</p> <ul style="list-style-type: none"> <li>• Areas that are identified as Roaded Natural that are located ½ mile on each side of existing power lines should be managed as Semi-Primitive Motorized.</li> <li>• Motorized use within areas identified as providing a non-motorized recreation experience may take place on a case-by-case basis as documented in site-specific permits. Examples of such permits include, but are not limited to, grazing permits, recreation event permits, or communication site permits.</li> </ul>
Guide-Rec-3	Customer services should meet evolving customer needs by being available in a variety of formats, locations, and timeframes.
Guide-Rec-4	Use of native plant species should be emphasized during design of new or improved recreation sites). Invasive weeds should be removed or treated on existing sites before they become widespread within recreational sites.
Guide-Rec-5	Unauthorized travel routes should be returned to natural conditions to discourage continued use.

Guide-Rec-6	Management tools (education, engineering, and enforcement) should be used to prevent resource damage due to recreational activities where needed and feasible. Examples of such tools include, but are not limited to: traffic control devices, designation of campsites, time limits, site rotation, group size limitation, registration, public contact, written information, permits, seasonal closures, fencing, enforcement activity, and current information posted on the internet.
Guide-Rec-7	Redesign, restoration or rehabilitation of recreation sites should be carried out where recreation activities have caused unacceptable natural and social resource impacts.
Guide-Rec-8	New developed campgrounds and designated dispersed campsites should be located away from riparian areas, floodplains, and other environmentally sensitive areas.
Guide-Rec-9	To guide appropriate motorized use, accurate and understandable signs should be placed in effective locations to discourage encroachment of motorized vehicles into non-motorized areas.
Guide-Rec-10	Engineering tools should be used to minimize recreation and livestock grazing conflicts. Tools could include but are not limited to: trail design that avoids stock tanks, incorporation of self-closing gates, use of ATV cattle guards or gates around cattle guards for horseback riders.
Guide-Rec-11	Within campgrounds, tree cutting should be limited to those that are diseased or a safety hazard.
Guide-Rec-12	Generally, in areas outside of the Prescott Basin Management Area, camping by each individual or group should not exceed a period of 14 days in a 30 consecutive-day period within the Prescott NF unless specifically designated otherwise. (See Prescott Basin Management Area in chapter 5 for guidance related to that area.)
<b>Transportation</b>	
Guide-Trans-1	Where creation of alternate routes does not lead to excessive damage to other resources, opportunities to relocate and restore motorized roads or trails in riparian areas and in proximity to other water courses should have priority.
Guide-Trans-2	Roads and trails removed from the transportation network should be rehabilitated as soon as possible. Treatments may include re-shaping travelways, removal of stream crossing structures, restoring and armoring natural drainages, stabilizing ground surface, revegetation, and maintenance or restoration of fish passage.
Guide-Trans-3	Roads and trails should be designed to not impede terrestrial and aquatic wildlife species movement and habitat connectivity.
Guide-Trans-4	Seasonal road and trail closures or other management methods should be used to manage and protect resources and infrastructure.
Guide-Trans-5	To avoid unintended entrapment, wildlife friendly design for cattle guards should be incorporated for new and replacement installations.
Guide-Trans-6	When system roads are constructed or reconstructed, efforts should be focused on reducing cumulative watershed effects This could include but is not limited to using design features that minimize sedimentation, reduce of number or length of system roads, or rehabilitate unneeded system roads and user-created routes.

Wilderness (See also <a href="#">Minerals</a> Guideline 9)	
<b>Std-Wild-1</b>	<b>Resolve conflict between wilderness values and recreation uses by favoring wilderness values.</b>
<b>Std-Wild-2</b>	<b>Natural ecological processes shall be allowed to occur freely in wilderness to the extent that they retain the wilderness character, except where public and firefighter safety and private property is put at risk. Activities allowed in wilderness shall be managed to preserve the wilderness character and value.</b>
<b>Std-Wild-3</b>	<b>All fire management actions within wilderness shall be conducted in a manner compatible with overall wilderness desired conditions including the character and values associated with each individual wilderness area.</b>
Guide-Wild-1	Where agency or applicant objectives can be met outside of designated wilderness, special use permits should not be issued in wilderness.
Guide-Wild-2	Wilderness maximum group size should be limited to 15 people except for occasional Forest Service maintenance activity or organized rescue or fire-fighting force in the performance of official duties.
Guide-Wild-3	Unless otherwise approved under permit, the maximum size of a party traveling or camping at one location with riding or pack animals should be limited to 10 animals.
Guide-Wild-4	Wilderness boundary posting should be maintained in areas where non-conforming use is likely to occur.
Guide-Wild-5	Where active intervention is warranted to preserve the wilderness character, corrective activities should be initiated for areas that become degraded as a result of human activities.
Guide-Wild-6	Facilities at wilderness trailheads should be consistent with level of use.
Guide-Wild-7	Minimum Impact Suppression Tactics <sup>32</sup> (MIST) should be used when managing both wildfire and prescribed fire within wilderness.
Guide-Wild-8	During wildland fire operations, a wilderness resource advisor should be assigned to all fires occurring within wilderness or when there is a high likelihood that fire will spread into a wilderness area.
Guide-Wild-9	The use of helispots, spike camps and water sources outside of wilderness should be considered before adding impact to the wilderness.
Guide-Wild-10	Decisions for the appropriate suppression tool or tactic in the wilderness should receive the same considerations for firefighter and public safety and the protection of values at risk as they would outside of wilderness. If such considerations are not urgent, the use of retardant in the wilderness should be avoided if possible.
Wild/Scenic Rivers	
<b>Std-W&amp;S-1</b>	<b>Requirements included in The Verde Wild and Scenic River Comprehensive River Management Plan for Coconino, Prescott and Tonto National Forests (2004) shall be incorporated into management activities.</b>

<sup>32</sup> Minimum Impact Suppression Tactics are the strategy and tactics that meet fire management objectives with the least environmental, cultural and social impacts, including in this case, wilderness values.

Std-W&S-2	<b>Within river segments that are eligible for Wild/Scenic Rivers designation, identified outstandingly remarkable values shall be afforded adequate protection, subject to valid existing rights, until the eligibility determination is superseded (i.e., the segment is determined not suitable for designation, or Congress makes a decision regarding designation). Authorized uses shall not be allowed to adversely affect either eligibility or the tentative classification, (i.e., actions that would change a classification from wild to scenic).</b>
Education/Interpretation	
Guide -Interp 1	Use of opportunities to provide interpretation and education related to the natural world and Prescott National Forest resources should ensure that activities inform people about the following subject areas to assist in achieving Desired Conditions. <ul style="list-style-type: none"> <li>• Forest Health activities, such as fuels management that leads to reduced risk of intense fire; complexity, risks and benefits of wildland fire management; and the nature of visual changes due to such activities.</li> <li>• Wilderness ethics, values, and opportunities</li> <li>• Awareness and appreciation of resource and land stewardship principles</li> <li>• Rationale for limitations on visitor use such as designation of motorized trails and areas or short term restrictions related to wildlife reproduction</li> <li>• Grazing program and the need to respect fences, gates, and vegetation for multiple uses</li> <li>• Trail ethics</li> <li>• Ecological importance of riparian systems</li> <li>• Value of native plant and animal species and awareness of non-native invasive species issues</li> <li>• Cultural Heritage values</li> <li>• Geology</li> <li>• Mineral use</li> </ul>

### **Management of Open Space, Land Ownership, Energy and Communication Sites, Permits, Recreation Residences and Scenic Values**

Standards and guidelines related to management of lands, permits, recreation residences, and energy and communication sites provide guidance for trending toward or achieving DC-Wildlife 1, DC Watershed-1, DC-Open Space-1, DC-lands-1 and DC-Scenic-1 in chapter 2 of this document.

Open Space, Lands, Energy and Communication sites, Permits, Recreation Residences, and Scenic Values—	
Std-Lands-1	<b>Height of towers shall be less than 200 feet above natural ground level<sup>33</sup>. An exception to the height limitation may be granted by the Forest Supervisor, if allowing an increase in height would result in placement of fewer towers, or if a greater height is necessary for emergency services or homeland security. The applicant must prove that the requested height is the minimum necessary</b>

<sup>33</sup> Towers greater than 200 feet in height require lights and guidewires, which could increase impact to bats and migratory birds.

	<b>to provide communication services. Design features to minimize impacts to bats and birds should be incorporated.</b>
<b>Std-Lands-2</b>	<b>New recreational residences shall not be established.</b>
<b>Std-Lands-3</b>	<b>Recreational residences shall be occupied no less than 15 days per year and shall not be used as full time residences.</b>
Guide-Lands-1	Easement rights of way should help provide adequate access to the Prescott NF. When responding to requests for new access permits or easements; easements should be granted in reciprocity if appropriate, to ensure administrative and public access to Forest Land.
Guide-Lands-2	<p>When responding to land exchange proposals as presented, consideration should be given to effects to visual characteristics; cultural resources; recreational opportunities; threatened, endangered or sensitive species impacts; and community vision statements. In coordination with general factors to consider in 36 CFR 254.3(1) proposals for acquisition should meet one or more of the following criteria:</p> <ul style="list-style-type: none"> <li>• Lands within designated wilderness</li> <li>• Lands that contain important wildlife habitat, including that needed for species viability, such as habitat needed to maintain migration patterns or important habitat linkages</li> <li>• Wetlands, riparian areas and other water-oriented lands</li> <li>• Lands that contain unique, natural, or cultural values</li> <li>• Lands that provide needed access, protect public lands from fire or trespass, or prevent damage to resources</li> </ul>
Guide-Lands-3	<p>Lands offered by the United States in land exchange should generally meet one or more of the following:</p> <ul style="list-style-type: none"> <li>• Lands needed to meet the needs of communities and the public, such as land for a water treatment plant.</li> <li>• Lands where public land management would be improved by transferring them to others.</li> <li>• Lands that have lost their wildland character.</li> </ul>
Guide-Lands-4	<p>The following guidelines should apply to communication sites:</p> <ul style="list-style-type: none"> <li>• Help fulfill the public and government need for adequate communication sites.</li> <li>• Communication site management plans, including site boundaries, are implemented at each communication site.</li> <li>• Maximize use of existing facilities, where appropriate, prior to authorizing new facilities.</li> <li>• New authorizations for facility managers should include the requirement that the facility manager provide shared solar-generating systems, back-up generators, grounding systems, fuel containers, access ways, and parking areas as needed for all tenants upon request.</li> <li>• Lot plans as previously established should be eliminated. Sites should be</li> </ul>

	<p>allocated only the actual ground space they occupy.</p> <ul style="list-style-type: none"> <li>• Maintenance of access roads and trails should be carried out jointly through cooperative maintenance payments proportionate to the amount of use or will be maintained by the users.</li> <li>• Vegetation clearing should be limited to defensible space within a) the communication sites; b) fuel breaks around the perimeter of the sites; and c) areas that pose a hazard to facilities and operational efficiency.</li> <li>• All uses should be designed, operated and maintained to not physically or electronically interfere with the senior uses. Senior uses<sup>34</sup> generally take precedence over new uses. High power uses should be physically separated from low power uses by 1 mile or more. The responsibility for correcting interference problems lies with the holder of the communications site authorization for the facility, the user causing the interference, and the affected parties.</li> <li>• New and replacement towers should be self supporting, and should incorporate design features to minimize bat and bird impacts.</li> <li>• All new and replacement microwave radome covers should be dark grey, or as specified by the Forest representative.</li> <li>• Visual resource objectives should be maintained by using design standards that make towers unobtrusive and by utilizing earth tone colors and nonreflective surface material.</li> <li>• New towers and tower additions should not be authorized if they adversely affect the fire tower lookouts line of sight, or present radio frequency radiation hazards to FS employees or general public.<sup>35</sup></li> <li>• Wildlife movement corridors, such as the Arizona’s wildlife linkages, should be considered when energy sources and transmission lines are located.</li> </ul>
<p>Guide-Lands-5</p>	<p>Energy sources should be managed according to the guidelines below:</p> <ul style="list-style-type: none"> <li>• When compatible, new energy proposals should be located within existing corridors including the Westwide energy corridor unless valid concerns about the reliability and integrity of the state’s electrical grid indicate otherwise.</li> <li>• Towers for 69 kV lines and above, should be self-weathering with non-reflective lines, and where geomorphology allows, located in non-sensitive<sup>36</sup> areas that blend in with the terrain or background.</li> <li>• Low growing plant communities that do not interfere with overhead lines, should be maintained within power line corridors.</li> <li>• Less than 69kV power lines should be placed underground where physically feasible.</li> </ul>

<sup>34</sup> Senior communication uses predate later communication applications. The most senior uses form the basis for the communications site designation.

<sup>35</sup> For FCC purposes, this applies to human exposure to Radio Frequency fields when the general public is exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

<sup>36</sup> Examples of sensitive areas are important wildlife habitat, waterways, visually unique areas, heritage, occupied Region 3 Sensitive Species habitat, and recreation areas.

	<ul style="list-style-type: none"> <li>• Overhead utilities should have approved Corridor Management Plans in place prior to all vegetation treatments.</li> <li>• Solar and wind power facilities should be co-located within compatible corridors, or located in non-sensitive areas with the least visual impacts, maintaining natural appearing vistas.</li> <li>• When locating new power line corridors, areas in proximity to existing power line corridors or sub-stations should be considered first.</li> <li>• Utility companies and wind power facilities should incorporate design features to minimize bat and avian collisions.</li> <li>• AZGFD Wind and Solar Energy Development Guidelines should be considered for avoiding or minimizing impacts to wildlife.</li> </ul>
Guide-Lands-6	Preparation and implementation of Transmission Corridor Management Plans should be in conformance with the pertinent, most recent guidelines for corridor management, such as the Vegetation Management Guidelines agreed to by APS and Coconino, Prescott, and Tonto National Forests (12/5/06) or maintenance standards approved by the Federal Energy Regulatory Commission. Such plans should be submitted prior to all vegetation treatments.
Guide-Lands-7	<p>Recreation residences should be managed according to the guidelines below:</p> <ul style="list-style-type: none"> <li>• Recreation residences, decks, outbuildings and other structures should be colored and designed to blend in with the natural landscape. All improvements should be pre-approved by the Forest Service representative.</li> <li>• Recreation residences should be maintained in good condition to prevent vandalism and wildlife access.</li> <li>• Native plants should be used for landscaping. Type of species and placement should be consistent with maintaining a low fire risk. Non-native invasive species should not be introduced; infestations should be removed where they exist.</li> </ul>
<p><b>Scenic Value</b>          (See also: <a href="#">Forest Health</a> Guidelines-3,4,5,6,7,8; <a href="#">Wildland Fire</a> Guidelines 8,9, and <a href="#">Minerals</a> Guideline-5)</p>	
Guide-Scenic-1	Scenic Integrity Objectives (see map A in appendix A) should be met or exceeded.
Guide-Scenic- 2	All improvements (including permanent structures), vegetation manipulation, and ground-disturbing activities and/or construction should be compatible with the Scenic Integrity Objective (SIO) for the area and should be designed to complement the character of the surrounding natural landscape. Methods to disguise or minimize visual effects of constructed features by use of colors and materials that blend with the existing landscape should be considered. Vegetation that screens views of structures should be protected or enhanced.
Guide-Scenic- 3	For projects needed to protect or enhance forest health, the Scenic Integrity Objectives (SIO's) may be modified on a case-by-case basis.

## Minerals<sup>37</sup> and Minerals Material<sup>38</sup> Management

Standards and guidelines related to minerals management provide guidance for trending toward or achieving DC-Minerals-1 in chapter 2 of this document.

Leasable Minerals (See also Guideline <a href="#">Wildlife-5</a> )	
<b>Std-Leasable Minerals-1</b>	<b>For Private Mineral Rights (includes oil, gas, and minerals outstanding or reserved in deeds), surface disturbance shall be limited to the minimum necessary for extraction of minerals; however, land management decisions must not preclude the ability of private mineral owners to make reasonable use of the surface, as defined by deed and public law.</b>
Locatable Minerals	
<b>Std-Locatable Minerals-1</b>	<b>Key heritage sites, administrative sites, and recreation sites that have an investment in facilities shall be requested for withdrawal from mineral entry and location.</b>
<b>Std-Locatable Minerals-2</b>	<b>Use of closed roads or routes that are not on the motorized vehicle use map for mining activity must be authorized. This is usually done through the plan of operations or notice of intent approval process.</b>
Guide-Locatable Minerals-1	Provisions should be provided for recreational gold panning and dry mining activities that are allowed on the PNF. These could include but would not be limited to: <ul style="list-style-type: none"> <li>• Guidance found in 36 CFR Part 228</li> <li>• Minimizing disturbance to riparian vegetation</li> <li>• Avoiding disturbance to upland vegetation</li> <li>• Only operating one area at a time and refilling holes and restoring areas of operation as nearly as possible to their pre-mining appearance</li> </ul>
Guide-Locatable Minerals-2	Given that the Forest Service function is the management and protection of surface resources in a manner compatible with reasonable and logical mining operations, the following should be included in Plans of Operations for locatable minerals: <ul style="list-style-type: none"> <li>• Structures and support facilities for mining activity should be located outside riparian areas. Where no alternative to locating facilities in riparian area exists, site-specific design features should be developed to minimize impacts.</li> <li>• Mine waste that has the potential to generate hazardous material should be located outside of riparian areas. If there is no reasonable alternative, design</li> </ul>

<sup>37</sup> Mineral management on the Prescott NF primarily includes locatable minerals which are defined as hard rock minerals and are mined and processed for the recovery of metals. Locatable minerals may also include certain nonmetallic minerals and uncommon varieties of mineral materials, such as valuable and distinctive deposits of limestone or silica. Management of this type of mining falls under the authorities related to the 1872 Mining Law.

<sup>38</sup> Mineral material includes common variety material such as rock or gravel. Their management does not fall under the 1872 Mining Law and royalties for removal are paid to the government.

	<p>features should be applied to minimize impacts.</p> <ul style="list-style-type: none"> <li>• Approval of mining activities should include the use of reclamation bonds to protect and restore surface resources.</li> <li>• Mitigation measures should be used for Southwestern Region Sensitive Species to minimize impacts to populations due to mineral exploration or extraction activity.</li> <li>• Watershed protection and mitigations should be incorporated to avoid degradation of aquatic systems, including water quality, during mineral extraction.</li> <li>• Priority should be given to closing and reclaiming abandoned mine lands.</li> </ul>
<b>Minerals Materials</b>	
<b>Std-Minerals Materials-1</b>	<b>Restoration plans shall be prepared before development and use of new mineral material sources<sup>39</sup>. Existing pits that have not been utilized as a source for mineral materials for 2 years shall require a restoration plan before approval is granted to new applicants.</b>
Guide-Minerals Materials-1	Adverse effects to aquatic and other riparian dependant resources from mineral material operations should be avoided.
Guide-Minerals Materials-2	Visual impact assessments should accompany new mineral material pit proposals. Effort should be made to meet scenic integrity objectives for the area of activity.
Guide-Minerals Materials-3	Mineral material sites for public use and those only available for Forest Service use should be determined and made public.
Guide-Minerals Materials-4	Decisions on mineral material development should balance private and community needs with potential resource impacts, while providing material for Forest Service road maintenance or other needs.
Guide-Minerals Materials-5	Mineral material activities should not be permitted in designated or recommended Special Areas (Wilderness, Wild/Scenic Rivers, etc.)
Guide-Minerals Materials-6	Generally, occupied Southwestern Region Sensitive Species habitat should be avoided during development of new mineral material extraction sites. Where feasible, heavy equipment use and material removal should not take place in occupied Southwestern Region Sensitive Species habitat within current or new permitted sandstone or dolomitic limestone quarries.

<sup>39</sup> Mineral material? is defined as common variety minerals such as rock or gravel.

## Management of Heritage Values

Standards and guidelines related to management of heritage values provide guidance for trending toward or achieving DC-Heritage-1 and 2, and Minerals 1 in chapter 2 of this document. There are few guidelines for heritage, because most direction exists as law and Forest Service policy.

Heritage Values (See also <a href="#">Minerals</a> Std 3)	
Guide-Her-1	Heritage sites on the deferred maintenance list should be protected from impacts due to erosion or natural weathering as well as potential human activity.
Guide-Her-2	Development, access, signage, and interpretation should be minimized for sites eligible for and listed on the National Register of Historic Places to better provide protection.

## Range Management

Standards and guidelines related to range management provide guidance for trending toward or achieving DC-Watershed-1 and DC-Veg-1, 2, and 5 in chapter 2 of this document.

Range (See also Guidelines <a href="#">Soils</a> -7 and <a href="#">Watershed Integrity</a> - 11,12,13,14)	
<b>Std-Range-1</b>	<b>Water troughs shall incorporate escape devices to prevent animal entrapments.</b>
<b>Std-Range-2</b>	<b>Year-long livestock grazing in riparian areas (streams, springs and seeps) shall be avoided to prevent adverse impacts to water quality and riparian habitat in those areas.</b>
Guide-Range-1	The placement of salt, minerals, and/or other supplements for the purposes of livestock management should be located further than ¼ mile from riparian areas or seasonally present water that is not overland flow.
Guide-Range-2	For structural improvements, the following should be considered: <ul style="list-style-type: none"> <li>• Implement design features that incorporate wildlife needs and reduce barriers to movement and entrapment hazards.</li> <li>• Consider wildlife needs in fence placement and design to reduce barriers and hazards to movement and minimize chances of entrapment</li> <li>• Remove fencing when it is no longer needed.</li> </ul>
Guide-Range-3	After occurrence of wildland fire or mechanical activity that removes most vegetation, a time period for recovery, establishment and re-growth of grasses and forbs should be determined and applied to meet site specific objectives.
Guide-Range-4	Livestock salting should be located away from known locations of Southwestern Region Sensitive Plant Species, so that plants are not adversely affected by associated trampling
Guide-Range-5	Livestock use on woody riparian species (cottonwood, willow, ash, alder, etc.) should provide for maintenance of those species and allow regeneration of new individuals leading to diverse age classes of woody riparian species where potential for this vegetation exists and where the resource objective is to manage for woody species.

## Forest Health<sup>40</sup> Management

Forest health management standards and guidelines provide guidance for trending toward or achieving Desired Conditions labeled as DC-Ecosystem Resilience-1, DC-Watershed-1, DC-Veg-2 and 6, DC-Wildlife-1, and DC-Scenic-1 in chapter 2 of this document.

Forest Health	
Guide-FH-1	Ponderosa pine site treatment timing and residual green slash accumulations should be managed to minimize opportunities for <i>Ips</i> beetle populations to increase.
Guide-FH-2	Along visually sensitive roads (Concern Level 1 and 2) within High Scenic Integrity Objective areas (See map A in appendix A) or next to recreation sites, branches and tree tops from management activity (slash) should be piled and burned or removed from the visible area up to 50feet from edge of the road.
Guide-FH-3	When management activities require cutting trees in piñon-juniper vegetation within the viewshed of Concern Level 1 Roads, cut trees should be treated so that pieces lie no higher than 18 inches above the ground.
Guide-FH-4	Log landings should be out of sight of Concern Level 1 Roads and developed recreation areas, except where steep slopes, archeological sites, sensitive soils, sensitive species habitat, lack of road access, or other similar factors prevent it.
Guide-FH-5	Within the viewshed of Concern Level 1 and 2 roads, timber markings should be located so that they are not visible from the road.
Guide-FH-6	When located within the viewshed of Concern Level 1 roads or within developed recreation sites, log landings and skidding areas should be reclaimed and slash treatments completed as quickly as possible after timber harvest has been completed in each payment unit.
Guide-FH-7	Flagging visible from Concern Level 1 roads and trails should be removed within one year after project completion to avoid impacting the viewshed.

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<sup>40</sup> Most vegetation treatments in forested environments are done to reduce fuel build-up, adjust structural characteristics of forested ecosystems, or to trend toward wildlife or watershed integrity desired conditions. Therefore this section has been titled Forest Health.



# Chapter 5. Management Area Direction

## Introduction

The 1987 Prescott Land and Resource Management Plan for the Prescott National Forest included specific direction on how to manage different land areas based on ecological characteristics. In this revised Plan, we have addressed ecological variation using other methods (see chapters 1 and 2). Management area boundaries were selected based on human geographic boundaries, so that guidance in response to social or economic issues could be better identified to meet each community's needs. As Forest Plan revision steps progressed, we asked ourselves which aspects of the plan needed to be addressed differently based on geographic location. The response was that recreation needs and desires were likely to be different for various parts of the Prescott National Forest. In addition, the Verde Valley area had specific desires relative to maintaining and enhancing Open Space.

The Prescott NF was divided into human geographic areas based on descriptions of communities located near and within the national forest (Confab, 2007). Using methods developed by James Kent and Associates, geographic areas were mapped indicating where people from various communities feel strongly about conditions and events. Communities were then invited to develop community visions for the Prescott NF and other surrounding lands.

In a more recent effort to develop a recreation strategy for the Prescott NF, similar boundaries were used to divide the forest and surrounding area into three zones. In this Plan, those zone boundaries were adjusted slightly and are called geographic areas. Management areas are subdivisions of geographic areas. Geographic areas have desired conditions; however, guidelines are listed by management area. The relationship between geographic areas and management areas in this Plan is shown below:

<b>Agua Fria/Crown King Geographic Area</b>	<b>Prescott/Chino/Drake Geographic Area</b>
Agua Fria Management Area	Upper Verde Management Area
Crown King Management Area	Williamson Valley North Management Area
	Williamson Valley South Management Area
<b>Verde Valley Geographic Area</b>	Prescott Basin Management Area
Verde Valley Management Area	

Desired condition statements are included for each of the three geographic areas listed above. They were developed from statements taken from the community visions identified in 2006 and 2007. Only statements related to recreation or open space were included. Forestwide desired conditions (chapter 2) address community vision statements related to other topics. While the source of each community vision statement is indicated in parentheses, the statements apply to the whole geographic area. Desired conditions for each geographic area provide a wider viewpoint and may include desired community characteristics that overlap both the Prescott NF and other land ownership.

Each management area includes descriptions of desired conditions and listings of guidelines that are specific to that area of the Prescott NF. Map E in appendix A displays geographic area and management area boundaries.

Desired conditions that apply to all of the Prescott NF have been included in chapter 2 of this Plan. The desired conditions included for each geographic area and each management area are those that are specific to that land area. Forestwide desired conditions apply to these areas, as well all other areas on the Prescott NF. Geographic or management area desired conditions refine the Forestwide descriptions. Objectives developed in response to management area desired conditions have been included in chapter 3, Objectives.

Forestwide standards and guidelines are found in chapter 4 of this Plan. The management area standards and guidelines described for each management area in this chapter provide more specific guidance for each individual management area. If there appears to be a conflict between forestwide standards and guidelines and those found in management areas, the most restrictive apply.

## **Agua Fria /Crown King Geographic Area**

### **Historic Context**

When the Spanish arrived in Arizona, the Agua Fria River Basin was occupied primarily by the Yavapai people, although Apache people also were present. With the discovery of precious metals in the Bradshaw Mountains and the Black Hills in the 1860s, 'gold fever' hastened the migration of industrialism and capitalism to the area. Numerous mining camps and towns sprang up. In the 1920s a quarter million sheep seasonally moved through the Agua Fria watershed from the Salt River Valley to the high plateau, with many stopping at the Old Cordes Ranch for shearing. Bales of wool eventually were moved by wagon from Old Cordes to the Cleator railroad siding and then to markets.

The largest mine in the Bradshaw Mountains, and the one that gave its name to the local settlement was the Crowned King Mine. The first claim was in 1875. Years later the name was shortened to its current form, Crown King. Miners transformed the area with picks, machinery, explosives, smoke stacks, industrial chemicals, logging, and the construction of roads and railroads. The Crown King mill pounded away at ore from the mine through 1890, at one time making three tons of high-grade concentrates per day. Surrounding forests were cut down to feed the boilers that drove the mill. In the 1930s the City of Phoenix leased almost 2,000 acres of land in Horsethief Basin from the Forest Service. Through the Works Progress Administration and Civilian Conservation Corps programs, a dam was built to create a lake. Cabins, tennis courts, and playgrounds were constructed and used by families escaping the summer heat. After the land reverted to the National Forest, the cabins became Summer Home dwellings as part of the recreation residence program (Cliff Hersted and Cultural Resources Overview: The Prescott National Forest, 1989<sup>41</sup>)

### **Special Features or Characteristics of the Agua Fria/Crown King Geographic Area**

Approximate Acres: 373,000, of which 97 percent is National Forest Service land

Miles of trail limited to non-motorized uses: 101

Miles of motorized trails or multi-use trails: 126

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<sup>41</sup> USDA Forest Service. (1989). Cultural Resources Overview: The Prescott National Forest. Report No. 89-062

*Special Areas:*

- Castle Creek Wilderness
- Cedar Bench Wilderness (west portion)
- Pine Mountain Wilderness
- Grapevine Botanical Area

*Inventoried Roadless Areas*

- Arnold Mesa Inventoried Roadless Area
- Blind Indian Creek Inventoried Roadless Area
- Grief Hill Inventoried Roadless Area (west portion)
- Pine Mountain Wilderness Contiguous Inventoried Roadless Area

*Developed Campgrounds and Day Use Sites:*

- Powell Springs Campground
- Horsethief Basin:
  - Hazlett Hollow Campground
  - Turney Gulch Group Campground
  - Horsethief Lake Day Use

*Features:*

- Community of Crown King
- Historic mining
- Recreation Residences in Horse Thief Basin
- Recreational gold panning
- Towers Mountain and Horse Thief Fire Tower
- Horse Thief Basin Cabin rental
- Sycamore Creek Cabin Rental
- Multiple agency Recreation Resources border Prescott National Forest
  - Aqua Fria National Monument (BLM)
  - Tonto National Forest
  - Bureau of Land Management

*Management Areas:*

- Agua Fria Management Area
- Crown King Management Area

**Desired Conditions for the Aqua Fria/Crown King Geographic Area**

Recreational opportunities are common. Trails and signage are in good condition. Evidence of trash accumulation and illegal dumping is rarely seen. Use of trails by motorized vehicles takes place on designated roads, trails, or use areas. (from Agua Fria community vision)

As new, sustainable, efficient, non-polluting conservation practices are identified, they are incorporated into management activities. (from Agua Fria community vision)

There is equal access to services, amenities, and recreational opportunities. Developed public facilities, such as campsites and trails are adequate to accommodate visitors. (from Crown King community vision)

Forest Service roads provide safe access to local citizens and visitors. (from Crown King community vision)

Interactions and partnerships between local communities and municipal, state, and federal agencies help to move toward achieving desired conditions. (from Cherry community vision)

The rural nature and natural beauty is valued and retained. (from Black Canyon City community vision)

## **Agua Fria Management Area**

The Agua Fria Management Area generally includes lower elevation desert grasslands, piñon-juniper woodlands and chaparral. This area includes the communities of Cordes Junction, Dugas, and Cherry. Access is provided by Highways 69, 169, or I-17 and single lane roads. Permitted livestock grazing is common and agriculture remains a way of life. Most recreational opportunities are dispersed. Horseback riding, OHV use, hunting, and hiking are common. While OHV policy restricts such use to designated roads, trails, and areas, the open areas prove to be attractive to riders who want to leave trails and roads even though it is unlawful.

### **Desired Conditions**

Motorized use is found on designated trails and roads. Developments are few and interactions between visitors are few. Motorized and non-motorized opportunities are often separated, but may share trailhead access. Visitors and citizens make use of trails that provide their desired experiences and “unofficial” trails are not evident. The Black Canyon non-motorized Trail stretches from BLM land ownership through the Prescott NF connecting Black Canyon City to Camp Verde.

Hunting is common. OHV use and motorized access to dispersed camping remains within the legal distance from roads, especially near Yellow Jacket Creek north of the Agua Fria National Monument. Dispersed campsites are scattered along designated roads, sites are relatively small, use only minimally affects resources, and riparian corridors remain natural. Interactions between grazing permittees and recreationists are generally positive or benign including signing and other tools to communicate the need to respect gate closures for livestock and natural resources.

### **Objectives**

All objectives, including those related to Management Area desired conditions are found in chapter 3, Objectives.

### **Guidelines**

**MA-AF-1:** Management actions should focus on reducing recreation impacts to the riparian corridor along Yellow Jacket Creek.

**MA-VV-2:** Management actions should focus on retaining the scenic integrity objectives associated with the Grief Hill Inventoried Roadless Area.

## **Crown King Management Area**

The Bradshaw Mountains are the major feature of the Crown King Management Area. Elevation ranges from 3,000 to over 7,500 feet. Vegetation on the eastern side of the management area includes desert communities. A major recreational attraction is the cooler temperatures and the ponderosa pine at higher elevations. This area includes the communities of Cleater, Old Cordes, and Crown King. Access via Senator Highway, Forest Road 177, or County 59 can be primitive with single lane roads threading their way through switchbacks to Crown King and the Horsethief Basin Recreation Area. The major recreation attractions are trails including Off Highway Vehicle (OHV) connection to Lake Pleasant Recreation Area to the south, native surface roadways traveled by both vehicles and OHVs, and hiking or horseback riding in Castle Creek Wilderness. Developed camping opportunities are found in Horsethief Basin and dispersed camping takes place where there is enough accessible level area to camp.

### **Desired Conditions**

Recreation information is available to visitors to Crown King; OHV visitors remain on legal, designated trails and routes, and those travelways are well-signed and maintained. Areas are generally trash free.

Forest Road 52 (Senator Highway) and Forest Road 362 provide an approximate north/south boundary through the area relative to types of recreation experiences. West of that boundary, the recreation experience is largely non-motorized with occasional OHV trails crossing from east to west. The experience is one of moderate isolation from sights and sounds of people, and the environment is predominantly unmodified. To the east of Forest Road 52, the experience is largely motorized with the exception of Castle Creek Wilderness. There is a high degree of interaction with the natural environment throughout the area. Visitor use is high nearer Crown King and Horsethief basin, especially on weekends, and interaction between visitors is common in the summer time. Within the Castle Creek Wilderness, the experience is one of non-mechanized activity with a predominantly unmodified environment. Concentration of visitors is low, and terrain and limited water availability make activities challenging.

There are several dispersed campsites near the community of Crown King that show minimal compaction and have vegetative cover at a density similar to that found in the surrounding area. Developed facilities in Horsethief Basin are well-maintained and respond to demand for use. Recreational uses provide a sustainable contribution to the local economy during summers at Crown King. Hazlett Hollow Campground allows OHV access to developed campsites. Forest Road 711, provides access from the south to Crown King, and it remains a 4-wheel drive, very high clearance vehicle route that provides extreme challenge. Recreational target shooting is not common in the Crown King area.

Palace Station historic stage stop retains its historic value, and facilities there are well-maintained. The area in and around the Grapevine Botanical Area provides a non-motorized setting for recreation. Within the Grapevine Botanical Area, Grapevine Creek and riparian areas are healthy; the watershed condition is generally good; and sensitive plant and animal species are protected. The value of the botanic area for scientific research is maintained (see map E for location). Objectives

All objectives, including those related to Management Area desired conditions are found in chapter 3, Objectives.

## Guidelines

**MA-CK-1:** Management actions should focus on reducing recreation impacts such as soil compaction and loss of vegetation and provide a sanitary, primitive camping experience in the vicinity of Horsethief basin and the Crown King community.

**MA-CK-2: Within the Grapevine Botanical Area:**

- No livestock grazing, trailing or driving should take place within the botanical area except that livestock may trail through the Bootlegger-Grapevine Unit on established roads to Forest Road 87A and then Trail 304. This movement should be controlled and not be accomplished by drifting.
- Motorized and mountain bike use should not take place on Trails 4, 304, and 9432 below the rim of Big Bug Mesa.
- Recreation use should be limited to day use.

**MA-CK-3:** Management actions should focus on maintaining the wilderness characteristics of the Castle Creek Contiguous recommended wilderness area until further action is initiated by the Forest Service to forward it to the Congress for designation.

## Prescott/Chino/Drake Geographic Area

### Historic Context

In 1853-54, Lt. Amiel W. Whipple led a military expedition into northern Arizona and established the first access routes to nearby gold fields. After the Walker party found gold near Granite Creek and near the Hassayampa River, Arizona was organized as a separate territory and its first temporary capital was located at nearby Fort Whipple. The city of Prescott was designated the capital of the new territory of Arizona from 1865-1867 and again from 1877 to 1889. The early economy of the area centered on cattle ranching and mining. Prescott's first rodeo was held in 1888, and that annual event has continued to the present. The city places great emphasis on historic preservation, with over 600 buildings on the National Register of Historic Places.

Chino Valley, about 16 miles north of Prescott, is thought to have been named by Lt. Whipple after the curly grama grasses that were common and called "del china" by Mexicans. What is now Prescott Valley was originally called Lonesome Valley and was part of the Fain family ranch for years. In the 1960s speculators from Phoenix bought land about 7 miles east of Prescott and incorporated under the name Prescott Valley. They sold lots to those in northern areas who were looking for warmer, sunny winters. The towns of Prescott Valley, Chino Valley, and Prescott together make up an area known locally as the 'Tri-City' area with a combined population estimated at 88,000 in the 2006 census. Yavapai-Prescott Tribal lands are located next to and partially within the borders of Prescott (Prescott Chamber of Commerce, Chino Valley Chamber of Commerce, AZ Jerome, Sharlot Hall Museum, 2006 Census).

### Special Features or Characteristics of the Prescott/Chino/Drake Geographic Area

Approximate Acreage is 896,000, of which 87 percent is National Forest Service land.

Miles of trail limited to non-motorized uses: 235

Miles of motorized or multi-use trails: 224

*Special Areas:*

- Juniper Mesa Wilderness
- Apache Creek Wilderness
- Sycamore Canyon Wilderness
- Woodchute Wilderness
- Granite Mountain Wilderness
- Upper Verde River, eligible for Wild/Scenic River designation

*Inventoried Roadless Areas:*

- Ash Creek Inventoried Roadless Area
- Connell Mountains Inventoried Roadless Area
- Fritsche Inventoried Roadless Area
- Muldoon Inventoried Roadless Area
- Sheridan Mountain Inventoried Roadless Area

*Developed Camping and Day Use Sites:*

- Lynx Lake Recreation Area
  - Hilltop Campground
  - Lynx Lake Campgrounds
  - Lynx Lake Day Use Area and Lake access
  - Lynx Creek Ruin Day Use

- Granite Basin Recreation Area
  - Granite Group Campground
  - Cayuse Equestrian Day-Use
  - Yavapai Campground

- Thumb Butte Day Use area and trail
- Alto Pit OHV Day Use and Camping
- White Spar Campground
- Indian Creek Campground
- Groom Creek Horse Camp
- Groom Creek Schoolhouse Day Use
- Lower Wolf Creek Campground
- Upper Wolf Creek Group Campground
- Mt. Union Lookout Day Use
- Spruce Mt. Lookout Day Use

*Features:*

- Prescott Basin designated dispersed camping
- Flagstone quarries in the northern portion of the Management Area
- Spruce Mtn., Mt. Union, and Hyde Mtn. Fire Towers

*Management Areas:*

- Upper Verde Management Area

Williamson North Management Area  
Williamson South Management Area  
Prescott Basin Management Areas  
Desired Conditions for the Prescott/Chino/Drake Geographic Area

Recreational access for all ages and physical conditions is available. Roads, trails and signage, as well as water source access for horses is available and well maintained (from Wilhoit community vision).

There is a thoughtful balance between available access and protection of forest resources and aesthetics. A comprehensive system of meaningful and sustainable trails, trailheads and designated campsites is present. Conflicts between types of uses, are rare, especially those that take place on non-motorized and multi-use trails. All user groups, including hikers, equestrians, bicyclists, motorized vehicle operators and hunters enjoy a reasonable amount of access (from Prescott community vision).

Many portions of the geographic area retain open areas and a feeling of 'space.' Area for activities like horseback riding, hiking, and taking the dogs for walks is found throughout the geographic area and provide the feeling of openness that people enjoy (from Paulden community vision).

### **Upper Verde Management Area**

The focus of this management area is the Upper Verde River. The Upper Verde River includes the headwaters of the Verde River, a perennial river that has continuous flow. This river is eligible for designation as a Wild and Scenic River and there has been great public interest in such designation. This area also extends south almost to the community of Cherry on the western slopes of the Black Hills. Access to the area is via State Highways 89 and 89A, and the Perkinsville Road.

### **Desired Conditions**

Within this area, the Upper Verde River retains its outstandingly remarkable values, while recreation facilities are found in several locations along the river. These facilities provide for day use or overnight camping, make use of existing roads as access, and minimize resource impacts, including heritage resources. Most sites are found in areas where 1) the landscape is generally natural with modifications moderately evident; 2) opportunities for challenge and risk are generally moderate to low; and 3) opportunities for both motorized and non-motorized activities are present. Motorized use off designated trails is rare. Control systems, such as law enforcement activity or citizen interactions, ensure resource impacts are minimized as population and visitor use increase. A non-motorized experience is generally found in the area to the south of the river between Forest Roads 638 and 9110H and continues along the river corridor to Bear Siding. East of the Perkinsville Road, opportunities for non-motorized experiences continue along the River and connect with Sycamore Canyon Wilderness.

A variety of experiences exists elsewhere in the management area with motorized uses limited to designated roads and trails and a less developed setting found between those routes. Experiences where there is opportunity for isolation from man-made sights, sounds, and management controls can be found in the Sycamore Canyon Wilderness and Woodchute Wilderness.

North of the Upper Verde River, existing roads provide access for hunting, one of the predominant recreational activities in this area, and for driving for pleasure. Permitted firewood cutting and dispersed camping are common.

### **Objectives**

All objectives, including those related to Management Area desired conditions are found in chapter 3, Objectives.

### **Guidelines**

*MA-UVR-1: As recreation facilities are developed in the vicinity of the upper Verde River, developed opportunities should be placed near existing roadways to retain opportunities for isolation along the river where designated roads and motorized trails are rare.*

*MA-UVR-2: Management tools should be used to highlight appropriate trail use near the upper Verde River.*

*MA-UVR-3: Interpretive programs and enforcement activity should encourage appropriate behaviors and provide recreationists with information about the Verde River ecosystem.*

*MA-UVR-4: Management actions should focus on maintaining the wilderness characteristics of the Sycamore Canyon A, and Sycamore Canyon B recommended wilderness areas until further action is initiated by the Forest Service to forward them to the Congress for designation.*

### **Williamson Valley North Management Area**

This management area includes checkerboard ownership in the northern half of the area, Walnut Creek that flows east and west through the area, and two wilderness areas near the western side of the area. It can be accessed by the Williamson Valley Road (County 5) and Forest Road 664. Most recreational activity is related to trail use or other dispersed activity. There are no developed campgrounds in this area.

### **Desired Conditions**

As dispersed recreation continues in this area, the trail system is formally designated, well-maintained, and signed. The area includes a mixture of both motorized and non-motorized recreational opportunities, however non-motorized opportunities are more common. Trails with various intended uses are located so that conflicts between different uses are minimized.

More primitive experiences with few interactions between visitors, and isolation from man-made sights and sounds are found within the Apache Creek and Juniper Mountains Wilderness and the immediate area surrounding each. Hiking trails are designed to take advantage of spring locations. Trails and trailheads located along the interface between the Forest Service and other ownership efficiently and effectively provide access to the Prescott National Forest, while avoiding resource damage. Wildlife viewing opportunities are available. Impacts to wildlife and water resources, as well as recreational use conflicts are uncommon.

### **Objectives**

All objectives, including those related to Management Area desired conditions are found in chapter 3, Objectives.

**Guidelines**

**MA-WVN-1:** *As trail facilities are developed at the interface between national forest and other ownership in the Williamson Valley North Management Area, consideration should be given to providing public access and discouraging the creation of social trails.*

**MA-WVN-2:** *Management tools should be used to minimize recreation impacts to wildlife species.*

**MA-WVN-3:** *Management actions should focus on maintaining the wilderness characteristics of the Apache Creek A, Apache Creek B, Bald Mountain, and Juniper Mesa recommended wilderness areas until further action is initiated by the Forest Service to forward them to the Congress for designation.*

**Williamson Valley South Management Area**

This area extends from the vicinity of Campwood Road south toward the city of Prescott and surrounds the Prescott Basin management area. It includes: Granite Mountain Wilderness, Alto Pit Off-Road Motorized Use Area, and 317 miles of trails where motorized use is allowed. It is accessed primarily via Campwood Road (County 68) in the northern part of the area and County Roads 66, and 121 on the east and south.

**Desired Conditions**

The predominant experiences in this management area include: a) a mixture of opportunities to affiliate with other groups or be isolated from people, b) a generally natural landscape with facilities that are moderately to readily evident, and c) the concentration of visitors varies from low in the Sheridan Mountains to high in the area that surrounds Prescott Basin. Opportunities for both motorized and non-motorized activities are present, but motorized activities are more common. Facilities that support trail systems, such as trailheads or camping are found in the vicinity of Campwood Road (County Road 68), as well as near the Prescott Basin Management Area. Visitors and citizens use designated trails or areas that provide their desired experiences and “unofficial” trails are not evident. Motorized access for dispersed camping or firewood gathering occurs near designated roads. Impacts to ecology and water resources, as well as recreational use conflicts are uncommon. The Hassayampa River and the area along Copper Basin Wash have healthy riparian characteristics, are trash free, and show little natural resource impacts due to recreational use.

Granite Mountain Wilderness provides quiet recreation in a location that is easy to access. Because this Wilderness is very near population centers, a wilderness management plan mapped desired experiences in this wilderness. They are described in the following table and map G of appendix A.

**Table 2. Desired Experiences by Wilderness Opportunity Class within Granite Mountain Wilderness**

Wilderness Opportunity Classes	Class I	Class II	Class III	Class IV
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<b>Wilderness Opportunity Classes</b>	<b>Class I</b>	<b>Class II</b>	<b>Class III</b>	<b>Class IV</b>
Human impacts	Minimal and generally not apparent to most visitors. Vegetation Impacts would recover annually.	Low; apparent to only a few visitors. Vegetation impacts would recover annually.	Moderate and apparent to a moderate number of visitors. Vegetation impacts may persist from year to year.	Generally high and readily apparent to most visitors. Vegetation impacts persist from year to year and there may be moderate loss of vegetation and soil at some sites.
Opportunity for isolation and solitude	Outstanding	High	Moderate	Little
Independence and degree of outdoor skills	Outstanding opportunity for independence; maximum degree of outdoor skills; very high potential for challenge, self-reliance and risk.	Good opportunity for independence; primitive recreation skills; high potential for challenge and risk.	Moderate opportunity for independence using primitive skills; moderate opportunity for challenge and risk.	High degree of interaction with the natural environment; low-to-moderate challenge and risk.
Interparty contacts	Few or none	Few	Moderate	High much of the time
Onsite management of visitors	Minimal	Involves minimum visitor contact	Involves routine visitor contact	Involves frequent visitor contact
Presence of formal regulations	Only when other methods fail to achieve objectives.	May be necessary to achieve objectives. Signs provide minimum information necessary.	May be necessary to achieve objectives. Minimum number of signs provides information necessary.	May be necessary to achieve objectives. Signs placed to aid in distributing and dispersing use.
System trails	None	Mostly no trails; some may be present for resource protection and user safety; expect light travel.	Frequent; expect moderate use for most of use season.	Frequent; expect high traffic for the majority of the use season.
Availability of facilities	None	Only in few extreme cases for resource protection; natural materials dominate.	Moderate number for protection of resources and safety of user; natural materials dominate.	Facilities and trails may be provide resource protection and user safety; emphasize natural materials.

## Objectives

All objectives, including those related to Management Area desired conditions are found in chapter 3, Objectives.

## Guidelines

### ***MA-WVS-1: Within Granite Mt. Wilderness:***

- *All dogs should be on a leash.*
- *Camping should not take place within 200 feet of either side of Trail 261.*
- *Campfires should not be used.*
- *Existing fixed anchors may be maintained for rock climbing; however, new fixed anchor climbing routes should not be created. Power drills and other electro-mechanical or pneumatic devices for maintaining fixed anchors shall not be used.*

***MA-WVS-2:*** *As recreation facilities are developed in the vicinity of Camp Wood Road (County Road 68), developed opportunities should be placed near existing roadways to retain opportunities for isolation from people in areas where designated roads and motorized trails are rare.*

## Prescott Basin Management Area

Recreation within the Prescott Basin is concentrated around the city of Prescott. Residents can often drive for less than 15 minutes and enjoy the natural environment. The Prescott Basin area was first identified in 1999 and incorporated by amendment into the 1987 Plan in order to respond to needs to provide more controls on recreation use related to dispersed camping. These controls have been integrated with the direction found in this Plan.

### Desired Conditions

Interaction between recreationists is common. Multiple recreation sites exist including developed campgrounds, designated dispersed camping, day use sites, an OHV off-road area, and multiple trails for both motorized and non-motorized use. In general, existing facilities remain in place, Parking is available for high-use periods including holiday weekends. Recreational target shooting does not occur due to density of visitors and recreation facilities.

While much of the recreation use tends to be concentrated around the few water bodies available, activity at other sites is moderate. Facilities are well-maintained. Occurrences of vandalism and graffiti are minimal, and if they occur, are obvious for only a short time.

Developed and designated dispersed recreation sites support both community and Prescott NF focused recreation opportunities. Designated dispersed sites are popular and provide an inviting, sanitary, more primitive, place to camp. Expansion of individual sites and evidence of overuse is minimal. Resource changes due to recreational use, such as compaction and lack of vegetation, are minimized.

There is a balance between motorized and non-motorized recreation opportunities. Non-motorized opportunities are expanded near existing urban populations by connecting small parcels of land that currently provide non-motorized experiences but are too small to display on the Recreation Opportunity Spectrum (ROS) map C, appendix A.

Both motorized and non-motorized trail systems consist of interconnecting loops, as well as trails that connect communities or to other destinations. Visitors and citizens use designated trails or areas that provide their desired experiences, and “unofficial” trails are not evident.

Impacts to ecology and water resources, as well as recreational use conflicts are uncommon. Educational activities, such as campfire programs or naturalist tours, take place within campgrounds or in other areas where people congregate.

### **Objectives**

All objectives, including those related to Management Area desired conditions are found in chapter 3, Objectives.

### **Guidelines**

**MA-PB-1:** *Dispersed camping within the Prescott Basin Management Area should not exceed a period of 7 days within a 30 consecutive-day period.*

**MA-PB-2:** *Intensive recreation control systems, such as permits, temporary closures or reservation systems should be used for resource protection or to prevent recreation use conflicts.*

**MA-PB-3:** *Interpretive programs should focus on minimizing user conflicts, encouraging appropriate behaviors, and providing recreationists with information about natural ecosystems and the wildland-urban interface.*

## **Verde Valley Geographic Area**

### **Historic Context**

Inhabited 5,000 years or more ago by hunter-gatherers, the Verde Valley has long been populated. Around 800 AD, an agricultural-based culture settled and made use of irrigation to grow crops. Around 1,500 AD, the area was used by nomadic Yavapai and the Apache people, who still call the area home. As settlers from Europe and the eastern part of the U.S. migrated to the west, conflicts erupted between them and the native people. Fort Verde, originally called Fort Lincoln, was established in January 1864, by a group of volunteers from New Mexico to protect crops. Later the Fort was used by U.S. Army regulars in employing offensive operations against the Yavapai and Apaches. In 1875, acting on presidential executive order, about 1,500 Yavapai and Dilzhe’e Apache from the Rio Verde Indian Reserve were transferred to the Indian agency at San Carlos, 180 miles away. This led to a loss of many lives and loss of treaty lands promised to the Yavapai-Apache. When the Yavapai and Apache were released, only about 200 made their way back to the Verde Valley. Currently, the Yavapai-Apache have purchased lands and are a cultural and economic contributor to the area.

Many communities in the area, including Cottonwood, Camp Verde, Beaver Creek, and Cornville came about due to agricultural activity. These communities are located near the Verde River or its

tributaries where fertile land, views, and green vegetation are still found. Mining has also been an important factor within the Verde Valley. The town of Jerome originated as a copper mining camp, was incorporated in 1876 and peaked in population at about 15,000 in the 1920s. Railroads were built to support the mine, including one to the smelter in Clarkdale. In 1882, the Atlantic & Pacific Railroad, was completed connecting Jerome to Ash Fork. A portion of this line is now called the Verde Canyon Railroad and is a tourist attraction in Clarkdale today. Dependent on the demand for copper, Jerome's population dwindled after World War II. Its population is now about 450, and it is a thriving tourist and artist community, as well as a designated National Historic District (Verde Valley Land Use Plan, 2006; Komar and Schultz, 2007; and Socio-Economic Assessment for the Prescott National Forest, 2005).

### **Special Features or Characteristics of the Verde Valley Geographic Area**

Approximate acreage: 141,000 of which 82 percent is land under management by the Prescott National Forest

Miles of trails limited to non-motorized uses: 58

Miles of motorized or multi-use trails: 58

#### *Special Areas:*

- Cedar Bench Wilderness (east portion)
- Woodchute Wilderness
- Verde River Wild and Scenic segments

#### *Inventoried Roadless Areas*

- Black Canyon Inventoried Roadless Area
- Grief Hill Inventoried Roadless Area (east portion)
- Hackberry Inventoried Roadless Area

#### *Developed Campgrounds and Day-use sites:*

- Potato Patch Campground
- Mingus Mountain Campground and Day-use
- Mingus Lake Day-use
- Playground Group Campground
- Powell Springs Campground
- Beasely Flats River Access
- Hayfield Draw OHV Day-use
- Clear Creek Day-use
- Grief Hill Day-use

#### *Features:*

- Lower and Middle Verde River
  - River access
  - Bird migration flyway
  - Unique ecology
- Multi Agency Recreation resources:
  - State Scenic road 89A
  - Jerome Historic District

State Parks  
National Park Service National Monuments and sites  
Private Recreation and Natural Resource educational resources  
    Mingus Springs Camp  
    Methodist Camp  
Historic and Prehistoric sites  
    Salt mine  
    General Crook Trail  
    Coconino NF and Red Rocks influence  
    Fort Verde  
Views of Black Hills  
Mingus Mountain Hang Gliding  
Mingus Mountain Fire Tower  
Mingus Mountain Recreation Residences

*Management Areas:*

Verde Valley Management Area

**Desired Conditions for the Verde Valley Geographic Area**

All statements come from the Verde Valley community vision unless otherwise indicated.

Wide open spaces are free of litter and illegal uses. Prescott National Forest lands provide panoramic views. Recreationists, including: anglers, birders, hunters, hikers, bicyclists, equestrians, gun enthusiasts, river runners, hang gliders and off-highway vehicle drivers, respect and utilize the national forest in harmony with each other and the environment. A system of non-motorized multi-use trails connects communities, allow access to public lands and encourage people to improve health and vitality by exploring the outdoors. Roads, designated trails, and selected areas are managed for responsible use of off-highway vehicles, while other areas are set aside for protection or managed for non-motorized uses. Federal, State, and County agencies work cooperatively and effectively with neighboring municipalities, groups, and individuals to protect public lands and enforce the rules that govern them.

Each community retains its own identity and character. Unincorporated residential neighborhoods, farms, and ranches are intermingled and all are buffered by Prescott NF lands that provide natural open spaces and big mountain views.

Recreational shooting takes place in designated areas and educational programs encourage safe and wise use of firearms. (from Jerome community vision)

**Verde Valley Management Area**

The Verde Valley Management Area includes the Prescott NF land area on the east side of the Black Hills and west of the Verde River. The communities of Camp Verde, Clarkdale, Cottonwood, and Jerome are located here.

**Desired Conditions**

**Open Space, Visual Resources, and Land Ownership**

The Black Mountain Range, featuring Mingus Mountain and the Woodchute Wilderness on the north and Squaw Peak and the Cedar Bench Wilderness to the south, forms a scenic backdrop for the entire valley. Lands within the boundaries of the Prescott NF that enhance open space, scenic, watershed, or other natural resource values are generally retained in national forest ownership or are obtained through land adjustment. As proposed land exchanges are considered, processes are open to the public and there is opportunity to provide feedback regarding the land change.

## **Recreation**

Recreation opportunities are abundant and varied within the Verde Valley Management Area. Multiple opportunities exist for motorized and non-motorized trail use, picnicking, developed camping, hunting, and river-based activities along the Verde River. Visitors have opportunities to visit historic sites, view scenic vistas, birdwatch, and appreciate undeveloped, naturally-occurring open space between the vibrant communities of Jerome, Clarkdale, Cottonwood, and Camp Verde. Between September and April of each year, opportunities for long-term camping exist. Local user groups are well-informed about recreation opportunities and restrictions, providing helpful information to users and self-patrol of recreation activities.

Recreation use within the Verde Valley Management Area is concentrated primarily at areas along the Verde River corridor and on the top of Mingus Mountain. Designated dispersed sites at Mingus Mountain are popular and provide an inviting, sanitary, and primitive place to camp as an alternative to developed campgrounds. Evidence of over-use such as soil compaction and lack of vegetation is minimal at all recreation sites. Occurrences of vandalism and graffiti are minimized, and if they occur, are obvious for only a short time.

At Mingus Mountain, multiple recreation sites exist including developed campgrounds, designated dispersed camping, and day-use sites. Trails are well-maintained and trailheads have space to safely handle parking demand. Information on opportunities is available at obvious and convenient locations. Developed camping opportunities are fulfilling demand.

Along the Verde River, multiple recreation sites exist including developed campgrounds, designated dispersed camping, and day-use sites. Existing small parcels of National Forest land along the river provide a non-motorized experience for visitors. River access points meet public use needs. Educational efforts provide enhanced experiences by informing people about the history and ecology of the river and the area. Recreational visitors find that recreation opportunities complement those provided by city, state, tribal, other agency, and private entities.

Wilderness areas, including Pine Mountain, Cedar Bench, and Woodchute, provide a remote experience and unique hunting opportunities involving quietness and seclusion.

Both motorized and non-motorized trail systems consist of inter-connecting loops, as well as trails that connect communities or other non-Prescott NF destinations. Motorized and non-motorized opportunities are generally separated. Visitors and citizens make use of trails that provide their desired experiences and “unofficial” trails are not evident. Trailheads efficiently provide parking and access to trails where they are most critically needed. OHV trailheads provide a relatively dust-free environment that prevents erosion.

Local residents and visitors feel safe from the hazards of recreational target shooting activity that occurs within Prescott NF boundaries.

## **Objectives**

All objectives, including those related to Management Area desired conditions are found in chapter 3, Objectives.

## **Guidelines**

**MA-VV-1:** *Management actions should focus on discouraging unsafe and inappropriate winter recreation on Mingus Mountain.*

**MA-VV-2:** *Recreation control systems, including but not limited to reservation systems, physical and spatial control structures, and designated dispersed sites should be used to reduce recreation impacts such as soil compaction and loss of vegetation along the crest of Mingus Mountain.*

**MA-VV-3:** *Within the two areas shown on map F, Prescott National Forest lands should be retained in National Forest ownership or lands should be added to National Forest ownership, as available and feasible, to enhance open space values, to provide natural resource values such as wild habitat and movement corridors, and to improve watershed integrity.*

**MA-VV-4:** *Management actions should focus on maintaining the wilderness characteristics of the Black Canyon recommended wilderness area until further action is initiated by the Forest Service to forward it to the Congress for designation.*

**MA-VV-5:** *Management actions should focus on retaining the scenic integrity objectives associated with the Grief Hill Inventoried Roadless Area.*



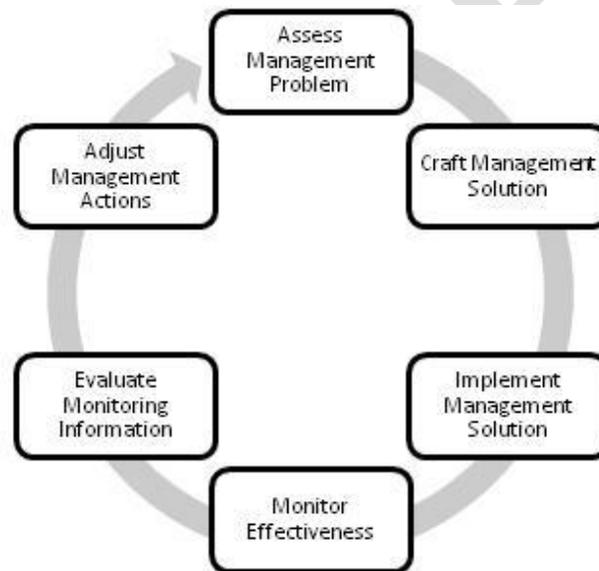
# Chapter 6. Monitoring and Evaluation

## Introduction

Monitoring and evaluation are separate and sequential activities required by National Forest Management Act regulations to determine how well the Forest Plan is working. Monitoring<sup>42</sup> involves collecting data by observation or measurement. Evaluation involves analyzing and interpreting monitoring data.

Monitoring and evaluation activities provide on-going feedback about management effectiveness and are essential elements of an adaptive management cycle that includes problem identification, solution, and implementation (figure 6-1). Monitoring and evaluation activities keep direction found in the Forest Plan up-to-date and relevant by being responsive to changing conditions and issues, including public desires, and to new information, such as research results or outcomes from management activities.

**Figure 2. Monitoring and evaluation are elements of an “adaptive” management cycle.**



## Monitoring Strategy

A strategy for Forest Plan monitoring and evaluation has been designed to answer these three basic questions:

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<sup>42</sup> The general purpose of monitoring is to detect changes or trends in a resource. Detection of a change or trend may trigger a management action, or it may generate a new line of inquiry. Monitoring data are most useful when the same methods are used to collect data at the same locations over time. It is important to note that cause and effect relationships usually cannot be demonstrated with monitoring data, but monitoring data might suggest a cause and effect relationship that can then be investigated with a research study.

- 1) **Did we do what we said we were going to do?** The answers to this question should tell us how well the direction in the Forest Plan is being implemented. Collected information is compared to objectives, standards, guidelines, and management area direction.
- 2) **Did it work how we said it would?** The answers to this question should tell us whether the application of standards and guidelines is achieving objectives, and whether objectives are achieving desired conditions.
- 3) **Is our understanding and science correct?** The answers to this question should tell us whether the assumptions and predicted effects used to formulate the desired conditions and objectives are valid.

The following guiding principles are key elements of the Prescott NF's monitoring strategy and serve as a framework for implementing an effective monitoring and evaluation program:

- Monitoring efforts are efficient, practical and affordable; make use of the best available science; and do not duplicate the collection of data already underway for other purposes.
- Monitoring tasks are scaled to the desired condition, objective, or management area direction to be monitored. Data that is collected for other purposes, but can also answer monitoring questions herein, are identified, compiled, and evaluated as part of the monitoring report.
- Monitoring considers effects of management on FS lands and resources as well as adjacent lands and communities. Monitoring results from adjacent non-FS lands are reviewed to identify how threats and resources may be crossing boundaries, and how pressures and management of surrounding lands may impact resources or activity on FS lands.
- Opportunities to complete monitoring and evaluation activities through partnerships and citizen collaboration are examined on a regular and on-going basis.
- Monitoring is not performed on every single activity, nor does it need to meet the statistical rigor of formal research.
- A monitoring action plan is prepared initially and updated regularly. The monitoring action plan identifies and schedules various site-specific, on-the-ground monitoring activities. It also describes the methods, locations, responsible persons, and estimated costs. Budgetary constraints may affect the level of monitoring that can be done in a particular fiscal year. If budget levels limit the Prescott NF's ability to perform all monitoring tasks, then those items specifically required by law are given the highest priority (e.g., items in table 3).
- A monitoring and evaluation report is prepared each year that summarizes the results of completed monitoring and evaluates the data for indicators of trends or effects.
- The forest supervisor annually evaluates the monitoring information displayed in the evaluation reports through a management review and determines if any changes are needed in management actions or the Plan itself.
- The public is given timely, accurate information about Forest Plan implementation. This is done through the release of the annual monitoring and evaluation report.

The specific monitoring questions and performance measures that should be used to evaluate movement toward Forest Plan desired conditions under this monitoring strategy are displayed below in tables 3 through 8 and arranged according to six monitoring themes:

- Legally Required Monitoring

- Conserving Biological Diversity
- Retaining Ecosystem Resilience
- Maintaining Watershed, Soil and Air Quality
- Sustaining Recreational and Social Benefits
- Maintaining Infrastructure Capacity

In some cases, the monitoring question and performance measures directly assess accomplishment of desired conditions. In other cases, they gauge objectives or guidelines associated with the desired conditions.

For each monitoring question/performance measure listed in tables 3 through 8, additional monitoring descriptors are included to provide context for the type of information to gather and how often to gather it. These descriptors are defined here:

- **Frequency of Monitoring:** Describes how often information is gathered or measured such as annually, every three-five years, or every ten years.
- **Frequency of Evaluation:** Defines how often the information is analyzed and reported. Depending upon the monitoring question, analysis of the information may occur at longer time intervals than the frequency of monitoring.
- Some resources need to be monitored annually to produce trend data. Annually gathered data may be analyzed periodically (3, 5 or 10-year cycle), depending upon the timeframe specified by each objective.
- **Data Precision and Reliability:** Precision refers to how close the repeated measurements of the same quantity are to each other. Accuracy is a measure of how close a measurement is to the actual value of the variable being measured.
- Two categories of precision and reliability are appropriate at the Forest Plan scale:
- **Class A:** Methods generally are well accepted for modeling or quantitative measurement. Results have a high degree of repeatability, reliability, accuracy and precision.
- **Class B:** Methods or measurements are based on project records, personal communications, ocular estimates, pace transects, informal visitor surveys and similar types of assessments. The degree of repeatability, reliability, accuracy and precision are not as high as Class A methods, but they still provide valuable qualitative information.

Theme 1 – Legally Required Monitoring (from 1982 Planning Rule Section 219)

**Table 3. Prescott Forest Plan Monitoring Questions (Theme 1)**

Action, Effect or Resource to be Measured	Monitoring Question	Performance Measure	Monitoring Frequency	Evaluation/ Reporting Frequency	Data Precision/ Reliability
Comparison between estimated and actual Plan objectives (Section 219.12(k)(1))	Are we achieving Plan objectives within the estimated ranges?	Proportion of objectives accomplished	Annually	Annually	A
Plan objectives, standards, and guidelines (Section 219.12(k)(2))	Are the effects of Forest management resulting in significant changes to productivity of the land?	Changes in watershed condition class (HUC 6 level)	Annually	Every 5 years	A
Comparison of actual and estimated costs of activities estimated in Plan objectives (Section 219.12(k)(3))	How close are projected costs with actual costs?	Dollars	Every 10 years	Every 10 years	A
Lands not suited for timber production (Section 219.12(k)(5)(ii))	Have areas classified as unsuited for timber production become suitable?	Amount of unsuited versus suitable acres	Every 10 years	Every 10 years	A
Maximum size of openings from even-aged management (Section 219.12(k)(5)(iii))	What percentage of openings created from even-aged management are 40 acres or less?	Percentage of harvest units	Every 5 years	Every 5 years	A
Destructive insects and disease <sup>43</sup> (Section 219.12(k)(5)(iv))	To what extent are undesirable outbreaks of insects and pathogens occurring within the Plan area?	Acres of infestation and tree mortality	Annually	Annually	A
Population trends of the Management Indicator Species in relation to habitat changes (Section 219.19(a)(6))	As a proxy for population, what are the trends in habitat for Management Indicator Species within the Plan area?	MIS habitat attributes; MIS occurrence & distribution	Annually	Every 5 years	A

<sup>43</sup> This item also meets the monitoring intent of Theme 3 – Retaining Ecosystem Resilience

Theme 2 – Conserving Biological Diversity

**Table 4. Prescott Forest Plan Monitoring Questions (Theme 2)**

Action, Effect or Resource to be Measured	Monitoring Question	Performance Measure	Monitoring Frequency	Evaluation/Reporting Frequency	Data Precision/Reliability
Vegetation Diversity (O-1,O-2,O-3,O-4,O-5,O-6, DC-Veg-1)	What are the current condition and trend of key characteristics for vegetation identified in the desired conditions for the plan area?	Vegetation size class, percent canopy cover, Composition; Acres of treatment by treatment type	Every 5years	Every 5 years	A
	How effective are management actions at maintaining or making progress toward desired conditions for the key characteristics of vegetation within the plan area?				
Species Diversity (O-1,O-2,O-3,O-4,O-5,O-6, O-25,O-26,O-27,O-28, DC-Ecosystem Resilience-1,DC-Wildlife-1)	To what extent are management activities providing ecological conditions to maintain habitat for viable populations of native and desired non-native species?	Habitat acres treated; Miles of fence modified; Number of water developments improved; Species surveys (e.g., fish, herpes, breeding birds, bats, etc.)	Every 1 to 5 years depending on species	Every 5 years	A
Aquatic Species (O-24)	Are management actions maintaining or making progress toward desired habitat conditions for native fish, amphibian and reptile species?	Aquatic habitat quality; stream miles improved	Every 1 to 5 years depending on species	Every 5 years	A
Federally Listed Species (DC-Ecosystem Resilience-1)	Have conservation actions or conservation strategies for federally listed species been implemented?	Number of plans or actions initiated	Every 1 to 5 years depending on species	Every 5 years	A
	What are the habitat trends for Federally Listed species on the Prescott NF?	Habitat attributes			

Theme 3 – Retaining Ecosystem Resilience

**Table 5. Prescott Forest Plan Monitoring Questions (Theme 3)**

Action, Effect or Resource to be Measured	Monitoring Question	Performance Measure	Monitoring Frequency	Evaluation/Reporting Frequency	Data Precision/Reliability
Non-native Invasive Plant Species (O-6)	What are the status and trend of areas infested by invasive plant species?	Acres of invasive species surveyed; Acres of infestation treated	Annually	Every 5 years	A
Fire (O-1,O-2,O-3,O-4,O-5)	Are management actions moving fire regimes towards desired conditions?	Acres treated by fire severity level and frequency	Annually	Every 5 years	A
	To what extent is wildland fire used to maintain desired fuel levels and vegetation characteristics? To what extent is unwanted wildfire on the landscape suppressed?	Acres of fire managed for multiple objectives; Acres of unwanted fire suppressed; post-fire fuel loadings			
	To what extent is prescribed fire used to maintain desired fuel levels, and/or mirror natural processes, and or restore desired vegetation characteristics?	Acres of prescribed fire by fuel type; post-fire fuel loadings; vegetation species structure and density			
	Has the risk for active crown fire been sufficiently reduced in fire-adapted ecosystems where crown fires were not frequent occurrences historically?	Predicted fire behavior by fuel type/loading			
	To what extent are extreme weather patterns (e.g., precipitation and air temperature) affecting fire season length and severity?	Monthly/daily Energy Release Component (ERC) estimates by fuel type			

Action, Effect or Resource to be Measured	Monitoring Question	Performance Measure	Monitoring Frequency	Evaluation/Reporting Frequency	Data Precision/Reliability
Ecosystem Resilience (DC-Ecosystem Resilience-1)	What management actions, measures, or decisions are the Forest Service taking to enhance ecosystem resilience in response to changing environmental conditions?	Project-level design features or mitigations	Every 5 years	Every 5 years	A

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Theme 4 – Maintaining Watershed, Soil, and Air Quality

**Table 6. Prescott Forest Plan Monitoring Questions (Theme 4)**

Action, Effect or Resource to be Measured	Monitoring Question	Performance Measure	Monitoring Frequency	Evaluation/Reporting Frequency	Data Precision/Reliability
High priority watersheds (O-18)	Are management actions being implemented to improve watershed conditions?	Number of projects implemented	Annually	Annually	A
Watershed features (O-19, O-23)	Are management actions being implemented to improve conditions of at-risk riparian areas, seeps, and springs?	Number of projects implemented	Annually	Annually	A
Watershed integrity (O-20, O-21, O-22)	Are management actions being implemented to reduce negative impacts to watershed conditions?	Miles of roads, routes, or trails repaired or improved	Annually	Annually	A
		Number of improved drainage crossings	Annually	Annually	A
Airshed conditions (DC-airshed-1)	Are management activities contributing or responding to air quality effects on human health or human enjoyment?	Particulate Matter (PM 2.5) recorded at smoke sensitive sites	Annually	Annually	A
	Are air quality related values of Sycamore Canyon and Pine Mountain Wilderness Areas being maintained?	Visibility using (IMPROVE) program	Annually	Every 5 years	A

Theme 5 – Sustaining Recreational and Social Benefits

**Table 7. Prescott Forest Plan Monitoring Questions (Theme 5)**

Action, Effect or Resource to be Measured	Monitoring Question	Performance Measure	Monitoring Frequency	Evaluation/Reporting Frequency	Data Precision/Reliability
Diverse Recreation Experiences (O-7, O-8,O-10,O-13,O-14,O-16)	How many new recreation sites or locations have been added to the system?	Number of facilities or sites, INFRA	Annually	Every 5 years	A
	How many recreation sites or locations have been improved, relocated or decommissioned in response to known resource damage?				
	Does the number of recreation opportunities limit overcrowding, reduce user conflicts, and minimize resource damage?	User satisfaction surveys (NVUM)	Every 5 years	Every 5 years	A
	Does the range of recreation experiences consider population demographic characteristics and desires of the local communities?				
	To what extent are visitor information opportunities/ education activities being provided to the public?	Number and type of visitor information and education activities	Annually	Annually	B
Eligibility for Wild/Scenic Rivers (DC-Wild & Scenic-1)	Has there been adequate protection of outstandingly remarkable values (ORVs) of river segments that are eligible for Wild/Scenic River designation?	Changes to ORVs	Every 5 years	Every 5 years	B
Eligibility for Wilderness Designation (DC-Wilderness-1)	Has there been adequate protection of wilderness characteristics of areas that are eligible for wilderness designation?	Changes to wilderness character	Every 5 years	Every 5 years	B
Land Adjustment (DC-Open Space-1, DC-Lands-1, O-29)	To what extent is the Prescott NF land adjustment program supporting or enhancing Forest Plan desired conditions (open space, scenery values)?	Area of land adjustment that meets community open space needs and provides for natural resource values	Every 5 years	Every 5 years	B

Theme 6 – Maintaining Infrastructure Capacity

**Table 8. Prescott Forest Plan Monitoring Questions (Theme 6)**

Action, Effect or Resource to be Measured	Monitoring Question	Performance Measure	Monitoring Frequency	Evaluation/Reporting Frequency	Data Precision/Reliability
Roads, Trails, and Facilities (O-9, O-11, O-12, O-15, O-17) (DC-Transportation & Facilities-1)	How many miles of the designated roads and trails are maintained to standard?	Miles of roads and trails	Annually	Annually	A
	How many developed and designated recreation sites are being maintained?	Percentage of sites maintained	Annually	Annually	A
	What proportion of trailheads and wilderness boundaries are adequately signed or marked?	Percentage of total trailheads; Miles of wilderness boundary	Annually	Every 5 years	A