List of Preparers

The following lists the names, titles, education, and experience of individuals who contributed substantially to development of the "Prescott National Forest Land and Resource Management Plan."

Name	Title	Education and Experience
Frances Alvarado	Geologist	M.S. Geology, University of Texas at San Antonio 5 years experience with the Forest Service
Christopher J. Brown	Planning Social/Economic/ Recreation Lead	B.S. Forest Resource Management, Virginia Polytechnic Institute & State University 8 years experience with the Forest Service
Dave Evans	Rangeland Management Specialist	M.S. Environmental Resources emphasis Rangeland Management, Arizona State University 10 years experience with the Forest Service
Bruce Fahrni	Recreation Team Leader	B.S. Outdoor Recreation Administration, Colorado State University 35 years experience with the Forest Service
Sally Hess-Samuelson	Forest Planner	B.S. Forestry, University of Minnesota 28 years experience with the Forest Service
Pam Jarnecke	Writer/Editor	B.S. Environmental Science and B.S. Human Resources, Black Hills State University 6 years experience with the Forest Service and 6 years experience with the Bureau of Land Management
Ann May	Landscape Architect	M.L.A. (Masters of Landscape Architecture), University of Michigan 19 years experience with the Forest Service
Jim McKie	Archaeologist	M.A. Anthropology, University of Idaho 30 years experience with the Forest Service
Ed Paul	Fuels Planner/ Fire Ecologist	B.S. Forestry, Northern Arizona University 32 years experience with the Forest Service
Barbara Phillips	Botanist	Ph.D. Ecology and Evolutionary Biology, University of Arizona 21 years experience with the Forest Service and 14 years experience with the Museum of Northern Arizona
Tom Potter	GIS Coordinator	M.S. Watershed Management, University of Arizona 11 years experience with the Forest Service and 8 years experience with the National Park Service
Adriane Ragan	Writer/Editor	M.A. English, Northern Arizona University 7 years experience with the Forest Service
Mary Rasmussen	Planning Ecological Lead/ Forest Planner	M.S. Forest Ecology, Oregon State University 14 years experience with the Forest Service and 11 years experience with the National Park Service
Jules Riley	Hydrologist	B.S. Hydrology, Colorado State University 22 years experience with the Forest Service

Name	Title	Education and Experience
Dan Salcido	Engineer	B.S. Civil Engineering, University of California, Berkeley 30 years experience with the Forest Service
Sheila Sandusky	Lands/Special Uses Specialist	Graduate, Bureau of Land Management Lands and Realty Academy and A.A. Liberal Arts, Cochise College 20 years experience with the Forest Service
Albert Sillas	Fisheries Biologist	B.S. Fisheries and Wildlife Science, New Mexico State University 20 years experience with the Forest Service and 7 years experience with the Fish and Wildlife Service
Dustin Walters	Soils Scientist	M.S. Natural Resource Conservation, University of Montana 10 years experience with the Forest Service
Jodi Wetzstein	Planning Forester	B.S. Forestry, Northern Arizona University; certified silviculturist 11 years experience with the Bureau of Land Management and 3 years experience with the Forest Service
Jason Williams	Trails/Wilderness/ Dispersed Recreation Program Manager	M.A. Public Lands Management, Prescott College 3 years experience with the Forest Service and 7 years experience with the Arizona Wilderness Coalition

Glossary

Adaptive capacity – The capacity of a system to adapt if the environment where the system exists is changing. As applied to ecological systems, adaptive capacity is determined by: (1) genetic diversity of species, (2) biodiversity within a particular ecosystem, and (3) heterogeneous ecosystem mosaics as applied to specific landscapes or biome regions.

Age class – Trees that originated within a relatively distinct range of years. Typically the range of years is considered to fall within 20 percent of the average natural maturity (e.g., if 100 years is required to reach maturity, then there would be five 20-year age classes).

Basal area – The cross-sectional area at breast height (4.5 feet above the ground) of trees measured in square feet. Basal area is a way to measure how much of a site is occupied by trees. The cross-sectional area is determined by calculating the tree's radius from its diameter (diameter/2 = radius) and using the formula for the area of a circle (π x radius2 = cross-sectional area). Basal area per acre is the summation of the cross-sectional area of all trees in an acre or in a smaller plot used to estimate basal area per acre. Diameter at root collar (defined below) is used to calculate the cross-sectional area of multistemmed trees such as juniper and oak.

Class I Federal areas – A classification where areas require the highest level of protection under the Clean Air Act (CAA). The CAA defines mandatory Class I Federal areas as certain national parks (over 6,000 acres), wilderness areas (over 5,000 acres), national memorial parks (over 5,000 acres), and international parks that were in existence as of August 1977.

Clump – A tight cluster of two to five trees of similar age and size originating from a common rooting zone that typically lean away from each other when mature. A clump is relatively isolated from other clumps or trees within a group of trees, but a stand-alone clump of trees can function as a tree group.

Coarse woody debris – Woody material, including logs, on the ground greater than 3 inches in diameter—a component of litter.

Concern level roads – Concern level 1 roads are travel routes where forest visitors have a high interest in scenic qualities. Concern level 2 roads are travelways where forest visitors have a moderate interest in scenic qualities. These routes are displayed in the "Scenery Management System Inventory Report" planning record (Forest Service, 2009d).

Connectivity – The arrangement of habitats that allows organisms and ecological processes to move across the landscape; the opposite of fragmentation. Patches of similar habitats are either close together or linked by corridors of appropriate vegetation.

Culturally important plant species – Plant species that either have specific requirements for survival and are found in few locations or have importance to American Indian tribes, communities, and nations.

Deciview – A measurement of visibility. A low deciview number reflects clearer visibility; while a high deciview number reflects increased haziness.

Declining – Refers to the senescent (aging) period in the lifespan of plants that includes the presence of dead and/or dying limbs, snag tops, and other characteristics that indicate the later life stages of vegetation.

Diameter at breast height (d.b.h.) – The diameter of a tree typically measured at 4.5 feet above ground level.

Diameter at root collar (d.r.c.) – The diameter typically measured at the root collar or at the natural ground line, whichever is higher, outside the bark. For a multistemmed tree, d.r.c. is calculated from the diameter measurements of all qualifying stems (≥ 1.5" diameter and at least 1 foot in length).

Deferred maintenance – Maintenance that was not performed when it should have been or when it was scheduled and which, therefore, was put off or delayed for a future period. When allowed to accumulate without limits or consideration of useful life, deferred maintenance leads to deterioration of performance, increased costs to repair, and decrease in asset value. Deferred maintenance needs may be categorized as critical or noncritical at any point in time. Continued deferral of noncritical maintenance will normally result in an increase in critical deferred maintenance.

Ecosystems – These are spatially explicit, relatively homogeneous units of the earth that include all interacting organisms and elements of the abiotic environment within its boundaries. An ecosystem is commonly described in terms of its:

- **Composition** – The biological elements within the different levels of biological organizations, from genes and species to communities and ecosystems.
- **Structure** – The organization and physical arrangement of biological elements such as snags and down woody debris, vertical and horizontal distribution of vegetation, stream habitat complexity, landscape pattern, and connectivity.
- **Function** – Ecological processes, such as energy flow; nutrient cycling and retention; soil development and retention; predation and herbivory; and natural disturbances such as wind, fire, and floods that sustain composition and structure.

Ecosystem services – Benefits that people obtain from ecosystems. The Prescott NF provides clean water and air, productive soil, riparian and aquatic resources, diverse wildlife habitats, educational and cultural values, scenery, recreation, timber, forage, and forest products.

Endemic – A population that has unique genetic characteristics and likely exists in a very limited geographic area.

Even-aged – Stands of trees that are comprised of one distinct age class of trees.

Federally listed species – Threatened or Endangered species listed under the Endangered Species Act, as amended. Candidate and proposed species are species which are being considered for Federal listing.

Fire regime – The patterns, frequency, and severity of fire that occur over a long period of time across a landscape and its immediate effects on the ecosystem in which it occurs. There are five fire regimes which are classified based on frequency (average number of years between fires) and severity (amount of replacement of the dominant overstory vegetation) of the fire. These five regimes are:

- **Fire regime I** – 0 to 35 year frequency and low (surface fires most common, isolated torching can occur) to mixed severity (less than 75 percent of dominant overstory vegetation replaced).
- **Fire regime II** – 0 to 35 year frequency and high severity (greater than 75 percent of dominant overstory vegetation replaced).
- **Fire regime III** – 35 to 100+ year frequency and mixed severity.
- **Fire regime IV** – 35 to 100+ year frequency and high severity.
- **Fire regime V** – 200+ year frequency and high severity.

Fire severity – Degree to which a site has been altered or disrupted by fire; also used to describe the product of fire intensity and residence time; usually defined by the degree of soil heating or mortality of vegetation.

Goshawk foraging areas – The areas that surround the PFAs (see definition below) that northern goshawks use to hunt for prey. They are approximately 5,400 acres in size.

Goshawk nest areas – The areas immediately around a nest that are used by northern goshawks in relation to courtship and breeding activities. They are approximately 30 acres in size and contain multiple groups of large, old trees with interlocking crowns.

Goshawk post-fledgling family areas (PFAs) – The areas that surround northern goshawk nest areas. They represent an area of concentrated use by the northern goshawk family until the time the young are no longer dependent on adults for food. PFAs are approximately 420 acres in size (not including the nest area acres).

Group – A cluster of two or more trees with interlocking or nearly interlocking crowns at maturity surrounded by an opening. Size of tree groups is typically variable depending on forest type and site conditions and can range from fractions of an acre (a 2-tree group) (i.e. ponderosa pine, dry mixed conifer) to many acres (i.e. wet mixed conifer, spruce fir). Trees within groups are typically nonuniformly spaced, some of which may be tightly clumped.

Herbivory – The act of feeding on plants.

Hydrologic unit – The U.S. Geological Service created hydrologic units to describe the hierarchy of watersheds within the country. Hydrologic units are identified by hydrologic unit codes (HUCs). As the unit code increases, the size of the watershed referenced decreases (e.g., several 6^{th} level watersheds can be combined to make up a 5^{th} level watershed). The average size of a 4^{th} level watershed (subbasin) is 1 million acres, 5^{th} level watersheds (watersheds) are around 165,000 acres, and 6^{th} level watersheds (subwatersheds) are about 21,000 acres.

Impaired waters – Polluted or degraded waterbodies (e.g., lakes, streams, segments of streams) which do not meet state water quality standards.

Instream flow – Seasonal streamflows needed for maintaining aquatic and riparian ecosystems, wildlife, fisheries, and recreation opportunities at an acceptable level.

Intactness – Untouched or unaltered, especially by anything that harms or diminishes its character.

Litter – Dead, unattached organic material on the soil surface that is effective in protecting the soil surface from raindrop splash, sheet, and rill erosion and is at least ½ inch thick. Litter is composed of leaves, needles, cones, and woody vegetative debris including twigs, branches, and trunks.

Maintenance levels – Maintenance levels define the level of service and maintenance requirements for a road. Maintenance levels 1 to 5 are described below:

- **Level 1** – These roads have been placed in storage between intermittent uses. They are not shown on motor vehicle use maps and are closed to vehicular traffic, but may be available for nonmotorized uses.
- **Level 2** – These roads are for use by high-clearance vehicles; passenger car use is discouraged or prohibited.
- **Level 3** – These roads are open and maintained for passenger car use. Roads in this maintenance level are typically low speed with single lanes and turnouts.
- **Level 4** – These roads provide a moderate degree of user comfort and convenience at moderate travel speeds. Roads in this maintenance level are typically double lane and aggregate surfaced.
- **Level 5** – These roads provide a high degree of user comfort and convenience. Roads in this maintenance level are typically double lane and paved.

Minimum Impact Suppression Tactics (MIST) – The strategy and tactics that meet fire management objectives with the least environmental, cultural, and social impacts, including in this case, wilderness values.

Mosaic – The pattern of patches, corridors, and matrix (forest or nonforest) that form a landscape in its entirety.

National Forest System (NFS) – As defined in the Forest and Rangeland Renewable Resources Planning Act (P.L. 93-378), the "National Forest System" includes all national forest lands reserved or withdrawn from the public domain of the United States, all national forest lands acquired through purchase, exchange, donation, or other means; the national grasslands and land use projects administered under Title III of the Bankhead-Jones Farm Tennant Act (P.L. 75-210); and other lands, waters, or interests therein administered by the Forest Service or are designated for administration through the Forest Service as part of the system.

National Forest System (NFS) road or trail – A road or trail wholly or partly within or adjacent to and serving the National Forest System that the Forest Service determines is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources. A forest road or trail other than a road or trail which has been authorized by a legally documented right-of-way held by a state, county, or other local public road authority (36 CFR 212.1).

Natural fire regime – The fire regime that existed prior to human-facilitated interruption of frequency, extent, or severity.

Nonnative invasive species – Species that are not native to the ecosystem being described and that cause, or have the potential to cause, ecological or economic harm.

Old growth – "Old growth" refers to specific habitat components that occur in forests and woodlands—old trees, dead trees (snags), downed wood (coarse woody debris), and structure diversity. These important habitat features may occur in small areas, with only a few components, or over larger areas as stands or forests where old growth is concentrated. In the Southwest, old growth is considered "transitional," given that that the location of old growth shifts on the landscape over time as a result of succession and disturbance (tree growth and mortality) (Forest Service, 2012). Some species, notably certain plants, require "old forest" communities that may or may not have old growth components but have escaped significant disturbance for lengths of time necessary to provide the suitable stability and environment. In Southwestern forested ecosystems, old growth is different than the traditional definition based on Northwestern infrequent fire forests. Due to large differences among Southwestern vegetation types and natural disturbances, old growth forests vary extensively in tree size, age classes, presence, and abundance of structural elements, stability, and presence of understory.

Openings – Spatial breaks between groups or patches of trees, as large as or larger than groups, which contain grass, forb, shrub, and/or tree seedlings but are largely devoid of big trees, with a total tree cover of less than 10 percent in openings.

Outstandingly remarkable value (ORV) – The unique, rare, or exemplary qualities that constitute the eligibility of a river segment for wild and/or scenic designation. ORV categories include: archaeology, scenery, fish, wildlife, recreation, and botany. A river must have one or more ORVs to be eligible for wild and/or scenic designation.

Patches – Areas larger than tree groups in which the vegetation composition and structure are relatively homogeneous. Patches comprise the mid-scale, thus they range in size from 100 to 1,000 acres.

Perennial intermittent stream – Streams where flow is discontinuous; perennial flowing segments are separated by reaches that have intermittent flow.

Productive sites – Sites that provide needed nutrients, light, and moisture that allow for vigorous growth of trees.

Properly functioning condition – Riparian areas are functioning properly when adequate vegetation, landform, or large woody debris is present to: dissipate stream energy associated with high flows (thereby reducing erosion and improving water quality); filter sediment; capture bedload and aid in flood plain development; improve floodwater retention and groundwater recharge; develop root masses that stabilize streambanks; develop diverse ponding and channel characteristics to provide habitat for fish, waterfowl, and other uses; and support greater biodiversity.

- **Functional-at-risk** – Riparian areas that are in functional condition, but an existing soil, water, or vegetation attribute makes them susceptible to degradation.
- **Improperly functioning** – Riparian areas that clearly are not providing adequate vegetation, landform, or large woody debris to dissipate stream energy associated with high flows and, consequently, are not reducing erosion and improving water quality.

Recommended wilderness – A potential wilderness area within the National Forest System which has been recommended for official designation by the regional forester to the Chief of the

Forest Service. The Chief may elect to forward the recommendation with wording for a congressional bill to the Secretary of Agriculture, who may then elect to transmit the proposed bill to Congress. It takes an act of Congress to designate a wilderness area.

Reference conditions – Environmental conditions that infer ecological sustainability. When available reference conditions are represented by the characteristic range of variation (not the total range of variation), prior to European settlement and under the current climatic period. For many ecosystems, the range of variation also reflects human-caused disturbance and effects prior to settlement. It may also be necessary to refine reference conditions according to contemporary factors (e.g., invasive species) or projected conditions (e.g., climate change). Reference conditions are most useful as an inference of sustainability when they have been quantified by amount, condition, spatial distribution, and temporal variation.

Resilience – The ability of an ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change.

Restoration – A process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed. Ecological restoration focuses on establishing the composition, structure, pattern, and ecological processes necessary to facilitate terrestrial and aquatic ecosystem sustainability, resilience, and health under current and future conditions.

Riparian corridor – A riparian corridor consists of the stream and an adjacent area of varying width where management practices that might affect water quality, fish, or other aquatic resources are modified. It is an area that acts as an effective filter and absorptive zone for sediment; protects aquatic and terrestrial riparian habitats; protects a channel and streambanks; and promotes flood plain stability.

Soil condition – There are four types of soil condition classes: satisfactory, impaired, unsatisfactory, and inherently unstable.

- **Satisfactory** – Indicators signify that soil function is being sustained and soil is functioning properly and normally. The ability of the soil to maintain resource values and sustain outputs is high.
- **Impaired** – Indicators signify a reduction in soil function. The ability of the soil to function properly and normally has been reduced and/or there exists an increased vulnerability to degradation. An impaired category indicates there is a need to investigate the ecosystem to determine the cause and degree of decline in soil functions. Changes in land management practices or other preventative measures may be appropriate.
- **Unsatisfactory** – Indicators signify that a loss of soil function has occurred. Degradation of vital soil functions result in the inability of the soil to maintain resource values, sustain outputs, or recover from impacts. Unsatisfactory soils are candidates for improved management practices or restoration designed to recover soil functions.
- **Inherently Unstable** – These soils have natural erosion exceeding tolerable limits. Based on the Universal Soil Loss Equation (USLE), these soils are eroding faster than they are renewing but are functioning properly and normally.

Slash – The residue (e.g., branches, bark) left on the ground after a management activity, such as logging, or natural disturbance such as a storm or fire.

Snags – Standing dead or partially dead trees (snag topped), often missing many or all limbs. They provide essential wildlife habitat for many species and are important for forest ecosystem function.

Southwestern Region sensitive species – Those plant and animal species identified by a regional forester for which population viability is a concern as evidenced by: (a) significant current or predicted downward trends in population numbers or density; or (b) significant current or predicted downward trends in habitat capability that would reduce the existing distribution of a species (FSM 2670.5 Definitions).

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

Traditional cultural property – Defined in the National Register Bulletin as a location, building, structure, community, and individual objects that are considered eligible for inclusion in the National Register as a historic property because of its association with cultural practices or beliefs of a living community that are (1) rooted in that community's history and (2) important in maintaining the continuing cultural identity of the community.

Uneven-aged – Forests that are comprised of three or more distinct age classes of trees, either intimately mixed or in small groups.

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

Wildland-urban interface (WUI) – Wildland-urban interface includes those areas of resident populations at imminent risk from wildfire and human developments having special significance. These areas may include: critical communications sites, municipal watersheds, high voltage transmission lines, church camps, scout camps, research facilities, and other structures that, if destroyed by fire, would result in hardship to communities. These areas encompass not only the sites themselves, but also the continuous slopes and fuels that lead directly to the sites, regardless of the distance involved.

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