



United States Department of Agriculture

# Draft Preliminary Need for Change Statements for Management Direction under the Existing 1986 Forest Plan

## Gila National Forest, New Mexico



Forest Service

Gila National Forest

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Cover Photo: Spur Fire in Catron County, NM. Photo by US Forest Service.

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# Gila National Forest's Draft Need for Change Management Direction of the Existing 1986 Forest Plan

The Gila National Forest's current land and resource management plan (forest plan) is 30 years old. The Forest is in the process of developing a revised plan that will guide how the Forest will be managed in the future. An assessment report providing information on the "state of the Forest," including conditions, trends and risks to sustainability, has been prepared and is available at <http://go.usa.gov/xKenb>. Using the assessment, Gila National Forest (NF) staff have begun to analyze what needs to change in the current forest plan in order to continue supporting the multiple use-sustained yield mandate under which the Forest Service functions.

A "need for change" describes a strategic change to the current forest plan necessary to address issues identified in the assessment report. The question to be answered in developing need for change statements is:

*What strategic current plan direction needs to be revised to address conditions, trends and risks to sustainability?*

Need for change statements form the bridge between the identification of resource conditions and trends in the assessment and the development of the revised forest plan by presenting where and how the revised forest plan needs to be different from the current plan. These statements provide focus for the second phase of planning – the development of the revised plan – where plan components are created to help ensure management meets desired conditions for each resource.

The document starts with a description of a forest plan, what it contains, and how the need for change statements might influence plan contents. The preliminary needs for change statements that follow serve as a place to begin the conversation about needs for change to the current forest plan among the Forest, the public and other stakeholders. Stakeholder input will inform revisions (i.e. additions, modifications or deletions) to these draft statements. The final needs for change will be summarized in the *Federal Register* along with a notice of intent to prepare an environmental impact statement to develop a revised forest plan following the National Environmental Policy Act (NEPA) process. During this process, a revised forest plan and environmental impact statement (including alternatives) will be developed based on the needs for change.

## What is a Forest Plan?

A forest plan provides broad, strategic direction for management of National Forest System lands and the resources contained within those lands. A plan is developed through an ongoing public process, relies on the best available scientific, local and native knowledge and provides a framework for integrated resource management. A plan does not authorize projects or activities, commit the Forest Service to take action, or regulate uses by the public; in other words, no site-specific decisions are expected to be made in a forest plan. A plan must comply with, but should not repeat existing laws, regulations or program management policies, practices or procedures that are already contained in the Forest Service Directive System. Future projects and activities must carry out and/or comply with plan direction, and are the means by which the plan is implemented.

A forest plan consists of components that will be developed from the need for change statements and guide future project and activity decision-making. These components are:

**Desired conditions:** These are specific social, economic and ecological characteristics of the plan area, or a portion of the plan area that are described in terms specific enough to allow for progress toward their achievement. Desired conditions are what drive the plan. All project-level management activities should be aimed at the achievement of these conditions for those resources in the area where the project is located. They can be thought of as goals that help define a vision for the National Forest in the future.

**Objectives:** These are concise, measurable, and time-specific statements of a desired rate of progress toward desired conditions and should be based on reasonably foreseeable budgets. Objectives and the strategies used to accomplish them can be thought of as tools to prioritize project activities and serve as mileposts along the road to desired conditions.

**Standards:** These are mandatory constraints on project and activity decision-making and can be thought of as the rules of operation for project development.

**Guidelines:** These are also constraints on project and activity decision-making, but may be replaced by something that is equal or better in terms of meeting the intent of the guideline. In other words, the intent of the guideline is a mandatory constraint, but departure of from the letter of the guideline may occur given the intent is met.

**Suitability of lands:** Specific lands within a planning area may be identified as suitable, or not, for various uses or activities based on the desired conditions applicable to those lands. The National Forest Management Act requires every plan to identify those lands that are not suitable for timber production. Other suitability analyses may be conducted but are not required.

A forest plan applies only to those lands within the National Forest System and identifies where plan components apply. Plan components will apply forest-wide, to certain parts of the forest (management or geographic areas), or to land of specific character such as riparian areas. Every plan must identify management or geographic areas and may utilize existing designated areas, or those recommended for designation when identifying those areas.

In addition to plan components, the forest plan must also include other content which will be linked to need for change statements. This other content includes:

**Priority watersheds:** Every plan must identify watersheds that are impaired or otherwise at risk, and as such, are a priority for maintenance or restoration.

**Roles and contributions:** Every plan must describe the roles and contributions of the plan area to ecological, social and economic sustainability within the broader landscape.

**Monitoring program:** Every plan must include a monitoring program. Monitoring information enables the responsible official to determine if a change in plan components or other plan content may be needed.

**Proposed and possible actions:** Every plan must describe proposed and possible actions that may occur within the plan area during the life of the plan. Examples of these actions could include, but are not limited to livestock grazing, timber harvesting, aquatic habitat restoration.

Forest plans may also include optional content such as existing conditions, explanatory narrative, management approaches and other sources of information. These sources are important in designing project and activities to achieve desired conditions, but do not offer direction. Existing conditions and explanatory narrative provide background information and a brief sense of history, as well as a context for desired conditions.

**Management approaches** describe an approach or strategy to achieve desired conditions. Management approaches are not direction, but describe an approach or strategy to achieve desired conditions. They may describe context, intent, priorities, partnership opportunities or coordination activities, needs for surveys, inventories or assessments, or approaches to risk and uncertainty. Unlike plan components, management approaches can be updated as science and technology advance and do not require a plan amendment to change. Therefore, the use of management approaches and strategic plan components increases the life span of a forest plan.

Other sources of information include existing laws, regulations, policies, memorandums of understanding and regional and/or national Forest Service guidance.

## Changes Needed Throughout the Plan

The Forest Service is a multiple-use and sustained yield agency as mandated by the Multiple-use Sustained Yield Act of 1960 and the National Forest Management Act of 1976. The mandate is not exclusive to a single resource or use, and the sustained yield principle applies to all multiple-uses for which the national forests and grasslands are administered. Recreation, timber, range, water, and wildlife, fish and plant resources on the Gila National Forest (NF) contribute to the maintenance of social cultures and long-standing traditions, connect people to the land and contribute to the quality of life for many.

The ability of the Gila NF to continue contributing the social and economic benefits associated with recreation and tourism, ranching, hunting, timber, fuelwood and other forest products desired by local communities, families and the visiting public is determined by the ability of Forest management to balance these and other multiple-uses in a changing economic environment, with the capacity of the Forest ecosystems and watersheds to sustain yields in a changing climate. Primary demands for uses on the Forest include traditional subsistence uses (i.e., livestock grazing and fuelwood harvest) and uses associated with market-based economic production (i.e., timber and recreation). The demand for traditional uses is expected to continue, while demand for recreational uses is likely to increase. The current Forest Plan describes the Forest's economic contributions in terms of potential yields and projected demands and the differences that existed between the two based on the science, methods, technologies, and local infrastructure, contractors and markets that existed at the time. However, many advances in scientific understanding, methods and technology have occurred since that time, including advances in climate science. Local capacities and markets have changed as well.

### Plan Need for Change

1. There is a need to better recognize and enhance the Forest's role in contributing to local economies through recreation and tourism, timber and forest products, livestock grazing, and other multiple-use related activities and products while balancing these uses with available resource capacity and emerging opportunities.
2. There is a need to reevaluate plan components based on new science, methods, and technologies.
3. There is a need to include management approaches throughout the plan as appropriate that consider the capacity of infrastructure, contractors and markets when planning towards desired conditions.

Relationships are a key factor that can impact the success of Forest Plan implementation. With the challenges presented by downward trends in Forest budgets and staffing levels, strong relationships are not a convenience, but a requirement in order to protect the land and serve the people. Some relationships are good or are getting better, while others need work to overcome contentious histories. The Forest does not always capitalize on partners who are willing to help. For example, stakeholder involvement is not reaching its potential for the recreation resource, resulting in missed opportunities for positive interactions and outcomes. The Forest also struggles to reach all stakeholders, which challenges relationships. Poor relationships are costly because they can lead to wasted time and energy through the planning process, misperceptions and miscommunications about the Forest's intentions and actions, and ultimately negative impacts on resource management. While the Forest Plan cannot provide direction beyond the scope of managing resources on the Gila NF, better relationships and additional partners may be part of strategies that help achieve desired resource conditions.

#### Plan Need for Change

4. There is a need to include plan guidance that will allow flexibility for fluctuations in Forest budgets over the life of the plan.
5. There is a need to include management approaches throughout the plan as appropriate that utilize collaboration with stakeholders, partnerships and volunteer opportunities as a management option to promote movement toward desired conditions. This includes management approaches that encourage working with neighboring land managers to implement projects at a scale that improves landscape scale connectivity across mixed ownerships where natural systems, such as watersheds and wildlife corridors, span multiple administrative boundaries.
6. There is a need for management approaches that can strategically leverage and streamline processes for engaging partners and volunteers during project implementation and monitoring.
7. There is a need for management approaches that emphasize public education about the Gila NF's diverse ecological, social, and economic resources, the multiple-use sustained yield philosophy, public laws and regulations, and management strategies.

Forest plans provide strategic management direction and must be consistent with all applicable laws, regulations and policies, but not repetitive of those requirements.

#### Plan Need for Change

8. There is a need for removing components that are redundant with existing laws, regulations and Forest Service policy. These should be incorporated by specific reference only, which will allow the plan to be up to date with the most recent versions without amendments.

The current Forest Plan imposes internal management boundaries (i.e., management areas), often with different management direction, which artificially fragments the landscape within the Forest boundary and makes it difficult to consistently implement projects on the ground at a large scale.

9. There is a need to reevaluate the number, arrangement, and boundaries related to current forest plan management areas, and base new ones on ecological boundaries such as ecological response units (ERUs)<sup>1</sup>.
10. There is a need to include plan direction that provides for adaptive management. There is also a need for plan components to be more strategic than prescriptive and for increased usage of management approaches based on best available science and monitoring.

The purpose of monitoring and evaluation is to determine if our management is meeting conditions and objectives laid out by the Forest Plan. The monitoring plan has not been amended for quite some time, and it is out of date with current science and trends in resources. Since monitoring is an essential component of adaptive management, these problems make it difficult to determine if resource management as described by the plan is working as desired.

11. There is a need for a monitoring program that tracks progress toward desired conditions and allows for a responsive adaptive management program with available resources, and uses updated terminology and methodologies especially for air quality, facilities, fire/fuels, lands, timber, and wilderness monitoring elements.

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<sup>1</sup> The assessment of terrestrial and riparian ecosystem condition was stratified using the ERU classification system, which is a grouping of sites that are each similar in plant species composition, succession patterns, and disturbance regimes. See the Assessment Report for more details.

## Ecological Changes

### Upland Vegetation

Past fire suppression and historic livestock grazing practices that are no longer in place have contributed to departure from the natural range of variation in most ecosystems on the Gila NF by disrupting characteristic ecological processes, such as fire and natural vegetation succession. Other factors contributing to departure include: historic logging and fuelwood harvesting practices that removed the largest and most fire resistant trees; roads and trails that fragmented the landscape and impeded the spread of frequent, low-severity fire; drought; climate change; and uncharacteristic extents of stand replacement fire such as those experienced during the 2012 Whitewater Baldy Complex and 2013 Silver Fire.

Most of the Spruce-Fir Forest and Mixed Conifer with Aspen occur within designated wilderness, are least affected by legacy issues and are not subject to management activities other than fire, but are departed for the largest number of key ecological characteristics. These ERUs typically experience infrequent, stand replacement fire, but departures in seral state proportion and patch size suggest that recent extents of stand replacement fire were uncharacteristic for these systems, also leading to departures in soil stability, hydrologic function and nutrient cycling. They also have the highest vulnerability to climate change, with the lowest uncertainty regarding that vulnerability of all ERUs on the Forest. Although these ERUs comprise just three percent of the Forest, they have significant ecological value in terms of the overall biodiversity of the Gila NF.

In other upland ERUs, legacy issues related to the disruption of natural ecological processes by historic management, including reductions in fire frequency and/or changes in fire severity have contributed to increasing forest and woodland stand densities of small to medium size trees and/or encroachment of woody species into grasslands. Grazing activities with unintended consequences during the 19<sup>th</sup>- and early- to mid-20<sup>th</sup>-centuries limited fine fuels (i.e. grasses and forbs) that typically carried frequent low-severity fire. Forest and woodland fragmentation and the presence of road and trail systems also impede the spread of frequent, low-severity wildfires across the landscape. Along with early- to mid-20<sup>th</sup>-century fire suppression activities, these changes contributed to shifts in species occurrence and composition, changes in fuel types, distribution, vertical and lateral continuity and overall increases in fuel loading uncharacteristic of historic conditions. The increased density of small to medium size trees as a result of the infill of canopy gaps by tree and woody species has also reduced the density, vigor and productivity of herbaceous understory plants in forested, woodland and grassland types. These changes and the variable degrees of departure are reflected in the seral state proportion, mean patch size, coarse woody debris and ecological status (i.e. species composition) analyses in the assessment report. These departures from the historic fire regime contribute to increased risk of larger, higher severity fire.

Increased stand densities not only increase the risk of wildfires uncharacteristic of these systems, but increases competition between plants for limited water, nutrients, sunlight and space. In turn, increased competition leads to increased stress, especially during periods of extended drought. This stress makes the entire plant community more susceptible to outbreaks of insects, pathogens, disease and invasion by non-native species. Water stressed plants are also more likely to die at lower fire severities than they would if they were not stressed, which has been observed in ponderosa pine following the 2013 Silver Fire and 2014 Signal Fire.

Movement toward the natural range of variability in key ecosystem characteristics analyzed in the Assessment Report will require active and adaptive management and may include re-evaluation of plan direction related to old growth forests, given the extents of recent stand replacement fires in some ERUs.

Plan Need for Change

12. There is a need to develop desired conditions regarding vegetation structure (seral state proportion), composition, and function, as well as objectives, standards, guidelines and management approaches that will promote ecological restoration, support resilience and sustainability, and minimize risks to ecosystem integrity.
13. There is a need to re-evaluate current plan direction regarding old growth forest and woodland based on the assessment findings regarding seral state proportions within the forested and woodland types. Seral state dominance has shifted from large to very-large size trees to a preponderance of small to medium size trees.
14. There is a need to update current direction, develop desired conditions, standards and guidelines that promote the restoration and maintenance of native herbaceous vegetation (i.e., grasses and forbs) productivity, limits woody species encroachment/infill and non-native invasive plant establishment, in all ERUs.

**Fire-adapted Ecosystems**

While management strategies that focus on restoring structure and composition of vegetative communities may increase system resiliency, restoring ecological processes such as fire is key to system sustainability. Prescribed fire and wildfire use are projected to increase with the continuing emphasis on landscape scale restoration of fire-adapted ecosystems. In general, prescribed fire has minor and relatively short-term negative effects on watershed condition as severities are typically lower than those associated with wildfires. Over the long term, prescribed fire can have positive effects as it reduces the risk of larger, more severe wildfires. However, restoring the historic fire regime faces challenges of altered fuel characteristics, climate change and operational, budget, policy and political constraints. Restoring the natural role of fire may not be desirable in the Wildland Urban Interface (WUI) as reducing both immediate and long-term risks to human life and property that may be posed by fire are the primary concerns.

While fire has been and will remain the most important management tool in supporting sustainable, fire-adapted ecosystems in the face of climate change, accounting for natural, site specific variability in reference forest structure and fire frequency may become increasingly important given projections of larger and more frequent wildfires as climate change progresses. The current Forest Plan does not adequately recognize the connections between the resources impacted by fire, whether positive or negative, nor does it adequately provide for an integrated resource approach to fire management, consider climate change, or allow the necessary flexibility that may be required to restore the natural role of fire particular to each ERU. The current Forest Plan is also largely silent on post-fire management activities, other than emergency stabilization, despite the fact that effects to soil and watershed condition are cumulative.

Plan Need for Change

15. There is a need to update current plan direction to allow for an integrated resource approach to increase flexibility for restoration and maintenance of fire as an ecological process in fire adapted

ecosystems while addressing public safety and health concerns, especially in the Wildland Urban Interface (WUI).

16. There is a need for plan direction that recognizes the natural processes of fire (e.g., natural fire regimes) and their use as management tools to help achieve desired conditions appropriate to each vegetation type (i.e., ERU) across the landscape.
17. There is a need for plan direction that allows managers the flexibility to manage naturally ignited fires to meet resource objectives based on weather and site-specific conditions (e.g., fuel conditions, topography, safety concerns and values). These actions may include the use of fire to reduce excess fuels, moderate the risk of future uncharacteristic fires, improve wildlife and range habitat, and improve watershed and overall forest health.
18. There is a need to update the plan to address vegetation structure within the Wildland Urban Interface (WUI) since these areas will have different desired conditions than non-WUI areas to encourage lower fuel loading and fire behavior.

### **Soils, Watershed, Riparian Ecosystems and Aquatic Habitat**

Upland vegetation is one of many ecosystem components. Other ecosystem components include soil, water, riparian vegetation, aquatic habitat and terrestrial and aquatic communities. All ecosystem and watershed components are interconnected by natural processes and are thus affected by both historic and current management actions or inactions that influence those processes. Both natural and human-caused disturbances are having impacts on the condition of these ecosystem components across the Forest.

Past fire suppression and historic overgrazing by livestock contributed to altered fire regimes and increased wildfire risk in some ecosystems and watersheds on the Forest by altering fuel types, densities and distributions. Legacy issues remain evident in some places on the Forest (e.g., woody vegetation encroachment and infill and soil condition), particularly in the grassland, woodland and shrubland ecosystems and watersheds containing large proportions of those ecosystems.

Seventy percent of watersheds are considered Functioning at Risk with respect to rangeland vegetation condition, 23 percent Functioning Properly and 7 percent Impaired Function. Livestock grazing has been excluded along much of the Gila and San Francisco Rivers, as well as some springs, seeps and wet meadows. Many riparian areas associated with smaller stream systems continue to support livestock grazing. The impacts of livestock under current management are substantially less than under historic management. In the northern portion of the Forest, large elk herds contribute to herbivory impacts.

Although wildfires are a natural disturbance, the uncharacteristic extents of stand replacement fire in recent years are having a significant impact on watershed and soil health, water quality, water quantity, riparian function and aquatic habitat. Increased rates of soil erosion, downstream sedimentation, alterations to stream channel shape and function, reductions in infiltration and groundwater recharge, and altered timing, duration and magnitude of streamflow are all consequences.

Eighty-three percent of the Spruce-Fir Forest and 96 percent of the Mixed Conifer with Aspen are currently Impaired or Unsatisfactory with respect to soil condition, and nineteen percent of watersheds are Impaired Function for soil productivity and erosion solely attributable to these post-fire effects. This nineteen percent of watersheds are also Functioning at Risk or Impaired Function with respect to forest cover. Forest cover is important for hydrologic function and soil stability as it is a critical component of

hydrologic function. There are also negative long-term implications for streamflow and groundwater recharge as increased potential evaporation and sublimation as well as shorter duration of the snow pack at higher elevations are likely given the uncharacteristic extents of stand replacement fire.

While watershed recovery will occur, the amount of time it takes for watersheds to stabilize depends on fire severity and extent, soils, topography, geology, vegetative species present pre-fire, post-fire treatments and management activities, and precipitation patterns. Some changes in watershed response may be expected long-term, depending on the extent and magnitude of soil loss. Subsurface soil layers have different hydrologic properties than topsoil and typically have lower infiltration capacities, which has implications for the amount of plant available water, streamflow and groundwater recharge. Subsurface soil layers are also lower in productivity. Where erosion reduces the total volume of soil, there is also a reduction in water holding capacity.

Soils are a non-renewable resource. Sustainable soil management may warrant heightened concern in the Southwestern climatic regime, as precipitation and temperature patterns restrict the rate of soil formation. Accelerated soil loss can have significant impacts on ecosystems and watersheds, as can soil compaction. Sixty eight percent of watersheds are Functioning at Risk or Impaired Function with respect to soil condition. The current Forest Plan does provide for some reduction in or mitigation of negative impacts to the soil resource, such as slope restrictions, but does not provide adequate measures for reducing or mitigating compaction or for the retention of coarse woody debris sufficient to maintain nutrient cycling function and long-term soil productivity. Better understanding and integration of vegetation, soil, watershed, and fire management strategies and objectives, as well as consistent, efficient and effective monitoring designed to document outcomes and assess the effectiveness of management actions relative to key soil characteristics are necessary.

With few exceptions, the current scientific understanding is that natural fire frequency and severity in riparian areas are less than surrounding uplands. Fires occur less often and at lower severity largely because of higher fuel moisture, soil moisture and relative humidity. While cottonwoods, willows, alders, sycamore may re-sprout after fire (and flood) in some regions and circumstances, willows are the only species that have been observed to re-sprout after fire with any reliability on the Gila NF. Riparian species experience mortality even with low severity fire.

Post-fire flooding events have also reduced shade over water by reducing riparian canopy cover which aids in regulating stream temperatures. While the Forest has seen a relatively quick recovery response in the riparian ecosystems that contain willow species, there are long-term implications for riparian and aquatic habitats, water quality and quantity associated with the magnitude and extent of stream channel erosion and sedimentation which has altered channel shape and function and thereby surface and groundwater connections. Approximately 25 percent of the Forest's stream channels and riparian areas have experienced these changes, including 77 percent of the Willow-Thinleaf Alder and 66 percent of the Arizona Alder-Willow. Concerns about the risk of future uncharacteristic wildfires in watersheds with higher than natural fuel loading and departure from the historic fire regime remain.

While riparian ecosystems are defined by change and are adapted to disturbance, human alterations such as water diversion, roads and trails, and in some areas, recreational use and grazing by wild ungulate and livestock have negatively impacted overstory and understory species composition, vegetative groundcover, streambank stability, water quality, aquatic habitat quality and connectivity, and have provided potential avenues for the establishment of non-native and invasive species. Riparian ecosystems

provide habitat for a whole host of species, but disturbances can alter habitat conditions or completely disconnect suitable habitat for species. While road and trail density, maintenance and proximity to water can and are having negative effects on water and water dependent resources, they are a critical fire management tool and facilitate multiple-uses.

Approximately 60 and 61 percent of watersheds are Functioning at Risk or Impaired Function with respect to riparian vegetation condition and aquatic habitat respectively. Springs, seeps, and other wetlands are centers of high productivity, wildlife activity, and biological diversity in arid landscapes. The ecological health of these resources is important for ecosystem sustainability; however, there is limited information on their distribution, characteristics, and condition on the Forest.

Drought is also having considerable impact on water, water dependent resources, multiple-uses and wildfire risk. Since 2000, streamflow gage data indicates a drying trend where average streamflow has decreased in the winter and spring months, peak snowmelt runoff is occurring earlier, the snowmelt runoff period is decreasing and the duration of late spring-early summer low flow periods is increasing. These changes have enormous ecological and socio-economic implications. Changes expected with the progression of climate change include an increase in the frequency, severity and duration of droughts, reductions in snow pack, and changes in the timing, frequency, magnitude and duration of precipitation.

Water is necessary for the existence of all life and is required to support both ecological function and multiple-uses. The Forest does not manage or influence the allocation or use of water. That authority is held by the State of New Mexico. However, the Forest does manage watersheds, streams, and springs that are important to surface and groundwater supplies.

Even without considering climate change, more water has been allocated to users in the Southwest than is available. The increased severity and duration of drought predicted as a result of climate change could very well lead to increased demand and decreased water availability in streams, springs, lakes and earthen tanks on the Forest. This would likely alter patterns of use by livestock and wildlife, and reduce carrying capacity. Groundwater supply is expected to decline as the vast majority of groundwater withdrawals in the State are in excess of recharge rates. There has been an observed increase on the Forest over the last several years in wells that need to be deepened because they are no longer producing sufficient water. As patterns of water availability are primarily driven by climate patterns, including natural cycles of drought, there is a need to develop adaptive management approaches for water dependent resources and multiple-uses.

Forest management has no ability to control or influence cycles of drought, climate change, water allocation or water use, but should look for opportunities to enhance adaptation by anticipating and planning for disturbances from intense storms, reduce watershed vulnerability by maintaining and restoring resilient ecosystems, increase water conservation and plan for reductions in upland water supplies.

#### Plan Need for Change

19. There is a need for plan direction that better recognizes the connections and interrelationships of ecosystem and watershed components.
20. There is a need to update plan direction to restore, maintain and sustainably manage soil condition.

21. There is a need to update plan direction to restore, maintain and sustainably manage watershed condition.
22. There is a need to update plan direction to sustainably manage water resources.
23. There is a need to update plan direction to inventory, restore, maintain and sustainably manage riparian areas, including those associated with springs, seeps and wetlands.

### **Wildlife, Fish, and Plants**

The Gila NF is home to hundreds of animal and plant species, some of which are found only on the Gila NF. For a few species, changing land use patterns outside of the Forest have reduced potential habitat availability and increased the species' reliance on Gila NF managed lands. At-risk species were evaluated in the draft assessment report for the Gila NF and include federally recognized threatened, endangered, proposed, and candidate species, as well as potential species of conservation concern (SCC). Criteria for identifying potential species of conservation concern include that 1) the species is native and known to occur in the plan area, and that the 2) best available scientific information indicates a substantial concern about the species' capability to persist over the long term in the plan area. A total of 61 at-risk species were identified, 14 federally recognized (five endangered, seven threatened, two proposed threatened) and 47 SCC. The most at-risk species were associated with features such as cliff/talus/rock/soils/snags (31 species), Riparian (29 species), Mixed Conifer with Aspen (13 species), Mixed Conifer-Frequent Fire (12 species), and Ponderosa Pine Forest (9 species) ERUs. Restored, resilient, and connected habitats with an emphasis on ecological conditions that support these species are necessary to maintaining species diversity across the Forest.

Wildlife and fish resources are also important for the utilitarian and commodity-oriented uses they provide. The Forest supports habitat for legally fished and hunted species managed by the New Mexico Department of Game and Fish and birdwatching with three important bird areas (IBA) designations. Plants are important to cultural and traditional uses such as Christmas tree cutting, fuelwood gathering, and gathering forest products for medicinal and ceremonial use. Finally, wildlife related activities especially hunting, fishing, wildlife viewing and associated outfitter guide services on the Forest have important contributions to local and regional economies.

#### Plan Need for Change

24. There is a need to update plan direction to provide for conservation and recovery of federally recognized species, as well as maintain viable populations of species of conservation concern and other native species.
25. There is a need to provide plan direction that allows for managing toward terrestrial, riparian and aquatic habitat and population connectivity for species movement across the landscape; and restoring the range of native species.

### **Restoration Approaches and Tools**

Many of the ecosystems on the Gila NF are significantly departed from natural range of conditions for the vegetative characteristics most indicative of resilience (i.e., fire frequency, seral state proportion, patch size, coarse woody debris, over and understory vegetation composition, and ecological status). Only a small percentage of most ecological types are treated annually on the Forest, which limits the effectiveness of restoration activities. Mechanical and manual vegetation treatments, in conjunction with

managed fire, are expected to occur more often and over larger areas with the continuing emphasis on landscape scale restoration.

In the past, mechanical and manual non-fire vegetation treatments (including thinning by timber or fuelwood harvest, pushing, chaining, mastication and others) have been conducted with intended outcomes related to reductions in fuels and wildfire risk, wildlife habitat and forest health restoration, watershed protection, and increased herbaceous vegetation production. Fuels treatments and wildfire risk reduction are particularly important in the Wildland Urban Interface (WUI). Treatment success has been variable and is influenced by pre-treatment vegetation composition and structure, soil characteristics, site specific climatic conditions, and weather during treatment implementation. Decreases in canopy cover as a result of treatment have often produced increases in canopy cover and/or stems per acre of shade intolerant, re-sprouting species such as evergreen oak and alligator juniper. Adaptive management strategies are necessary to efficiently and effectively maintain restoration treatments to ensure an ecological trajectory towards desired conditions.

In the coming years, other stressors such as invasive species may compound the challenge to effectively restore ecosystem resiliency. Although non-native invasive plant species are not yet well established on the Gila NF, as compared to other southwestern forests, the current and future presence of these species is of concern. Potential harmful effects include, but are not limited to interrupted upland and riparian forest succession and changes in wildfire frequency and intensity. Both physical treatment (i.e., hand-pulling) and herbicide treatments are tools employed by the Forest to eradicate or control invasive species, but existing NEPA, including the current Forest Plan NEPA, only provides for the use of herbicides on a limited number of non-native species in certain areas. Vegetation changes associated with climate change are expected to be species specific, making it difficult to determine what future threats might be posed by invasive plant species. Potential future water developments that alter natural streamflow may promote invasive plant species in riparian areas.

While the current Forest Plan does include language reminiscent of integrated pest management, it stops short of providing for the full range of available tools to manage both native and non-native species contributing to current and potential future ecological departures. In particular, it does not adequately recognize or provide for appropriate use of herbicide as a means to reduce or mitigate negative impacts to the soil and watershed resource resulting from multiple mechanized entries that may be necessary to address native re-sprouting species and maintain restoration treatments.

#### Plan Need for Change

26. There is a need to update plan direction regarding integrated pest management. There is also a need to provide plan direction on the use of pesticides for restoration.
27. There is a need for plan standards and guidelines to address the presence of nonnative species by encouraging the removal of existing populations, limiting the introduction and spread of new populations while promoting the characteristic composition and condition of native species.

## Social, Cultural and Economic Changes

### Recreation

The Gila NF features a unique and diverse range of recreational opportunities as compared to other national forests within the Southwestern Region. Opportunities for solitude, either as part of a wilderness experience, or even when pursuing more developed recreation experiences is one of the strengths of the Gila NF. Demand for recreational opportunities, including permitted recreation special uses, on the Gila NF is increasing, while many in-demand opportunities have limited availability on lands adjacent to the Forest. There are a total of 1,927 miles in the forest trail system, including 193 miles of newly designated motorized trails and 861 miles of wilderness trails. However, because of limited funds many trails receive infrequent maintenance, and may be difficult to locate and follow in their current condition, especially with the effects of recent wildfires and post-fire flooding.

Challenges to the recreation program include more frequent, uncharacteristically severe intensity wildfires, post-fire flooding, drought, insects and disease, and an increasing backlog of deferred maintenance for recreation facilities and trails. These impacts negatively affect the quality of recreation settings, opportunities, seasons of use, and visitor experiences. The Gila NF is currently in the process of updating the Scenery Management System and Recreation Opportunity Spectrum classification, which will contribute to future planning processes. Management of Forest recreation and special uses opportunities with stagnant or declining budgets, limited staffing, conflicting user group demands, and resource impacts will continue to be a challenge.

#### Plan Need for Change

28. There is a need for plan direction to address the long-term sustainability, changing trends in services, and intended use of recreation infrastructure, trails, and facilities.
29. There is a need to provide guidance for management of recreation activities and permitted special uses that occur in areas sensitive or at risk of resource degradation due to high visitation.
30. There is a need to include plan direction to implement management approaches to anticipate demand and minimize conflicts between uses.
31. There is a need to update existing plan direction and guidance to emphasize the importance of scenery and recreation opportunity effects when planning projects across all Forest program areas.
32. There is a need to provide plan direction for cave management since this is not addressed in the current Forest Plan.
33. There is a need to update plan direction for administration of the special uses program to be aligned with current National, Regional, and Forest policy direction.
34. There is a need to provide plan direction to balance consideration of special uses requests with impacts to natural resources, wilderness character, and other forest users.

### Designated Areas

Designated areas on the Gila NF represent identified exceptional areas that have distinct or unique characteristics warranting special designation. Designated areas have specific management objectives to maintain their unique characteristics and are important ecologically and socially for the exceptional values they offer.

The Gila National Forest holds a unique distinction internationally among designated areas, as it is the location of the world's first designated wilderness, and regionally because of its three large wilderness areas in relatively close proximity together totaling over 790,000 acres. Popular wilderness uses include hiking, backpacking, equestrian use, hunting, and fishing. The majority of permitted outfitter/guide use on the Gila NF occurs within designated wilderness areas, and this is expected to grow as demand for hunting for trophy elk increases.

During the plan revision process, the Forest is required to conduct an inventory and evaluation for lands that may be suitable for inclusion in the National Wilderness Preservation system, and inventory of eligibility of rivers for potential inclusion in the Wild and Scenic Rivers System. Both of these designations may only be made statutorily, through legislation passed by Congress. Other potential special designations (e.g. botanical, geological areas and research natural areas) will also be further considered and evaluated in the Forest plan revision process.

#### Plan Need for Change

35. There is a need to update plan direction for managing existing or potential new designated areas to maintain desired character and values unique to each area.
36. There is a need to update plan direction for the Continental Divide National Scenic Trail.
37. There is a need to update plan direction for determination of and implementation of wilderness use capacities for permitted outfitter/guide use within designated wilderness to allow for changing conditions and to align with current National, Regional, and Forest policy direction.

#### **Range**

Review of past and current range analysis, watershed condition rating outcomes and professional judgement indicates that the majority of rangeland vegetation on the Gila NF is in fair condition with stable to upward trends. There are also rangeland areas within the Forest rated as good and poor condition. Woody species encroachment, climate change, drought, and invasive species may affect the long-term ability of the Gila NF to sustain the productivity of rangelands. Grassland openings on the Gila NF are being encroached upon by woody species such as juniper and piñon and ponderosa pine reducing the amount of understory forage for livestock and wildlife. Climatic conditions continue to challenge livestock operations and land management requiring more intense and adaptive strategies in order to address these effects. Since the relatively wet 1980s, generally decreasing trends in precipitation and increasing trends in temperature have led to decreases in forage production and water availability and reliability. These trends are likely to continue with climate change, which increases the importance of effective monitoring and adaptive management. Although the Gila NF is not currently inundated by invasive species, occurrences are documented, and further invasive species establishment and spread is possible due to disturbances.

These issues affecting rangeland sustainability are of concern for many communities adjacent to the Forest for whom ranching is a way of life. Future management that focuses on the restoration and maintenance of ecological integrity is required to address these sustainability issues. The Forest has utilized adaptive management to work with permittees to adjust authorized livestock numbers to sustain forage during drought, and subsequent restocking to permitted numbers once conditions have improved. Wildfire can provide long term benefits to maintaining the ecological integrity of grasslands and preventing woody species encroachment. However, fire management activities do pose short-term

management challenges as the herbaceous vegetation providing forage is also the resource providing the fine fuels necessary to carry fire. Other challenges include the need to rest areas from grazing after fire to provide forage recovery, resulting in the need to find other pastures or allotments to graze. In addition, the presence of species listed as threatened or endangered under the Endangered Species Act, especially Mexican wolf occupied areas, present similar management challenges. Increased management flexibility is needed to address these challenges.

Plan Need for Change

38. There is a need to update plan direction for livestock management that incorporates increased flexibility in order to restore and maintain ecological integrity of rangelands.

**Timber and Special Forest Products**

The Gila NF's primary contribution of timber and forest products is to local communities around the Forest for logs, firewood, and other forest products. An increase in forest restoration projects will be vital to help sustain forest and watershed health, reduce potential for uncharacteristic wildfire, and improve or maintain wildlife habitat. An increased emphasis on landscape scale restoration projects should allow for the continued ability to meet the demand of the public, including local mills which operate in or adjacent to the planning area, within the capability of the resource.

Plan Need for Change

39. There is a need to update plan direction based on results of a new timber suitability analysis.
40. There is a need to update plan direction so that restoration efforts allow for commercial and non-commercial products to be available to the public.

**Infrastructure**

The ability of the Gila NF to continue to maintain current facilities and infrastructure is at risk of being unsustainable due to limited funding. This has led to an increasing amount of deferred maintenance. Examples of different facilities include administrative buildings, recreation buildings, communication structures, lookout towers, remote cabins, and range and wildlife developments.

Roads and trails across the Forest are important for access and fire management, and facilitate multiple-uses, but have potential negative ecological impacts. Road density is an issue in some watersheds, but maintenance is a much larger issue across the Forest. The Gila NF is currently unable to keep pace with the maintenance of its transportation system given current road maintenance funding levels. The Forest has worked with local county agencies to clarify jurisdictional issues associated with roads passing through the Gila NF. The end result is a transfer of nearly 400 miles of National Forest System (NFS) roads to Catron and Grant counties. The Forest recently published its first Motorized Vehicle Use Map (MVUM) showing 3,334 miles of NFS roads open for motorized use by the public. There are an additional 329 miles of routes designated for administrative use or by written authorization only and 908 miles of closed NFS roads. The Forest is currently maintaining approximately 300 miles of these roads annually.

The current Forest Plan does provide direction regarding roads, some of which may no longer be applicable or is redundant given the implementation of the Travel Management Decision, or possible given the recent declines in budgets. Additionally, forest plan direction only provides consideration of ecological impacts from roads associated with wildlife habitat, and does not consider effects to soil,

watershed or water quality. Moving forward, the Forest will need to address and prioritize which roads it maintains annually and which closed roads are no longer needed so they can be decommissioned.

#### Plan Need for Change

41. There is a need for plan direction to ensure sustainable infrastructure (e.g., roads, trails, recreation and administrative facilities, range developments, maintenance, etc.).
42. There is a need to provide plan direction for prioritized maintenance of the Gila's National Forest System roads.
43. There is a need to update plan direction for decommissioning of unneeded roads.

#### **Cultural and Historic Resources**

The Gila National Forest contains archaeological resources that demonstrate human occupation and use for approximately the past 12,000 years. The occupation and use of the Forest by Native Americans (American Indians) with Pueblo and Athabaskan ethnic affiliations and groups ancestral to these ethnic affiliations has occurred over this entire time span. Occupation and use of the Forest by Euro-Americans and other peoples from the Old World occurred over the past 400 years. As a result the Gila NF includes the locations of numerous Historic Properties and Traditional Cultural Properties.

Archeological site densities vary from 5 or fewer to over 25 sites per square mile with only about 12% of the Forest inventoried to an acceptable standard. Properties and sites are vulnerable to degradation by both natural processes (i.e., erosion and high severity wildfire), and human processes (i.e., recreation and construction related to land development), which affect their intrinsic cultural value. Historic properties are a major source of information regarding the history of human occupation of the plan area. In addition, the cultural importance of the land itself and the connection of local communities to that land are important parts of their cultural identities.

#### Plan Need for Change

44. There is a need for updating plan direction to stabilize, preserve, interpret, and protect historic and sensitive properties (e.g., archaeological sites, historic structures, and traditional cultural properties).
45. There is a need for plan direction that recognizes the inherent value and preservation of Native American traditional cultural properties and sacred sites, as well as non-Native American traditional cultural properties, while maintaining the anonymity of such sites where appropriate.
46. There is a need for desired conditions in the plan that address the alignment of heritage resources management objectives (the management of historic properties and landscapes, sacred sites, contemporary uses) with other resource management objectives (particularly but not limited to ecosystem restoration).

#### **Areas of Tribal Importance**

The Gila National Forest maintains a governmental relationship with ten federally recognized Indian tribes (based in New Mexico, Arizona, Oklahoma, and Texas), and routinely consults with these tribes on policy development, plans, and projects, programs, or activities proposed on the Forest that have a potential to affect tribal interests or natural or cultural resources of importance to the tribes. Lands managed by the Gila National Forest have been used, and continue to be used by many tribes, for a variety of traditional

cultural and religious activities. Places and properties valued and used by the tribes for a variety of purposes have been identified on every District of the Gila National Forest.

Conditions and trends that are influencing tribal use of the Forest and impacting areas of tribal importance include: (1) changes in adjacent land ownership and development of private lands affecting access, (2) degradation of forest health and watershed conditions affecting plant collections, (3) changing technologies and development interfering with traditional ceremonies, and (4) recreation use contributing to conflicts with traditional practitioners. However, within these challenges there is also room for optimism. Despite being located a significant distance from tribal populations, programs are being established by tribes with Forest participation, which bring youth onto the Forest to reconnect with traditional lands. Landscape restoration provides an opportunity for tribes and the Forest Service to work together towards common goals. The Forest strives to build and strengthen relationships with tribes and hear and incorporate tribal input into a broad range of activities.

#### Plan Need for Change

47. There is a need to update plan direction on giving consideration to the value and importance of areas that may be identified as a sacred site or part of an important cultural landscape by tribes (also see Land Status and Ownership, Use and Access section below).
48. There is a need for management approaches that include opportunities for integrating Forest management with tribal needs through shared stewardship.

#### **Land Status and Ownership, Use and Access**

The Lands program faces challenges keeping up with increasing demands on its services; including access issues (in general and to private inholdings), encroachments from private land onto National Forest System (NFS) land, title claims, evolving requests for communication sites, the growing Wildland Urban Interface (WUI) area, completing property boundary surveys, and fragmentation.

The current 1986 Forest Plan allows for the adjustment of landownership for resource management goals. Acquisition of some of these private parcels can be helpful in achieving a desired Forest landownership pattern that supports resource management goals, addresses fragmentation, and reduces future management costs. Conversely, the sale or disposal of Forest land can assist communities in moving toward community objectives such as area for expansion or other municipal purposes

Since 1990, radio and wireless technology has evolved at an extraordinary rate. Lack of cell phone service in certain areas is an issue affecting safety, visitor and potential resident perceptions, and economic development. Because of the rapid pace of technological advancement and the high economic value that communication sites represent, it is necessary to re-evaluate how to best serve administrative and commercial needs, while also protecting natural and cultural resource objectives.

Residential development has increased adjacent to many Forest boundaries, and adjacent at-risk communities in the wildland-urban interface have responded to the threat of uncharacteristic wildfire by developing community wildfire protection plans. A trending loss of access to Gila NFS lands has developed as a result of unwillingness of many new private landowners to allow public access across their property to NFS lands. The Gila NF desires to acquire road rights-of-way where possible to provide adequate access for public and administrative use.

Plan Need for Change

49. There is a need to develop plan direction related to Forest Service acquisitions, disposals, and exchanges that are not covered by the existing Forest Plan.
50. There is a need for plan direction for the authorization, location, and inspection of current and future communication site infrastructure because there is an increasing demand on the Forest for these services.
51. There is a need for plan direction that is more flexible to changes in technology and can be responsive to future needs and changes in communication site demand.
52. There is a need to include management approaches on the large number of known and suspected trespass and encroachment issues present on the Forest.
53. There is a need for plan direction that encourages the protection of existing public access and the acquisition of new public access opportunities to National Forest lands.

**Energy and Minerals**

The public desires to know the policies and regulations concerning personal collecting of rocks, minerals and gold ore from the Forest as this information has been disseminated in an ambiguous or uneven way in the past. More internal Forest Service training and communication on this subject was suggested to improve the accuracy and consistency of responses to public inquiries.

Plan Need for Change

54. There is a need to include management approaches for communication of policies regarding recreational mining and non-commercial rock and mineral specimen collection activities.