

Draft Desired Conditions for the Apache-Sitgreaves National Forests' Revised Forest Plan

August 2008

Important Information for Reviewers

The draft desired conditions in this document are a first attempt at integrating public comment, Forest Service employee input, and information derived from the draft Comprehensive Evaluation Report and the associated sustainability evaluations for the Apache-Sitgreaves National Forests.

The draft desired conditions are organized by the three revision topics: 1) Maintenance and Improvement of Ecosystem Health, 2) Managed Recreation, and 3) Community-Forest Interaction.

Desired conditions are the "social, economic, and ecological attributes toward which management of the land and resources is to be directed" (36 CFR 219). Desired conditions "paint the picture". They describe what the Apache-Sitgreaves National Forests should look like or provide and are the foundation of the revised forest plan.

It is important to realize that desired conditions are only one of five components that will express forest plan direction. Additional direction will be in the form of objectives, special areas, suitability of areas, and guidelines. Objectives provide direction on how we move toward achieving desired conditions.

Special areas are designated for the special or unique characteristics that contribute to desired conditions. Areas of the forests will be identified as generally suitable for various uses. Guidelines provide the sideboards within which projects or activities may occur. These other plan components will be developed collaboratively as we move through the revision process.

The input we receive from this review will be incorporated into an updated document and will be made available. We anticipate that desired conditions will continue to be adjusted as we move through the process and learn more. For example, there is a regional effort underway to draft desired conditions for some vegetation types as they apply to national forests in Arizona.

To be most useful, your comments on this initial set of desired conditions need to be received by OCTOBER 15th.

Note: Comments received during the planning process, including the names and addresses of those who commented, will be part of the public record and will be available for public inspection. A comment form for your use is included at the end of this document.

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Maintenance and Improvement of Ecosystem Health

Ecosystem Diversity

Prior to the 1850s, the Apache-Sitgreaves National Forests' (ASNFs) ecosystems were resilient systems that provided a variety of vegetation across the landscape, and were home to a diversity of plants and animals. Events such as fire, disease, and climate change were natural components of this functioning ecosystem.

Over the years, public desires and needs from national forests and grasslands have changed and grown. Congress directed the Forest Service to manage National Forest System lands for multiple uses and benefits for sustained yield of renewable resources. Multiple uses means managing resources under the best combination to benefit the American people, while ensuring the productivity of the land and protecting the quality of the environment.

Human activities, coupled with natural disasters, have changed the ecological character of the ASNFs. The Chief of the Forest Service has identified fire and fuels, invasive species, and loss of open space as threats to the health of the Nation's forests. The ASNFs face additional threats as well. These are identified in the background and existing condition boxes below.

The following desired conditions address these threats by describing the characteristics of the Apache-Sitgreaves National Forests (ASNFs) that provide ecosystem diversity. Ecosystem diversity is the primary means by which a forest plan contributes to sustaining ecological systems.

Desired Conditions for Air

Background and Existing Conditions for Air

The Clean Air Act and subsequent amendments give federal land managers the responsibility to protect Air Quality Related Values in Class 1 areas and to protect human health and basic resource values in all areas.

The Mount Baldy wilderness area is a Class 1 attainment area where very little deterioration of air quality is allowed.

All other areas on the ASNFs are Class 2 where only moderate deterioration of air quality is allowed. There are no air quality non-attainment areas within the ASNFs.

Areas affected by smoke or dust from prescribed fires and other management activities have a minimal impact on visibility and public health.

Air quality related values within the Mount Baldy airshed are not negatively impacted by forest actions.

Desired Conditions for Soil

Background and Existing Conditions for Soil

The soil surface is the critical area where plant and animal organic matter accumulate, begin to decompose and eventually become incorporated into soil. It is also the zone of maximum biological activity and nutrient release. The presence and distribution of the surface soil is critically important to productivity. The physical condition of this zone plays a significant role in soil stability, nutrient cycling, water infiltration, and energy flows. The soil condition rating used on the ASNFs is based on these factors.

Current soil conditions are departed more than 30 percent from historic conditions.

Soil condition is satisfactory or improving towards satisfactory.

Soils are not compacted.

Soils are stable within their natural capability. Vegetation and litter are adequate to prevent occurrence of rills, gullies, pedestalling, soil deposition, and loss of topsoil.

Soil loss is minimized, especially on sensitive or highly erodible sites.

Soils provide for the plant species composition that should occur naturally. Vegetative ground cover is well distributed across the soil surface to promote nutrient cycling and water infiltration.

Logs and other woody material are distributed across the surface to maintain soil productivity. The amount varies by vegetation type.

Biological soil crusts (mosses, lichens, algae, liverworts) are present, protected and encouraged to re-establish where appropriate.

Desired Conditions for Aquatic Systems

Desired Conditions for Water Resources

Background and Existing Conditions for Water Resources

Lands within the ASNFs form the headwaters for the Little Colorado, Salt, and Gila Rivers and produce water for a variety of uses throughout the State of Arizona. Streams and riparian areas on the forests occur at higher density than other areas in the State. Watersheds and aquatic ecosystems have changed from the historic conditions, however, the location and extent of waters found on the ASNFs has generally not changed. The demand for water is increasing.

Most riparian areas on the forests are not functioning properly; many are trending away from historic conditions. Diversions and prolonged drought have the potential to reduce stream flow and riparian habitat. Pumping from the Little Colorado and Morenci groundwater aquifers is greater than the estimated recharge, resulting in reduced water availability and affecting some stream flows. Currently, water yield is estimated to be about 378,000 acre feet per year.

Water quality is generally good on the forests; however some impaired streams and lakes exist on the ASNFs. Suspended sediment is a potential non-point source water quality problem throughout the forest. Water quality is impaired on the Lower Blue River due to *E.coli* bacteria, and there are low dissolved oxygen and high alkalinity conditions in some lakes.

There are nine state designated unique waters or waters of exceptional quality within the forests where water quality must not be impacted.

Watersheds, as well as streams and lakes, wetlands, and riparian areas, have characteristics, processes, and features consistent with their natural potential condition. Water quality, stream channel stability, and aquatic habitats retain their inherent resilience to natural and other disturbances. They maintain their capability to respond and adjust to disturbances without long-term adverse changes. Desired vegetation conditions in the uplands contribute to the desired downstream watershed conditions.

Soil condition (used as an indicator of watershed health) within watersheds, is satisfactory or improving towards satisfactory where potential exists. Upland soils do not contribute to excessive sediment.

Stream flows access floodplains regularly. These seasonal flows recharge riparian aquifers and provide late season stream flows that minimize temperature fluctuations. Channels transport water, sediment, and woody material over time, while maintaining their dimensions (e.g. bankfull width, depth, slope, sinuosity). Stream channels and floodplains are dynamic, but they are resilient to disturbances. The water and sediment balance between streams and their watersheds allow a natural frequency of low and high flows and stream conditions. Floodplains minimize impacts of floods on human safety, health and welfare; reduce risks to property; and minimize destruction and degradation of wetlands.

There are sufficient instream flows that provide for channel maintenance, water quality, aquatic habitats, and riparian vegetation. Water is available for a variety of uses including fish and aquatic insect habitat, wildlife, livestock, recreation, road construction, fire fighting, and domestic use.

Water quality meets or exceeds State of Arizona or Environmental Protection Agency water quality standards for designated uses. Nonpoint pollution sources from the ASNFs are minimized or eliminated.

Desired Conditions for Aquatic Habitat and Species

Background and Existing Conditions for Aquatic Habitat and Species

The ASNFs are home to 14 native and 25 non-native fish species, from high elevation coldwater trout streams to lower elevation warm water streams with primarily cyprinid (minnow family) species.

Approximately 70 percent of inventoried streams have shown reduced fish habitat quality. Fish populations, especially Apache trout, have shown decreases of 50 to 75 percent over the last 10 years. These declines can be attributed to undesirable habitat characteristics, such as fragmentation.

Invasive animal species are also a serious and growing threat to native species. Non-native invasive animals, such as crayfish, and bullfrogs, prey on, out-compete, and degrade habitats that many native species depend on.

Aquatic habitats support well distributed, self-sustaining populations of native vertebrate and invertebrate species at all spatial scales.

Aquatic species populations and their associated habitats provide the resiliency and redundancy necessary for maintaining species diversity (i.e., both temporally and spatially, landscape scale processes/disturbances are occurring).

Aquatic habitat and species fragmentation does not preclude species from their historical habitat, either through physical barriers (dams, culverts) or habitat alterations (temperature changes, loss of stream flow, non-native species predation/hybridization).

Hydrologic and stream channel conditions, functions, and processes are not being impacted from historical or ongoing management (human) activities.

Desirable non-native species provide recreational fishing opportunities only where they have minimal impacts to native species.

Spread of diseases and/or non-native species through recreational or management activities is eliminated, controlled, or minimized.

Desired Conditions for Riparian Systems

Background and Existing Conditions for Riparian Systems

Riparian areas include springs, streams, ponds, lakes and their associated wet areas and floodplains (FSM 2526). Riparian areas collect and transport water, soil, and organic material from upslope and upstream. They comprise the most potentially productive and diverse components of forest and range ecosystems. Fish, some wildlife, and some plant species depend on riparian areas for their existence. Riparian areas are basic to the hydrologic function of watersheds. Ground cover promotes infiltration and conserves water, soil, and nutrients on-site. Moisture inflows to soils recharges ground water and base flows. Native trees and shrubs regulate floods by dissipating flow energies, control water temperature by shading streams, improve channel structure by adding debris, and supply food to aquatic fauna. Watershed conditions, upstream and in uplands, affect riparian areas by influencing the size, frequency, duration, and water quality of floods and base flows.

Three types of riparian forests occur on the ASNFs: montane willow, cottonwood willow, and mixed broadleaf. Wetland/cienega is an type of riparian system.

Montane Willow Riparian Forest

This riparian forest is found along approximately 1,130 miles of rivers and streams starting at low elevations (~3,500 feet) and climbing up to approximately 11,000 feet.

At lower elevations this forest can be found along perennial streams and seasonally intermittent drainages. Dominant woody vegetation includes Fremont cottonwood, Arizona sycamore, Arizona walnut, velvet ash, and soapberry include a variety of willows, chokecherry, and Arizona alder. A variety of herbaceous species are usually present.

At higher elevations, this forest is found along streambanks, seeps, fens, and isolated springs. Narrowleaf cottonwood may be present. This forest can be shrub and herb dominated. Dominant shrubs may include thinleaf alder, birch, redosier dogwood, and a variety of willows. In many situations within the herbaceous species component is dominated by non-native Kentucky and Canada bluegrass.

Cottonwood-Willow Riparian Forest

Typically found at lower elevations along approximately 800 miles of rivers and streams in unconstrained valley bottoms, this riparian forest is dominated by woody species including narrowleaf cottonwood and a variety of willows (Goodings, Bebb, greenleaf, and dewystem). Various grasses and forbs are usually present.

These areas are often subjected to water withdrawal, heavy grazing and recreational pressure and can be profoundly degraded and the water table can be severely depleted. Vegetation can be dependent upon annual or periodic flooding for growth and reproduction, especially at lower elevations.

Mixed Broadleaf Riparian Forest

This riparian forest is found along approximately 860 miles of rivers and streams starting at low elevations (~3,200 feet) and climbing up to approximately 7,000 feet at the upper elevations.

The vegetation is a mix of riparian woodlands and shrublands with a variety of vegetation associations. The dominant vegetation is likely to depend upon a suite of site-specific characteristics including elevation, substrate, stream gradient, and depth to groundwater. For example, one vegetation association is dominated by bigtooth maple with mixed stands of Emory oak and scattered conifers (pines and junipers).

Other sites can be dominated by a mixture of the following woody species: boxelder, Fremont cottonwood, Arizona sycamore, velvet ash, Arizona walnut, desert willow and true willow species, as well as numerous shrub, grass, and forb species.

This forest often contains several species of oaks and conifers (pines and junipers) from upstream and adjacent uplands. Vegetation can be dependent upon annual or periodic flooding for growth and reproduction, especially at lower elevations.

Wetland/Cienega

Wetland/cienega is associated with perennial springs or headwater streams, bogs, and fens (very unique habitats in Arizona) where groundwater intersects the surface and creates pools of standing water, sometime with channels flowing between pools. Wetland/Cienegas are areas where water covers the soil, or is present either at or near the surface of the soil all year or for varying periods of time during the year, including during the growing season. Wetland/cienegas occur between 3,500 and 11,000 feet elevation.

Some soils in these areas may be saline. Distribution and types of vegetation vary due to a gradient in saturated soils, salinity, and elevation.

Although wetland/cienegas are often wet, they might not be wet year-round. In fact, some of the most important wetland/cienegas are only seasonally wet. Wetland/cienegas are the link between the land and the water. They are transition zones where the flow of water, the cycling of nutrients, and the energy of the sun meet to produce a unique ecosystem characterized by hydrology, soils, and vegetation - making these areas very important features of a watershed.

Some vegetation found in wetland/cienegas include saltgrass yerba mansa, sacaton, giant sacaton, and bog alkaligrass, in more saline areas at lower elevations. At medium higher elevations tufted hairgrass, mannagrasses, Canada and Kentucky bluegrass, rushes, sedges, flat sedges, and spikerushes can be found. Deep pools support a variety of other aquatic vegetation.

Wetland/cienega also includes high elevation meadows with subsurface flows dominated by herbaceous cover provided by a variety of sedges, grasses, and rushes. Willows may also be present.

Wetland/Cienegas play an integral role in the ecology of the watershed. The combination of shallow water, high levels of nutrients, and primary productivity is ideal for the development of organisms that form the base of the food web and feed many species of fish, amphibians, reptiles, and insects. Many species of birds

and mammals rely on wetlands for food, water, and shelter, especially during migration and breeding

All Riparian Areas

Properly functioning lotic (stream) riparian-wetland areas have adequate vegetation, landform, or large woody debris present to: dissipate stream energy associated with high waterflow; filter sediment; capture bedload and aid floodplain development; improve flood-water retention and ground-water recharge; develop root masses that stabilize streambanks against cutting action; and develop diverse ponding and channel characteristics to provide the habitat, water depth, duration and temperature necessary for fish production, waterfowl breeding, and other uses.

Properly functioning lentic (wetland) riparian areas have adequate vegetation, landform, or large woody debris present to: dissipate energies associated with wind action, wave action, and overland flow from adjacent sites; filter sediment and aid floodplain development; improve flood-water retention and ground-water recharge; develop root masses that stabilize islands and shoreline features against cutting action; restrict water percolation; and develop diverse ponding characteristics to provide the habitat, water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses and support greater biodiversity.

Disturbance Processes

Flooding, inundation, scour, and drying out result in change, displacement, replacement, and succession of plant species. These processes in moderation are necessary for recruitment of many desired species and promote diverse structure.

Riparian areas have characteristics that reduce the frequency and severity of fire relative to their surrounding uplands (e.g. surface water, saturated soils)

Grazing does not result in a shift in plant composition or loss of protective vegetation.

Beaver and otter occur where historically present because of their importance to ecological functioning and stability of riparian systems. Beaver dams result in disturbance that may benefit plant reproduction and structure.

Non-native invasive species are absent or only present to the extent that they do not adversely affect natural processes such as stream bank stability.

Insects and disease are at natural levels.

Impacts to riparian communities and water quality from roads are minimized, particularly excessive sedimentation.

Riparian Forests

All three age classes of native, woody riparian species are present and vigorous, demonstrating successful reproduction and maintenance. These classes are: seedling/sprout, young/sapling, and mature/decadent.

Two or more native, riparian-obligate woody species and two or more riparian-obligate herbaceous species are present and vigorous. The presence of self-perpetuating populations of native woody

riparian species, in particular the long-term maintenance of mature cottonwood stands and areas with regenerating cottonwood and willow saplings provide key habitat for many neo-tropical migratory bird species (e.g. warblers, redstarts).

Woody and herbaceous species are present in sufficient amounts to assure increased sediment retention within the drainage that help protect banks while dissipating flow energy throughout the drainage. Riparian-wetland vegetation cover is adequate to protect banks from erosion. Depending on stream type, this proper functioning condition is considered to include about 75 percent of the stream banks.

Riparian areas have an adequate source for large woody debris. Not all systems need woody debris, such as canyon-confined areas, or steep gradient reaches. Most sand/gravel reaches have coarse wood which provides habitat and food, as well as dissipates hydraulic energy.

Wetland/Cienegas

Wetlands maintain and/or improve the hydrologic, hydraulic, and geomorphic processes. They also maintain or improve the physical, chemical, and biological community characteristics, functions, and dynamic equilibrium. Furthermore, they are re-establishing dominance of the native plants and limiting the presence of non-native invasive plants (including Kentucky bluegrass).

Desired Conditions that apply to all Vegetation

Background and Existing Conditions for Vegetation

The vegetation that occurs on the ASNFs can be grouped into five types: riparian (discussed above), forest, woodland, grassland, and chaparral.

All of these types vary, to some degree, from their historic conditions.

Large scale unnatural disturbances such as fires of uncharacteristic severity or invasive species outbreaks are likely to occur within this planning cycle.

The composition, structure, and function of vegetation ensure resistance and resilience to disturbances, are within or moving toward historic conditions. Historically characteristic disturbances resume a natural role in the function of the ecosystem. Risk of loss of key ecosystem components (e.g. native species, large trees, soil) to uncharacteristic disturbance is low. These conditions correspond to Fire Regime Condition Class (FRCC) 1.

The composition, abundance, and mosaic of vegetation provide favorable conditions for water quantity and high water quality and help reduce uncharacteristic erosion and sedimentation.

The composition, abundance, and mosaic of vegetative conditions reduce uncharacteristic wildfire risk to local communities and forest ecosystems in general.

Vegetative conditions provide sustainable levels of products, such as forage or wood fiber for public needs, at local and regional levels, consistent with other desired conditions and ecosystem processes.

Vegetative ground cover provides soil protection and moisture infiltration. Grasses are a diverse mix of cool and warm season species. Soil productivity (fertility) is maintained.

Results of management activities emulate natural processes.

Diversity of structure, species composition, and successional stages provide habitat for all desirable wildlife and plant species.

The existing range of species genetic diversity remains within native tree and plant populations, which may enable them to adapt to changing environmental conditions. Vegetative connectivity provides for species dispersal and genetic exchange.

Various disturbance factors occur on the landscape including fire, wind, insects, and disease, and management activities.

Insect and disease populations are generally at historically characteristic levels. Localized insect and disease outbreaks are generally limited in landscape scale by a variety of structural and successional stages.

Transition zones or ecotones between forests, woodlands, shrublands, and grasslands shift in time and space due to changing site conditions, such as fire, climate, or other factors. These zones occur as ongoing areas of expansion and contraction over time into adjacent vegetation types. Ecotones are valuable sources of ecological and species diversity, in that they provide a high degree of edge effect where one vegetation type fingers into another.

Desired Conditions that apply to all Forests and Woodlands

Areas are composed of native tree and woody species suited for each site and best adapted to the environmental factors occurring there.

A mosaic of vegetative conditions, stand densities, and stand structures is provided within each of these vegetation types. This mosaic occurs at a variety of scales across the landscape. The actual mix is based upon vegetation type and historic fire regimes.

Forested landscapes provide for the full range of ecosystem diversity, including habitats for those species associated with late successional stages, climax communities, and old growth forests.

Plant community attributes are at or moving towards historic conditions for species composition.

Desired Conditions for Ponderosa Pine Forest

Background and Existing Conditions

This forest generally occurs at elevations ranging from 6,000 to 9,000 feet. The dominant species in this system is ponderosa pine. Other trees may be present. There is typically a shrubby understory mixed with a variety of grasses and forbs; however, this forest sometimes occurs as savannah with extensive grasslands interspersed between widely spaced clumps or individual trees.

Ponderosa pine is the vegetation type that is most highly departed from historic conditions. It currently has an over abundance of young- and medium-aged trees in a crowded closed canopy. The natural fire regime is also severely departed from historic conditions.

These forests are dominated by ponderosa pine and commonly include other species, such as oaks, New Mexico locust, juniper species, and piñon. Occasionally aspen, and infrequently more shade tolerant species such as Douglas-fir, white fir, and blue spruce are also found. Where Gambel oak occurs, most are single large trees with full crowns and acorn production.

Forest structure is generally open and multi-aged to uneven-aged, but occasional patches of even-aged trees are present at the mid-scale (100 acres or more). Denser overstory conditions exist in some locations such as north-facing steep slopes, stream courses, or areas with site specific desired conditions.

Forests are composed predominantly of vigorous trees, but declining trees are a component and provide for snag and log recruitment for ecosystem function. Old growth, large trees, large snags and logs, and woody debris (greater than 3 inch diameter) are present and well-distributed throughout the landscape.

Low-intensity fires, sufficient to maintain desired overall tree density, structure, coarse woody debris, and nutrient cycling, occur every 2 to 17 years (Fire Regime I, Condition Class 1). Forest structure is such that fires occur primarily on the surface, do not spread between tree groups as crown fire, and threats to life and property are minimized. Insects and disease are at natural levels.

Ponderosa pine forests are predominantly comprised of groups of trees interspersed within grass/forb/shrub openings. Trees within groups (fine scale) are variably-spaced with crowns interlocking (clumped trees) or nearly interlocking. Trees within groups are of similar or variable age.

The mid-scale and landscape scale (1000 acres or more) are a mosaic of highly interspersed groups of different tree ages and sizes. At the landscape scale, all ages and sizes of trees are present.

The age and structural distribution constitute a sustainable forest condition.

Tree groups generally cover less than an acre and consist of 2 to 44 trees, but may range upwards to approximately 4 acres. Size and shape of groups, number of trees per group, and number of groups per area are variable at the mid-scale and at the landscape scale. The size and number of groups are also variable depending on elevation, soil type, aspect, and soil productivity. More biologically productive sites have larger groups, more trees per group, and more groups per site. Trees dying from overcrowding at the mid- and landscape-scale are minimized.

Openings with grass/forb/shrub vegetation between tree groups cover 30-70 percent of the mid-scale and landscape-scale area. Some openings contain individual trees. Native species in the grass/forb/shrub component are well-developed and well-distributed.

Live legacy trees (i.e. large dead/broken-topped or lightning/fire-scarred trees) are present and distributed throughout the landscape. Large oaks, aspen, and other successional species may be present. Grasses, forbs, and shrubs (fine fuels) are adequate to provide for and maintain the natural fire regime.

Organic ground cover and herbaceous vegetation, covering at least 70 percent of ground surface, protects soil productivity, provides moisture infiltration, and helps carry fire.

Northern Goshawk

Desired conditions for the general ponderosa pine forest provide suitable foraging habitat for goshawks. Northern goshawk post-fledgling family areas (PFA) are 600 acres where pairs and their young spend the breeding season. Forest conditions in PFAs are similar to conditions in general foraging areas except that tree groups are denser by a few more trees per group. Nest areas within the PFA (six areas of 25-30 acres each) have forest conditions similar to those in the PFAs except that tree groups are larger and are dominated by large trees with relatively dense canopies. Snags and logs provide habitat for prey species. *(add picture that illustrates)*

Wildland-Urban Interface (WUI)

Forest structure in the wildland-urban interface has a generally open appearance with more widely spaced and smaller groups of trees. Fires occur primarily on the surface and do not spread between tree groups as crown fire. The risk to life and property from fire is reduced.

Old Growth

Old growth is present on the landscape similar to its historic patterns and includes legacy trees. An old growth component of generally one to four trees per acre over 150 to 200 years of age based on site capability is present as groups or individuals.

Other Desired Conditions

Mexican spotted owl (MSO) – see the MSO Recovery Plan. Ponderosa pine-oak forests are used by MSO in parts of their range for nesting, roosting, foraging, and dispersal as described in the MSO Recovery Plan.

(Need to add references to other listed species with recovery plans and other mandatory management constraints or direction)

Desired Conditions for Dry Mixed Conifer Forest

Background and Existing Conditions

This forest typically occurs as a transition between the ponderosa pine and wet mixed conifer forests. Dry mixed conifer generally occurs at lower elevation (approximately 6000 – 10,000 feet) on flat ridgetops and upper slopes of drainages and knolls. Dry mixed conifer historically had a frequent fire interval (which is distinctly different from the wet mixed conifer and true spruce-fir forests).

Dry mixed conifer forests are made up of predominantly shade intolerant species, such as Douglas-fir, ponderosa pine, southwestern white pine, aspen, and Gambel oak. Shade tolerant species such as white fir and blue spruce represent a minor component, mostly on north-facing slopes in canyons, or along streams.

Forest structure and density is similar to ponderosa pine in that it is generally open and multi-aged to uneven-aged, with occasional patches of even-aged trees present at the mid-scale (100 acres or more). Size and shape of groups, number of trees per group, and number of groups per area are variable at the mid-scale and at the landscape-scale. Denser overstory conditions exist in some locations such as north-facing steep slopes or stream courses.

Forests are composed predominantly of vigorous trees, but declining trees are a component and provide for snag and log recruitment for ecosystem function. Old growth, large old trees, large snags and logs, and woody debris (greater than 3 inch diameter) are present and well-distributed throughout the landscape. The mature and old structure components represent about 25-50 percent of this forest. Openings within the forest generally range in size from two to four acres and provide regeneration sites for shade intolerant species.

Aspen within dry mixed conifer is maintained or increased by disturbances, but naturally occurs in relatively small patches in moister sites. Where Gambel oaks exist, they are generally in groves of large single-trunk trees with full crowns capable of robust acorn production.

Where trees are widely spaced, a well-established understory of a variety of native grasses, forbs, and/or shrubs is present. New Mexico locust, Gambel oak, and other shrubs generally do not inhibit establishment of Douglas-fir, ponderosa pine, or aspen.

Various disturbance factors occur on the landscape including fire, wind, insects and disease, and management activities. The species composition and arrangement of the trees contribute to resilience to disturbances. Surface fires occur on average every 9-22 years and control overall tree density,

reduce fuel build-up, and recycle nutrients. When they do occur, these fires remove less than 25 percent of the dominant overstory vegetation (Fire Regime I, Condition Class 1).

Live legacy trees (i.e. large dead/broken-topped or lightning/fire-scarred trees) are present and distributed throughout the landscape. Grasses, forbs, and shrubs (fine fuels) are adequate to provide for and maintain the natural fire regime.

Northern Goshawk

Desired conditions for the general dry mixed conifer forest provide suitable nesting and foraging habitat for goshawks. Northern goshawk post-fledgling family areas (PFA) are similar to conditions in ponderosa pine except tree groups tend to be denser. The groups may be dominated by ponderosa pine, Douglas-fir, white pine, or other species. Nest areas within the PFA (six areas of 25-30 acres each) have forest conditions similar to those in the PFAs except that tree groups are larger and are dominated by large trees with relatively dense canopies. Snags and logs along with grassy areas provide habitat for prey species.

Wildland-Urban Interface (WUI)

Forest structure in the wildland-urban interface has a generally open appearance with more widely spaced and smaller groups of trees. Douglas-fir and ponderosa pine are the dominant tree species. Fires occur primarily on the surface and do not spread between tree groups as crown fire. The risk to life and property from fire is reduced.

Old Growth

Old growth is present on the landscape similar to its historic patterns and includes legacy trees. Many old growth stands are on generally steep slopes and along stream courses. Stands are composed of predominantly healthy trees, but unhealthy trees are a component and provide for snag and down woody recruitment. Generally, 3 large down logs (greater than 12” mid-point diameter) per acre are present. Seven to ten tons per acre of woody debris is present on the forest floor. Generally, there are 3 large snags (greater than 18”dbh¹) per acre.

Other Desired Conditions

Mexican spotted owl (MSO) – Portions of dry mixed conifer may be considered Mexican spotted owl critical habitat, and some certain percentage of the desired condition structure will be defined by MSO Recovery Plan requirements.

Desired Conditions for Wet Mixed Conifer Forest

Background and Existing Conditions

Wet mixed conifer typically occurs as a transition between the dry mixed conifer and true spruce-fir forests. Species composition is extremely variable depending on time since disturbance and its intensity and site variables such as aspect, slope, elevation, and soil productivity. Wet mixed conifer has a relatively infrequent fire interval which is distinctly different from dry mixed conifer forest. In wet mixed conifer, fire and site conditions are the principal factors that determine species composition and stand structure. Aspect, slope and soils can further dictate whether a site is wet mixed conifer or dry mixed conifer.

¹dbh = diameter at breast height

Moderate to high severity (Fire Regime III) fires represent the typical fire behavior in this forest. Infrequent fires occur at intervals of generally 22-150 years. These mixed severity fires are a combination of surface fires and fires which reach into upper tree canopies resulting in clump and group torching. These fires can remove 25-75 percent of the dominant overstory vegetation in a mosaic pattern. The surface fire removes species not adapted to fire (spruce and true firs). Infrequent fire occurrence results in mixed severity mortality at the group and patch scale (less than 100 acres).

Stand replacing fires (Fire Regime IV) rarely occur. When they do occur, these fires remove most of the understory vegetation as well as more than 75 percent of the upper canopy. Stand replacing fires can exceed 100 acres up to generally 250 acres, but tend not to occur at larger landscape scales.

Various other disturbance factors occur on the landscape including drought, insects and disease, windthrow, floods and management activities. A variety of structural and successional stages generally limits localized outbreaks of insects and diseases.

Desired conditions differ by successional stage (see table below). There is high variability at the landscape level in successional stages and ranges of tree densities. Wet mixed conifer is considered Mexican spotted owl (MSO) critical habitat and some percentage of the desired condition structure will be dictated by MSO Recovery Plan requirements.

Table 1. Wet Mixed Conifer Desired Conditions by Successional Stage			
	Early Successional Stage	Mid Successional Stage	Late/Climax Successional Stage
Dominant Species	Aspen, Douglas-fir, southwestern white pine, and ponderosa pine.	Douglas-fir is generally dominant. Douglas-fir and aspen may co-dominate with southwestern white pine, white fir, and ponderosa pine present in subordinate amounts.	White fir, Douglas-fir, blue spruce are co-dominant with minor amounts of aspen. Wetter, cooler sites can include subordinate species such as Rocky Mountain maple and other hardwoods (except oak). Ponderosa pine is generally scarce on the wettest of these sites.
Forest Structure	Where openings occur as a result of disturbance, there is a mosaic of open to dense trees of different ages arranged in groups, and shrub or grass/forb dominated patches (generally less than 100 acres). No tree death is occurring from over crowding.	A mosaic of moderately open conifers to dense aspen of different ages arranged in groups as well as shrub or grass/forb dominated patches (generally less than 100 acres). A second canopy layer may occur. Crowns are beginning to interlock into a moderately closed canopy.	Dense, closed canopy, two-storied or multi-storied forest, with an overstory of large trees occurs across the landscape in patches (generally less than 100 acres). Some larger patches are present. Within these patches, small canopy gaps occur in the overstory due to scattered tree death. Shade tolerant species occupy the lowest canopy layer.

Table 1. Wet Mixed Conifer Desired Conditions by Successional Stage

	Early Successional Stage	Mid Successional Stage	Late/Climax Successional Stage
Aspen	<p>Where possible, aspen sprouts become well-established primarily as a single age class. They grow in sufficient numbers to provide for shade tolerant conifers.</p> <p>Where aspen does not exist, openings are large enough to provide for Douglas fir, southwestern white pine, and ponderosa pine seedlings. Tree density is sparse.</p>	<p>Where aspen has provided shade, conifers are approaching the same height as the mature aspen.</p> <p>In conifer sites, young trees are healthy and growing well, but are beginning to compete with one another. Two canopy levels may begin to develop.</p>	<p>Generally minor amounts of only mature trees occur. Root system is still intact.</p>
Forest Floor	<p>Maximum production of grass/forb shrub community occurs and is composed of predominantly mesic herbaceous and woody species.</p>	<p>Shade tolerant tree species (true firs, spruce) begin to dominate the understory. Grasses/forbs become less prevalent.</p>	<p>Herbaceous cover is generally lacking except where small canopy gaps permit sunlight to reach the forest floor. Tree litter, duff, and coarse woody debris are abundant.</p>
Forest Health	<p>These young trees are generally healthy, fast-growing, disease free and minimally impacted by insects and/or browsing.</p>	<p>Trees are generally healthy but slowing in growth rate, primarily disease free and minimally impacted by insects and/or browsing.</p>	<p>Insects, disease, and windthrow are more prevalent than in the early and mid successional stages thereby creating snags and downed logs.</p>
Snags and Logs	<p>Snags and logs left after disturbance may be present in low to moderate levels and decay at natural rates.</p> <p>Ground fuels generally average 1-5 tons per acre.</p>	<p>Snags and logs left after disturbance may be present in low to moderate levels and decay at natural rates.</p> <p>Ground fuels generally average 5-20 tons per acre.</p>	<p>Where aspen has been replaced by conifers, a heavy fuel bed of aspen logs may accumulate. Occasional large conifer logs are also present.</p> <p>Where aspen has been absent or scarce on the sites, density-related mortality in conifers is occurring in all size classes, resulting in greater fuel loadings.</p> <p>Ground fuel loadings generally average 20-80 tons per acre.</p>

Landscape Scale Desired Conditions for Wet Mixed Conifer

Mixed severity fires create a mosaic of different forest structural patterns at different spatial scales across the landscape. A well-balanced distribution of all successional stages is present within this forest. Only a portion of the watershed scale landscape is ripe to burn at lethal intensities at any given

time. Desired condition is to increase the number of stands, both open and dense, and amount of landscape in early successional stages.

Where wildland-urban interface occurs within or adjacent to this forest, a more open condition with early successional, fire-adapted species is emphasized.

The aspen component is maintained or increased.

Where tree cover is sparse or absent, a well-established understory vegetation layer consisting of native grass, forbs, and/or shrubs is present. New Mexico locust, currant species, and other shrubs are generally subordinate to and do not inhibit adequate regeneration of shade-intolerant conifer species or scattered aspen clones.

Desired Conditions for Spruce-Fir Forest

Background and Existing Conditions

Spruce-fir forests are found on the coldest, wettest high elevation sites on the ASNFs. The majority of this forest type lies within Wilderness Areas.

Principal disturbance factors are insects, disease, and windthrow followed by infrequent high severity fires. These influence the species composition and stand structure. Climate shifts, such as drought, can also influence this forest.

The first step in the natural succession pattern following disturbance is the establishment of plant species that prefer full sunlight (grass, shrubs, aspen, Douglas-fir). The next successional stage is typically establishment of Douglas-fir, Engelmann spruce, and subalpine (corkbark) fir. Aspen, shrubs, and Douglas-fir provide shade for the establishment of spruce and true fir. In the final successional stage spruce and fir have matured, shading out the sun tolerant species. If grass is the replacement community, it may take as many as 300 or more years to return to spruce-fir forest.

These communities are composed either of pure Engelmann spruce or mixed stands of spruce, subalpine (corkbark) fir, and aspen. Minor components can include white fir, Douglas-fir, and blue spruce. Patches of nearly pure aspen occur across the landscape. Where aspen occurs, it provides shade for young conifers and perpetuates the spruce fir forest. Natural succession patterns occur.

A mosaic of vegetative conditions (variety of patches less than 100 acres of similar age and size) is present on the landscape that prevents entire watersheds from burning in a single event. A mosaic of similar age/size groups of trees occur adjacent to groups of different size/age thus creating a patchy pattern across the landscape. A well balanced distribution of all successional stages in even-aged patches (less than 100 acres each) is present. Only a portion of the watershed scale landscape burns at any given time, however occasional landscape scale fires may occur.

Trees grow tightly together with interlocking crowns and are generally the same height and age. This helps prevent these shallow-rooted spruce trees from blowing down.

The extent of the spruce-fir forest is maintained, given favorable climatic factors which provide long cold winters with snow-pack and short cool summers.

Encroachment of the spruce-fir forest into the wet mixed conifer forest is minimized.

High intensity stand-replacement (all or most of trees are killed) fires occur on average every 150-400 years (Fire Regime IV and V). These primarily occur in patches of insect, disease, and windthrow

disturbance where heavy fuels have accumulated. However, larger sized fires may occur at higher elevations.

Old Growth

Large snags and logs are natural components of late and climax successional stages in this forest. Generally, early successional stages contain approximately 1-5 tons per acre woody debris on the forest floor. Mid successional stages generally contain 5-20 tons per acre of downed fuels. Late / climax successional stages generally contain 20-80 tons per acre of downed fuels. Large logs represent a greater fuel component in the later successional stages.

Desired Conditions for Madrean Pine-Oak Woodland

Background and Existing Conditions

These woodlands exist between montane coniferous forests at higher elevations and semi-desert grasslands in lower elevations. The composition, structure, and responses to disturbance vary accordingly. On a landscape scale, variation is based on attributes such as slope, aspect, and soil.

Dominant species vary by elevation, aspect, and soil types. Tree species include ponderosa pine, Chihuahuan pine, alligator juniper, Gambel, Emory, gray, netleaf, Arizona, and silverleaf oaks, Rocky Mountain juniper, and Rocky Mountain maple. Other species present include piñon pine, oneseed juniper, manzanita, mountain mahogany, and perennial bunchgrasses.

A mix of ages, stories, and groupings of trees occur which creates a mosaic across the landscape.

Madrean pine-oak is composed of uneven-aged groups of trees to all aged groups that contain some trees greater than 300 years old.

This woodland is generally open canopy with large trees and a grass understory with some groups of closed canopy. Depending on fire history and local site conditions, woodlands can be open to very dense. Overall, conditions are open to moderately dense with 5-45 percent canopy cover.

The understory includes buck brush, mountain mahogany, sedges and grasses, and young oak trees.

Ground cover consists of perennial grasses and forbs that support frequent fire. There are scattered snags and logs (2-5 tons/acre)

Typically fires are of low to occasionally moderate severity and occur every 5-20 years (Fire Regime I).

Desired Conditions for Piñon-Juniper Woodland

Background and Existing Conditions

Tree species within the piñon-juniper type are capable of existing and dominating in a wide range of ecological communities. Wide variability in temporal and spatial distribution as well as stand structures exist. Some have open structures with widely spaced trees; others are dense with high canopy covers. Most stands are uneven-aged with multiple canopy layers.

Piñon-juniper woodland is divided into two subtypes: savanna and persistent woodland.

Savanna

This subtype generally occurs on flats, basins, and gentler east/south/west facing foothills in generally lower elevations, gentle uplands, and transitional valleys.

Precipitation levels are low to moderate – too low to support many trees but receives reliable summer rainfall.

This piñon-juniper subtype occurs on soils that are generally deep and productive.

Persistent Woodland

This subtype generally occurs on flats, ridgetops, rugged uplands, and steep slopes on various elevations.

Precipitation levels are moderate to high – enough to support trees for several to many decades.

This piñon-juniper subtype occurs on soils that are shallow, rocky, and less to moderately productive.

Table 2. Piñon-Juniper Desired Conditions by Subtype

	Savanna	Persistent Woodland
Dominant Species	<p>Grass dominated with a few sparse trees.</p> <p>Scattered tree cover is made up of alligator juniper, one-seed juniper, Utah juniper, piñon pine and occasionally Rocky Mountain juniper on wetter sites.</p> <p>Cool season grasses comprise 45-65 percent composition.</p>	<p>Juniper and/or piñon-juniper dominated with some grass/forb/shrub.</p> <p>Tree cover dominates as a single species or a mix of species such as alligator juniper, one-seed juniper, Utah juniper, piñon pine, and occasionally Rocky Mountain juniper on wetter sites. Varying amounts of Gambel oak and evergreen oaks occur in some locations.</p>
Ground Cover	<p>Continuous native grass/forb cover contributes to improved watershed conditions.</p> <p>Scattered snags.</p>	<p>Discontinuous native grass/forb cover.</p> <p>Where there is a lack of continuous vegetation, abundant biological soil crusts are functional.</p> <p>Ground cover (tree litter, soil crust, grass/forb) contributes to improved watershed conditions.</p> <p>Scattered snags and logs (2-5 tons/ac).</p>

	Savanna	Persistent Woodland
Woodland Structure	<p>Open, scattered individuals to small groups.</p> <p>Very open - only a few trees per acre and generally canopy cover about 5-15 percent. Spatial extent closely resembles historical levels.</p> <p>Can be young to relatively old (greater than 150 years) - at least one tree/acre older than 150 years.</p>	<p>Mix of ages (ranging from young to old), stories, and grouping of trees occurs.</p> <p>Somewhat open to moderately dense. 16-45 percent canopy cover. The canopy cover and size of Gambel oak and other shrubs is variable. Spatial extent more closely resembles historic levels. Minimal tree competition.</p> <p>Unevenaged groups to all aged with some trees greater than 300 years old.</p>
Fire Occurrence	Frequent (1-35 years) and low severity carried by continuous ground cover. Fire Regime I.	Less frequent and variable due to differences in ground cover. Mixed to high severity (highly speculative 35-600 years). Fire Regime II-V.

Desired Conditions for Grasslands

Background and Existing Conditions

There are three types of grasslands found on the ASNFs: semi-desert, Great Basin, and montane/subalpine.

Semi-desert Grassland

This grassland occurs below the Mogollon Rim at elevations ranging from 3,200 to 4,500 ft. These grasslands are bounded by Chihuahuan Desert at the lowest elevations and Madrean Pine-Oak Woodlands or Interior Chaparral at the higher elevations. Species composition and dominance varies across the broad range of soils and topography. Dominant grassland associations/types are black grama grassland, blue grama/hairy grama grassland, tobosca grassland, giant sacaton grassland, and mixed native perennial grassland. Shrubs also inhabit these grasslands and their abundance and species composition also varies, however, juniper and mesquite are most common.

Current woody (tree and shrub) canopy cover is greater than 10 percent on roughly 80 percent of the grassland acres. Current infestations of non-native invasive species range between 350 and 500 acres. Current fire regime condition class is 3. Current fire return interval is every 1,430 years.

Great Basin Grassland

Rain, temperature, and soils limit this grassland to lower elevations with vegetation coverage consisting of mostly grasses and forbs with interspersed shrubs. Grass species may include but are not limited to: Indian ricegrass, threeawns, blue grama, needle and thread, New Mexico feathergrass, green needlegrass, muhlys, James' galleta, big bluestem, little bluestem, western wheatgrass, and sand dropseed. Shrub species may include but are not limited to: saltbush, jointfir, rabbitbrush, snakeweed, winterfat, juniper, and wax currant. This grassland is found on moderate to gentle slopes and may also include areas that are dominated by a variety of forbs.

Current woody (tree and shrub) canopy cover is greater than 10 percent on roughly 68 percent of the grassland acres. Current non-native invasive plant

infestations range between 2,050 and 3,050 acres. Current fire regime condition class is 3. Current fire return interval is every 1,430 years.

Montane/Subalpine Grassland

This grassland contains a mix of dominant and co-dominant species in both dry and moister environments. This grassland typically occurs at elevations ranging from approximately 7,500 to 11,000 ft. on gentle to steep gradient slopes. Soils in swales and on riparian benches are usually moist throughout the year, and often harbor several plant associations with varying dominant grasses and herbaceous species. Upland and swale vegetation composition is characterized by different dominant species. Common species at higher elevations in more moist sites include tufted hairgrass, exotics Canada bluegrass and Kentucky bluegrass, sheep fescue, Nebraska sedge, yarrow, dryspike sedge, and Baltic rush. The more dry upland sites are dominated by mutton bluegrass, Arizona fescue, pine dropseed, mountain muhly, White Mountain sedge, sheep fescue, woolly cinquefoil, and small-leaf pussytoes. Common species at lower elevations in more moist sites include Canada and Kentucky bluegrass, spike muhly, spreading fleabane, annual muhly, white clover, yarrow, and dandelion. The more dry upland sites at lower elevations are dominated by pine dropseed, blue grama, spreading fleabane, prairie junegrass, White Mountain sedge, Canada bluegrass, annual muhly, and Fendler's sandwort. Trees may occur along the periphery of these meadows; primarily ponderosa pine, southwestern white pine, Engelmann spruce, and sub-alpine fir, depending on elevation and moisture gradient. Some shrubs may also be present.

Current woody (tree and shrub) canopy cover is greater than 10 percent on roughly 10 percent of the grassland acres. Current non-native invasive plant infestations range between 1,100 and 1,650 acres. Current fire regime condition class is 3. Current fire return interval is every 1,110 years.

Species Composition

Species composition is dominated by perennial herbaceous species; including perennial native grasses, grass-like plants, and forbs.

There is a natural balance of both warm- and cool-season species.

Canopy cover provided by tree species is less than 10 percent.

Canopy cover provided by shrub species is less than 10 percent.

Non-native invasive species are absent or only present to the extent that they do not adversely affect natural processes such as the natural fire regime.

Ground Cover

There is adequate cover for soil protection, production and moisture infiltration.

Herbaceous ground cover and litter should be a minimum of 70 percent in semi-desert and Great Basin grasslands and 80 percent in montane/subalpine grasslands.

Fine fuels are adequate and contiguous to provide for and maintain the natural fire regime.

Disturbance Processes

The natural fire regime condition class and fire return interval are functioning ecological processes

Natural fire regime condition class is I.

In semi-desert grasslands, the natural fire return interval is every 2-10 years. In Great Basin grasslands it is every 10-30 years. In montane/subalpine grasslands it is 2-400 years.

Grassland Restoration

Where possible, grasslands occupied by woody species are restored to their former grassland state and productivity.

Grasslands have high ecological similarity to their potential natural vegetation and productivity.

Species Diversity

Grassland ecological conditions are such that the diversity of habitats is present to support the variety of vertebrate and invertebrate species dependent upon them

Vegetation composition and structure are varied across the landscape. A mosaic of patch sizes exists in the semi-desert and montane/subalpine grasslands. In the Great Basin grasslands there are tall, mid, and short grasses, as well as a mix of species.

Undesirable non-native species are absent or only present to the extent that they do not adversely affect native species populations

Desired Conditions for Interior Chaparral

Background and Existing Conditions

Interior chaparral usually exists between semi-desert grasslands and madrean pine-oak woodlands. Dominant vegetation forms tend to move back and forth across the transition zones in response to natural and human caused environmental conditions. Interior chaparral is typically structurally uniform and dominated by shrubs with thick, stiff, waxy evergreen leaves.

In the early successional stage, chaparral contains a grass and forb component in the understory while later stages are dense, nearly impenetrable thickets with considerable leaf litter. Standing dead material may accumulate in stands that have not burned for several decades. Succulent plants, including prickly pear cactus, agave, and yucca, commonly grow alongside the shrubs. Chaparral is in a constant state of transition from early to late successional stage and back again.

Dominant species are primarily shrubs including mountain mahoganies, live oaks, manzanita, silk tassels, agave, beargrass, yucca, mesquite, cliffrose. Occasionally individual or groups of trees occur such as Arizona cypress, Mexican piñon, silverleaf oak, and Emory oak.

Grasses are a minor component in chaparral. They include Arizona cotton top, cane beardgrass, tobosagrass, and native perennial grama and muhly grasses.

Ground cover consists primarily of shrub litter (small stems and leaves).

The vast majority of chaparral is closed canopy with some openings of grasses/forbs.

Stand replacing fires occur every 15-45 years (Fire Regime IV, Condition Class 1).

Fire, drought, insects, and diseases serve as natural disturbance processes.

Chaparral continues to exist on the landscape as it appears currently.

Species Diversity

Management of the ASNFs for wildlife is based on 1) the ecosystem diversity premise--by managing vegetation communities within or towards a desired vegetation condition, the forests are providing habitat for the majority of the more than 2,500 wildlife and plant species known to occur; and 2) the species diversity premise--eliminating or minimizing risks and threats to individual species where management of habitats alone is not adequate to fully provide for a particular species or group of species, especially threatened and endangered species, species of concern, and species of interest. Managing for both ecosystem and species diversity helps provide appropriate ecological conditions for federally-listed species, species of concern, and species of interest. Ecological conditions for habitat quality, distribution, and abundance contribute to self-sustaining populations that are well distributed and interactive, within the bounds of the life history, distribution, and natural population fluctuations of the species; within the capability of the landscape; and consistent with multiple use objectives.

All species and species groups associated with particular vegetation or with specific ecological characteristics (e.g. snags and logs, herbaceous understories) were considered and their needs addressed in the vegetation desired conditions.

The desired conditions listed below are needed to provide for species diversity in addition to those covered under ecosystem diversity.

Desired Conditions for Multiple Species

Terrestrial wildlife habitats are diverse with native plant communities dominating the landscape.

Species richness (numbers of species) is high.

Wildlife habitats and/or populations meet conditions set forth in established and approved recovery plans, management plans, biological opinions, conservation strategies, conservation assessments, and other appropriate (e.g. scientifically credible, peer reviewed) direction.

Habitat conditions are provided so that species listed as threatened or endangered under the Endangered Species Act trend toward recovery or are delisted.

Habitat is available to sustain populations of species of concern and species of interest.

A greater understanding of many non-game species (e.g. amphibians, invertebrates, fish) and plants, including their habitat requirements and effects from human activities, is acquired.

Populations of plant species of concern and/or interest are interconnected and populations persist and expand.

Movement/travel corridors, with adequate cover and minimal human disturbance, provide population connectivity and genetic exchange between large blocks of habitat.

Allotment fencing allows for passage for animals prone to restrictions, such as pronghorn antelope.

Wildlife is not disturbed during critical life stages such as breeding, nesting, rearing, and wintering.

Caves and mines are available and undisturbed for roosting bats, reducing the potential for displacement from habitat, abandonment of young, and possible mortality.

Big game winter range provides adequate hiding and thermal cover in large contiguous blocks.

Non-native fungi, parasites and diseases among wildlife and plants are controlled or minimized.

Native frog populations are free from non-native predation, are thriving, and are interconnected.

Livestock carcasses are not available for scavenging within the Mexican Wolf Recovery Zone.

Collecting of live plants, invertebrates, fungi, and other forest products is not impacting species diversity.

Prairie dog habitat is available for new colonies and populations are thriving.

Desired Conditions for Invasive Species

New non-native invasive species are not introduced and existing populations are eradicated, controlled, or contained.

Severely disturbed sites are revegetated with native species suited to the modified site and capable of becoming established.

Invasive species do not adversely affect natural processes.

Tamarisk and other invasive plant populations that threaten riparian areas are substantially reduced in distribution and abundance and eradicated where possible.

Crayfish populations are eradicated or controlled.

The introduction and spread of bullfrogs, algae, bivalves, and other non-native invasive species is eliminated.

Managed Recreation

Background and Existing Conditions

The Chief of the Forest Service identified unmanaged recreation, in particular the large increase in demand for motorized recreation opportunities, as one of the four threats to the Nation's forests and grasslands.

Some other issues related to unmanaged recreation include:

-Commodity-related uses of the Apache-Sitgreaves National Forests (ASNFs) are declining, while recreation, including off-highway vehicle use, continues to increase. Visitors are drawn to the forests' recreation sites, scenery, and special areas such as wilderness and scenic byways.

-Demographics of recreationists are changing. An aging population and increased ethnic diversity contribute to the changes in demand for recreation opportunities on the ASNFs.

-There is a lack of funds to maintain and repair aging recreation sites.

-Currently, cross-country motor vehicle travel is allowed. This is inconsistent with direction in the Travel Management Rule.

Desired Conditions for Recreation Opportunities

The ASNFs offer a spectrum of recreation opportunities and settings from primitive to urban and dispersed to developed, with an emphasis on retaining the natural appearing character of the forests. Recreation activities occur within the capacity of the land to support it and with minimal user conflicts.

Recreation on the ASNFs enhances the quality of life for local residents, provides tourist destinations, and contributes to local economies.

Recreation opportunities are provided that represent a variety of skill levels, needs, and desires in partnership with permit holders, private entities, volunteer groups, diverse community groups, and state, federal, and tribal governments.

Visitors have access to information about recreation activities, values of forests and ecosystems, uses, and management of the forests. Visitors to the ASNFs have opportunities to learn about its past.

Desired Conditions for Dispersed Recreation

Dispersed recreation opportunities (e.g. hunting, fishing, hiking, camping) are available. Dispersed sites are in good condition and occur in a variety of areas throughout the forests.

Facilities for dispersed recreation activities are minimal and designed only to the degree necessary to sustain resource conditions.

Water-based settings and the associated recreation opportunities are balanced with resource protection needs.

Winter recreation opportunities continue to exist as conditions allow.

Roads and trails that traverse the forests invite visitors to view the natural landscapes and abundant wildlife.

Desired Conditions for Developed Recreation

Developed recreation sites allow people to camp, obtain information, and participate in day-use activities (e.g. picnic areas, fishing piers, scenic overlooks).

Facilities are high quality, well-maintained, safe, accessible, and complement the forests' natural character. Facilities range from primitive to highly developed, with an emphasis on more rustic facilities.

Desired Conditions for Motorized Opportunities

Motorized access and travel occurs on a designated system of roads, trails, and areas that provides positive recreation experiences and limits resource and user conflicts.

Unauthorized routes do not exist.

The system of roads and motorized trails is safe and environmentally sound, supports forest management activities, and provides access for recreation, special uses, and fire protection. The system is well-maintained, corresponding to levels of use.

The system is connected to state, county or local public roads and trails. Scenic byways and roads are a prominent feature within this interconnected system.

Desired Conditions for Non-Motorized Opportunities

Non-motorized experiences are available in a variety of settings that provide differing levels of challenge and seclusion.

A safe and environmentally sound non-motorized trail network is in place, providing access to locations of interest for a variety of uses.

Desired Conditions for Scenic Resources

The forests appear predominantly natural with moderate evidence of human activities.

The natural and cultural features of the landscapes that provide their 'sense of place' are intact.

Landscapes possess vegetation patterns and species mixes that are natural in appearance and function and contribute to scenic values.

Constructed features and landscape alterations complement the natural setting.

Desired Conditions for Heritage Resources

Historic and prehistoric properties and sites, including known Native American sacred sites and traditional cultural properties, are generally free from inappropriate impacts.

The public understands and appreciates the value of heritage resources.

Forest and timber products are available to tribes and tribal members for religious and cultural purposes.

Community-Forest Interaction

Background and Existing Conditions

The Apache-Sitgreaves National Forests (ASNFs) are literally the backyard for many residents of the White Mountains region of Arizona. Many communities adjoin the forests, while others are completely surrounded. Because of this close proximity, many communities and private landowners are directly affected by forest management decisions. These entities, in turn, affect forest management.

There has been a major increase in development, including seasonal homes, on land adjoining or surrounded by the ASNFs. Demands related to this growth include access to the forests, utility corridors, roads, special use permits, and recreational opportunities. With more and more people residing in proximity to the forests, managers are challenged to provide the goods, services, and access that people demand.

Some of the issues related to community-forest interaction include:

- Commodity use and production (e.g. grazing, logging) contributes to sustaining the lifestyles and traditions of local communities.

- Many communities are surrounded by the forests and can be affected by adjustments to ASNFs land ownership.

- Wildfire risk is associated with living in or near the forest.

- There are increasing demands for goods, services, and forest access from growing populations and urban developments that border the forests.

- Energy resource demands continue to grow, including the need for additional energy (utility) corridors for transmission lines.

Desired Conditions for National Forest System Lands

The ASNFs are composed of large contiguous tracts of National Forest System lands.

Forest Service/private land boundaries are minimized.

Neighboring property owners and wildland-urban interface residents are aware of Forest Service regulations pertaining to boundaries.

Occupancy trespass does not occur.

Desired Conditions for the Wildland-Urban Interface

There is reasonable and legal access to public lands for resource management and recreation. This access is dynamic and adaptable to resource and user needs.

Access to public lands across private lands and/or other jurisdictions is considered during community development.

Wildfire behavior in the wildland-urban interface is controllable with typical suppression methods and minimizes damage to ecosystems and structures.

To the extent possible, the forests contribute to the protection of communities and individuals from wildfire within the limits of firefighter safety and budgets.

Wildland-urban interface residents and visitors are educated regarding wildfire protection of their homes and appropriate uses of the forests.

Desired Conditions for Provision of Goods and Services

Values obtained from National Forest System lands contribute to the ecological, economic, and social sustainability of local communities and the forests.

Desired Conditions for Forest Products

The ASNFs provide a sustainable supply of timber products (e.g. small diameter wood, saw timber, chips, pulp, firewood) and forest products (e.g. Christmas trees, wildings, posts, poles).

Theft of forest products does not occur.

Forest and timber products are available to businesses and individuals that may assist with forest restoration and fuel treatments to achieve ecologically sustainable conditions.

Desired Conditions for Livestock Grazing

Rangelands and permitted livestock grazing use, within ecological capability, contribute to desired vegetation conditions, social, economic, and cultural structure and stability of rural communities.

Unauthorized livestock use does not occur.

Range developments (e.g. stock tanks, pipelines, fences) are functional.

Desired Conditions for Minerals and Energy

Mineral and energy resources provide benefits to the Nation, local communities, and commercial interests in keeping with the need to meet other desired conditions.

Common variety minerals (e.g. gravel, cinders) are available for road maintenance activities for the Forest Service transportation system and community (county) public road system.

Lands where past mineral or energy development or exploration has occurred are restored to natural conditions to the extent possible.

Designated wilderness areas and administrative and recreation sites with an investment in facilities are withdrawn from (off limits to) mineral entry.

Desired Conditions for Water Uses

Water developments minimize damage to fish, wildlife, and riparian habitat as well as scenic and aesthetic values.

ASNFs' water rights are secure and contribute to rangeland, recreation, wildlife, and administrative uses.

Management Approaches

Note: Management approaches describe administrative practices or procedures that may be used to achieve desired conditions.

Forest Service, Tribes, and communities of interest have a close relationship characterized by communication and trust which contributes to the quality of life and economically stable communities surrounded by healthy forests.

The forests cooperate with communities during development of their master plans.

Public information, interpretive services, and environmental education programs/activities connect people to the land and to each other, and encourage visitors and local residents to take informed actions in sustaining cultural and natural resources.

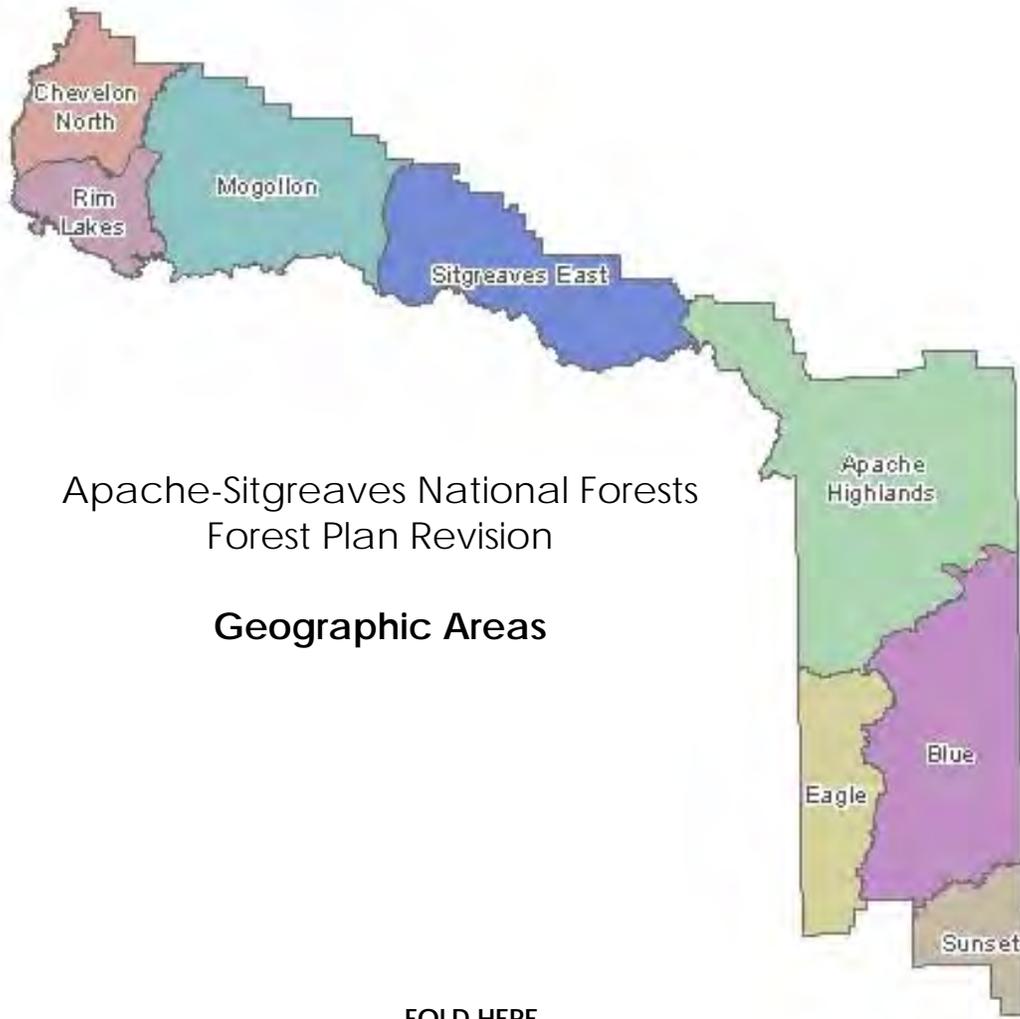
The forests contribute leadership, organizational skills, facilities, and other resources to communities. Agency personnel are active participants within the communities. There are economic contributions when purchases are made locally.

Forest users are informed about the mission of the Forest Service and the benefits derived from permitted land uses.

Partnerships are in place to assist in resource management and advancement towards desired conditions.

Land adjustments (i.e. exchanges, purchases) consolidate the National Forest System land base, reduce administrative problems and costs, enhance public access and use, contribute to local community expansion needs, and support resource management objectives, including the protection and improvement of species habitat.

Strategic easements for access and species conservation are acquired.



Apache-Sitgreaves National Forests
Forest Plan Revision

Geographic Areas

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**Apache Sitgreaves National Forests
Attn: Plan Revision Team
P.O. Box 640
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