United States Department of Agriculture
Forest Service
Angeles National Forest
San Gabriel Mountains National Monument
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Monument Interested Parties:

During planning for the San Gabriel Mountains National Monument Management Plan (Monument Plan), stakeholders expressed the desire to have one document containing all the management direction pertaining to the Monument. Outlined below is how we achieved what you desired.

The current Angeles National Forest Land Management Plan (ANF LMP) was published in 2005, and Plan Amendments have since occurred modifying the ANF LMP. Most of this direction is still applicable to the National Monument. The Monument Plan amended the direction in the ANF LMP to provide consistency with the Presidential Proclamation that designated the Monument, as well as to provide for protection and interpretation of the scientific and historic objects identified in the Proclamation.

This digital document contains and clarifies all the current management direction that applies to the National Monument, including:

- 2005 ANF LMP Parts 1, 2, and 3 applicable to the San Gabriel Mountains National Monument;
- 2014 Plan Amendment with changes to Roadless Area and Land Use Zones;
- 2016 Appendix C Monitoring Plan, which modified the 2005 ANF LMP Appendix C; and,
- San Gabriel Mountains National Monument Management Plan

The Monument Manager and I look forward to further collaboration with you and completing projects to achieve the goals of the Monument Plan. Please join me, along with ANF staff, in celebrating, sustaining, and enhancing our San Gabriel Mountains National Monument.

Please feel free to contact Monument Manager, Matthew Bokach at 626-335-1251 or matthew.bokach@usda.gov if you have questions or for more information.

Sincerely,

JEROME E. PEREZ
Forest Supervisor

cc: Matthew Bokach, Adrienne Dunfee, Julie Uyehara

Applicable to the San Gabriel Mountains National Monument

Land Management Plan

Part 1 Southern California National Forests Vision

Angeles National Forest
Cleveland National Forest
Los Padres National Forest
San Bernardino National Forest

United States Department of Agriculture

Forest Service

Pacific Southwest Region

R5-MB-075

September 2005

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Applicable to the San Gabriel Mountains National Monument

Land Management Plan

Part 1 Southern California National Forests Vision

Angeles National Forest

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San Bernardino National Forest

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Document Format Protocols

The following format protocols (font type, size, and strength, as well as indentation) are used throughout the Land Management Plan.

All headings are Arial bold, in varying font sizes and indentation.

Text is generally Times New Roman, 12 point regular.

Table Titles are Arial, bold, 11 point.

Table column headings are in Arial Narrow, 10 pt, with a shaded background.
Table cell contents are Times New Roman, 12 point.

Photograph captions have a top and bottom border to separate them from regular text, and are 12 point Arial font. For example, this is a clip-art butterfly.

References to websites (URLs) are in OCR B MT, 10 point in the printed version. In the electronic version, these are live links. The electronic version is posted at:

http://www.fs.fed.us/r5/angeles/projects/lmp

http://www.fs.fed.us/r5/cleveland/projects/lmp

http://www.fs.fed.us/r5/lospadres/projects/lmp

http://www.fs.fed.us/r5/sanbernardino/projects/lmp

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Introduction

The revised land and resource management plans (forest plans) for the southern California national forests describe the strategic direction at the broad program-level for managing the land and its resources over the next 10 to 15 years. The strategic direction was developed by an interdisciplinary planning team working with forest staff using extensive public involvement and the best science available. The revised forest plans have a focus that is different from the old forest plans. The revised forest plans are outcome based and are focused on the condition of the land after project completion rather than the products removed from the land. Each forest plan is directed toward the realization of the desired conditions using strategies that are consistent with the concept of adaptive management and sustainable resource use.

The revised forest plans are grounded on the concepts described by the Committee of Scientists in their report, *Sustaining the People's Lands (Committee of Scientists, March, 1999).* Paraphrasing the committee's report, the term sustainability includes three components: ecological, social, and economic. Sustainability means meeting the needs of the present generation without compromising the ability of future generations to meet their needs. The concept of sustainability is old; its broadened interpretation and redefinition should be viewed as a continuation of the attempt by Gifford Pinchot and others that followed him to articulate the meaning of 'conservation' and 'conservative use' of the lands and waters of the national forests. Therefore, the revised forest plans are designed so that managers have the flexibility to adapt management strategies to the constantly changing demands that are inherent to natural resource management. The strategic direction is expressed through an overall vision of what is wanted, the strategy for accomplishment, and the design criteria that will be used as activities are proposed, analyzed and implemented.

The forest plans were prepared according to the requirements of the National Forest Management Act (NFMA), the National Environmental Policy Act (NEPA), and other laws and regulations (Appendix A). The current forest plans for the southern California national forests were approved between 1986 and 1989. NFMA regulations require that each forest plan be revised every 10 to 15 years (36 CFR 219.10). The revised forest plans have been prepared to meet that requirement.

The forest plans were developed to implement Alternative 4a (selected). Alternative 4a (selected) represents the adjustment of the preferred alternatives identified in the draft environmental documents. The accompanying Final Environmental Impact Statement (FEIS), describes the analysis used in formulating the revised forest plans.

Organization of the Forest Plan

This forest plan presents a new format based on a model that is referenced in FSM 1921.1 and further described in FSH 1909.12, Chapter 10, section 12.2 Plan Components. The format consists of three interrelated parts that work together to facilitate the use of adaptive management and the development of management activities that will collectively move the national forests toward their desired outcome. Part 1 paints the picture of the vision and conditions desired in the long-term. Parts 2 and 3 contain, respectively, the strategic management direction and the guidance for designing actions and activities in order to make progress toward the vision and desired conditions described in Part 1. The contents of the forest plan are organized as follows:

Part 1 is the vision for the southern California national forests. It describes the national forests' uniqueness on a national and regional level. It describes the Forest Service's national goals, the roles and contributions that the national forests make (their niche), the desired conditions (36 CFR 219.11(b)) for the various landscapes within the national forests, and finally, the evaluation/monitoring indicators (36 CFR 219.11 (d)) that will be used to assess the progress made toward accomplishing the desired conditions. The Code of Federal Regulations (CFRs) is the implementing regulations for laws. Part 1 includes:

- Niche: Distinctive roles and contribution of the national forests. The vision document begins with a description of the national forest, including its distinctive roles and contributions to the local area, state, region, and nation. Through the course of public collaboration, the niche for National Forest System lands has been identified.
- Government Performance and Results Act (GPRA) goals: (36 CFR 219.12 (f)(6)): In 1993, Congress passed the GPRA to increase the accountability of federal agencies by measuring progress toward achieving agency goals and objectives. This legislation requires preparing periodic strategic plans. In 2003, the Forest Service (USFS 2003) issued an updated draft version of the 2000 Strategic Plan for the agency. These long-term goals and objectives help guide the Forest Service's current actions and future plans.
- Desired Conditions: The desired conditions describe the ecological, economic and social attributes that characterize or exemplify the outcome of land management. In short, this means how the national forests are expected to look and function in the future when the revised forest plan direction has been successfully implemented. Desired conditions can be measured now and over time through monitoring. Each national forest desired condition contributes to the achievement of GPRA goals. Desired conditions are not commitments and may be achievable only over the long-term.
- Evaluation/Monitoring Questions: Each of the desired conditions is linked to evaluation/monitoring questions. These questions are designed to evaluate the indicators of progress over time towards the desired conditions (outcomes). These, along with annual accomplishment indicators and implementation monitoring of design criteria constitute the land management monitoring plan (36 CFR 219.11(d) and 36 CFR 219.12(k)).

Part 2 is the strategy. The strategy describes the objectives (36 CFR 219.11 (b)) that the Forest Service intends to implement in order to move the national forests toward the vision described in Part 1. Part 2 identifies suitable uses through land use zones (36 CFR 219.11(c)) that show allowable uses and opportunities by zone, including existing and recommended wilderness and other special area designations (36 CFR 219.17). Part 2 also presents a prospectus that describes past program performance, program priorities and objectives, and a discussion of performance risks, recent trends, and expectations regarding the levels of experiences, goods, and services supplied by the national forests. The national forests have been subdivided into geographic areas called 'Places.′ The theme and desired condition and the multiple-use management focus for each Place are described in Part 2.

Part 3 is the design criteria. The design criteria include the laws, the standards (36 CFR 219.11 (c) and 219.13 through 219.27) and a reference to other applicable guidance that the Forest Service uses during project planning and implementation. Standards are mandatory requirements

that come into play as site-specific activities are planned for implementation, and are designed to be consistent with achieving the objectives and desired conditions. The standards act as thresholds or constraints for management activities or practices to ensure the protection of resources.

Purpose of the Forest Plan and Adaptive Management Framework

The purpose of the revised land and resource management plan is to articulate the long-term vision and strategic management direction for each southern California national forest and to facilitate the development of management activities that will contribute toward the realization of the national forests' desired conditions. The forest plan defines the parameters (limits) for management, but offers the flexibility to adapt decisions to accommodate rapidly changing resource conditions.

A forest plan makes six fundamental requirements including:

- The establishment of forest-wide multiple-use goals and objectives. This requirement is met through a combination of the desired conditions described in Part 1 and the more traditional objectives described in Part 2.
- Determine the suitability and capability of national forest land for resource production. This requirement is met through the use of appropriate scientific analytical processes described in the project record, land use zoning, and the identification of land uses appropriate for the zones that are included in Tables 2.1.1 through 2.4.4 in Part 2 of the revised forest plans.
- The identification of, and recommendation to, Congress for areas as wilderness and wild and scenic rivers. This requirement is met based on the wilderness evaluations for Inventoried Roadless Areas, the suitability studies done for eight rivers, and the eligibility inventory (no decision) for an inclusive list of rivers and creeks on all four southern California national forests (36 CFR 219.17- 219.18).
- The establishment of forest-wide and forest-specific standards. This requirement is met through the simplified list of mandatory design criteria and the associated Forest Service Manual and Handbook requirements described in Appendix A of Part 3 (36 CFR 219.11(c)).
- The identification of management area prescriptions. This requirement is met through the use of land use zones that are identified on the national forest zoning map and described in Part 2 of the revised forest plans (36 CFR 219.11(c)).
- The establishment of monitoring and evaluation requirements for plan implementation. This requirement is met through the monitoring requirements identified and described in all three parts of the revised forest plan. All monitoring requirements are detailed in Appendix C of Part 3 (36 CFR 219.11(d) and 36 CFR 219.12(k)).

It is important to emphasize that the revised forest plans are completely strategic. They do not make project level decisions nor do they compel managers to implement specific actions or activities. Current uses are carried forward. Any changes made to existing uses or new proposals will be determined at the project level according to the requirements of the National Environmental Policy Act (NEPA). This concept is consistent with the requirements of the

National Forest Management Act (NFMA), and with the agency policy of two decision levels: 1) strategic, and 2) project (site specific). These strategic plans **DO NOT**:

- create, authorize, or execute any ground-disturbing activity;
- grant, withhold, or modify any permit or other legal instrument;
- subject anyone to civil or criminal liability; nor
- create legal rights.

The original forest plans were often a confusing mix of strategic and site-specific direction that have been difficult to implement. In contrast, the revised forest plans describe only the strategic direction and offer the flexibility for managers to deal with unpredictable events that range from politics and policy decisions at the national level to on-the-ground situations such as drought, disease, or wildland fire.

Managers will work from within this strategic framework as they make decisions and propose site-specific projects that are designed to incrementally move the national forests toward the desired conditions. Project decisions must be consistent with the strategic direction, or must amend the plan. Site-specific projects may be the result of public demand (i.e., utilities including hydro-electric, transportation corridors, airports or more specific requests, such as groundwater extraction), or they can result from resource program needs (i.e., vegetative management, habitat projects, roads or trails construction). Projects will, in general, be proposed for implementation in order to bridge the gap between existing and desired conditions. Detailed analysis of resource trade-offs rightfully occurs at the project level where the extent of project requirements is known and can be assessed at the appropriate scale.

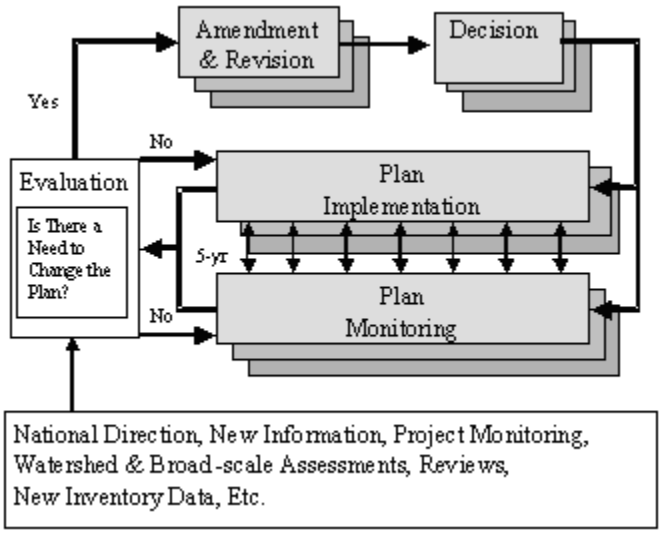
At the open house in Goleta, people study maps and discuss the management alternatives in the draft EIS with Forest Service Representatives.

This concept would support the argument that forest plans by themselves are not action-forcing or ground disturbing with significant effects on the human environment and would not require an Environmental Impact Statement (EIS). That discussion is moot since these revisions are being done to comply with the requirements of the 1982 planning regulations including the preparation of an EIS. What is different is the level of analysis that is done to support the strategic direction described in the revised forest plans. Rather than the exhaustive, expensive analysis that has been done in the past, the Forest Service is analyzing information at the coarse scale that is more

appropriate to identify trends and conditions of environmental indicators that support the conclusions made in the EIS. Rather than projecting what might happen in the future through modeling in the EIS, the revised forest plans establish an adaptive management framework.

The revised forest plans describe the monitoring and evaluation that is the linchpin for the success of an adaptive approach to national forest management. The forest plans also identify the data that will be gathered over time and periodically evaluated to determine if changes in management are needed. Current conditions of key environmental indicators are identified in the EIS along with projected trends. Actual trends in key environmental indicators are used to measure changes over time as the basis for determining when a need for change is indicated. Monitoring is the vehicle for adapting to change and to more easily amend and eventually revise forest plans in order to achieve desired conditions while ensuring the presence of healthy thriving public forests for future generations.

Figure 1. The Three Parts of a Plan in the Adaptive Cycle



Vision, Forest Niche, and Management Challenges

General Location

The southern California national forests (Angeles, Cleveland, Los Padres and San Bernardino) include over 3.5 million acres of federally managed public land extending from Big Sur to the north and the international border with Mexico to the south

The Angeles National Forest (662,983 acres) is located within Los Angeles, San Bernardino and Ventura Counties. The Forest Supervisor's office is located in Arcadia and there are Ranger District offices in Glendora, Saugus, and Tujunga.

The Cleveland National Forest (420,877 acres) is located within Orange, Riverside and San Diego Counties. The Forest Supervisor's office is located in Rancho Bernardo and there are Ranger District offices in Alpine, Corona, and Ramona.

The Los Padres National Forest (1,781,364 acres) is located within Kern, Los Angeles, Monterey, San Luis Obispo, Santa Barbara, and Ventura Counties. The Forest Supervisor's office

is located in Goleta and there are Ranger District offices in Frazier Park, King City, Ojai, Santa Barbara, and Santa Maria.

The San Bernardino National Forest (665,753 acres) is located within San Bernardino and Riverside Counties. The Forest Supervisor's office is located in San Bernardino and there are Ranger District offices in Fawnskin, Idyllwild, Lytle Creek, Mentone, and Skyforest.

A spectacular forest vista (San Bernardino NF photo).

Vision

The southern California national forests provide a balanced and sustainable flow of goods and services for a growing diverse population while ensuring long-term ecosystem health, biological diversity, and species recovery. The national forests also accommodate changing trends in visitor use through outreach efforts, facilities and education that meet the needs of emerging population demand.

National Forest watersheds are managed to provide many benefits including flood protection and quality drinking water for downstream communities, as well as protection of Wildland/Urban Interface (WUI) areas from wildland fire. They also offer a haven for native plants and animals, and provide unique and irreplaceable habitat for threatened, endangered, and sensitive species.

The national forests offer an escape from busy urban life by providing much-needed open space and a wide variety of recreation opportunities. They serve as an outdoor classroom, a 'living laboratory,' for learning about our natural and cultural heritage and the importance of conservation.

Conservation education for youngsters on the Los Padres NF.

Forest Niche

On a global and national scale, the national forests:

- constitute four of the most urban-influenced national forests in the total National Forest System (NFS). They serve as an open space, visual backdrop, recreation destination, and natural environment for a diverse, urban population of over twenty million people who live within an hour's drive of any one of the four national forests.
- lie within a region recognized by Conservation International as one of the world's 'biodiversity hotspots' (areas where exceptional concentrations of endemic species are undergoing exceptional loss of habitat). They provide habitat for 31 federally listed threatened and endangered animals, 29 federally listed threatened and endangered plants, 34 Region 5 sensitive animal species and 134 Region 5 sensitive plant species.
- provide the opportunity for scenic driving and access to National Forest Scenic Byways and Scenic Highways, including California State Highway 1, the 'All-American Road.'
- continue to provide a high-quality recreation setting for a large portion of the Pacific Crest National Scenic Trail (over 400 miles) and several National Recreation Trails, as well as three designated Wild and Scenic Rivers.
- manage 69 National Register of Historic Places sites, 13 State Historic Landmarks, and over 400 sites that are eligible to be included in the National Register.
- manage 21 nationally designated wildernesses, which cover approximately 1.1 million acres of NFS land.
- cooperatively manage a large portion of the Santa Rosa and San Jacinto Mountains as a national monument.

Approximately 3000 species, including many rare species such as the California Condor, are at home in the diverse habitat on the four national forests in southern California.

USDI Fish and Wildlife Service photograph

On a regional scale, the national forests:

- continue to offer a variety of recreation opportunities that meet the changing trends in visitor use. They provide equality in public participation in settings ranging from coastal shoreline to rugged canyon and mountain areas while meeting the needs of diverse populations, many who create new demands for the use of open space.
- play an important role in the education, outreach and development of stewardship within urban communities.
- play an important regional role in maintaining large blocks of wildland habitat. Combined with a mix of local, state, federal, and private lands, they form a regional system of open space and habitat preserves within one of the most highly urbanized landscapes in the United States.
- contain diverse habitats important to maintaining well-distributed populations of native and desired nonnative plant, fish and animal species.
- contain areas that are the only remaining habitat refugia for species imperiled by the loss or degradation of habitat off-forest.
- provide some of the only remaining available spawning habitat for stocks of southern steelhead trout.
- include areas that can be cooperatively managed with communities and other agencies for more effective wildland fire protection to reduce the threat of wildland fire and the floods that often follow wildland fires. The national forests were originally established to protect the health of watersheds from erosion damage and flooding that follow wildland fires.
- serve as quality, low-cost, local source of water consumed by the urban population of southern California. The national forests continue to serve as a recharge area for numerous reservoirs and groundwater basins that provide water for numerous communities, and for agricultural and industrial uses.

- provide opportunities for research and education in Research Natural Areas, Special Interest Areas, and the San Dimas Experimental Forest.
- provide postcard landscapes that serve as scenic backdrops for highly developed urban areas, and some of the last vestiges of vast, natural-appearing landscape panoramas.
- sustain the historic use of the national forest for urban infrastructure, considering technological advances to reduce the impacts on the natural environment in the future.

Management Challenges

Maintaining healthy, sustainable national forests in southern California is affected by a complex set of factors including population growth, rapid urbanization, recreation use, access, drought, disease, tree mortality, fire, exotic pests and invasive non-native species, and protection of natural resources. For the sake of brevity, these factors are addressed in three major categories: urbanization, fire, and natural resources. The health of the southern California national forests depends on our ability to meet these challenges, while at the same time maintaining forest and community sustainability.

Urbanization

The rapidly increasing population of southern California, and the resulting effects on the national forests is one of the main challenges the Forest Service faces. The Angeles and San Bernardino National Forests are virtually surrounded by urban development. The level of development adjacent to the Cleveland and Los Padres National Forests continues to grow at a steady pace. Southern California's population has grown substantially over the last two decades to over 20 million people. The ethnic diversity of the population has increased and is evidenced by the approximately 30 languages used in the area. These challenges will continue to increase as the population grows by another 35 percent over the next two decades (Management Recommendations from Socioeconomic Assessment, 2002, Draft).

Growing recreation demand is a management challenge. Forest visitors are especially drawn to riparian areas (Angeles NF photo)

A highly adaptive approach to recreation management is needed to meet the challenges of new forms of outdoor recreation and the changing demographic profile of visitors. Conservation education programs are needed to teach national forest visitors about their connection and

dependence on the land, what is expected of them when they come to the national forests, and the potential effects their presence can have on the national forests. Forest staff will be challenged to develop partnerships and seek the assistance of volunteers to accommodate higher levels of use and to accomplish recreation objectives. Additional challenges will arise as visitation grows. Urban influences, and trends in lifestyles create the demand for convenient national forest access, improvements to facilities, environmental safeguards, and engaging conservation education programs.

The challenge of urbanization manifests itself in many ways and can be summarized by asking the question: "How will managers sustain the character of the national forests and maintain or improve forest ecosystems, while accommodating the demands of an increasing number of users in a large and growing urban area?"

Management challenges related to urbanization include:

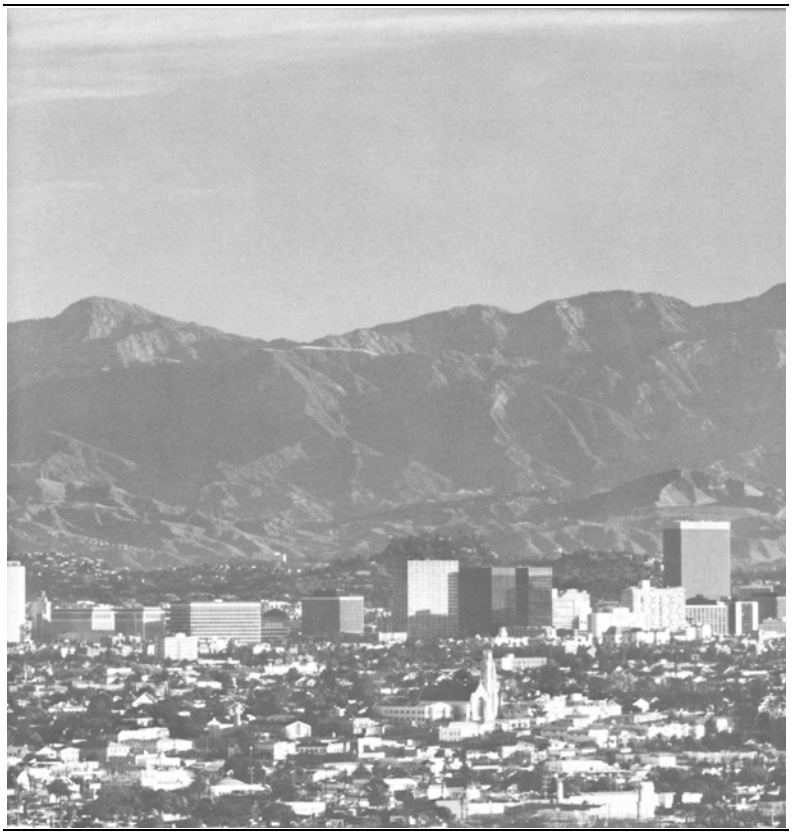
- increasing numbers of people coming to the national forests for a growing number of activities. There are increased demands for a variety of high quality year-round recreation opportunities, especially day-use activities including picnicking, driving and trail use, as well as access to dispersed areas where people recreate.
- accommodating the demand for recreation opportunities that meet the needs of diverse populations that have differing social and activity preferences.
- providing environmental education for an urban population that may be unfamiliar with the national forest environment.
- utilizing underserved community's input in the formulation and execution of project level work.
- retaining the opportunity for solitude in the face of the increasing population. As development of private areas continues, the Forest Service anticipates a greater dependence on the national forests for this type of value. Solitude defines itself and is becoming an increasingly rare opportunity in many areas of the national forests.
- accommodating the demand for an increasing variety of national forest products due to the diversity of the surrounding populations and the demand for products used for weaving, floral displays, medicinal, or other uses such as firewood. Managers are also challenged to effectively communicate with diverse populations of people in order to understand the ways they would like to use the national forests.
- accommodating the demand for energy fuels and industrial minerals for a growing and industrialized economy and population.

- accommodating the increasing demands from private, semi-private and public industry, corporations, organizations, associations and private individuals for requests for various uses on National Forest System lands. Managers are challenged to develop and sustain working relationships with authorized users to protect resources, resolve issues and continue to provide unique recreation opportunities.
- access to national forest land. Access is a complex problem that has many forms. For example, traditional points of access to the national forests are lost as private land is developed. New landowners are often reluctant to accommodate access across their land. At the same time, the people living adjacent to the national forests want convenient access, often resulting in the development of unplanned roads and trails. Balancing the human need for roads with their resource effects is another form of the access challenge. Most of the national forests' road systems were constructed in the 1930s for fire protection and are narrow and steep with few, if any, turnouts or other safety features. Limited budgets, maintenance backlogs, safety improvements, resource mitigation, road reconstruction or relocation, access and the decommissioning of roads are just a few of the challenges addressed in the Roads Analysis that Forest Service transportation planners face.

Accommodating urban infrastructure to support growing populations is a management challenge (Cleveland NF photo).

- infrastructure for community support. There are numerous facilities already located on the national forests including utility corridors, communication sites, dams, diversions, and highways. The role of the national forests and how they are used to safely accommodate additional facilities and to remove abandoned facilities, while retaining the character of the landscapes is a significant challenge.
- accommodating the demand for a wide variety of water uses with a limited supply of water in one of the driest climates in the United States. The demand for water for community, commercial, or private use has resulted in numerous impoundments, diversions and wells. Finding the delicate balance between peoples' need for water and the water necessary to sustain healthy riparian habitat and wetlands in the national forests will continue to be a challenge. Healthy, stable, and resilient watersheds absorb rain, refill aquifers, cool and cleanse water, slow storm runoff, reduce flooding, and provide important habitat for fish and wildlife. Water users include people (who are particularly

attracted to water because of hot temperatures and the arid climate), downstream cities and communities that use the water for municipal water supplies, as well as the numerous plant and animal species that depend on water for their survival. The demand for water can only increase as the population increases. Water is a complex challenge as the existing above-ground sources may be fully used and subsurface (groundwater) supplies are at a minimum heavily tapped for municipal or private water or for commercial uses (water bottling). Maintaining the quality of water is a challenge because of the intense levels of human use, air pollution, or natural events such as landslides, flooding and post-fire erosion. Managers are challenged to improve impaired watersheds.



Urban interface on the Angeles National Forest.

- continuing to provide law enforcement sufficient to protect resources and provide the level of service that is responsive to public need using innovative, non-traditional strategies as levels of use increase over time.
- understanding and protecting the historic and cultural sites that are abundant in the four southern California national forests. Numerous tribes live adjacent to or near the national forests. Managers are challenged to develop government-to-government relationships with the tribes in order to protect resources, to resolve access issues, supply resources and to continue the important traditional or cultural uses of the national forests.

Fire

Wildland fire may be the biggest challenge forest managers and the public face over the next couple of decades. Fire is a fact of life in southern California. Fire is not a question of if, rather,

it is a question of when and how much damage. Fire staff have concluded that under the right conditions, a fire started anywhere on the four southern California national forests may be a threat to adjacent communities. The four southern California national forests include over 3.5 million acres with thousands of structures in or around their borders that are threatened by wildland fire. The national forests are also located in one of the driest, most fire-prone areas in the United States. The situation is compounded by decades of fire suppression practices that have resulted in the development of unnaturally dense stands of trees and the accumulation of brush and other flammable fuels in many areas. Housing and other development adjacent to national forest boundaries is increasing at a rapid rate without adequate provision for the development of a 'defensible' space around them. Further compounding the complexity of the situation is the recent drought and insect infestation that is centered on the San Bernardino National Forest, but may be spreading toward the Angeles and Cleveland National Forests. Dead trees in and around communities and homes are an immediate challenge.

Preparedness is a key challenge in southern California. Photo shows Piru Fire, October 2003, Los Padres NF.

Finally, managers are challenged to offer a safe forest environment in potentially dangerous situations. Human safety is always the first priority of national forest managers. The Forest Service faces a huge challenge in southern California and most of the western United States to emphasize fuel treatments that result in defensible space in Wildland/Urban Interface (WUI) areas.

Management challenges related to fire include:

- working with other agencies, communities, and property owners to develop 'community defense zones' that allow firefighters to stay on-the-ground and defend homes and property more safely. The challenge is a long-term one that requires years of work to complete the vegetative treatments necessary to defend the communities. Another facet of the same challenge is to maintain the defensible conditions over time.
- reconciling the need to manage areas at risk where threatened, endangered, proposed, candidate, sensitive species live.

- reconciling the need to manage areas at risk where significant heritage resources are located, as well as areas of concern for tribes and Native American communities.
- increased fire frequency (most often the result of human causes) that has resulted in the loss of native plant species or conversion to an unnatural mix of vegetation. Management challenges will also include increased erosion potential and downstream flooding from burned areas.
- dead trees within and/or adjacent to communities. Entire communities, with a combined population of over 100,000 people are at risk of loss from fire. Based on the severity of the situation, the United States Congress recently placed the Angeles, Cleveland, and San Bernardino National Forests on the nation's 10 Most Fire-Threatened Forests list (California Fire Alliance).
- allowing fire to play a more natural role in an unnatural environment.

Wildlife and Plants

The four southern California national forests lie within a bioregion considered by Conservation International to be one of the world's 25 biodiversity 'hotspots.' High vegetation diversity, unique ecological communities found nowhere else, and many endemic species characterize this area. The number of species at risk of extinction is increasing at an alarming rate. In 1986, there were 17 listed threatened and endangered (T&E) species on the four national forests; in 2004, the number of T&E actually or potentially found on the four national forests increased to 62.

Management challenges related to wildlife and plants include:

- balancing the demands of people while providing habitat for imperiled species. The primary challenge is long-term conservation and recovery of at-risk and listed species.
- finding solutions to problems in freshwater aquatic habitats and montane meadows, which are relatively uncommon in southern California and have been substantially modified by dams, diversions and erosion. These areas support a large number of species of concern and are also places where people like to recreate because of water, shade, and cooler temperatures.
- developing education programs to help people learn that the simplest of activities, such as walking up a creek could harm an extremely rare or vulnerable species that lives there.
- sustaining water resources for riparian areas and wetlands where the streams are impounded or diverted for human use.
- collaborating in nontraditional formats with local communities and governments to maintain and restore habitat linkages between the national forests and other open space reserves. Similarly, many people recognize that communities and government organizations need to work together to restore connectivity of riparian habitat along streams that run from the national forests through communities and eventually out to the sea.

- arresting the spread or eradicating invasive nonnative plant and animal species that displace, prey upon, or otherwise harm native species and their habitats.
- managing forest pests under conditions of changing climate and altered natural fire regimes.

Providing habitat such as riparian areas and wetlands for imperiled species while balancing the demands of people is a challenge.

In the end, the fundamental challenge is for the people of southern California to collaborate in order to find solutions. This means working together in a nontraditional, coordinated, collaborative network of tribes, communities, government agencies, groups, organizations, and individuals to sustain the southern California national forests for the future, for our children, and for their children. The challenge includes defining the role of the national forests as the backdrop to, and respite from, the urbanized web of communities that surround them.

Through adaptive management over the course of the planning period, the Forest Service and communities of southern California will continuously seek a balanced and sustainable flow of goods and services for a growing diverse population while ensuring long-term ecosystem health, biological diversity, and species recovery.

Strategic Goals

Government Performance and Results Act Priority National Goals

The priority goals for the Forest Service are provided in the Forest Service National Strategic Plan (2003 Revision). The priority goals embody the Forest Service's many areas of responsibility, as captured in the agency's mission statement: "The mission of the USDA Forest Service is to sustain the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations."

National Strategic Plan, Goal 1- Reduce the risk from catastrophic wildland fire

National Strategic Plan, Goal 2 - Reduce the impacts from invasive species

National Strategic Plan, Goal 3 - Provide outdoor recreation opportunities

National Strategic Plan, Goal 4 - Help meet energy resource needs

National Strategic Plan, Goal 5 - Improve watershed conditions

National Strategic Plan, Goal 6 - Mission related work in addition to that which supports the agency's goals

Keeping America’s forests and grasslands healthy requires restoring and rehabilitating damaged areas to: (1) prevent severe wildland fires, (2) stop the introduction, establishment, and spread of invasive species, (3) reduce the conversion of forests and grasslands that lead to fragmentation of rural landscapes through subdivision, and (4) manage impacts of motorized recreation vehicles by restricting use to designated roads and trails.

The Forest Service Strategic Plan (2003 Revision) provides a new framework for accomplishing the agency’s mission and incorporates actions to resolve four major threats to America’s forests and grasslands. Forest Service leadership is committed to removing the 'Four Threats' from the national landscape. This is a necessary action in order to achieve long-term outcomes: clean air, clean water, conserving wildlife, and protecting communities from wildland fire.

Forest Service actions to achieve these outcomes are important contributions to enhancing the quality of life for Americans.

Invasive species such as cheatgrass pose a threat to the ecosystem.

Actions needed to address the Four Threats include:

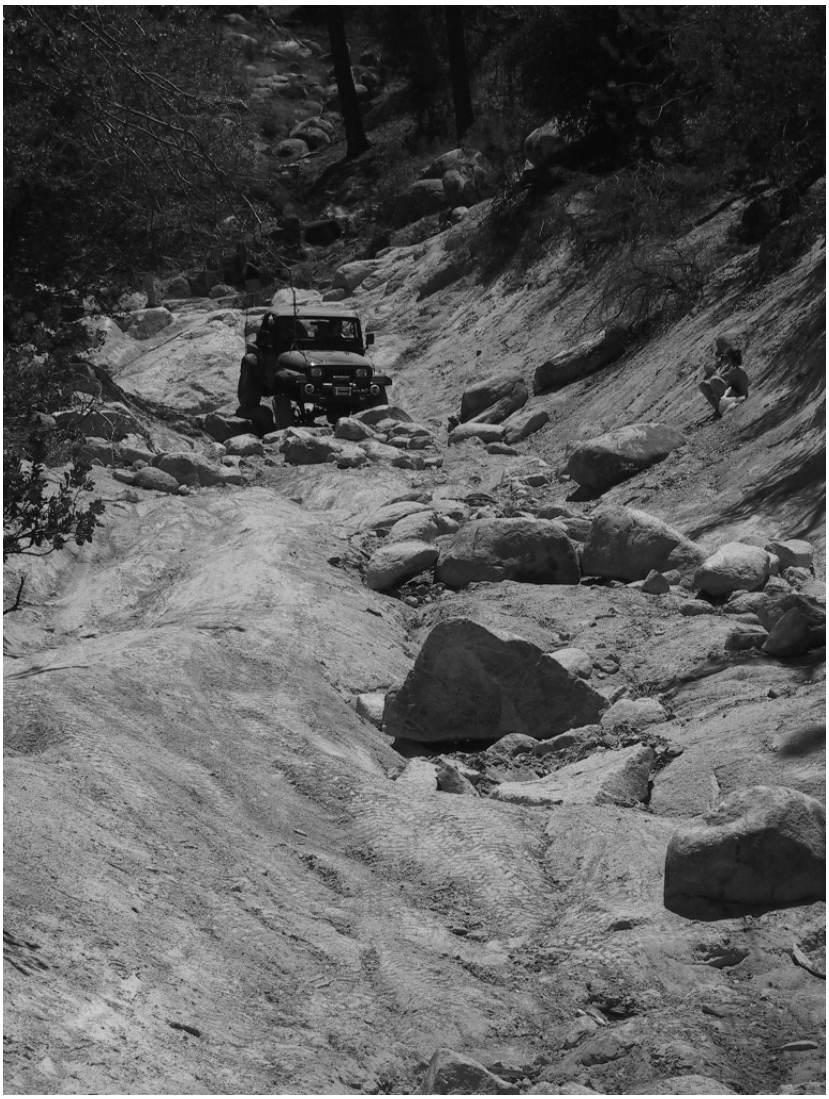
Fire and fuels—Restore healthy, disturbance-resilient ecosystems on lands that are at risk of catastrophic fire, improving the condition and function of critically important watersheds, and sustaining critical wildlife habitats nationwide.

Invasive species—Protect forest and rangeland ecosystems by preventing the release of non-native species and by controlling the spread of, or eradicating, invasive species.

Loss of open space—Conserve the nation's forests and rangelands most at risk (due to subdivision and land conversion) by working with partners, communities and landowners to balance development with sustaining ecosystem services and viable working landscapes.

Unmanaged recreation—Work with partners to develop travel management plans that regulate the use of off-highway vehicles (OHVs) on designated roads, trails, and parks in an appropriate manner.

Forest plans further refine these goals by developing desired condition statements and forest-specific objectives. The forest plans identify the role each national forest plays in working toward these national goals.



The Forests need to address unmanaged recreation including work with partners to develop travel management plans. OHV enthusiasts may use designated routes, as shown here on the San Bernardino NF.

Forest Goals and Desired Conditions

This section includes a discussion of forest goals and desired conditions for resources. The goals are responsive to both national priorities and the management challenges identified for the four southern California national forests (Angeles, Cleveland, Los Padres and San Bernardino National Forests). Goal numbering is linked to the National Strategic Plan. Goals 1-6 and Goal 7 are linked to the national concern over loss of natural areas. For each goal, a brief background statement is given followed by a series of desired condition statements. Specific indicators and outcome evaluation questions are displayed for each major forest goal. Baseline conditions and projected trends in these indicators are found in the environmental impact statement (EIS). Monitoring of actual trends in these indicators will allow managers to determine if there is a need to change the forest plan through amendment or revision. This determination is reported in the Comprehensive Monitoring and Evaluation Report approximately every five years.

Community Protection

Goal 1.1: Improve the ability of southern California communities to limit loss of life and property and recover from the high intensity wildland fires that are a natural part of this state's ecosystem.

Large fires are an inevitable and increasingly common part of southern California ecosystems (see vegetation condition). Suburban communities have been developed in more remote areas and urban areas have pushed up into the foothills in many places. This has led to an explosion in the amount of Wildland/Urban Interface (WUI) areas that are at risk and in need of protection from wildland fire. A large portion of these interface areas are covered in chaparral or coastal sage scrub vegetation. High intensity stand-replacing fires are a natural part of the fire regime within these vegetation types putting homes built here at risk even from the natural fire regime. Fire history studies are showing an increasing trend in fire occurrence.

Pile burning near mountain community, San Bernardino NF.

The desired condition is to have vegetation treated to enhance community protection and reduce the risk of loss of human life, structures, improvements, and natural resources from wildland fire and subsequent floods. Firefighters have improved opportunities for tactical operations and safety near structures, improvements, and high resource values. By providing for defensible space, public and firefighter safety is enhanced. Local jurisdictional authorities, citizen groups and the Forest Service act together to mitigate hazardous fuel conditions in areas surrounding urban interface, urban intermix, and/or outlying improvements.

Outcome Evaluation Question: Has the national forest made progress in reducing the number of acres that are adjacent to development within WUI defense zones that are classified as high risk? (See implementation and effectiveness monitoring in Appendix C of Part 3.)

Restoration of Forest Health

Goal: 1.2 - Restore forest health where alteration of natural fire regimes have put human and natural resource values at risk.

The present condition of the vegetation on the four southern California national forests has been influenced by a century of fire management (mostly fire suppression), as well as by other land-use practices such as logging, grazing and mining. The complex interaction of climate, geology and topography has created an unusually rich array of vegetation types on the four southern California national forests that range from dry desert scrub to humid coastal redwood forests.

The structure, function and species composition of nearly all southern California plant communities is under the direct control of recurrent fire. In this section, the Forest Service addresses how the major vegetation types, and the wildlife habitats they provide, have been affected by changes in fire regimes. The long-term goal of vegetation management is to perpetuate plant communities by maintaining or re-introducing fire regimes appropriate to each type while at the same time protecting human communities from destructive wildland fires. To accomplish this goal, the Forest Service has developed desired conditions within the framework of five major fire regimes that have been described for the United States (Schmidt et.al. 2002). In this classification, fire regimes are defined primarily by the frequency (average interval between fires) and fire severity (related to intensity). Generally, other elements of fire regimes such as season of burning, landscape pattern and size are not so heavily weighted in this classification. The regimes are as follows:

- Fire Regime I (0-35 years - low severity)
- Fire Regime II (0-35 years - stand replacement)
- Fire Regime III (35-100+ years - mixed severity fires)
- Fire Regime IV (35-100+ years - stand replacement)
- Fire Regime V (200+ years - stand replacement)

An example of the discrepancy between a current fire regime and the desired regime is provided by montane conifer forests. Before suppression, Fire Regime I (frequent, low severity fires) was prevalent in this type. Forests burned often because of seasonal, high-elevation lightning storms. Frequent fires produced a patchwork of small burns that constantly thinned stands, kept fuel loading low and encouraged the regeneration of shade-intolerant plant species; however, with the success of fire suppression, these forests now rarely burn, and when they do, they are more likely to burn as stand replacing crown fires that cover a much larger area. They have moved from the historic Fire Regime I into Fire Regime V. The management goal is to return these forests to the historic Fire Regime I. One way to return these forests to a less flammable condition with tree densities and species composition more like presuppression forests is to use mechanical treatments in combination with prescribed burning at shorter intervals.

In sharp contrast to the above example, fire regimes of small areas of vegetation that are growing near the urban interface need to be managed with community protection as the primary objective. In these locations, portions of chaparral and coastal sage scrub that historically burned in Fire Regime IV would be moved into Fire Regime I. To protect life and property, these types would

be managed (*e.g.*, cleared, prescribe burning etc.) away from the historic regime to make them less flammable.

A national Condition Rating System has been developed that links fire regime to existing vegetation by evaluating the degree to which a vegetation type has departed from its ideal regime. The greater the departure, the greater the risk fire poses to the functioning of the ecosystem. For example, in the past, montane conifer forests in Condition Class 1 burned frequently and at lower intensities. However, when forests burn at increasingly longer intervals relative to the historic range, then the risk of high-intensity, stand replacing fires also increases. These fires then threaten to radically change or significantly alter ecosystem structure and functioning. In contrast to the montane conifer forest example, other vegetation types like coastal sage scrub (especially at the urban interface) are threatened by fires that burn at shorter intervals (higher frequency) than they did historically. Areas that repeatedly burn within a relatively short time can convert to vegetation types like annual grasslands that are resilient to frequent fires.

The three Condition Classes are as follows:

- Condition Class 1 - Fire regimes are within a historical range (1910 to present), and the risk of losing key ecosystem structure and function is low. Vegetation attributes (*e.g.*, species composition and structure) remain intact and operate within the historic range.
- Condition Class 2 - Fire regimes have been moderately altered from their historic range. Fire frequencies have departed from historical frequencies by one or more return intervals (either increased or decreased) and the risk of losing key ecosystem components is moderate. Vegetation attributes have been moderately altered from their historic averages resulting in moderate changes to one or more of the following attributes: fire size, intensity and severity, and landscape pattern.
- Condition Class 3 - Fire regimes have been significantly altered from their historical range. Fires have departed from historic frequencies by multiple return intervals. Vegetation attributes have been significantly altered from their historic range. The risk of losing key ecosystem components is high resulting in significant changes to one or more of the following fire regime attributes: fire size, intensity, severity, and landscape pattern.

In the following sections, major vegetation types on the national forests have been aggregated into groups (see the EIS for a detailed discussion) with the same fire regime and are discussed in terms of their current Condition Class relative to the desired class. Although habitat discussions are organized by fire regime, Condition Classes are used as indicators to monitor changes from the current to the desired fire regime.

It is important to note that because fire regimes were mapped on a landscape scale, there is not necessarily a one-to-one relationship between vegetation type, its habitat grouping and fire regime. The biophysical setting is an important consideration in designating a fire regime for a landscape. For example, Coulter pines growing in a matrix of chaparral are classified as Fire Regime IV (infrequent, stand replacing fires) because they burn with the same frequency and intensity as the chaparral in which they are imbedded. On the other hand, Coulter pine growing in a matrix of Jeffery pine forests (montane conifer forest) would be classified as Fire Regime I. For this reason, there is not always a direct relationship between the area of each vegetation type and the area in the fire regimes and Condition Classes. A detailed discussion of the analysis process for development of fire regimes is provided in the EIS.

Fire Regime I (0-35 years - low severity)

Goal 1.2.1 - Reduce the potential for widespread losses of montane conifer forests caused by severe, extensive, stand replacing fires.

Montane Conifer Forests. This is the primary vegetation type in Fire Regime I and is the principle habitat for 30 animal and 38 plant species of concern.

Over the last century, fire suppression has dramatically altered fire regimes of montane mixed-conifer, Jeffrey pine and ponderosa pine forests (collectively called montane conifer forests in this discussion) in southern California. Because fire suppression has been highly successful stopping fires when they are small in these forests, the majority have missed two or more cycles of low-to-moderate intensity fires that, in the past, would have regularly thinned them and reduced the accumulation of understory fuels that naturally develop between fires. As a result, many montane conifer forests now have tree densities that are much higher than they ever were historically. Stand overcrowding both has accelerated and aggravated drought-caused mortality, making montane conifer forests susceptible to widespread insect and disease outbreaks that, in combination with excessive fuel loading, has set the stage for more large-scale, stand replacing wildland fires. A prime example is the recent multi-year drought that triggered widespread bark beetle infestations, which have killed drought-weakened trees over thousands of acres of montane conifer forests, especially in the Palomar, San Bernardino, and San Jacinto Mountains.

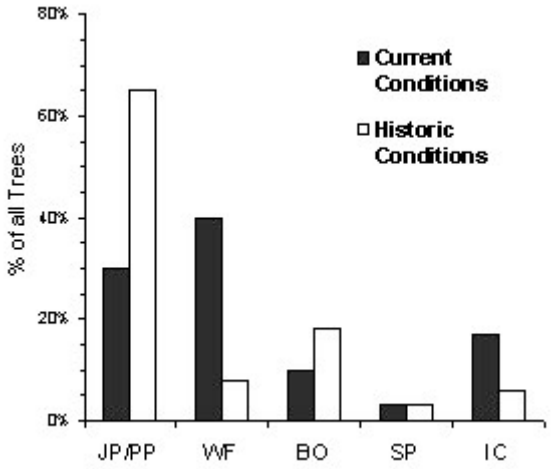
Example of a healthy forest, Fire Regime I, montane conifer forest. This Frazier Mountain forest stand (Los Padres NF) was thinned as a firewood sale. Slash was piled and broadcast burned. The oldest trees are 400 years old.

In October 2003, strong, dry Santa Ana winds pushed several wildland fires across southern California, consuming over 700,000 acres in a one-week period; 21,500 acres of which burned through montane conifer forests. Montane conifer forests were severely impacted by these fires. The combination of dead trees, accumulated understory fuels, and overly dense stands resulted in crown fires that cut wide swaths through both public and private lands. As a result, many southern California rural and suburban communities were devastated by the loss of life and property. In terms of size and severity, these fires were well outside the pre-suppression range of variability.

Since more than 90 percent of the forests with significant insect-caused mortality and other hazardous fuel conditions have yet to burn, much of the remaining forests are still at risk from fires like those of 2003. Thus, a major focus of national forest management will be to mitigate these risks through an active vegetation management program and, where possible, to restore severely burned forest ecosystems.

In the long-term, the desired condition for the remaining unburned national forest land will be to: (1) create forests more resistant to the effects of drought, insect and disease outbreaks and stand-killing crown fires; (2) encourage tree recruitment that contain a species mix more like pre-settlement composition, (*i.e.*, with a higher representation of shade-intolerant species like ponderosa pine that have declined during the period of fire suppression) - Figure 2; (3) recreate stand densities more like those of the presuppression era; and (4) encourage a stand structure that emphasizes large-diameter trees.

Figure 2. Historic and current percentages of tree species in mixed-conifer forests.



Note the high representation of shade-intolerant Jeffrey and ponderosa pines in the past vs. the present, and the high percentage of the shade-tolerant white fir in present-day forests compared to historic abundances. Species are: JP, Jeffrey pine; PP, ponderosa pine; WF, white fir; BO, black oak; SP, sugar pine; and IC, incense cedar.

A somewhat different management emphasis will be applied to forests with more productive growing sites. In these settings, forests have high canopy cover with densely-shaded understories. Many wildlife species, including the California spotted owl, specifically require such high-cover conditions. Although the overall goal of fuels reduction also applies to these forests, they will be managed to maintain high canopy cover, as well as greater within-stand vertical (*e.g.*, tree regeneration layers, snags) and horizontal (e.g., downed woody material) heterogeneity than in other montane conifer forests.

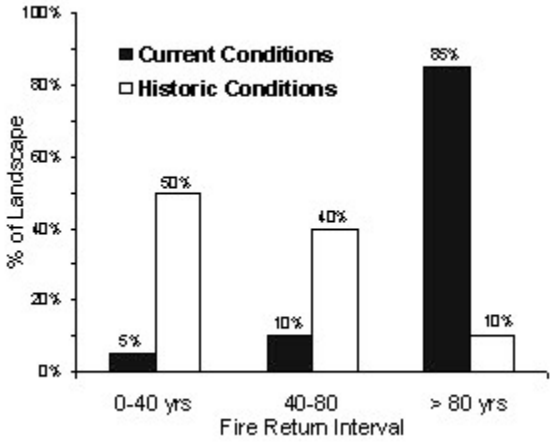


Figure 3. Current and historic distributions of fire-return intervals for montane mixed-conifer forests.

The interval between fires will be shortened (Figure 3) in montane conifer forests to emulate historic intervals so that excessive accumulations of stand-threatening ladder and ground fuels do not develop. However, complete elimination of stand replacing fires is not possible since during wildland fires weather, topography and fuels create localized patches of high intensity, passive crown fires. Moreover, small areas of crown fires are desirable because they provide openings for the regeneration of shade-intolerant species. Rather, the goal will be to reduce the occurrence of extensive crown fires like those that burned in 2003. With this management emphasis, the majority of forest stands would eventually be returned from Condition Class 3 to Condition Class 1.

Outcome Evaluation Question: Is the national forest making progress toward increasing the percentage of montane conifer forests in Condition Class 1? (See implementation and effectiveness monitoring in Appendix C of Part 3.)

Fire Regime II (0-35 years - stand-replacement)

Although Fire Regime II (0-35 years - stand replacement) is a concern of the Forest Service at the National level, this regime occurs only on small areas and has been mapped with the other fire regimes for the four southern California national forests.

Fire Regime III (35-100+ years - mixed severity fires)

Oak woodlands and savannas. These are characteristically two-layered plant communities consisting of a tree overstory that ranges from 10 to 60 percent, and a continuous understory herbaceous layer made up of a species-rich mixture of forbs and grasses. The most common oaks in

Example of fire regime III, oak woodlands, Cleveland NF.

these woodlands and savannas are coast live oak and blue oak. Engelmann oak and valley oak are much less common and more restricted in their distributions.

Habitat loss (due to urban expansion) has been the major threat to Engelmann oak woodlands and forests on private lands, making populations on the Cleveland National Forest vital to the conservation of this species.

In the case of valley oak woodlands, a combination of urbanization, agricultural conversion and poor-to-non-existent natural regeneration has imperiled this habitat throughout the State of California. Natural recruitment of valley oak appears to be inadequate to maintain its populations over time, and without management intervention some areas now covered by these oaks may eventually convert to annual grasslands.

Research expects that some areas of oak woodland and savannas (especially in Engelmann oak, valley oak and blue oak) that are dominated by large, old trees with little or no natural regeneration will begin to convert to annual grasslands as old oaks die without replacement. Losses of coast live oak woodlands could be accelerated by sudden oak death to which this species is particularly susceptible.

The desired condition is to retain existing oak woodlands and savannas. National Forest managers would prevent the conversion of savannas and oak woodlands to annual grasslands or other non-oak vegetation.

Fire Regime IV (35-100+ years - stand-replacement)

Goal 1.2.2 - Reduce the number of acres at risk from excessively frequent fires while improving defensible space around communities.

A variety of vegetation types and habitats are identified as being under the influence of Fire Regime IV.

Chaparral. These shrublands cover almost two million acres of National Forest System (NFS) land in southern California. The combination of California's Mediterranean climate, steep topography and a continuous fuelbed of shrubs covering thousands of acres guarantees that unsuppressed wildland fires will burn large tracts of land. However, it is important to note that high-intensity, stand replacing fires have burned chaparral for millennia, and except for areas of unusually high ignition rates at the urban interface or next to major transportation routes the interval between fires probably has changed little from prehistoric times. Thus, unlike montane conifer forests in Fire Regime I, fire sizes and intensities in chaparral generally remain within the natural range of variability.

Largely because human populations in southern California have increased exponentially in the last fifty years, urban development has expanded unchecked into fire-prone wildlands. An unwanted outcome of this growth is that chaparral fires increasingly pose a major threat to life and property, as was made abundantly clear by the fires of October 2003, and other fires in recent years. Indeed, most homes lost in the recent fires resulted from high-intensity fires spreading into urban areas from surrounding chaparral.

The desired condition for chaparral is to establish a diversity of shrub age classes in key areas near communities to improve the effectiveness of fire suppression operations. Adequate defensible space around communities could greatly reduce the risk of structure loss, as well as

improve safety for residents. Thus, at the urban interface there will be a management emphasis on direct community protection. This could be accomplished in at least two ways: (1) by removing or heavily modifying shrublands immediately adjacent to populated areas (Wildland/Urban Interface Defense Zones); and (2) by strategically creating blocks of young, less flammable vegetation near the interface areas. Both types of fuels' modification could significantly slow or even halt the rate of fire spread into urban areas. To complement these management activities, local building codes and land use zoning need to ensure that homes at the urban interface are constructed of non-flammable exteriors and that communities are designed in ways that minimize their exposure to shrubland fires. The primary role of the Forest Service is to address the vegetation management side of the equation on public lands and to work closely with local and state agencies to reduce losses.

In addition to protecting urban areas, strategically placed blocks of young chaparral around certain forest types (*e.g.*, montane conifer and bigcone Douglas-fir forests) could be used to reduce the risk of crown fires. For example, burning chaparral around bigcone Douglas-fir forests (a key habitat of California spotted owl) could reduce tree mortality in wildland fires. Likewise, burning at the interface of chaparral and these forests could reduce the spread of crown fires.

Coastal Sage Scrub. Fires in coastal sage scrub can occur at shorter intervals than those in chaparral because this type of vegetation forms a more flammable fuelbed within five to ten years of the last burn. Many shrub and subshrub species in coastal sage scrub possess a high percentage of volatile oils that make them particularly flammable. Furthermore, many die in response to summer drought (drought-deciduous leaf shedding). As a result, coastal sage scrub is capable of burning under a wider range of conditions and at a younger age than chaparral. This susceptibility to frequent burning is particularly important because mature, late-seral scrub provides habitat for a suite of threatened and endangered species, of which the best known is the California gnatcatcher.

Due to necessity, there will be a heavy emphasis on direct community protection by reducing hazardous fuels in coastal sage scrub immediately adjacent to at-risk communities, as well as creating areas of young, less flammable vegetation that slow the rate of fire spread and provide better opportunities for suppression. To complement these activities, the national forests will work with local and state agencies to reduce losses of homes by promoting local building codes and land use zones, which ensure that homes built at the urban interface are constructed of non-flammable exteriors, and that communities are designed in ways that minimize their exposure to shrubland fires.

In areas with high ignition rates, coastal sage scrub is at high risk of conversion to grasslands because of excessively short fire-return intervals. In other words, it is in danger of moving from Fire Regime IV to Fire Regime II, especially on the Cleveland National Forest. For example, coastal sage scrub in portions of the Upper San Diego River of the Cleveland National Forest has burned three times since 1995. For this reason, management will emphasize prevention to reduce the number of ignitions, especially near populated areas.

The desired condition for coastal sage scrub is to increase the average interval between fires thereby reducing the area at risk of type conversion. Establishment of community defense zones immediately adjacent to structures in the WUI zones will reduce the threat of frequent fires and fires burning into residential areas.

Gabbro habitats. These are small, disjunct areas that are dominated by a type of igneous mafic rock called gabbro. In addition to periodic fire, past disturbances in gabbro habitat have been mostly related to disturbance to infrastructure development, cattle grazing, and off-highway vehicle use. These gabbro habitats have been adversely affected by the spread of non-native invasive plant species. Several are rare closed-cone conifer species (*e.g.*, Cuyamaca and Tecate cypress) that grow on gabbro, which maintain aerial seed banks in the form of closed cones. Seeds from these cones are released following natural tree death, drought, or more likely, crown fires. Trees usually grow intermixed with the chaparral and typically burn in stand-replacing events. As a result, they are most threatened by excessively frequent fires. For example, Cuyamaca cypress is found only on 293 acres of the west slope of Cuyamaca Mountain. These stands all burned in the October 2003 fires. They previously burned in the 1950 Canejos Fire and a small portion burned again in the 1970 Boulder Fire. Presumably, these trees had a sufficient aerial seed (cone) bank to re-establish after the 2003 fires. Nevertheless, if fire occurs before the seed (cone) bank develops, individual trees or even entire stands could be lost.

Serpentine habitats. Like gabbro habitats, areas dominated by serpentine soils are typically small and widely scattered about the northern and southern Santa Lucia ranges of the Los Padres National Forest, as well as in several localized areas of the Cleveland National Forest (*e.g.*, Pleasants Peak- Research Natural Area candidate). Serpentine soils develop from ultramafic rocks and have a highly imbalanced calcium:magnesium (Ca:Mg) ratio, making them inhospitable to most plant species. As a result, many endemic plant species are confined to serpentine soils. In fact, on the Los Padres National Forest the Alder Creek, Lion's Den and Cuesta Ridge Botanical Areas have been set aside to protect Sargent cypress and rare taxa that grow exclusively on this soil type. Among the four southern California national forests, nine at-risk plant species are endemic to serpentine areas. In the past, disturbance of serpentine areas was mostly by mining. Fire is now the dominant source of disturbance.

The desired condition for both gabbro and serpentine habitats is to keep disturbance levels low. For closed-cone conifers residing in these habitats, the desired condition is to maintain 35 to 100 year intervals between stand replacing fires depending on the life history characteristics of each species.

Closed-cone conifer forests. Sargent cypress, Tecate cypress, knobcone pine and Coulter pine are all fire-dependent tree species. Typically, these forests burn in stand replacing crown fires. Heat from a fire opens closed-cones triggering massive seed release, which is followed by seedling establishment the next spring season. All of these species depend on a well-developed aerial seed bank of closed-cones to perpetuate the stand after fire. Nevertheless, the rate at which this seed (cone) bank accumulates varies from species to species. If stands burn before they have a sufficient seed (cone) bank, they will not regenerate and will disappear from the landscape.

The danger posed to the closed-cone conifers is that fires will occur too frequently, that is, before seed (cone) banks reach a sufficient size. For example, Tecate cypress is endangered because the interval between fires has shortened compared to the historic interval. However, the other species are still generally within the natural range of variability. The desired condition is to maintain these species on the landscape by assuring that fire frequency is aligned with accumulation of the seed (cone) bank.

Lower montane forests. Generally, these forests are patchily distributed across the four national forests between elevations of 3,000 and 5,500 feet and include: bigcone Douglas-fir forests,

canyon live oak forests, and black oak and coastal live oak forests. Mixed evergreen forests occur in the northern, and parts of the southern, Santa Lucia Mountains and are composed of mixtures of tanoak, madrone, bigleaf maple and oak species. Except for bigcone Douglas-fir forests (discussed in Fire Regime V), these vegetation types tend to burn at the same frequency as surrounding chaparral and usually in stand replacing fires.

Outcome Evaluation Question: Is the national forest making progress toward maintaining or increasing the percentage of chaparral and coastal sage scrub in Condition Class 1? (See implementation and effectiveness monitoring in Appendix C of Part 3.)

Fire Regime V (200+ years - stand-replacement)

Goal 1.2.3 - Maintain long fire-free intervals in habitats which are slow to recover.

A variety of vegetation types fall into Fire Regime V.

Alpine and subalpine forests. These habitats cover small portions of the Angeles, Los Padres, and San Bernardino National Forests generally above 8,000 feet in elevation. Subalpine conifer forests are more extensive than alpine forests and are composed of lodgepole pine, limber pine, white fir, and western juniper. Canopy cover in both vegetation types is generally sparse except where there are dense lodgepole stands in and around meadows and basins. Currently, fire regimes in these habitats are within the range of natural variability.

The desired conditions for alpine and subalpine habitats are (1) to maintain long fire-free intervals to encourage natural, sporadic tree recruitment and (2) to limit the effects of human use, especially trampling of fragile alpine plant communities.

Desert woodlands, forests and scrub. Vegetation types in this category are: singleleaf pinyon California juniper woodlands and forests, juniper woodlands, semi-desert chaparral, sagebrush scrub, Joshua tree woodlands, Parry pinyon and California pinyon woodlands and other desert scrub types. In the past, pinyon woodlands on the San Bernardino and Los Padres National Forests have burned in stand replacing fires that typically have occurred at long intervals (greater than 100 years).

Example of fire regime V, alpine and Subalpine forests. Vista from San Gorgonio, San Bernardino NF.

In much of the Mojave, Great Basin and Sonoran Deserts, high-intensity fires have been followed by the invasion of exotic grasses, such as the ubiquitous cheatgrass. Over large areas of these deserts, the interval between fires has been greatly reduced due to a more continuous and flammable grass understory. Invasion of non-native grasses could increase the likelihood of excessively frequent fire in these vegetation types on the national forests. For instance, the open nature of vegetation allows for illegal off-road

vehicle travel, which could cause an increase in ignitions of fire in these types of vegetation. There are concerns that more frequent fires, to which singleleaf pinyon and other desert species lack resilience, may convert extensive areas of desert vegetation to grasslands. Currently, there are local areas of conversion on the San Bernardino National Forest, but the potential for more widespread conversion on National Forest System lands is a definite possibility.

The overall desired condition is to maintain long fire-free intervals in these desert types and to prevent frequent fires from eliminating them or significantly reducing their distributions. This will be accomplished by an emphasis on fire prevention. The desired condition and management of these woodlands varies somewhat on the Los Padres National Forest from that of the Angeles and San Bernardino National Forests. Small-scale (less than 1 acre) disturbances (*e.g.*, insect outbreaks, small lightning-caused fires, landslides) have been a regular occurrence in singleleaf pinyon woodlands on the Los Padres National Forest. As a result, prescribed burning has been used, and will continue to be used, to thin forests and create openings, although for most of this type, fire suppression will be the dominant management strategy.

Example of fire regime V, bigcone Douglas-fir stand, San Bernardino NF.

Bigcone Douglas-fir forests. These forests are patchily distributed across the four southern California national forests typically occurring as an archipelago of small stands (less than 50 acres) interspersed within large, continuous areas of chaparral. They occupy relatively fire-proof topographic sites, such as cliffs, steep slopes and landslides. Bigcone Douglas-fir forests are of special conservation concern because they are the preferred habitat for the California spotted owl. Although they generally burn at the same frequency as the surrounding chaparral, severity is highly variable (mixed) from stand to stand, ranging from low-intensity surface fires to high-intensity crown fires that kill parts of or occasionally all of the stand.

Aerial photographic evidence from the San Bernardino Mountains along with written historical evidence indicates that the extent of bigcone Douglas-fir on the Angeles and San Bernardino National Forests has declined in the last century. Reasons for these losses are not entirely clear. Experts suggest that as a result of fire suppression, fires in chaparral have become more intense, causing higher mortality in bigcone Douglas-fir forests than in the past. However, fires are not the only cause of bigcone Douglas-fir mortality. As a result of the recent multi-year drought, extensive losses of bigcone Douglas-fir forests have occurred on the San Bernardino National Forest, especially in the low-elevation areas of the national forest.

Outcome Evaluation Question: Has the national forest been successful at maintaining long fire-free intervals in habitats where fire is naturally uncommon? (See implementation and effectiveness monitoring in Appendix C of Part 3.)

Invasive Species

Goal 2.1 - Reverse the trend of increasing loss of natural resource values due to invasive species.

Invasive nonnative species are animal and plant species with an extraordinary capacity for multiplication and spread at the expense of native species. They are introduced into an area in which they did not evolve and in which they have few or no natural enemies to limit their reproduction and spread. These species can cause environmental harm by significantly changing ecosystem composition, structure, and function. They are known to prey upon, consume, harm or displace native species.

Many invasive nonnative species are well established on the national forests and are difficult to control or eradicate. Some species, such as bullfrogs, starlings, arundo, cheatgrass and black mustard are so prevalent they may always persist. A continuing threat is the potential for introduction of new invasive species and the spread of those that are currently present. Mosquito fish (*Gambusia afinis*) and sport fishing species continue to be introduced into aquatic habitats in many parts of the four southern California national forests. Products used on the national forests can also provide sources of infestation. The movement of humans, vehicles, equipment, boats, livestock, wildlife, wind and water can spread seed and reproductive plant parts. Aquatic species in southern California continue to be spread by the flooding of irrigation canals and ditches.

Forest workers removing Spanish broom, San Bernardino NF.

The presence of urban communities within and adjacent to the national forests and lands under special-use permit also contribute to the introduction and spread of invasive nonnative species. Invasive nonnative plants occur in higher densities along roadways; in areas disturbed by off-road vehicle use; livestock and fuel treatments; in campgrounds; along recreation trails and at trailheads; in utility corridors; and in aquatic habitats modified by dams and diversions.

Based on the Weed Risk Assessment for the Forest Plan Revision found in Appendix C of the final environmental impact statement (FEIS), riparian and aquatic communities, coastal sage

scrub, desert woodland and scrub, Monterey coastal communities and montane conifer forests are ecosystems in decline as a result of previous human disturbances and natural processes or lack of processes. These communities are also currently affected by invasive species or have a high probability of being affected by future actions.

Desired Condition: The structure, function, and composition of plant communities and wildlife habitats are not impaired by the presence of invasive nonnative plants and animals.

Outcome Evaluation Question: Are the national forests' inventory of invasive plants and animals showing a stable or decreasing trend in acres of invasives? (See implementation and effectiveness monitoring in Appendix C of Part 3.)

Managed Recreation in a Natural Setting

Goal 3.1 - Provide for Public Use and Natural Resource Protection.

Management of recreation uses on the national forests of southern California has traditionally been low-key with minimal regulation of use patterns. As surrounding populations have soared, national forests have become a primary source of natural open-space based recreation activities. Limited access (due to steep topography and dense chaparral) has led to a pattern of generally low levels of use across most of the landscape. Recreation is highly concentrated in areas that are relatively flat with roaded access (e.g., valley bottoms and forested mountain valleys and plateaus). In addition, water is an attraction that draws large crowds in many areas. This concentrated and unregulated use has become a concern, especially where sensitive natural resources may be disturbed.

Developed Recreation. A camper relaxes at Laguna campground on the Cleveland NF.

Increasing demand for recreation use is accommodated within the capacity of the land to support it. An emphasis on natural resource protection improves resource conditions through increased regulation of recreation use. Improved recreation infrastructure is designed to direct use away from sensitive areas or, where this is not possible, minimize adverse effects. Expansions in recreation infrastructure are balanced by restoration and removal of unneeded facilities that do not meet user needs or are in conflict with resource protection needs. ~~There is a low level of increase in roaded acres over time, as defined by road density analysis~~.

Recreation - Recreation opportunities, outreach, activities and services contribute to urban community well-being and visitors' physical and mental well-being. Recreation opportunities are provided that represent a variety of skill levels, needs and desires in partnership with permit holders, private entities, nonprofit/volunteer groups, diverse community groups, state, federal and tribal partners. Scenic routes are a prominent feature that link the key places within the national forests and offer ecosystem-based excursion opportunities through the national forests' varied landscapes. Quality hunting and fishing habitat and access opportunities are available to the public. Facilities and infrastructure are high quality, well-maintained, safe, accessible, and consistent with visitors' expectations. Abandoned facilities and facilities no longer needed are removed and sites are restored to natural conditions.

Conservation Education - Conservation education is broad and includes interpretation, environmental education, and visitor information. People connect to the land and to each other through expanded public information, interpretive services, and environmental education programs/activities, with well-supported nonprofit partners and local community groups in a lead role and the Forest Service providing guidance and leadership. Proactive efforts reach both traditional and nontraditional users and lead to a greater citizen understanding, appreciation, advocacy, and participation in forest stewardship and ecosystem conservation. Recreation and natural resource management, as well as conservation education is improved through increased knowledge of social science and heritage resources. As the Forest Service learns more about the diverse communities and stakeholders it serves, better services are supplied to national forest visitors through the use of current knowledge of who is using the national forests and how.

Conservation education. A Los Padres NF employee shares about heritage resources with a group of youths.

Heritage Site Protection - Significant heritage resource sites are preserved or enhanced. Connections are made with the American people on the importance of public land heritage stewardship through public involvement programs. The important role heritage resources plays in ecosystem management including the importance of socio-cultural values within an environmental context, both past, present, and future is recognized.

Tribal and Native American Use - The national forests are maintained in a condition so that tribes and other Native American groups and individuals can exercise and retain traditional connections to the land and to foster both traditional and contemporary cultural uses of the national forests. The national forests have active agreements and protocols to facilitate consultation, and government-to-government relationships.

Road and Trail System - The transportation system of roads and trails is safe, affordable, and environmentally sound; responds to public needs; and is efficient to manage. The system provides public access for recreation, special uses and fire protection activities, and supports forest-management objectives. The system is well maintained commensurate with levels of use and available funding. The system is connected to state, county or local public roads and trails. Scenic routes are a prominent feature within this interconnected system. Roads and trails determined to be unnecessary through Roads Analysis and the analysis required by the National Environmental Policy Act (NEPA), are removed and the landscape is restored. Rights-of-way to access National Forest System lands satisfy public needs and facilitate planned resource activities. Over the planning period, the number of inventoried unclassified roads and trails are reduced, and the development and proliferation of new unclassified facilities is minimized.

An environmentally sustainable, integrated system of remote, urban and rural non-motorized trails is established and maintained. The system can accommodate a range of experience in high-quality settings, and is managed to minimize conflicts while providing opportunities for partnerships, learning, stewardship and mental and physical renewal for a diverse, urban visitor population. The availability of day-use 'loop trails' is improved.

Burnt Rancheria Campground, Cleveland NF

Off-highway vehicle (OHV) systems provide a range of recreation opportunities, and challenges for OHV enthusiasts through the development of an integrated system of trails and low maintenance standard roads. OHV use is occurring on designated roads and trails only. High-use areas are managed within capacities in order to maintain the quality of experiences. Facilities that provide access to the OHV system are developed in conjunction with the development of the overall OHV system. Conflicts between OHV enthusiasts and other recreationists with private lands, and homeowners adjacent to national forest land and with resource issues are addressed and resolved in a timely manner. Resolutions are consistent with area objectives and management direction.

Habitat Protection - Habitats for federally listed species are conserved, and listed species are recovered. Habitats for sensitive species and other species of concern are managed to prevent downward trends in populations or habitat capability and to prevent federal listing. ~~Habitat conditions are stable or improving over time as indicated by the status of management indicator species~~.

Outcome Evaluation Question: Are trends in indicators and visitor satisfaction surveys indicating that the national forest has provided quality, sustainable recreation opportunities that result in increased visitor satisfaction? (See implementation and effectiveness monitoring in Appendix C of Part 3.)

Wilderness

Goal 3.2: Retain a Natural Evolving Character within Wilderness.

Desired conditions for wilderness include:

Ecological Processes – Ecological processes occur untrammeled. Human influences do not impede the free play of natural forces in the ecosystem. Management activities prescribed for enhancement and recovery of threatened and endangered species and for the re-introduction of extirpated species are supported.

Vegetation Management/Fire – Vegetation management maintains or mimics natural processes for the purpose of achieving wilderness fire management objectives. Reduce to an acceptable level, the risks and consequences of wildland fire within wilderness or escaping from wilderness.

Solitude – Outstanding opportunities for solitude and inspiration are characteristic and stable, or increasing.Challenge – Primitive and unconfined recreation opportunities that offer physical and mental challenges are stable or increasing.

Air Resources – Remediate and prevent human caused impairments to air quality values (AQRV) including visibility, ozone injury, and acid and nitrogen deposition. Suppression of wildland fires and ignition of prescribed fires in wilderness will consider impacts to human health and air quality (AQRVs).

Environmental Education – People are connected to the values of wilderness resulting in support and stewardship for these values.

Wilderness. An equestrian near Madulce Peak in the solitude of the Dick Smith Wilderness, Los Padres NF.

Science baseline information – Wilderness is used as a benchmark for ecological studies.

Outcome Evaluation Question: Are trends in indicators and visitor satisfaction surveys depicting the national forest has provided solitude and challenge in an environment where human influences do not impede the free play of natural forces? (See implementation and effectiveness monitoring in Appendix C of Part 3.)

Energy and Minerals Production

Goal 4.1a - Administer Minerals and Energy Resource Development while protecting ecosystem health.

A wide variety of minerals and energy resources are found on southern California national forests, including precious minerals, oil and gas, high quality metallurgical, chemical and cement grade carbonate rocks, and mineral materials. The national forests have an essential role in contributing to an adequate and stable supply of mineral and energy resources while continuing to sustain the land's productivity for other uses and its capability to support biodiversity goals.

The desired condition is that approved minerals and energy developments are managed to facilitate production of mineral and energy resources while minimizing adverse impacts to surface and groundwater resources and protecting or enhancing ecosystem health and scenic values.

Outcome Evaluation Question: Has the national forest been successful at protecting ecosystem health while providing mineral and energy resources for development? (See implementation and effectiveness monitoring in Appendix C of Part 3.)

Energy infrastructure. Oil wells on the Los Padres NF.

Goal 4.1b - Administer Renewable Energy Resource developments while protecting ecosystem health.

Wind energy can be developed to generate mechanical power or electricity. Solar energy can be developed to provide heat, light, hot water, electricity and cooling for many uses. Hydro-electric power can be developed to provide both mechanical power and electricity for a multitude of uses.

Due to tree and shrub mortality and other fuel treatments on the national forests, there is far more biomass available than can be disposed of through green waste recycling, landfills, or saw mills. Biomass from vegetation treatment is available for developing cogeneration facilities.

The national forests have an essential role in contributing to an adequate and stable supply of renewable energy resource developments while continuing to sustain the land's productivity for other uses and its capability to support biodiversity goals.

Energy infrastructure. Cajon Pass utility corridor, San Bernardino NF.

The desired condition for solar, wind and hydro-electric energy resources is that national forests will support the use of these renewable resources to help meet the growing energy needs in southern California while protecting other resources. The desired condition for biomass is that as national forests generate timber and chipped woody material as a by-product of ecosystem management, healthy forest restoration, fuels management and community protection projects, that biomass will provide for energy co-generation when other higher value options are not available.

Outcome Evaluation Question: Has the national forest been successful at protecting ecosystem health while providing renewable resources for development? (See implementation and effectiveness monitoring in Appendix C of Part 3.)

Watershed Function

Goal 5.1 - Improve watershed conditions through cooperative management.

The national forests generally provide the headwaters and primary source areas for most of the major river systems in southern California. Streams and rivers offer habitat to numerous aquatic and riparian dependent species-at-risk found on all of the national forests; in addition to providing water for municipal, commercial and agricultural uses off of the national forests. Watershed conditions, or watershed health, on the national forests vary depending upon the amount of disturbance that has occurred within each watershed, and the effect of the disturbance on the natural integrity of the watershed as a whole.

Each of the 88 watersheds on the southern California national forests have been analyzed and have been assigned a watershed condition rating. These ratings were based on quantitative indicators about hydrology, soils, and geology, and professional judgment indicators such as floodplain connectivity, water quality and quantity, riparian vegetation, channel stability and aquatic integrity. Almost half (48 percent) of the watersheds received a good condition rating; 38 percent were rated in moderate condition; and 13 percent were given a low or poor rating. Those watersheds with a condition rating of poor, frequently contain only a small amount of National Forest System land relative to the total watershed acreage. Most of the conditions leading to the poor ratings were associated with high road densities, agriculture, and urban developments within the floodplains located outside of national forest boundaries.

Sespe River watershed, Los Padres NF

Geologic resources and geologic hazards constitute the physical foundation materials and characteristics, and primary earth processes that influence watershed condition and ecosystem health. Geologic resources include rock formations and mineral occurrences, fossils, cave and groundwater resources, geologic special interest areas, and rock and soil construction materials (mining and energy minerals are covered elsewhere). Geologic formations influence patterns of vegetation, as well as plant and animal habitats across highly variable landscapes.

Geologic hazards include landslides, seismic activity, subsidence, flooding, toxic minerals and mine drainage, and cliff erosion. Geologic hazards are the more violent or toxic forms of geologic processes that can cause great risk to human health and safety, and to other resources.

They can also cause costly repairs, environmental effects, and inconveniences to communities, businesses, travel corridors, and other resources. The potential for creating or exacerbating geologic hazards and risks can be affected by many different activities. Some of these include wildland fire, encroaching urbanization, increasing recreation uses, and disturbance from land management activities such as construction, reconstruction, operation or maintenance of roads and trails, mines, energy mineral developments, dams, reservoirs and tunnels.

The desired condition is that national forest watersheds are healthy, dynamic and resilient, and are capable of responding to natural and human caused disturbances while maintaining the integrity of their biological and physical processes.

Watersheds, streams, groundwater recharge areas, springs, wetlands and aquifers are managed to assure the sustainability of high quantity and quality water. Where new or re-authorized water extraction or diversion is allowed, those facilities should be located to avoid long-term adverse impacts to national forest water and riparian resources. The Forest Service has acquired and maintains water rights where necessary to support resource management and healthy forest conditions. Forest management activities are planned and implemented in a manner that minimizes the risk to forest ecosystems from hazardous materials.

Additional desired conditions are that geologic resources are managed to protect, preserve and interpret unique resources and values, and to improve management of activities that affect watershed condition and ecosystem health. Geologic hazards are identified, analyzed and managed to reduce risks and impacts where there is a threat to human life, natural resources, or financial investment.

Outcome Evaluation Questions: Is the national forest making progress toward sustaining Class 1 watershed conditions while reducing the number of Condition Class 2 and 3 watersheds?

Is the national forest making progress towards identifying geologic hazards and reducing risks? (See implementation and effectiveness monitoring in Appendix C of Part 3.)

Riparian Condition

Goal 5.2: Improve riparian conditions.

Riparian and aquatic ecosystems occur on all four southern California national forests and are associated with water. They play a vital role in watershed functioning and in the survival of most of the species-at-risk. These ecosystems contain aquatic and terrestrial features and lands adjacent to perennial, intermittent, and ephemeral streams, as well as in and around meadows, lakes, reservoirs, ponds, wetlands, vernal pools, seeps, springs and other bodies of water.

In riparian areas, slope and fluvial processes are tightly interconnected and terrestrial and aquatic systems strongly interact. Many species in southern California depend on water and riparian areas as migration and travel routes throughout the national forests. These riparian-dependent resources include fish, amphibians, reptiles, fairy shrimp, aquatic insects, plants, birds and mammals, as well as soil and water conditions. No other habitat type in the southern California national forests has been as dramatically altered by human activities as the freshwater riparian habitat.

Riparian Conservation Areas (RCAs) are areas along streams and around water/riparian features that are identified to protect riparian and aquatic ecosystems and the dependent natural resources associated with them during site-specific project planning and implementation. Standard S47 (in Appendix E and Part 3) explain the concept and the process for delineating RCAs. A variety of national forest management activities occur within RCAs, both as planned activities and as emergency actions. Because these activities can disrupt riparian ecosystem processes and interactions that can result in adverse effects, RCAs serve to provide protection to these sensitive environments. Some of the greatest threats to riparian and aquatic habitats are from diversion of surface water, removal of shallow groundwater, the effects of prolonged drought conditions, and from the invasion of nonnative plant species, particularly tamarisk, arundo and cape ivy within the stream channels.

Montane meadow is a rare wetland type that provides habitat for a large number of rare plant and animal species. It is present on all four southern California national forests; however the highest acreages occur on the Cleveland and San Bernardino National Forests. These wetlands function like a sponge to collect water and then slowly release it into adjacent drainages. They also filter runoff by trapping sediments, nutrients, and pollutants, and lower the risk of erosion by moderating the energy of water flow. Montane meadow habitats are affected by activities that alter hydrology, remove vegetation, or cause compaction or soil erosion.

The desired condition is that watercourses are functioning properly and support healthy populations of native and desired nonnative riparian dependent species. Riparian vegetation consists mainly of native species, with minimal or no presence of invasive nonnative plants. Nuisance nonnative aquatic animals are absent or rare in streams and lakes. Riparian and aquatic ecosystems (including vegetation, channel stability, water quality and habitat for aquatic and riparian dependent species) are resilient and able to recover after natural events, such as floods and wildland fires.

Outcome Evaluation Question: Is the national forest making progress toward reducing the number of streams with poor water quality or aquatic habitat conditions? (See implementation and effectiveness monitoring in Appendix C of Part 3.)

Rangeland Condition

Goal 6.1 - Move toward improved rangeland conditions as indicated by key range sites.

Livestock grazing primarily occurs in the annual grassland community. Herbaceous annual plants characterize the annual grasslands of California. Species from the grass genera (*Avena, Bromus, Festuca, and Hordeum*) mix with other annuals from common genera like *Erodium, Trifolium, Madia, Amsinckia, and Brassica* (Heady 1977). Many of these species also occur as understory plants in Valley oak woodland and other vegetation types. Although native plants are usually present, species of Eurasian origin provide most plant productivity in the grasslands. Vernal pools, found in small depressions with a hardpan soil layer, support Downingia, meadow foam, and other species.

Plant growth is strongly seasonal and well adapted to California's Mediterranean climate with fall germination from seeds produced the previous growing season, slow winter growth, followed by rapid spring growth, maturity, and death (George et al. 1985). Only a few species of annual forbes grow through the yearly summer dry period. The peak standing crop in spring varies considerably from year to year and among sites but can exceed 3600 lb/acre (Bartolome et al. 1980).

Livestock grazing on the Los Padres NF.

Rangeland management of livestock grazing areas for sustainability is achieved by allowing moderate utilization levels that maintain forage, cover, and habitat requirements for wildlife; and maintain soil productivity, water quality, and ecosystem health. Moderate use is defined as leaving adequate amounts of residual dry matter (RDM) that provides favorable microenvironments for early seedling growth, soil protection, and adequate soil organic matter.

In livestock grazing areas, 'key areas' are designated to monitor rangeland conditions. Key areas are defined as "... a portion of the range, which, because of its location, grazing or browsing value, and/or use serves as an indicative sample of range conditions, trend, or degree of use seasonally." A key area guides the general management of the entire area of which it is part.

Key areas general guidelines:

1. Are located in suitable range and are permanently marked.
2. Are representative of the primary range and sensitive to changes in livestock management.
3. Guide the manager in determining if standards and guidelines are being met and/or desired conditions are being met.

4. Are critical areas where use must be closely monitored because of forest plan requirements, such as riparian areas or areas where threatened, endangered, or sensitive species may occur.
5. Key areas can also be reference points that are sensitive to management changes. These are small areas where long-term trend studies are installed and maintained so that the manager can assess the resource impacts from management.

Biological and physical components are evaluated. Monitoring focuses on desirable and undesirable plant species, percent cover, soil erosion, and any other goals within the area. In 2002, the four southern California national forests had 336,839 acres that were meeting or moving towards desired conditions; 13,338 acres not meeting desired conditions; and 130,163 acres in undetermined status. In key areas, long-term trend is monitored by installing and reading condition and trend frequency transects about every five years.

The desired condition is that livestock grazing opportunities are maintained and are managed for sustainable, healthy rangelands that contribute to improving watershed conditions towards a fully functional and productive condition.

Outcome Evaluation Question: Is national forest rangeland management maintaining or improving progress towards sustainable rangelands and ecosystem health by increasing the number of key areas in good and fair condition? (See implementation and effectiveness monitoring in Appendix C of Part 3.)

Biological Resource Condition

Goal 6.2 - Provide ecological conditions to sustain viable populations of native and desired nonnative species.

The mountains and foothills of southern California are home to approximately nine native species of fish, 18 amphibians, 61 reptiles, 299 birds, 104 mammals, 2,900 vascular plants and an unknown number of species of invertebrate animals and non-vascular plants. Approximately 3,000 of these species occur on the four southern California national forests.

Many of the 3,000 species have a large proportion of their distribution on National Forest System land. Some are endemic to the national forests (essentially found nowhere else in the world), and some have special status as federally listed threatened, endangered, proposed, candidate, or Forest Service sensitive species. Other species have wide geographic ranges and are found elsewhere in California, Mexico, the West or the Southwest, but are rare in southern California. There are also plants and animals that were formerly common in southern California, but are now rare because of urban development. Some of the best remaining habitat for these species occurs on the margins of National Forest System land.

Management Indicator Species (MIS) are selected because their population or habitat trends are believed to indicate the effects of management activities (36 CFR 219.19(a)(1) [1982]; 36 CFR 219.14 [2005]), and as a focus for monitoring (36 CFR 219.19(a)(6) [1982]). Species considered for designation as MIS were assessed using the following criteria to determine their appropriateness:

- Changes in the species' population or habitat should reflect the effects of national forest management activities; and
- Population or habitat trends for the species must be capable of being effectively and efficiently monitored and evaluated.

Twelve MIS were selected for habitat types and issues shown below. They will be monitored along with other indictors of progress toward achieving desired conditions for biological resources.

The arroyo toad, federally listed as endangered, is one of the 61 threatened, endangered, or proposed species managed for on the four southern California national forests.

Indicators of Management	MIS
Fragmentation	Mountain Lion
Healthy Diverse Habitats	Mule Deer
Aquatic Habitat	Arroyo Toad
Riparian Habitat	Song Sparrow
Oak Regeneration	Blue Oak
Oak Regeneration	Engelmann Oak
Oak Regeneration	Valley Oak
Bigcone Douglas-fir Forest	Bigcone Douglas-fir
Coulter Pine Forest	Coulter Pine
Montane Conifer Forest	California Spotted Owl
Montane Conifer Forest	California Black Oak
Montane Conifer Forest	White Fir

The desired condition is that habitats for federally listed species are conserved, and listed species are recovered or are moving toward recovery. Habitats for sensitive species and other species of concern are managed to prevent downward trends in populations or habitat capability, and to prevent federal listing. Flow regimes in streams that provide habitat for threatened, endangered, proposed, candidate, and/or sensitive aquatic and riparian-dependent species are sufficient to allow the species to persist and complete all phases of their life cycles.

Habitat conditions sustain healthy populations of native and desired nonnative fish and game species. Wildlife habitat functions are maintained or improved, including primary feeding areas, winter ranges, breeding areas, birthing areas, rearing areas, migration corridors, and landscape linkages. Fish habitat functions are maintained or improved, including spawning areas, rearing areas, and upstream and downstream migration, where possible.

Vegetation condition is managed toward the desired conditions identified for each habitat grouping listed under Forest Goal 1.2 - Restoration of Forest Health.

Riparian and aquatic habitat conditions are managed toward the desired conditions identified under Goal 5.2 - Riparian Condition and Goal 5.1 - Watershed Function.

Outcome Evaluation Question: Are trends in resource conditions indicating that habitat conditions for fish, wildlife, and rare plants are in a stable or upward trend? (See implementation and effectiveness monitoring in Appendix C of Part 3.)

Natural Areas in an Urban Context

Goal 7.1 - Retain natural areas as a core for a regional network while focusing the built environment into the minimum land area needed to support growing public needs.

Urbanization within and surrounding national forest boundaries is threatening to alter the natural character of many areas. Suburban communities have been developed in more remote areas and urban areas have pushed up into the foothills in many places. This has led to an explosion in the amount of Wildland/Urban Interface areas that are at risk and in need of protection from wildland fire. The combination of increased development and the need to protect these developed areas from fire and other natural events (such as flooding) will put increasing pressure on national forest managers to alter landscape character to accommodate these uses.

Table 1-1. Ownership Complexity

Forest	Miles NFS	Miles/sq.mile	Miles Private	Miles/sq.mile
ANF	1,242	1.13	462	0.42
CNF	1,299	1.44	1,058	1.17
LPNF	2,918	0.95	1,728	0.56
SBNF	1,665	1.32	1,018	0.81

Table 1-1, Ownership Complexity, shows the relative complexity of land ownership based on miles of interface with private lands. As these lands develop, there is a high potential for significant increase in the interface between developed areas and national forest boundaries. There are currently about 1,700 miles of forest interface with developed areas on the four southern California national forests. This number could more than double in the future. Urban development also puts additional pressure on public lands to provide urban support facilities (infrastructure) through special-use authorizations as private land options for development are exhausted.

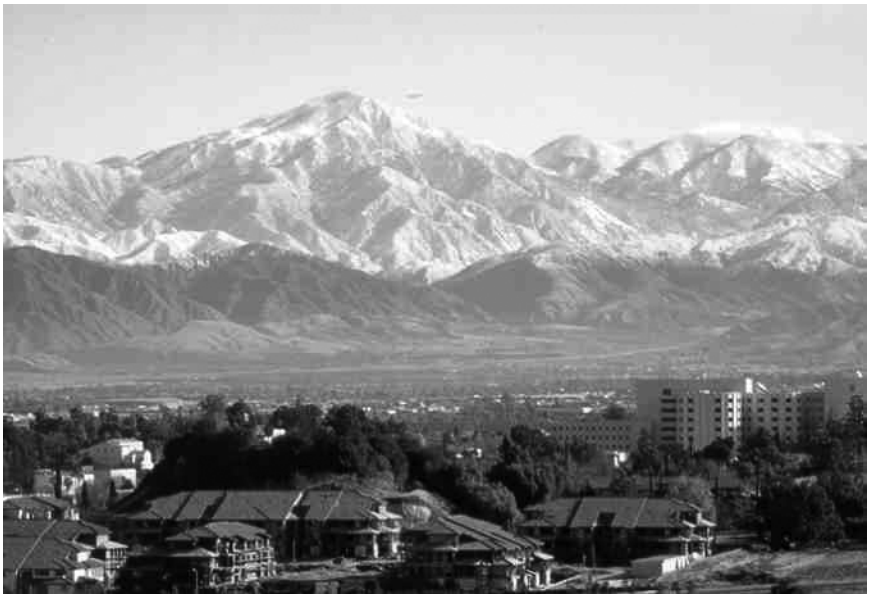
Extensive habitat conservation planning efforts led by local government and conservation

Habitat linkages are desired for movement of wildlife, such as the Peninsular bighorn sheep on the San Bernardino NF. Photo by BLM.

organizations have identified the need to maintain an inter-connected network of undeveloped areas or landscape linkages, which retain specific habitats and allow for maintenance of biodiversity and wildlife movement across the landscape. These efforts have led to development of several multi-species habitat conservation plans. National Forest System lands are a core element of this natural open space network and will play an increasingly important role as additional habitat fragmentation occurs on surrounding private lands.

The desired condition is that the natural and cultural features of landscapes that provide their 'sense of place' are intact. Landscapes possess a vegetation pattern and species mix that is natural in appearance and function. Built elements and landscape alterations complement landscape characteristics. Areas zoned as Back Country retain an undeveloped character with a low level of loss of acres in this condition.

National Forest facilities and infrastructures are high quality, well maintained, safe, accessible, consistent with visitor expectations, and support the Built Environment Image Guide principles. Facility maintenance meets established national standards. Structures are well integrated into the landscape and advance environmentally sensitive technology, such as water and energy efficiency and retention of habitat linkages.



Urban interface near the San Bernardino NF.

Facilities supporting urban infrastructure needs are clustered on existing sites or designated corridors, minimizing the number of acres encumbered by special-use authorizations. Special-uses serve public needs, provide public benefits, and conform to resource management and protection objectives. All uses are in full compliance with the terms and conditions of the authorization. There is a low level of increase in the developed portion of the landscape as measured by road densities; in fact, over time, the built environment is shifted away from or designed to better protect resource values.

Land adjustment administration contributes to the reduction of the complexity of land ownership and consolidates the National Forest System land base; reduces administrative problems and costs; enhances public access and use; supports resource management objectives, including the protection and improvement of habitat condition and linkage. Strategic easements for access and species conservation are acquired. Clear title to National Forest System land is retained. Occupancy trespass is eliminated and national forest boundaries are clearly posted.

Outcome Evaluation Question: Is the national forest balancing the need for new infrastructure with restoration opportunities or land ownership adjustment to meet the desired conditions? (See implementation and effectiveness monitoring in Appendix C of Part 3.)

Appendix A. Government Performance and Results Act Priority National Goals

The priority goals for the Forest Service are provided in the Forest Service National Strategic Plan (2003 Revision). The priority goals embody the Forest Service's many areas of responsibility, as captured in the agency's mission statement: "The mission of the USDA Forest Service is to sustain the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations."

National Strategic Plan Goal 1- Reduce the risk from catastrophic wildland fire.

Outcome: Reduced risk to communities and the environment from catastrophic wildland fire by improving the health of the nation's forests and grasslands.

"A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Wildland Fire Strategy" (Department of Interior and Department of Agriculture, 2001) describes the need to reduce the risk of wildland fire to communities and the environment because:

- increased population growth in the wildland-urban interface place more citizens and property at risk;
- many of the traditional approaches to land management and suppression of wildland fire have resulted in dense, diseased or dying forests, which has contributed to severe fires and increased threats to communities and ecosystems; and
- post-fire ecosystem health problems from insects, pathogens, and invasive species are increasing.

Miles of rural landscape once buffered urban areas from the effects of wildland fire. Now forests are increasingly part of the wildland-urban interface, creating a greater challenge for fire protection. Recent research has identified 73 million acres of National Forest System lands and 59 million acres of privately-owned forestland at high risk of ecologically destructive wildland fire (condition classes 2 and 3, Fire Regime I and II) (Schmidt et al., 2002).

The following objectives support this goal:

1. Objective: Improve the health of National Forest System lands that have the greatest potential for catastrophic wildland fire.
2. Objective: Consistent with resource objectives, wildland fires are suppressed at a minimum cost, considering firefighter and public safety, benefits, and values to be protected.
3. Objective: Assist 2,500 communities and those non-National Forest System lands most at risk with development and implementation of hazardous fuel reduction and fire prevention plans and programs.

National Strategic Plan Goal 2- Reduce the impacts from invasive species.

Outcome: Improve the health of the nation's forests and grasslands by reducing the impacts from invasive species.

Invasive species, particularly insects, pathogens, plants, and aquatic pests, pose a long-term risk to the health of the nation's forests and grasslands. These species interfere with natural and managed ecosystems, degrade wildlife habitat, reduce the sustainable production of natural resource-based goods and services, and increase the susceptibility of ecosystems to other disturbances such as fire and flood. Rampant population growth and impact often occurs when new organisms are introduced into ecosystems and their natural enemies do not follow. Habitat fragmentation (the division of forest and grassland habitat into smaller, more isolated patches) limits containment and eradication of invasive species.

Economic impacts to forests and grasslands from invasive species currently exceeds $4 billion per year, without considering the cost of environmental consequences, such as loss of native fauna and flora in large areas. The best defense against invasive species is either preventing their introduction or aggressively eradicating newly detected pest species. The Forest Service accomplishes both courses of action by implementing the National Invasive Species Management Plan in cooperation with other USDA agencies, other federal departments, States, tribes, and private sector partners.

The following objective supports this goal:

1. Objective: Improve the effectiveness of treating selected invasive species.

National Strategic Plan Goal 3- Provide outdoor recreation opportunities

Outcome: Provide high-quality outdoor recreational opportunities on forests and grasslands, while sustaining natural resources, to help meet the nation's recreation demands.

By mid-century our nation's population is projected to increase by nearly 50 percent. Simultaneously, public access to privately owned forestland is expected to continue to decline. This situation will increase the pressure on public lands to provide additional recreation opportunities. If public lands are to continue to provide additional recreation benefits without experiencing unacceptable impacts to resources, emphasis must be placed on effective management solutions. In particular, it is critical that we improve management of off-highway vehicle access and use on National Forest System lands to preserve high-quality experiences for all recreational users.

The following objectives support this goal:

1. Objective: Improve public access to National Forest System land and water and provide opportunities for outdoor health-enhancing activities.
2. Objective: Improve the management of off-highway vehicle use to protect natural resources, promote safety of all users, and minimize conflicts among various uses through the collaborative development and implementation of locally-based travel management plans.

National Strategic Plan Goal 4- Help meet energy resource needs

Outcome: Consider opportunities for energy development and the supporting infrastructure on forests and grasslands to help meet the nation's energy needs.

The nation's forests and grasslands play a significant role in meeting America's need for producing and transmitting energy. Unless otherwise restricted, National Forest System lands are available for energy exploration, development, and infrastructure occupancy (e.g., well sites, pipelines, and transmission lines).

The following objective supports this goal:

1. Objective: Work with other agencies to identify and designate corridors for energy facilities, improve permit application processing efficiency, and establish appropriate land tenure (including transferability clauses) in easements and other authorizations to provide for long-term project viability.

National Strategic Plan Goal 5- Improve watershed condition

Outcome: Increase the area of forest and grassland watersheds in fully functional and productive condition.

An estimated 3,400 towns and cities currently depend on National Forest System watersheds for their public water supplies. Our national forests and grasslands contain more than 3,000 public water supplies for campgrounds, administrative centers, and similar facilities. Communities that draw source water from national forests and grasslands provide water to 60 million people, or one-fourth of the nation's people. Although most forested watersheds are in fully functioning or satisfactory condition, many streams on National Forest System lands do not meet State water-quality standards. Some municipal watersheds, especially in the West, are at risk from catastrophic wildland fire and from impacts due to excessive use. These problems are compounded by land parcelization. The loss of valuable corridors connecting National Forest System land with other undisturbed tracts of land increases the difficulty of effectively managing watershed conditions. Sustaining functional watershed conditions over time maintains the productive capacity of our land and water.

The following objectives support this goal:

1. Objective: Assess and restore high-priority watersheds and maintain riparian habitat within these watersheds.
2. Objective: Monitor water quality impacts of activities on National Forest System lands.
3. Objective: Restore and maintain native and desired nonnative plant and animal species diversity within terrestrial and aquatic ecosystems and reduce the rate of species endangerment by contributing to species recovery.

National Strategic Plan Goal 6—Mission related work in addition to that which supports the agency goals

Outcome: Improve the productivity and efficiency of other mission-related work and support programs.

The Forest Service provides direction for natural resource stewardship through direct land management practices, indirect management under partnership agreements, and research and development programs. The agency also provides many goods and services such as recreational opportunities, clean water, and wood products, to the American people. We consistently strive to maintain the organizational structure and capacity to deliver the necessary mission work.

The following objectives support this goal:

1. Objective: Provide current resource data, monitoring, and research information in a timely manner.
2. Objective: Meet Federal financial management standards and integrate budget and performance.
3. Objective: Maintain the environmental, social, and economic benefits of forests and grasslands by reducing their conversion to other uses.
4. Objective: Maintain Office of Safety and Health Administration standards.
5. Objective: Develop and maintain the processes and systems to provide and analyze scientific and technical information to address agency priorities.

Applicable to the San Gabriel Mountains National Mounument

United States Department of Agriculture

Forest Service

Pacific Southwest Region

R5-MB-076

September 2005

Land Management Plan

Part 2 Angeles National Forest Strategy

Applicable to the San Gabriel
Mountains National Monument

Land Management Plan

Part 2 Angeles National Forest Strategy

R5-MB-076
September 2005

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Document Format Protocols

The following format protocols (font type, size, and strength, as well as indentation) are used throughout the Land Management Plan.

All headings are Arial bold, in varying font sizes and indentation.

Text is generally Times New Roman, 12 point regular.

Table Titles are Arial, bold, 11 point.

Table column headings are in Arial Narrow, 10 pt, with a shaded background.
Table cell contents are Times New Roman, 12 point.

Photograph captions have a top and bottom border to separate them from regular text, and are 12 point Arial font. For example, this is a clip-art butterfly.

References to websites (URLs) are in OCR B MT, 10 point in the printed version. In the electronic version, these are live links. The electronic version is posted at:

`http://www.fs.fed.us/r5/angeles/projects/lmp`

Land Management Plan Strategy

This document is Part 2 of the three-part (vision, strategy and design criteria) land and resource management plan (forest plan) for the Angeles National Forest. The strategic direction and program emphasis objectives that are expected to result in the sustainability (social, economic and ecological) of the national forest and, over the long-term, the maintenance of a healthy forest are described in this document. The legislative mandate for the management of national forests requires that public lands be conservatively used and managed in order to ensure their sustainability and to guarantee that future generations will continue to benefit from their many values.[1] Forest plans are founded on the concept of sustainable use of the national forests. In its simplest terms, sustainability means to maintain or prolong. In order to foster the concept of sustainability, this section describes the program emphasis and strategies that may be employed to enable multiple uses to occur in ways that promote long-term sustainability. The program emphasis and management strategies are continuously projected over a three to five year period (over the life of the plan) in order to describe the projects or activities that may be employed as we move along the pathways toward the realization of the desired conditions described in Part 1 of the revised forest plan.

Mountain vista, Angeles NF

Part 1 describes the national forest in the future, the niche it occupies in the community framework, the desired conditions the Forest Service is striving to realize, as well as the challenges the national forest will resolve in getting there. Part 2 supplements Part 1 of the forest plan. Part 2 also constitutes the 'tools' resource staff will use to accomplish the objectives that contribute to the realization of the desired conditions. Part 2 defines and describes each of the land use zones. The land use zones are an on-the-ground manifestation of the desired conditions and are the primary tools used to describe the strategic direction, including the management intent and suitable uses for areas of the national forest where the zone is used. Part 2 also includes a prospectus describing the past performance history of the national forest and the anticipated performance in three to five year increments over the life of the forest plan. Place-Based Program Emphasis is also described so that people will have a better understanding of what types of management is expected in specific areas of the national forest. Finally, Part 2 addresses the monitoring to be done to assess the effective implementation of the strategies used.

[1] Committee of Scientists issued a final report on March 15, 1999, entitled *Sustaining the People's Lands.*

Part 3 of the forest plan is the design criteria and constitutes the ‘rules’ that the Forest Service will follow as the national forest implements projects and activities over time. The rules include the laws, agency policy, standards, and the associated guidance that is referenced for use at the project level.

Suitable Land Uses

Land Use Zones

Land use zones (CFR 219.11(c)) were used to map the Angeles National Forest (ANF) for the purpose of identifying appropriate management types of 'uses' that are consistent with the achievement of the desired conditions described in Part 1 of the revised forest plan. These land use zones are used to help demonstrate clearly management's intent and to indicate the anticipated level of public land use in any area (Place) of the national forest. The activities that are allowed in each zone are expected to result in progress along the pathway toward the realization of the desired conditions. National forest land use zoning is similar in concept to the zoning models that are being used by counties or municipalities throughout southern California. Tables 2.1.1 through 2.1.4 display the suitability of specific uses by land use zone (note: Recommended wilderness and existing wilderness zones are combined into the wilderness zone column on the tables).

Specific uses are allowed on national forests except when identified as not suitable, because of law, national or regional policy, or the revised forest plan. What this means is that the forest plans are permissive. That is, activities may occur unless the forest plan says that they cannot. However, activities are not authorized based solely on the land use zoning for this forest plan. The suitable uses identified in tables 2.1.1 through 2.1.4 are intended as guidance for consideration of future activities and do not affect existing authorized occupancy and uses or the administrative procedures used to manage them. Most ground disturbing activities require further project or site-specific analysis before a decision is made. The uses that are identified as suitable in each of the land use zones are subject to the design criteria, as well as the other guidance described in Part 3 (Appendix A) of this forest plan. The standards (along with applicable guidance) are typically used during project or site-specific planning. Applicable guidance includes the body of information encompassed by the Forest Service Manual and Handbooks, Species Accounts, Best Management Practices, Soil and Water Conservation Handbooks, the Built Environment Image Guide, or other documents with guidance that is identified for use based on site-specific project analysis.

Several activities are described in the suitable use tables as being permitted in designated areas only. What this means, for example, is that motorized uses are restricted to designated roads, trails and limited open areas and may be restricted or expanded further in order to achieve the desired condition for the land use zones. Vehicular traffic traveling cross-country or on non-designated routes is not allowed in any zone.

Table 2.1.1. Suitable Uses Resource Management, ANF:

Land Use Zone:	DAI	BC	BCMUR	BCNM	CB	W	EF
Activity or Use	Developed Areas Interface	Back Country	Back Country Motorized Use Restricted	Back Country Non-Motorized	Critical Biological	Wilderness	Experimental Forest
Rangeland Type Conversion for Forage production	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable
Restoration of Vegetation Condition	Suitable	Suitable	Suitable	Suitable	By Exception	Suitable	By Exception
Disposal of National Forest System lands	By Exception	By Exception	By Exception	By Exception	By Exception	Not Suitable	By Exception

*By Exception = Conditions which are not generally compatible with the land use zone but may be appropriate under certain circumstances.

Table 2.1.2. Suitable Uses Public Use and Enjoyment, ANF

Activity or Use	DAI	BC	BCMUR	BCNM	CB	W	EF
	Developed Areas Interface	Back Country	Back Country Motorized Use Restricted	Back Country Non-Motorized	Critical Biological	Wilderness	Experimental Forest
Recreation Residence Tracts	Designated Areas	Designated Areas	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Designated Areas
Organization Camps	Designated Areas	Designated Areas	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Designated Areas
Lodges, Resorts and Clubs	Designated Areas	Designated Areas	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Designated Areas
Developed Winter Sports Areas	Designated Areas	Designated Areas	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable
Hunting and Fishing	Regulated by the State (CDF&G)	Regulated by the State (CDF&G)	Regulated by the State (CDF&G)	Regulated by the State (CDF&G)	Regulated by the State (CDF&G)	Regulated by the State (CDF&G)	Regulated by the State (CDF&G)
Target Shooting Areas	By Exception	Designated Areas	Designated Areas	Designated Areas	Not Suitable	Not Suitable	Not Suitable
Public Motorized Use on Forest System Roads	Suitable	Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable
Authorized Motorized Use	Suitable	Suitable	Suitable	By Exception	By Exception	By Exception	Suitable

Activity or Use	DAI	BC	BCMUR	BCNM	CB	W	EF
	Developed Areas Interface	Back Country	Back Country Motorized Use Restricted	Back Country Non-Motorized	Critical Biological	Wilderness	Experimental Forest
Off-Highway Vehicle Use on Forest System Roads and Trails	Designated Roads and Trails	Designated Roads and Trails	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable
Public Motorized Use off Forest System Roads and Trails	Suitable in Designated Open Areas	Suitable in Designated Open Areas	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable
Mountain Bikes Forest System Roads and Trails	Unless Otherwise Restricted	Unless Otherwise Restricted	Unless Otherwise Restricted	Unless Otherwise Restricted	Unless Otherwise Restricted	Not Suitable	Not Suitable
Dispersed Area Camping	Suitable Unless Otherwise Restricted	Suitable Unless Otherwise Restricted	Suitable Unless Otherwise Restricted	Suitable Unless Otherwise Restricted	Not Suitable	Suitable Unless Otherwise Restricted	Not Suitable

*By Exception = Conditions which are not generally compatible with the land use zone but may be appropriate under certain circumstances.
CDF&G: California Department of Fish and Game

Table 2.1.3. Suitable Uses Commodity and Commercial Uses, ANF:

Land Use Zone:	DAI	BC	BCMUR	BCNM	CB	W	EF
Activity or Use	Developed Areas Interface	Back Country	Back Country Motorized Use Restricted	Back Country Non-Motorized	Critical Biological	Wilderness	Experimental Forest
(Non-Rec) Special Uses: Low Intensity Land Use	Suitable	Suitable	Suitable	By Exception	By Exception	By Exception	For Research
Communication Sites	Designated Areas	Designated Areas	Designated Areas	By Exception	By Exception	Not Suitable	By Exception
Livestock Grazing	Designated Areas	Designated Areas	Designated Areas	Designated Areas	Not Suitable	Designated Areas	Not Suitable
Major Transportation Corridors	Designated Areas	Designated Areas	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable
Major Utility Corridors	Designated Areas	Designated Areas	Designated Areas	Not Suitable	Not Suitable	Not Suitable	Not Suitable
Road construction or re-construction	Suitable	Suitable	Suitable for authorized use	Not Suitable	Not Suitable	Not Suitable	By Exception

Land Use Zone:	DAI	BC	BCMUR	BCNM	CB	W	EF
Activity or Use	Developed Areas Interface	Back Country	Back Country Motorized Use Restricted	Back Country Non-Motorized	Critical Biological	Wilderness	Experimental Forest
Developed Facilities	Suitable	Suitable	By Exception	Not Suitable	Not Suitable	Not Suitable	For Research
Oil and Gas Exploration and Development Areas	~~Suitable~~	~~Suitable~~	~~By Exception~~	~~By Exception~~	Not Suitable	Not Suitable	Not Suitable
Minerals Resources Exploration and Development	~~Suitable~~	~~Suitable~~	~~By Exception~~	~~By Exception~~	By Exception	Not Suitable	Not Suitable
Renewable Energy Resources	Suitable	Suitable	By Exception	By Exception	Not Suitable	Not Suitable	Not Suitable
Wood Products, including fuelwood harvesting	Suitable	Suitable	Suitable	Suitable	By Exception	Not Suitable	By Exception
Special Forest Products	Suitable	Suitable	Suitable	Suitable	By Exception	By Exception	Not Suitable

*By Exception = Conditions which are not generally compatible with the land use zone but may be appropriate under certain circumstances.

Table 2.1.4. Suitable Uses Fire and Fuels Management, ANF:

Land Use Zone:	DAI	BC	BCMUR	BCNM	CB	W	EF
Activity or Use	Developed Areas Interface	Back Country	Back Country Motorized Use Restricted	Back Country Non-Motorized	Critical Biological	Wilderness	Experimental Forest
Community Protection Areas	Suitable	Suitable	Suitable	Suitable	By Exception	By Exception	Suitable
Fuelbreak Construction including type conversion	Suitable	Suitable	Suitable	By Exception	By Exception	By Exception	For Research
Wildland Fire Use Strategy	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable

*By Exception = Conditions which are not generally compatible with the land use zone but may be appropriate under certain circumstances.

Seven land use zones have been identified for the Angeles National Forest (see Appendix C, Land Use Zone maps). In addition, the San Dimas Experimental Forest is classified as a separate zone due to the specific research mission of this area. These zones, including overlays described in the following section are applicable only to the National Forest System (NFS) lands and in no

way modify zoning applied to other ownerships by local government agencies. When other lands are acquired and become National Forest System lands, then the adjacent land use zones are applied unless changed through a Forest Plan Amendment. The land use zone descriptions in this section help to paint a picture of the anticipated level or intensity of public use or administrative activities. The existing character of each zone is included, along with the characteristic Recreation Opportunity Spectrum (ROS) objective (see Appendix C, Recreation Opportunity Spectrum Maps). The zones, in order of decreasing land use intensity are:

- Developed Area Interface (DAI)
- Back Country (BC)
- Back Country Motorized Use Restricted (BCMUR)
- Back Country Non-Motorized (BCNM)
- Critical Biological (CB)
- Recommended Wilderness (RW)
- Existing Wilderness (EW)
- Experimental Forest (EF)

Developed Area Interface (85,828 acres or 13 percent of the national forest): This zone includes areas adjacent to communities or concentrated use areas and developed sites with more scattered or isolated community infrastructure. The level of human use and infrastructure is typically higher than in other zones.

The characteristic ROS objectives are Rural and Roaded Natural. A number of highly popular developed recreation facilities, recreation and non-recreation special-uses facilities and national forest administrative facilities may be included in this zone. The level of development within this zone varies between areas that are highly developed to areas where no development has occurred.

The DAI zone is managed for motorized public access. Approximately 23.6 percent of the National Forest System and non-system user created routes are found in this zone including about 30 miles of unclassified road. The national forest road system is generally managed and maintained to a high standard, facilitating public access to developed recreation opportunities and authorized infrastructure. A designated off-highway vehicle (OHV) system may be included in some locations, often including trailheads or staging areas leading to Back Country areas.

Most direct community protection Wildland/Urban Interface Defense Zones (see Appendix K in Part 3 of the forest plan) and some Threat Zones are anticipated to be located within the DAI land use zone.

Although this zone may have a broad range of higher intensity uses, the management intent is to limit development to a slow increase of carefully designed facilities to help direct use into the most suitable areas and concentrating on improving facilities before developing new ones. National Forest staff expect that there will be some road construction, but anticipate no more than a 5 percent net-increase in road mileage.

Back Country (161,392 acres or 24 percent of the national forest): This zone includes areas of the national forest that are generally undeveloped with few roads. The characteristic ROS objectives are Semi-Primitive Motorized with limited areas of Roaded Natural. Most of the

national forest's remote recreation and administrative facilities are found in this zone. The level of human use and infrastructure is generally low to moderate.

The zone is managed for motorized public access on designated roads and trails. Approximately 45.5 percent of the National Forest System and non-system roads are found in this zone including 44 miles of unclassified road. Some roads within this zone may be closed to public access. The majority of National Forest System roads and other road systems that interconnect areas of concentrated development are found in this zone. A network of low standard Back Country roads provide access for a wide variety of dispersed recreation opportunities in remote areas such as camping and access to trailhead facilities for hiking or biking. Some new trails may be constructed to improve opportunities between trails on the existing system. The majority of the designated OHV system is found here including limited areas that are designated for OHV use (Angeles and Cleveland National Forests).

Wildland/Urban Interface Threat Zones (see Appendix K in Part 3 of the forest plan) are characteristic in this zone. Managers anticipate locating community protection vegetation treatments that require permanent roaded access (such as fuelbreaks) within the Back Country land use zone.

Although this zone generally allows a broad range of uses, the management intent is to retain the natural character inherent in this zone and limit the level and type of development. National Forest staff expect to manage the zone for no increase or a very low level of increase in the national forest road system. Managers expect to limit development to a slow increase of carefully designed facilities to help direct use into the most suitable areas and remove temporary facilities when they are no longer needed.

Back Country (Motorized Use Restricted) (52,791 acres or 8 percent of the national forest): This zone includes areas of the national forest that are generally undeveloped with few roads. Few facilities are found in this zone, but some may occur in remote locations. The characteristic ROS objectives are Semi-Primitive Motorized and Semi-Primitive Non-Motorized. The level of human use and infrastructure is low to moderate.

The zone will be managed for non-motorized (mechanized, equestrian, and pedestrian) public access. Motorized use is restricted to administrative purposes only that includes Forest Service, other agency, or tribal government needs, as well as access needed to private land or authorized special-uses. Administrative access is intermittent and generally limited to existing roads or to temporary roads needed for resource management purposes. The intent is to use temporary roads or gated permanent roads while management is occurring and then gate the permanent roads or remove the temporary routes when done.

Approximately 22.8 percent of the National Forest System and non-system roads are found in this zone including 16 miles of unclassified road. A limited number of National Forest System roads and other road systems that access administrative and authorized facilities and private land are found here. A network of low standard Back Country roads provides access for a wide variety of non-motorized dispersed recreation opportunities including camping, hiking, biking, hunting and fishing. Designated OHV use is not suitable in this zone.

Wildland/Urban Interface Threat Zones (see Appendix K in part 3 of the forest plan) are characteristic in this zone. Managers anticipate locating community protection vegetation treatments that require permanent roaded access (such as fuelbreaks) within the Back Country Motorized Use Restricted land use zone.

Although this zone allows a range of low intensity land uses, the management intent is to retain the natural character of the zone and limit the level and type of development. Some roads will be constructed and maintained, but the intent is to manage the zone for no increase or a very low level of increase in system development. Managers will consider expanding the ability of existing facilities to meet demand before proposing new facilities and removing temporary facilities when they are no longer needed.

Back Country Non-Motorized (248,399 acres or 37 percent of the national forest): This zone generally includes areas of the national forest that are undeveloped with few, if any roads. The characteristic ROS objective is Semi-Primitive Non-Motorized. Developed facilities supporting dispersed recreation activities are minimal and generally limited to trails and signage. The level of human use and infrastructure is low.

The zone is managed for a range of non-motorized uses that include mechanized, equestrian and pedestrian public access. Administrative access (usually for community protection) is allowed by exception for emergency situations and for short duration management purposes (such as fuel treatment). The intent is to use temporary routes while management is occurring and then close or remove the route. Access to authorized facilities and to private land is not anticipated but may occur by exception when there are existing rights to such access.

Approximately 3.1 percent of the National Forest System and non-system roads are found in this zone including about 11 miles of unclassified road. A network of low standard Back Country trails provide public access for a wide variety of non-motorized dispersed recreation opportunities including remote area camping, hiking, mountain biking, hunting and fishing. Designated OHV use is not suitable in this zone, and no designated OHV routes are located in this zone.

Wildland/Urban Interface Threat Zones (see Appendix K in Part 3 of the forest plan) may occur in this zone. Managers anticipate locating community protection vegetation treatments that require only temporary roaded access (such as mechanical thinning of trees or prescribed burning) within the Back Country Non-Motorized land use zone.

While a range of non-motorized public uses are generally allowed, the management intent is to typically retain the undeveloped character and natural appearance (fuelbreaks that contrast with the natural character may be present) of this zone and to limit the level of development to a low level of increase. Facility construction (except trails) is generally not allowed, but may occur in remote locations where roaded access is not needed for maintenance. Managers are expected to remove temporary facilities when they are no longer needed.

Critical Biological (3,920 acres or less than 1 percent of the national forest): This zone includes the most important areas on the national forest to manage for the protection of species-at-risk. Facilities are minimal to discourage human use. The level of human use and infrastructure is low to moderate.

Wildland/Urban Interface Threat Zones (see Appendix K in Part 3 of the forest plan) may occur in this zone. Community protection vegetation treatments within the Critical Biological land use zone may occur by exception. In these cases, managers will consider species and habitat needs.

The management intent is to retain the natural character and habitat characteristics in this zone and limit the level of human development to manage for protection of species-at-risk. Activities and modification to existing infrastructure are allowed if they are beneficial or neutral to the species for which the zone was primarily designated (see table 524: Angeles NF Critical

Biological Land Use Zones). Human uses are more restricted in this zone than in Back Country Non-Motorized zones in order to protect species needs, but are not excluded. Low impact uses, such as hiking, mountain biking and hunting are generally allowed. Motorized use of existing National Forest System roads is allowed. Approximately 1.3 percent of the National Forest System and non-system roads are found in this zone including one mile of unclassified road. Road density will not be increased and may be decreased as a result of species protection requirements.

Table 524. Angeles NF Critical Biological Land Use Zones

Primary Species Protected and Primary Uses			
CBLUZ	Primary Species Protected	Place	Primary Uses**
South Fork Big Rock Creek	Mountain yellow-legged frog	Angeles High Country	Existing use of Sycamore Flats, South Fork and Little Jimmy Campgrounds is retained
South Fork Little Rock Creek	Mountain yellow-legged frog	Angeles High Country	Existing use of the Williamson Rock climbing area is retained
Lower Little Rock Creek	Arroyo toad	Mojave Front Country	Ongoing activities at Little Rock Reservoir and associated developed areas to include the boat ramp, Fisherman's Point, Juniper, Rock Point and Sage Picnic Areas are retained. Use of Little Rock Road 5N04 is retained. Little Rock OHV Area is closed above Rock Point Day Use Area; however a small segment is retained. Little Rock OHV route adjacent to CBLUZ is retained for opportunities to define an improved system while relocating established routes outside of sensitive areas. Joshua Tree and Basin Campgrounds and Santiago OHV route are currently closed due to potential impacts to the arroyo toad. Site specific analysis of these areas will determine if they are a suitable use within the CBLUZ.
West Fork San Gabriel River	Santa Ana sucker	San Gabriel Canyon	CBLUZ location is Cogswell Dam downstream to the beginning of the wild trout area (2nd bridge). This area is currently managed as a wild trout stream and this designation is retained. Management of the Cogswell Dam for flood control and water conservation including water release is not in conflict with the CBLUZ designation and is retained. Installation of toilets can be considered neutral or beneficial use. Administrative use and use of Forest Service Road 2N25 as a hiking and bicycle path will be retained.

Primary Species Protected and Primary Uses			
CBLUZ	Primary Species Protected	Place	Primary Uses**
Upper Big Tujunga	Arroyo toad, California red-legged frog	Angeles Uplands (West)	Access on county road 3N19 and associated maintenance, access to private property in section 35, existing Special Use Permits, and proposed OHV corridor across Alder Creek area are retained. Dispersed recreation use will continue to be limited by limiting parking areas.
Soledad Canyon	Arroyo toad, unarmored three-spine stickleback	Soledad Front Country	The Wildlife Viewing site at this location will be retained. Soledad Campground will continue to be closed and facilities removed. Private lands surrounding the CBLUZ are not affected.
San Francisquito Canyon	California red-legged frog, unarmored three-spine stickleback, *Berberis nevinii*	Santa Clara Canyons	Access to the old Saint Francis dam site is retained. Because of it historical context, and to avoid use conflicts associated with visitor use at the dam site, the CBLUZ is disconnected at this location for a short distance.
Castaic	Arroyo toad	Santa Clara Canyons	Administrative access on FS Road 6N13 will be retained with restrictions on night-time use. Grazing has been discontinued.
Fish Canyon	Arroyo toad	Santa Clara Canyons	Administrative access on FS road 6N32 will be retained with restrictions on night-time use. Grazing has been discontinued. Cienega Campground will remain closed and facilities removed.

**This is a partial list of activities associated with these CBLUZ's. See Suitable Use Tables (Part 2) for full description of all suitable uses.

Existing Wilderness (81,924 acres or 12 percent of the national forest): This zone includes Congressionally designated wildernesses. Only uses consistent with all applicable wilderness legislation and with the primitive character are allowed in existing and recommended wilderness. Road access is limited to uses identified in the specific legislation designating the wilderness (see wilderness in the forest-specific design criteria of Part 2 of the forest plan), approximately .7 percent of the National Forest System and non-system roads are found in this zone including 1.4 miles of unclassified road. The characteristic Recreation Opportunity Spectrum objective is Primitive with limited areas of Semi-Primitive Non-Motorized.

Wildland/Urban Interface Threat Zones (see Appendix K in Part 3 of the forest plan) may occur in this zone. Community Protection vegetation treatments within the existing wilderness zone may occur by exception. In these cases, managers will consider wilderness needs.

The management intent is to administer this zone for the use and enjoyment of people while preserving its wilderness character and natural conditions. Non-conforming uses will be removed to preserve wilderness character. Designated wilderness includes:

- Sheep Mountain Wilderness
- San Gabriel Wilderness
- Cucamonga

Recommended Wilderness (13,231 acres or 2 percent of the national forest): This zone includes land that the Forest Service is recommending to Congress for wilderness designation and will be managed in the same manner as existing wilderness so that the wilderness attributes of the area are retained until Congress passes legislation, or the area is released from consideration. If Congress elects to not designate an area, the area would be zoned as Back Country Non-Motorized until modified by a subsequent plan amendment, no inventoried roads are found in this zone.

Wildland/Urban Interface Threat Zones (see Appendix K in Part 3 of the forest plan) may occur in this zone. Community protection vegetation treatments within the recommended wilderness land use zone may occur by exception. In these cases, managers will consider wilderness needs.

The management intent is to administer this zone for the use and enjoyment of people while preserving its wilderness character and natural conditions. Wilderness recommendations include:

- Cucamonga A (Cucamonga Wilderness)
- Sheep Mountain (Sheep Mountain Wilderness)

Experimental Forest (15,498 acres or 2 percent of the national forest): This zone serves as a research and demonstration area, and is generally closed to the public except by permit. This zone occurs only on the San Dimas Experimental Forest. While the Pacific Southwest Research Station manages the Experimental Forest, the Forest Supervisor for the Angeles National Forest is authorized to administer all recreation residence special use permits within the San Dimas Experimental Forest boundary.

Special Designation Overlays

The following land use classifications act as overlays to the primary land use zones. In other words, suitable uses identified in the land use zone tables are generally suitable in these overlay classifications unless specifically excluded. When differences occur in suitable uses between the land use zone and special designation overlay, the more restrictive set of allowable uses apply.

Wild and Scenic Rivers

Wild and Scenic River *eligibility* (an inventory and evaluation of whether a river is free-flowing and possesses one or more outstandingly remarkable values (ORVs) including scenery, recreation, geology, fish and wildlife, history, cultural (prehistoric), or similar values) was completed for the four southern California national forests. If found eligible, a river segment was then analyzed as to its current level of development (water resources projects, shoreline development, and accessibility) and a recommendation was made that it be placed into one of three classes—wild, scenic or recreational. The final procedural step (*suitability)* provides the basis for determining whether to recommend to Congress an eligible river as part of the National System.

The suitability study phase will be initiated at a later date for the five eligible rivers on the Angeles National Forest.

Suitable uses are those compatible with protecting and enhancing the outstandingly remarkable values for which the river was designated or found eligible.

Eligible Wild and Scenic Rivers Include:

- Little Rock Creek
- Piru
- San Antonio Canyon Creek
- San Francisquito Canyon
- San Gabriel River (East, West and North Forks)

All existing facilities, management actions, and approved uses will be allowed to continue in eligible river corridors until a decision is made on inclusion into the National Wild and Scenic River System, provided these facilities, actions, and uses do not interfere with the protection and enhancement of the rivers' outstandingly remarkable values.

New proposals include facilities, management actions, or uses on National Forest System land and are not allowed if they have the potential to affect the eligibility or potential classification of the river segment.

Uses comply with Forest Service Handbook 1909.12, chapter 8.2, which includes a description of developments and activities that are permitted, restricted or prohibited within the designated river corridor for each of the three classifications (wild, scenic and recreation).

Inventoried Roadless Areas

Inventoried Roadless Areas (IRAs) were originally mapped as a result of the second Roadless Area Review (RARE II), which was documented in a final environmental impact statement dated January of 1979, and refined during development of the national forest land management plans. These maps were identified in a set of inventoried roadless area maps, contained in the Forest Service Roadless Area Conservation, Final Environmental Impact Statement, Volume 2, dated November 2000. A final Roadless Area Conservation Rule was published in May of 2005, allowing optional State government involvement through a petition process. Alternatively the 1982 NFMA planning rule allows for the analysis and evaluation of roadless areas, including boundary adjustments, in the forest plan revision process. An updated inventory has been prepared to reflect changes in the roadless inventory due to analysis and evaluation made in this forest plan revision. Adjustments to the inventory include correction of mapping errors including boundary roads mistakenly included within an IRA, removal of those areas that congress has designated as wilderness, addition of undeveloped areas that were not part of the original inventory but were recommended as wilderness in this forest plan, and implementation of the following classification to reflect the land use zoning decisions in the revised forest plan (see Appendix C, Inventoried Roadless Area maps):

- 1a - IRAs allocated to a prescription that does not allow road construction and the forest plan recommends as wilderness.
- 1b - IRAs allocated to a prescription that does not allow road construction or reconstruction.
- 1c - IRAs allocated to a prescription that allows road construction or reconstruction.

Research Natural Areas

Research Natural Areas include relatively undisturbed areas of the national forest that form a long-term network of ecological reserves designated for research, education, and the maintenance of biodiversity. This designation applies to both established and proposed Research Natural Areas.

Research Natural Areas are selected to preserve a spectrum of relatively pristine areas that represent a wide range of natural variability within important natural ecosystems and environments, and areas that have unique characteristics of scientific importance. Research Natural Areas are also selected for one or more of the following reasons:

- To serve as reference areas for evaluating the range of natural variability and the impacts of management in similar environments.
- To protect and maintain representative or key elements of biological diversity at the genetic, species, population, community, or ecosystem levels.
- To serve as areas for the study of ecosystems and ecological processes including succession.
- To provide onsite and extension educational activities.
- To serve as baseline areas for measuring ecological change.

Uses that retain the research values for which the site is designated are appropriate.

Established Research Natural Areas Include:

- Falls Canyon
- Fern Canyon

There are no proposed Research Natural Areas for the Angeles National Forest.

Special Interest Areas

Special Interest Areas protect and, where appropriate, foster public use and enjoyment of areas with scenic, historical, geological, botanical, zoological, paleontological, or other special characteristics. Uses that are compatible with maintaining the target of the areas designation are appropriate.

Special Interest Areas include:

- Devil's Punchbowl
- Mt. Baden-Powell
- Mt. San Antonio
- Aliso - Arrastre Middle and North
- Liebre Mountain

Other Designations

- Designated Communication Sites, table 474
- Designated Utility Corridors, table 484
- Designated Transportation Corridors, table 482
- Recreation Residence Tracts, table 478
- Designated Shooting Areas, table 488
- Designated Sediment Disposal Sites, table 535

Table 474. Designated Communication Sites, Angeles National Forest

Communications Site Name	Existing Uses	Approximate Location	Restrictions
Mount Wilson	Broadcast/ High-power	Sec. 30, T2N, R11W, SBM	
Contractors Point	Microwave/ Amateur/ Low-power	Sec. 13, T3N, R15W, SBM	
Loop Canyon	Microwave/ Amateur/ Low-power	Sec.13, T3N, R15W, SBM	
Los Pinetos	Microwave/ Two-way Radio/ Low-power	Sec 9, T3N, R15W, SBM	Government Only
Magic Mountain	Microwave/ Cellular/ Two-way Radio/ Low-power	Sec 34, T4N, R14W, SBM	
Little Gleason	Microwave/ Local Exchange/ Low-power	Sec 34, T4N, R12W, SBM	
Mount Gleason	Microwave/ Two-way Radio / Low-power	Sec. 6, T3N, R12W, SBM	
Mount Disappointment	Microwave/ Two-way Radio / Low-power	Sec. 23, T2N, R12W, SBM	Government Only
Mount Lukens	Microwave/ Cellular/ Two-way Radio / Non-Broadcast/ Low-power	Sec 10, T2N, R13W, SBM	
Santa Anita	Microwave/ Amateur/ Two-way Radio / Low-power	Sec. 9, T1N, R11W, SBM	
Arcadia	Microwave/ Amateur/ FM Radiobroadcast/ Two-way Radio / Low-power	Sec. 10, T1N, R11W, SBM	
Barley Flats	Microwave Relay	Sec. 7, T2N, R11W, SBM	Single Facility Site
Chilao	PMRS Microwave/ Single User Microwave/	Sec. 26, T3N, R11W, SBM	Government Only
Johnstone Peak	Two-way Radio/ Broadcast/ Low-power	Sec. 23, T1N, R9W, SBM	
Pine Mountain	Microwave/ PMRS/ Low-power	Sec. 26, T2N, R10W, SBM	Government Only

Communications Site Name	Existing Uses	Approximate Location	Restrictions
Sunset Ridge	Broadcast/ Non-Broadcast/	Sec. 10, T1N, R8W, SBM	
Crystal Lake	Microwave Relay	Sec. 28, T3N, R9W, SBM	Single Facility Site
East Fork	Microwave Relay	Sec. 21, T2N, R9W, SBM	Single Facility Site
Blue Ridge	Non-Broadcast/ Low-power	Sec 13, T3N, R8W, SBM	
Inspiration Point	Microwave/ Two-way Radio / Low-power	Sec 3, T3N, R8W, SBM	
East Table Mountain	Non-Broadcast/ Low-power	Sec 1, T3N, R8W, SBM	
Grass Hollow	Local Exchange Telephone	Sec 4, T3N, R8W, SBM	Government Only
Burnt Peak	FAA VORTAK Microwave/ Amateur/ Non-broadcast/ Two-way Radio / Low-power	Sec. 21, T7N, R16W, SBM	
Portal Ridge	Microwave/ Non-broadcast/ Two-way Radio / Low-power	Sec. 24, T7N, R15W, SBM	
Whitaker Ridge	Non-broadcast/ Low-power	Sec. 3 & 36, T6N, R18W, SBM	
Emigrant Landing	Public safety radio base stations	Sec 22, T7N, R18W, SBM	Government Only
Castaic Communications	Microwave Relay	Sec 4, T5N, R16W, SBM	Single Facility Site

Table 478. Recreation Residence Tracts, Angeles National Forest

Barrett Canyon	Glacier	Roberts Canyon
Bear Canyon	Icehouse	San Antonio Falls
Big Rock Creek	Lake Hughes	San Francisquito
Big Santa Anita	Main San Dimas	Upper San Antonio
Big Tujunga (Includes Trail Canyon, Stoneyvale, Big Tujunga, Vogel, Trailunga La Paloma)	Manker Flat	West Fork
	McClellan Flats	West Fork San Gabriel
	Millard	Westfork San Dimas
Bouquet Canyon	North Fork San Gabriel	

Table 482. Designated Transportation Corridors, Angeles National Forest

Transportation Corridor Name	Approximate Land Area (acres)
Aliso Canyon Road	108
Angeles Crest Highway	1030
Angeles Forest Highway	383

Transportation Corridor Name	Approximate Land Area (acres)
Big Pines Highway	184
Big Rock Canyon Road	90
Big Tujunga Canyon Road	175

Transportation Corridor Name	Approximate Land Area (acres)
Bouquet Canyon Road	288
Chantry Flats Road	27
East Fork Road	84
Glendora Mountain Road	232
Glendora Ridge Road	192
Golden State Highway	118
State Highway 39	481
Interstate Highway 5	6793
Lake Hughes Road	364
Little Tujunga Canyon Road	164
Mount Baldy Road	184

Transportation Corridor Name	Approximate Land Area (acres)
Mount Emma Road	77
Mount Wilson Road	81
Old Ridge Road	308
Pine Canyon Road	288
Placerita Canyon Road	81
San Francisquito Road	292
Sand Canyon Road	98
Sierra Highway	195
Soledad Canyon Road	299
Spunky Canyon Road	86
Templin Highway	78
Upper Big Tujunga Road	145

Table 484. Designated Utility Corridors - Angeles National Forest

Utility Corridor Name	Approximate Land Area		Existing Uses
	Acres	Miles	
Interstate 5 (Tejon Pass)	9,544	27.1	500KV (2), 220KV (3), Oil & Gas pipelines (7), Fiber Optic line (4), Interstate Highway 5, Aqueduct
Old Ridge Route	3,543	10.7	2 500KV, 4 Oil & 2 Gas Pipelines, Fiber Optic, Aqueduct.
Saugus/Mesa	185	1.4	500KV.
Saugus/Del Sur	1,697	13.8	500KV, 66KV
Ranaldi Dept Water Power	1,207	9.6	500KV
Gorge Ranaldi	629	5.0	500KV
BPL	3,025	24.7	500KV
Vincent Gould	2,259	18.5	500KV
Vincent Rio Hondo	3,090	25.3	500KV
3-P Line	353	2.8	500KV
Midway Vincent	3,442	43.4	500KV
Vincent Pardee	191	1.4	500KV

Table 488. Designated Shooting Areas - Angeles National Forest

Component	Angeles
Concession-Operated Sites	A Place to Shoot Burro Canyon
Permitted Gun Clubs: Limited or No Public Access	Desert Marksmen Burbank
Designated Shooting Sites by Forest Order (Other Shooting Restrictions May Apply)	3 sites temporarily closed since 1993.
Remainder of Forest	Closed to shooting.

Table 535. Designated Sediment Disposal Sites - Angeles National Forest

Lower Pacoima Canyon Maple Canyon (Pacoima Reservoir) Limekiln Canyon Burro Canyon Cogswell Sycamore Canyon	Maple Canyon (Sawpit Reservoir) Lodi Canyon Mystic Canyon Spanish Canyon Keril Canyon

Scenery Management System

The Scenery Management System (SMS) is a tool for integrating the benefits, values, desires, and preferences regarding aesthetics and scenery for all levels of land and resource management planning. People are concerned about the quality of their environment and the aesthetic values of landscapes, particularly the scenery and spiritual values. Scenic integrity objectives have been designated for all areas of the national forest. At the project level, all national forest activities are subject to review of the scenic integrity objectives (see Appendix C, Scenic Integrity Objective maps).

Public Uses Regulated by Other Agencies

The California Department of Fish and Game (CDF&G) manages California's fish and wildlife populations for their ecological values and for their use and enjoyment by the public.

Hunting is permitted throughout the national forests of southern California during hunting seasons designated by CDF&G. Hunting is not permitted in those areas where the discharge of firearms is prohibited by county ordinance, California State law, or federal regulations. For safety, hunters must follow all laws including no hunting within 150 yards of a residence, building, campsite, developed recreation site or occupied area. Except as permitted by CDF&G, it is unlawful to use a dog to pursue/take animals or to train a dog for hunting. The CDF&G may issue dog training and organizational field trial permits authorizing releasing and taking domestically reared game birds, bobwhite quail, or coturnix quail. Such organized events require a special-use permit from the appropriate Forest Service office.

Angling is encouraged in most areas of the national forests during fishing seasons designated by CDF&G. Some locations have special regulations and a few are closed to fishing in order to protect the steelhead trout and other aquatic species that depend on high quality habitat.

Prospectus

The prospectus describes recent trends and expectations regarding the levels of experiences, goods and services, or other outcomes that are supplied by the national forest, as well as anticipated resource improvements planned over the next three to five years. Past performance is generally a good indicator of what is expected in the near future. Performance expectations under two budget levels are projected into the future and strategic program emphasis is described through specific objectives that the national forest will focus on under current budget expectations (see Program Emphasis and Objectives). Annual monitoring and evaluation of trends in performance indicators determine if there is a need to shift program emphasis to more effectively move toward the desired conditions (see Monitoring Trends and Performance Indicators). The Forest Supervisor will plan and implement projects that contribute to achieving desired conditions described in Part 1, while meeting the standards described in Part 3. Information in this prospectus will be updated on a regular basis to reflect changes in management emphasis or budget fluctuations. Specific strategies and tactics that are linked to program objectives are found in Appendix B. These are referenced from each of the applicable program objectives discussed in this section. The final section describes examples of performance risks that could cause a need for change in management emphasis (see Performance Risks).

Program Emphasis and Objectives

A methodology common to the four southern California national forests was applied during the development of the Forest Business Plan (`http://www.fs.fed.us/r5/business-plans/`), in order to describe the activities and programs for the Angeles National Forest. Activities were organized into six functional areas, which include all areas of business for which the national forest is responsible. The functional areas collectively include 35 programs. National Forest management uses the results to clearly communicate program capability both internally and externally.

The six functional areas are:

- Management & Administration: Forest leadership, management and administrative support activities, communications, external affairs, community outreach, planning, human resources, information technology, and financial management.
- Resource Management: Activities related to managing, preserving, and protecting the national forest's cultural and natural resources.
- Public Use & Enjoyment: Activities which provide visitors with safe, enjoyable and educational experiences while on the national forest and accommodate changing trends in visitor use and community participation and outreach.
- Facility Operations & Maintenance: Activities required to manage and operate the national forest's infrastructure (i.e., roads, facilities, trails, and structures).
- Commodity & Commercial Uses: Grazing management, forest special product development, and activities related to managing non-recreation special-uses such as national forest access, telecommunications sites, and utility corridors.
- Fire & Aviation Management: Wildland fire prevention through education, hazardous fuels reduction, and proactive preparation. This program also includes on-forest wildland

fire suppression, and national or international wildland fire and emergency incident response.

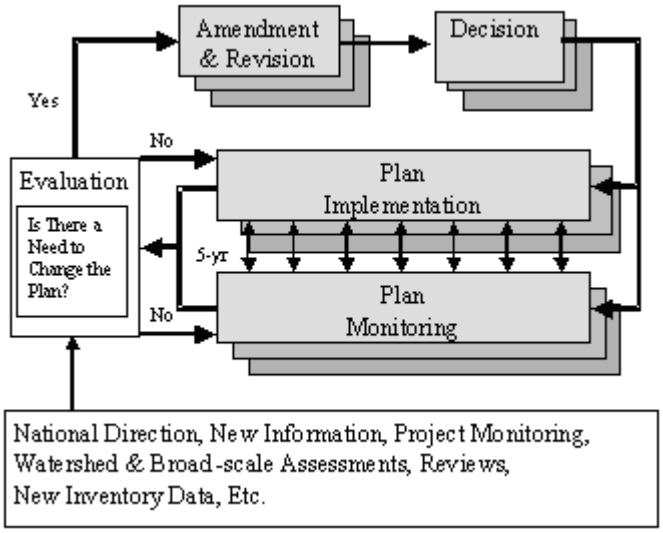
Monitoring Trends and Performance Indicators

Monitoring in Part 2 of the forest plan is focused on program implementation including inventory. The national forest currently uses performance indicators for tracking program accomplishments. The current system is expected to be replaced by a performance accountability system integrating annual budgets with programs of work and linking these to tracking of strategic plan performance indicators.

Each of the key performance indicators are estimated for two budget levels in the performance history section; one based on the current budget trend and the other an estimate of the total capability and need for the program activity on the national forest assuming an unconstrained budget. Performance indicators are shown at the end of each management function section for:

- Resource Management Performance Indicators, ANF, table 2.1.5, page 28
- Public Use and Enjoyment Performance Indicators, ANF, table 2.1.6, page 31
- Facilities Operations and Maintenance Performance Indicators, ANF, table 2.1.7, page 32
- Commodities and Commercial Uses Performance Indicators, ANF, table 2.1.8, page 34
- Fire and Aviation Management Performance Indicators, ANF 4,table 2.1.9, page 36

Figure 2.1 The Three Parts of a Plan in the Adaptive Management Cycle



Actual performance is tracked over time through annual documentation of accomplishment and these trends are evaluated periodically to determine if the national forest needs to shift program strategies (see figure 2.1, The Three Parts of a Plan in the Adaptive Management Cycle). This data is reported in the annual Monitoring and Evaluation Report as part of the national forest's implementation monitoring efforts.

Inventory is a continuous effort (see AM 2 - Forest-wide Inventory Program Strategies and Tactics section). As funding is available, priority inventories are implemented and reported through various resource information systems including interagency systems. Periodic evaluation of inventory data is used to explore trends in resource conditions over time. Annual monitoring and evaluation reports (see AM 1 - Land Management Plan Monitoring and Evaluation) will document when there is a need to change the forest plan in response to declining trends in resource conditions.

General Budget History

In 2002, Angeles National Forest's appropriations reached to $25.9M, which is their highest level ever. Of this amount, 64 percent or $16.6M was budgeted for wildland fire preparedness, with the remaining 36 percent or $9.3M covering all other operations. Funding growth rates in these two segments show similar disparities: between 1995 and 2002 wildland fire preparedness budgets grew at a rate of 30 percent per year, while growth in all other program budgets was at a much lower level of 2 percent. These differences have been particularly dramatic since 2000; appropriated fire budgets grew by almost 75 percent between 2000 and 2002, from $9.5M to $16.6M. Over the same time period, all other program budgets increased by only 15 percent (from $8.1M to $9.3M).

Management and Administration

The current complex web of federal, state, county, local, tribal, partnership, not-for-profit, and private relationships require broad and deep skills and experience to effectively manage the national forest. The challenge of proactively organizing the transformation of a healthy forest requires more than just management, it requires the leadership of everyone who might be affected by that change, including the communities of the urban areas in which the national forest conducts business.

The Forest Business Plan divides the Management & Administration category into General Management, Financial Management, General Administration, District Management, Planning, Public Affairs, and Information Technology programs. The forest plan addresses two of these programs: general and district management.

Vision, leadership, performance reporting, legislative contacts and priority setting are the tasks of the Forest Supervisor, Deputy Forest Supervisor, and their immediate support staff. From the Forest Supervisor's Office in Arcadia, human resources, engineering, recreation, resources, public relations, information technology and other staff functions provide technical and administrative support to the Ranger Districts.

One of a number of public open houses hosted by the Angeles NF for the forest plan revision.

The Angeles National Forest is divided into three Ranger Districts oriented around watershed boundaries: the San Gabriel River Ranger District, the Los Angeles River Ranger District, and the Santa Clara/Mojave Rivers Ranger District. A District Ranger oversees all of the programs and staff specific to that district, and maintains relationships with local communities and organizations. This program only covers the management-related activities of the District Rangers and their direct support.

The national forest will complete effective community outreach, enlisting the support of local communities, partners, and volunteers to promote land stewardship by jointly developing and implementing a broad range of conservation activities (see Forest Business Plan for the Angeles National Forest 2003). Emphasis will be placed on further developing relationships with tribal governments; working together to resolve issues; and to facilitate the continued traditional and cultural tribal use of the national forest (see Tribal 1 - Traditional and Contemporary Uses; and Tribal 2 - Government to Government Relations).

Resource Management

The mission of the Forest Service is "to sustain the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations." The resource management function manages the health of the vegetation on the land, the quality of wilderness areas, the boundaries and ownership of the land, the cultural heritage that resides on the land, the quality of the water running on and under the land, the air quality above the land, and the habitat for the wildlife roaming the land. These programs include the data management that allows national forest personnel to analyze and store all data collected as part of program activities.

Wildlife management staff at the Angeles National Forest carry out projects associated with monitoring and preserving key species, provide National Environmental Policy Act (NEPA) and other environmental permitting support to non-wildlife national forest projects, and complete wildlife monitoring activities associated with legal requirements and forest plan implementation.

Program emphasis for wildlife management is on minimizing the effects of urbanization. The Angeles National Forest will emphasize protecting core areas from the threat that urbanization poses such that these areas will continue to conserve biodiversity in an interconnected regional open space network. Habitat loss and fragmentation will be reduced through conserving and managing habitat linkages within, and where possible between, the national forests and other public and privately conserved lands. Declining trends in threatened, endangered, proposed, candidate, and sensitive species populations will be neutralized or reversed by maintaining or improving habitat capability, removing invasive species, and by reducing conflicts with other activities such as recreation, resource or community development. National Forest staff plan: to implement 10 percent of recovery tasks and conservation measures identified in recovery plans and species and habitat conservation strategies; continue the emphasis on improving our knowledge base regarding riparian dependent threatened and endangered species through basic inventory of suitable habitat; and prioritize completion of the inventory of nonwilderness areas in the next five years (see tables: WL 1 - Threatened, Endangered, Proposed, Candidate, and Sensitive Species Management; WL 2 - Management of Species of Concern; IS 1 - Invasive Species Prevention and Control; Link 1 - Habitat Linkage Planning; Lands 1 - Land Ownership Adjustment; Lands 2 - Non-Recreation Special Use Authorizations; AM 2 - Forest-wide Inventory).

The national forest places a high priority on controlling nonnative species that prey on or compete with threatened, endangered, proposed, candidate, and sensitive species. National Forest staff plan to implement control measures on approximately 20 percent of the known areas where invasive species are conflicting with threatened, endangered, proposed, candidate, and sensitive species (see table: IS 1 - Invasive Species Prevention and Control).

Vegetation management protects critical habitats, reduces fire and erosion risks, and replants burned or otherwise damaged vegetation. The national forest has identified the following vegetation management project categories related to community protection and forest health:

- **Mortality Removal - Annual Need: 1,000 acres.** The removal of dead vegetation to reduce fire hazard. Timber sales to remove merchantable trees and contract removal of non-merchantable trees and shrubs, slash treatments. Projects will move forested areas from Condition Class three towards Condition Class one. In chaparral areas, mortality removal is planned to reduce the fire hazard from high to low.

Chipping dead trees burned in the Curve Fire (Sept. 2002) at Crystal Lake Recreation Area. A contractor from northern CA is performing the work. November, 2004

- **Thinning - Annual Need: 600 acres.** The removal of living trees from overstocked stands, in most cases trees of 24 inches in diameter or less. These projects include the treatment of all slash and are expected to move forested areas from Condition Class two or three towards Condition Class one. Thinning is required prior to the reintroduction of fire in most cases.
- **Reforestation And Restoration Of Forest Vegetation - Annual Need: 100 acres.** Restoration projects are either designed to facilitate natural recovery following disturbance (fire, drought related mortality, insect and disease) or to implement planting projects as needed when natural processes are not likely to achieve desires results.
- **Fuelbreak Maintenance - Annual Need: 500 acres.** Existing fuelbreaks are generally maintained using prescribed fire, masticating machines, or grazing. Most of the fuelbreaks are in high hazard chaparral areas and are designed to limit wildland fire size, as well as provide firefighter access and improved firefighter safety. A few of the fuelbreaks are in coniferous forest and serve to limit fire spread from or towards communities or timber stands in poor condition. Most of the existing fuelbreaks are on ridgetops or along roads.
- **Fuelbreak Construction - Annual Need: 50 acres.** Most of the planned fuelbreaks are also along roads and ridgetops and are proposed for limiting wildland fire patch size. While most fuelbreaks are constructed with machinery, some are built by hand or by using prescribed fire. Herbicides may be used to kill resprouting chaparral and then fire is used to maintain the fuelbreak over time. Fuelbreaks are sometimes constructed near communities to provide some level of future protection in cases where land ownership patterns or topography limit the applicability of the Wildland/Urban Interface Defense and Threat Zones concept.
- **Wildland/Urban Interface (WUI) Defense and Threat Zones- Annual Need: 1,500 acres.** A WUI Defense Zone is a relatively narrow area in width (see standards S7 and S8 in Part 3), directly adjoining structures, that is converted to a less-flammable state to increase defensible space and firefighter safety. The WUI Threat Zone (see standard S7) is an additional strip of vegetation modified to reduce flame heights and radiant heat. The two zones together are designed to make most structures defensible. These zones are applicable to national forest land and all structures upon them. In addition, they apply where national forest boundaries are directly adjacent to communities on private lands.

Techniques may include hand or machine removal of vegetation and herbicides in the WUI Defense Zone. Treatments in the threat zone are less intensive and can generally be maintained with prescribed fire over the long-term. In forested areas, extensive tree thinning is planned as part of installing WUI Threat Zones.

- **Rx Fire - Annual Need: 5,000 acres.** Projects in this category are generally large burns in chaparral to reduce fire hazard near communities, or as part of an overall landscape mosaic designed to limit wildland fire patch size. Prescribed fire is also used to help restore and maintain land in the coniferous forest areas, currently categorized as Condition Class one or two. Some prescribed burns are conducted to enhance wildlife browse conditions.

Projects often incorporate a combination of these activities designed to most effectively meet site-specific objectives.

Forest health will improve through using the Community Protection Program. Vegetative treatments target restoration of desired fire regimes; the improvement of water quantity, quality and flow in order to maintain or improve riparian habitats; and improvement of watershed conditions will be concurrent with community protection projects that are implemented. National Forest staff plan to implement approximately 5 percent of identified Forest Health projects (see tables: Fire 2 - Direct Community Protection; FH 2 - Prevention of Fire Induced Type Conversion; FH 3 - Restoration of Forest Health).

Fisheries project on Angeles NF

Watershed, soil and air management personnel work to protect and monitor air, water, and soil resources throughout the national forest and surrounding area. Special designation areas and land ownership and adjustment staff work on programs to protect and enhance the geographic integrity of forest land.

Emphasize gaining control of groundwater and surface water resources in order to benefit ecosystem health and national forest administrative needs. To address the increased demand for groundwater and surface water resources, program emphasis will be on balancing the needs of water users with resource needs for the maintenance or improvement of stream, riparian, springs and wetland habitat by procuring water rights and instream flow agreements. National Forest staff plan to complete approximately 20 percent of the water diversion permit reauthorizations backlog, including acquiring available water rights or relocating diversions to the national forest perimeter if possible (see WAT 1 - Watershed Function; and WAT 2 - Water Management; Lands 2 - Non-Recreation Special Use Authorizations).

The Lands Program is responsible for maintaining the national forest's property records, completing land transactions, and surveying and protecting national forest boundaries. The national forest has 600 miles of boundary, only 100 of which have been resurveyed and marked since the late 1800s. In this program area, the current staffing level of two people is insufficient

to deal with the backlog of survey needs and an ever-increasing number of national forest boundary encroachments by private landowners. Today, there are an estimated 5,000 such encroachments. These encroachments degrade the quality of national forest land and possibly remove it from the public domain. In addition, many opportunities exist to purchase private lands to further protect critical forest resources. At current funding levels, national forest staff cannot pursue all opportunities that would benefit the national forest.

The national forest will work collaboratively with others to acquire land that contains unique resources; is needed for continued public access; enhances public use; or improves habitat linkage. National Forest staff plan to implement land adjustment strategies on approximately 5 percent of the areas identified on land adjustment maps.

The national forest will emphasize retaining and restoring clear title to National Forest System land by posting boundaries in undeveloped areas to prevent trespass and encroachment. Forest staff plan to resolve approximately 10 percent of the backlog of trespass and encroaching uses cases (see tables: Lands 1 - Land Ownership Adjustment; Lands 3 - Boundary Management).

Heritage Resource Management strives to protect significant heritage resources present on national forest land; to share their values with the American people; and to contribute relevant information and perspectives to natural resource management. Under various agreements with the California State Historic Preservation Office and the Advisory Council on Historic Preservation, the Angeles National Forest has agreed to both provide heritage support to other resource-related projects on the national forest (Section 106), and also to develop a sound overall program for the management of the national forest's heritage resources (Section 110). The majority of national forest staff time is currently occupied in the former capacity.

The Heritage Program emphasis includes identifying all activities that have the potential to adversely affect or do not complement significant cultural properties. National Forest staff expect to document 40 percent of all known significant cultural properties to identify any such activity, and develop measures to mitigate the adverse effects or impacts on approximately 40 percent of the sites (see tables: Her 1 - Heritage Resource Protection; and Her 3 - Forest-wide Heritage Inventory; Her 4 - Heritage Research). Program emphasis will also focus on public participation programs such as Passport in Time (see: Her 2 - Public Involvement Program).

Table 2.1.5. Resource Management Performance Indicators, ANF

Performance Indicators for Resource Management	Current Level	Estimated Forest Capability and Need
Acres of Terrestrial Habitat Enhanced	464	620
Miles of Aquatic Habitat Enhanced	31	50
Acres of Noxious Weeds Treated	13	50
Acres of Vegetation Improved (also see Hazardous Fuels Reduction)	562	1,000
Acres of Watershed Improved	172	375
Acres of Land Ownership Adjusted	45	300
Number of Heritage Resources Managed to Standard	75	130

Public Use and Enjoyment

Public Use & Enjoyment in the Angeles National Forest includes all activities related to providing visitors with a safe and educational experience. The functional area includes all interpretive services, visitor center management, interpretive media, in-forest concessions management, fee collection, community outreach, visitor safety and law enforcement services.

The overall mission of the interpretive services, visitor centers and education program is to forge intellectual and emotional connections between people and their natural and cultural heritage. The primary focus of the Interpretive Services and Education Program is on public service communication. The Angeles National Forest uses a variety of media to deliver information on recreation opportunities, on stewardship responsibilities such as heritage and wilderness protection, and on in-depth topics of public interest.

Community outreach includes activities that encourage the stewardship of national forest lands through the participation of people from local areas. These efforts lead to sustainable recreation within the national forest.

Partnerships and volunteers will be emphasized to improve visitor services and increase opportunities for interpretation and environmental education (see tables: REC 4 - Conservation Education; Her 2 - Public Involvement Program).

Conservation education at Mt. Baldy Visitor Center includes heritage resources

The Angeles National Forest manages approximately 500 recreation special-use authorizations, including four concession campground complexes, two concession target shooting areas, five ski areas, a marina, 26 organization camps, and over 450 summer homes. The national forest also issues and administers numerous recreation events, such as mountain bike events and car rallies.

The Angeles National Forest operates 63 campgrounds with over 1,100 individual campsites and an additional 36 picnic areas. Activities include trash collection, cleaning, maintenance of infrastructure, monitoring of water systems, and others associated with keeping the facilities clean, safe, and in good repair.

Concentrated Use Areas are locations throughout the national forest where large groups of people recreate outside of established recreation facilities. These locations are often along rivers and streams with easy road access, and lack the trash collection, restroom, and other facilities found at traditional developed sites. This lack of facilities, combined with heavy use, results in significant degradation of these sites from litter, vegetation loss, erosion, and graffiti.

The national forest will emphasize providing balanced, environmentally sustainable recreation opportunities to meet the needs of a growing, urban, culturally diverse population, particularly for day use. National Forest staff plan to use adaptive management measures to be implemented on approximately 75 percent of Concentrated Use Areas and developed sites that have threatened, endangered, proposed, candidate, and sensitive species conflicts identified. The national forest will also focus on community outreach, education and collaboration.

Recreation special-uses are an important program component. The national forest will complete re-issuance of recreation residence permits by 2008. (See REC 1 - Recreation Opportunity; REC 2 - Sustainable Use and Environmental Design; REC 3 - Recreation Participation; and Fac 1 - Facilities Maintenance Backlog.)

Scenic resources will emphasize conserving or restoring aesthetic, recreation, and open space values, especially those of high-valued scenery such as scenic backdrops for local communities

Crystal Lake Recreation Area facilities

and increasingly rare values such as solitude. (See REC 1 - Recreation Opportunity; LM 1 - Landscape Aesthetics; LM 2 - Landscape Restoration; LM 3 - Landscape Character).

Law enforcement services are an integral part of the Forest Service's day-to-day management. These services include the administration of permits and contracts, the dissemination of visitor information regarding the use of National Forest System lands, and the enforcement of the rules and regulations that govern the management of the national forest. The authority for providing law enforcement services is described at 16 USC 551 and 559. The means to implement these authorities are found in 36 CFR 261 and Title 18 of the United States Code. Visitor safety and resource protection activities are accomplished using law enforcement officers working at three different levels. These are:

(1) Forest Protection Officers are primarily responsible for public contact in the field, public information and education efforts and they have the authority to write citations. This level of enforcement focuses on the prevention of violations when in the field;

(2) Law Enforcement Officers are responsible for the prevention of crimes and the enforcement of federal laws and regulations on national forest and adjacent land. These officers carry firearms and can make arrests; and

(3) Special Agents are the investigative arm of the agency and are responsible for the staff work related to the arrest and prosecution of criminals and for the development of reports that address claims made for and against the government.

The Jackson Lake area offers recreation opportunities that include recreation facilities and organization camps.

Table 2.1.6. Public Use and Enjoyment Performance Indicators, ANF

Performance Indicators for Public Use and Enjoyment	Current Level	Estimated Forest Capability and Need
Products Provided to Standard (Interpretation and Education)	490	659
Recreation Special Use Authorizations Administered to Standard	504	715
PAOT Days Managed to Standard (Developed Sites)	222	1,295
Recreation Days Managed to Standard (General Forest Areas)	445	2,205

PAOT: Persons at One Time

Facility Operations and Maintenance

The Angeles National Forest operates over 350 buildings throughout the national forest. These range from restroom facilities, fire stations and administrative offices. Spending for these facilities falls into two categories: maintenance (annual and deferred) and capital improvements.

Grounds maintenance includes ongoing exterior upkeep. All walkways, steps, and lawn areas are cleaned by the grounds operation. Snow removal is performed when needed. Grounds operation also includes maintaining sprinkler systems, the mowing, edging, and fertilization of all lawn area, as well as tree pruning and flower bed maintenance. Work also involves repair and improvement of hardscape elements such as retaining walls, curbs, and sidewalks.

Several agencies maintain a large road network in the national forest, including bridges, culverts, low-water crossings and tunnels. The California Department of Transportation is responsible for three major highways: California State Route 2; California Interstate 5; and California State Route 39. Los Angeles and San Bernardino Counties also maintain a portion of the network. Still, the Forest Service maintains 1,000 miles of roads.

Investment emphasis will focus on Forest Service recreation facilities and administrative maintenance needs. Opportunities will be developed through partnerships and special funding to reduce the backlog of facility maintenance. National Forest staff plan to reduce the facilities maintenance backlog by approximately 10 percent.

The Roads and Trails Program will emphasize managing the transportation system to address user demand, national forest and community protection needs, and resource considerations. Roads and trails will be maintained to minimize the level of effects to species and watersheds while safely accommodating use. National Forest staff plan to maintain approximately 10 percent of National Forest System roads to their objective maintenance level. Decommissioning of unneeded or unauthorized roads and trails will be emphasized. National Forest staff plan to complete site-specific road analysis on approximately 30 percent of the unclassified roads and make appropriate designations (National Forest System Road, decommission or National Forest System Trail, either motorized or non-motorized).

Road and San Gabriel Canyon OHV staging area

Roads accommodating high levels of use will be candidates for improvement, including parking in appropriate locations for popular destinations. National Forest staff plan to enhance parking opportunities on approximately 10 percent of identified potential sites.

Access to the national forests, will be acquired where needed for administrative and public use through purchase, exchange, easements, and rights-of-way. Program emphasis will be on developing and maintaining National Forest System roads and trails that address access issues and minimize conflicts with private landowners.

(See Trans 1 - Transportation System; Trans 2 - Unnecessary Roads; Trans 3 - Improve Trails; Trans 4 - Off-Highway Vehicle Opportunities; and REC 3 - Recreation Participation; Lands 1 - Land Ownership Adjustment.)

Table 2.1.7. Facilities Operations and Maintenance Performance Indicators, ANF

Performance Indicators for Facility Operations and Maintenance	Current Level	Estimated Forest Capability and Need
Miles of Passenger Car Roads Maintained to Objective Maintenance Level	9	72
Miles of High Clearance & Back Country Roads Maintained to Objective Maintenance Level	154	400
Miles of Road Decommissioned	3	10
Miles of Trail Operated and Maintained to Standard	78	360

Commodity and Commercial Uses

Non-Recreation Special-Uses: This program receives the majority of funding in this functional area. Given the Angeles National Forest's proximity to Los Angeles' 10 million people, National Forest System land is in high demand for electronic sites, transmission lines, pipelines, roads, reservoirs, sediment disposal sites, apiaries and film shoots.

Demand for the infrastructure to provide water, energy, transportation and other needs to support communities will continue to receive focus with program emphasis on managing these uses while preserving open space and natural settings. Special-uses are authorized only when they cannot be reasonably accommodated on non-National Forest System land. Maintaining open space is given priority over accommodating urban needs. National Forest staff plan to reduce the backlog of permit re-issuance by approximately 20 percent (see Lands 2 - Non-Recreation Special Use Authorizations).

Mt. Wilson Telecommunications Site

Minerals and Non-Renewable Energy Resources: The Angeles National Forest maintains its role in a viable, healthy and environmentally sound minerals industry by administering its Mineral Program to facilitate the orderly exploration, development, and production of mineral and energy resources. The minerals staff administers activities related to mining, leasing, identifying and closing abandoned mines, and reclaiming mined lands while protecting resources. The Minerals and Energy Program will emphasize processing and administration of exploration and development proposals and operations while providing adequate protection of surface resources, wildlife habitat, scenery and recreation settings (see ME 1 - Minerals Management). Permits, leases, and Plans of Operation will require that adverse environmental effects are minimized, or mitigated, and that mined lands are reclaimed in a timely manner to regain surface production and use. Portions of the national forest have been identified as having a high potential for oil and gas reserves; however, no requests for exploration have been received for exploration in the last ten years.

Timber and Grazing: While many national forests in the National Forest System have large timber and grazing activities, the Angeles National Forest focuses more on recreation and commercial land use. There are no large-scale timber or grazing operations on the Angeles National Forest.

Table 2.1.8. Commodities and Commercial Uses Performance Indicators, ANF

Performance Indicators for Commodity and Commercial Uses	Current Level	Estimated Forest Capability and Need
Land Use Authorizations Administered to Standard	225	780
Number of Mineral Operations Administered	50	100
Manage Grazing Allotments	200	200

Fire Management

Fire Management includes all activities involved with pre-fire preparation, fire hazard reduction such as brush removal, and public education concerning fire prevention and safety.

Angeles NF Deputy Fire Chief Don Garwood speaks at the Loop Fire Tragedy (1966) Staff Ride. The staff ride is part of the "Lessons Learned" safety program. January, 2005

The Fire Management and Administration group formulates and administers fire management and safety plans, and oversees all fire management operations including budget and planning, general supervision, scheduling, and other administrative activities.

Wildland fire suppression encompasses all activities included in containing and mitigating the damages of wildland fires caused by either natural or human means. This program also includes national support of fire and disaster teams in other areas of the country. The primary responsibility is in supporting large suppression operations nationally; however, other types of assignments include assisting the Federal Emergency Management Agency (FEMA). Past assignments have included earthquakes, floods, hurricanes, 9/11 disaster support, and supervision of the Columbia Space Shuttle debris recovery.

Prevention is based on three primary categories: education, engineering and enforcement. Education includes Smokey Bear programs to instill a fire prevention ethic in school children and Firewise community programs that target civic and homeowner groups. Engineering includes abatement of fire hazard along roadways and in high-use areas using fire retardants and removal of flammable vegetation. Enforcement includes executing state fire law regarding hazard abatement around structures, for both public and private land in the national forest. This is also done along all electrical transmission and distribution systems, (placed by public utility agencies), across the national forest.

Smokey Bear at Wrightwood Fire Safe Council Wildfire Awareness Day, May 15, 2005

Hazardous fuel reduction is the set of activities associated with removing brush and vegetation from areas where they pose a significant threat to human life, property, and national forest resources, and where they interfere with the health of natural fire-adapted ecosystems. Fuel reduction involves direct management of vegetation using prescribed fire, mechanical, manual, or chemical methods. This is accomplished by a multidisciplinary planning approach using resource specialists, local governments, communities and contractors. The national forest Fuels Officer provides overall leadership for this program, which is then carried out by Fire Management personnel and local government.

Suppression of wildland fires is the first priority for program managers. All wildland fires on southern California national forests are considered to be a threat to communities. Aggressive fire suppression and prevention strategies will be implemented near communities to achieve the objectives to protect life and property from wildland fire, subsequent floods and debris flows. National Forest staff plan to maintain the suppression organization at 90 percent of the most efficient level or higher.

WUI Defense and Threat Zones around structures, fuelbreaks, and vegetation treatments to maintain or restore forest health within community protection areas are the next priority. Over the next three to five years, vegetative treatments will be strategically integrated to maximize community protection efforts and minimize wildland fire size, while considering habitat needs. Mortality removal will be integrated with thinning within the community protection areas. National Forest staff plan to complete approximately 40 percent of identified treatment needs (see Fire 1 - Fire

Prevention; Fire 2 - Direct Community Protection; Fire 3 - Fire Suppression Emphasis; Fire 4 - Firefighter and Public Safety; Fire 5 - Fuelbreaks and Indirect Community Protection; and FH 3 - Restoration of Forest Health).

Table 2.1.9. Fire and Aviation Management Performance Indicators, ANF

Performance Indicator for Aviation and Fire Management	Current Level	Estimated Forest Capability and Need
Acres of Hazardous Fuel Reduction	927	10,050

2005 Rose Parade, Pasadena CA

Forest Service Honor Guard marches along Sierra Madre Blvd.

Forest Supervisor Jody Noiron (center) poses in front of a flower-decked ladder wagon with Angeles NF firefighters

Place-Based Program Emphasis

The national forest has been divided into a series of geographical units called 'Places.' Each Place has its own 'landscape character.' Landscape character has been described as an overall visual and cultural impression of landscape attributes, the physical appearance and cultural context of a landscape that gives it an identity and 'sense of place.'

Each Place has a theme, setting, desired condition and program emphasis section.

- Theme - refers to images of the landscape that can be defined with a brief set of physical, visual or cultural attributes that encapsulate the sense of place.
- Setting - provides a description of the landscape character of the Place. The approximate number of acres of special designation overlays that are found in each place are listed in this section.
- Desired Condition - paints a picture of what the Place could be as the national forest implements activities to move toward the overall forest-wide desired conditions.
- Program Emphasis - identifies priority activities the national forest will emphasize in the next three to five years.

These are the Places identified for the Angeles National Forest:

- The Front Country within Angeles National Forest (101,232 acres)
- Angeles High Country (100,560 acres)
- Angeles Uplands East (56,049 acres)
- Angeles Uplands West (68,792 acres)
- Big Tujunga Canyon (5,495 acres)
- I-5 Corridor (37,701 acres)
- Liebre-Sawmill (17,094 acres)
- San Gabriel Canyon (23,288 acres)
- Santa Clara Canyons (140,824 acres)
- Soledad Front Country (59,338 acres)
- Mojave Front Country within Angeles National Forest (52,610 acres)

The Front Country

Theme: The scenic mountain backdrop for the greater Los Angeles area. This Place provides portals from the Los Angeles Basin, (with its 15 million plus population), to the national forest. This 'backyard' landscape is extensive and includes the 60 miles from Lytle Creek to Newhall Pass. It is one of the "Key Places" representing the most picturesque national forest locations, containing it own landscape character.

Setting: The Front Country Place rises dramatically from the Los Angeles Basin from an elevation of approximately 300 feet to an elevation of approximately 6,000 feet. The communities that make up the urban interface of the San Bernardino, San Fernando, and San Gabriel Valleys define the lower elevation edge of the Place. The area is easily accessible from various points along the Interstate 5, 15, and 210 travel corridors. The trails through the Place offer national forest visitors dramatic urban panoramas and views to rugged mountain backdrops. This Place includes a variety of special designations, including the San Dimas Experimental Forest and the 1,400-acre Fern Canyon Research Natural Area (RNA), which offers opportunity for study of mixed chaparral and live oak woodland communities. Five Inventoried Roadless Areas are located in the Front Country, some of which may be recommended as wilderness.

The southern aspect of the Place includes steep slopes with sharp to rounded summits and deep narrow canyons. The steeper reaches of the slopes are typically barren and highly eroded. Canyons characteristically have steep, rocky sides and are often strewn with large distinctive boulders.

The Mediterranean climate of southern California affects vegetation types and water availability. Perennial water is present only in the largest creeks and rivers. Chaparral is the most dominant plant community. Canyon and coast live oaks grow along the shaded slopes of the canyons.

Deciduous trees and shrubs occupy riparian areas. Degradation of air quality (in surrounding communities) is a factor that is affecting forest health in a variety of ways including stressed plant communities, lower water productivity and lower water quality. Human use has resulted in the presence of invasive exotic weed infestations in many areas.

There is a rich diversity of plant and animal species found in the Place, as well as habitat for four federally listed plants and several other rare plants. Riparian areas along the streams include habitat for numerous riparian dependant species, and serve as valuable linkages between the national forest and adjacent habitat on private land. Potential threats to habitat for riparian dependent species and other sensitive habitat include recreation uses, wildland fire, flood control and other water conservation activities and practices.

The cultural landscape of the Place is generally characterized by urban influences resulting in a modified character in many areas. The modified setting is often inconsistent with the types of recreation opportunities visitors are seeking. In other areas, steep slopes limit access (protecting resources) resulting in feelings of remoteness and solitude while enjoying hidden treasures that include, springs, waterfalls, a variety of landscapes, and many recreation experiences including hunting and fishing. Access is limited by a trail system that some think is not meeting the needs of the recreating public. Some trails are located in poor locations (steep, unstable areas) requiring high maintenance. There is also a network of user created trails that are the cause of resource problems in many areas. The developed sites in the Place are aging and do not meet the needs of the modern recreation user. Many facilities cannot accommodate modern vehicles and at a fundamental level do not meet the requirements of the Americans with Disabilities Act (ADA) or the National Forests and Grasslands Built Environmental Image Guide (BEIG). In many areas within the Place, managers feel that the levels of recreation use are exceeding the capacity of the facilities.

The Place has numerous electronic and communication sites located on ridgelines and mountain tops. Many of the utility corridors that support the Los Angeles Basin are located in the Place, as well as flood control structures and dam facilities. Finally, there are many unauthorized activities occurring in the Place resulting in resource problems.

Fire safe conditions along the urban interface within the Place are inconsistent. Private landowners look to the Forest Service to accomplish the vegetative treatments required for community defense. Traditionally, fuel treatments have been focused on Front Country watershed protection, concentrating on age class mosaics and fuelbreaks designed to reduce the threat of downstream flooding that often occurs after wildland fire. Wildland fires have resulted in significant property and resource losses. The numbers of fire starts are not consistent with natural disturbance cycles and are moving some plant communities toward type conversions that are out of character in the Place.

The proximity of the Place to the cities along the urban interface emphasizes the need to continue to develop and maintain good working relationships with other agencies and community government. Inconsistent management strategies have led to problems and emphasize the need to work together and effectively manage the national forests to support common goals in an era of intense urbanization. Habitat linkages, access, water, and urban infrastructure are just a few of the problems requiring a more common solution.

The Place is viewed by the residents of adjacent communities as their backyard. The area might be characterized as being loved to death. The area is intensively used resulting in user conflicts, trash, non-permitted uses, parties, car dumping, graffiti, and other activities that compromise national forest resources.

Existing Wilderness in the Place includes:

- Cucamonga 216 acres

Recommended Wilderness

- Cucamonga "A" (southernmost section) 448 acres

Established Research Natural Areas:

- Fern Canyon 1,400 acres

Total Angeles National Forest acres--Front Country Place: 101,232

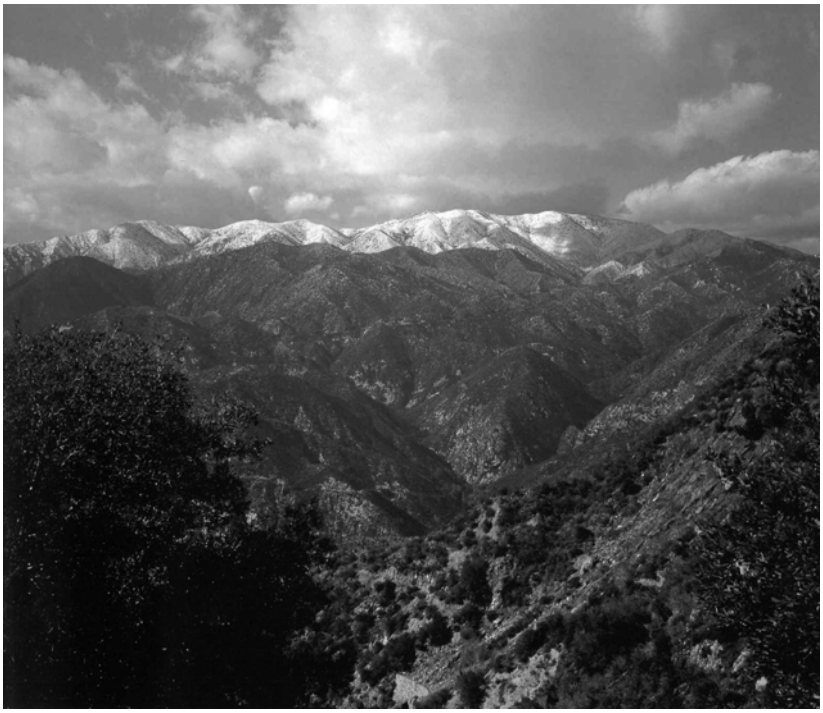
Desired Condition: The Front Country Place is maintained as a natural appearing landscape that functions as a 'first impression' scenic backdrop for the Los Angeles/San Bernardino metropolitan area, and a national forest portal for its 15 million residents. The valued landscape attributes to be preserved over time are the rugged and wild appearing mountain silhouettes, dramatic undisturbed views to urban and mountain landscapes especially from trails and roads, coast live oaks along the shaded slopes of the canyons, and a well-defined age-class mosaic in chaparral. Wildlife linkages connecting the southern San Gabriel Mountains to the Santa Ana, Santa Susana and Verdugo Mountains are established and functioning. Habitat conditions for threatened, endangered, proposed, candidate and sensitive species are improving over time. Exotic species are reduced and controlled over time.

Program Emphasis: Management emphasis is on protecting communities from the threat of fire, managing for high recreation use levels, and maintaining urban and national forest infrastructure (facilities) consistent with the natural setting. An extensive trail network is managed to provide opportunities for hiking, biking, and equestrian trips of short duration and to provide linkages to the national forest trail network and the Pacific Crest Trail. Picnic areas and campgrounds along the Front Country Place provide close to home "first visit" opportunities. Mount Wilson is managed as a major trail destination, vista point and astronomical research site. The national forest will focus on open space protection along the urban interface. Local communities and the national forest cooperate to develop environmental education and conservation stewardship programs relevant to urban students and families especially for the San Gabriel Canyon entry point. The national forest is active in regional planning efforts to establish wildlife linkages connecting the San Gabriel Mountains to the Santa Ana, Santa Susana and Verdugo Mountains. Uses and activities are managed to provide opportunities for establishment of a regional wildlife linkage in the Place.

Angeles High Country

Theme: The Angeles High Country Place is characterized by the highest elevations in Los Angeles County including the tallest peak in the county, Mt. Baldy (10,064 feet). The Place functions as a year-round mountain recreation landscape for the greater Los Angeles Area and is associated with winter snowplay, opportunities for solitude, hiking through spectacular big tree-cover vistas and includes historic and scenic mountain resorts. The Pacific Crest National Scenic Trail is located here and traverses the entire width of the Place. It is one of the "Key Places" representing the most picturesque national forest locations, containing its own landscape character.

Setting: The Angeles High Country Place is located at the top of the Angeles National Forest and is regarded by many as the core area of the national forest. Elevations within the Place range from approximately 5,000 feet to approximately 10,060 feet. The area is characterized by steep slopes with sharp to rounded summits surrounding small alpine valleys. The Place exhibits a forested (tree-covered) environment offering community linkages between the national forest and the surrounding urban areas. The area is a truly unique setting where, on a clear day, visitors are offered panoramic views including the urban center of Los Angeles and the Pacific Ocean to the west and the Mojave Desert to the north. Numerous special designations are found within this Place, including eligible Wild and Scenic River segments, Congressionally-designated wilderness, recommended wilderness, and National Inventoried Roadless Areas (IRAs). Three Special Interest Areas (SIAs) are also found here. The Devil's Punchbowl SIA exhibits unique geological values, including folds, faults, plate tectonics, cuestas, and hogbacks. The Mt. Baden-Powell and Mt. San Antonio SIAs boast unique botanical elements, including ancient limber pine, and alpine and subalpine plants. The area is accessed from major highways, scenic byways, and a trail system that includes routes with state or national designations such as the Pacific Crest Trail. The community of Wrightwood is the 'gateway' to the Place. The high elevation of the Place (above the inversion layer) and the more remote locations offer an ideal setting for 'dark-sky' research facilities and communication sites.



The Angeles High Country Place is one of the 'resource jewels' of the Angeles National Forest. The higher reaches of its slopes are typically barren and show evidence of distinctive fractured rock formations and numerous landslides. The area is geologically unique in that it includes the point of highest elevation in the State for the San Andreas Fault. Watersheds in the Place include streams that flow into the Mojave Basin and the Pacific Ocean. The ground and surface water supply is an important resource that many feel has been over extended or alternately under utilized depending on location. There is concern for the northeastern portion of the Place where there is visible evidence of stress on riparian and aquatic ecosystems. Crystal Lake, a landslide feature, is the only natural lake on the Angeles National Forest. Snowmelt constitutes the majority of available surface water.

View from Vincent Gulch, Angeles High Country Place

The cooler and wetter mountain climate affects vegetation types within the Place. The trees are seen as tight clumps or scattered individuals. Historically, the presence of large conifers has resulted in the Place being known as the Place where the big trees are. The predominant plant communities include Coulter pine and mixed conifer on the south facing slopes and bigcone Douglas-fir and Jeffrey pine on the north facing slopes. Oaks are present in dense woodlands along the shaded slopes of the canyons. Deciduous trees and shrubs are typical in riparian areas.

There is a rich diversity of animal communities living in the Place including the endangered mountain yellow-legged frog. The Place includes habitat for the Nelson's bighorn sheep. This species viability is a significant concern for managers due to a dramatic drop in population since the 1980s. The East Fork of the San Gabriel River includes important habitat linkages and sensitive resource areas for riparian dependent species and other wildlife between adjacent Places.

The cultural landscape of the Angeles High Country Place includes a diverse range of recreation opportunities in areas with settings that are more primitive or natural appearing. Human development has occurred ranging from historic sites, recreation sites, observatories, visitor centers, ski areas, organization camps and private resorts. Many of these are attractions are for year-round visitors looking for a mountain getaway from the surrounding urban communities. There is a wide range of opportunities including hiking, camping, backpacking, hunting, fishing, OHV uses, mountain biking, water and snow play. The Place has established visitor centers and entrance stations. Some of the most significant historic buildings and sites are found in this Place. The Pacific Crest National Scenic Trail traverses the entire width of the Place in an east-

west direction and exits the east side of the national forest onto the San Bernardino National Forest. Similar to other areas of the national forest, the facilities in this Place are aging and out of date.

There is a history of fire in the Place; however, only a portion of this Place is within the normal fire regime. The village of Wrightwood requires community protection strategies. Fuel treatments to date have been limited, but are expected to increase due to the build up of fuels over the past decades.

A variety of special-use authorizations exist in the Place, ranging from organization camps to recreation residence tracts to ski areas. There are some unique potential user conflicts in the area such as the need for dark skies at the Table Mountain site and the need for lights at a nearby ski resort for night skiing and operational maintenance.

Eligible Wild and Scenic Rivers:

- Little Rock Creek 7.5 miles
- San Antonio Canyon Creek 2.2 miles

Existing Wilderness:

- Cucamonga 3,585 acres
- San Gabriel Wilderness 5,928 acres
- Sheep Mountain Wilderness 23,290 acres

Recommended Wilderness:

Sheep Mountain (Sheep Mountain Wilderness) 1,897 acres

Existing Special Interest Areas:

- Devil's Punchbowl 89 acres
- Mt. Baden-Powell 252 acres
- Mt. San Antonio 164 acres

Critical Biological Zones (see table 524: Angeles NF Critical Biological Land Use Zones, page 10):

- South Fork Big Rock Creek
- Upper Little Rock Creek

Total national forest acres--Angeles High Country Place: 100,560

Desired Condition: The Angeles High Country Place is a key place that is valued for its scenic quality and is maintained as a naturally evolving and natural appearing landscape that functions as a year-round forested mountain recreation area. The valued landscape attributes to be preserved over time are large conifer trees in groups and as scattered individual specimens, views of distant landscapes, and oak woodlands along the shaded slopes of the canyons. The built environment portrays a rustic, historic image. Habitat conditions for threatened, endangered, proposed, candidate and sensitive species are improving over time. Exotic species are reduced and controlled over time.

Program Emphasis: Management emphasis is focused on forest health particularly relative to community protection from fire around Wrightwood and large recreation complexes while

maintaining the big tree character, vistas and natural appearing landscapes. Additional emphasis will be placed on the use by recreationists and urban and national forest infrastructure that is sustainable such that it has minimal effects to species (mountain yellow-legged frog) and their habitat. Bighorn sheep habitat will be enhanced and wilderness implementation schedules will be developed. Protection and enhancement of threatened, endangered, proposed, candidate and sensitive species such as the mountain yellow-legged frog, California spotted owl, San Diego horned lizard, and a wide array of rare and sensitive plants will be emphasized in all activities. Exotic species eradication will be emphasized. The Angeles Crest Scenic Byway Corridor Management Plan is implemented; rural routes showcase key destinations off the Scenic Byway, and the Interforest Transportation Route linking the Scenic Byways of southern California is established. An emphasis will also be placed on maintaining the historic fabric of the Big Pines Historic District. Historic lodges, resorts, etc. at Big Pines, Chilao, and Crystal Lake will be managed to maintain historic character and to provide interpretation. The national forest will emphasize large appropriate management of large recreation complexes and the winter sports activities that occur in the Place. Snowplay opportunities will be assessed. Management of special-use authorizations will occur along with resolution of water diversion issues. The focus is toward finding a balance that will result in a sustainable level of human use and the sustainability of forest health. Special emphasis on managing the Pacific Crest National Scenic Trail and other National Recreation Trails that occur here will also be given.

Angeles Uplands East

Theme: The Angeles Uplands East Place is a rugged wilderness and remote landscape that serves as a transition zone between the Front Country and the wilds of the High Country. This remote, natural appearing landscape extends from the San Antonio River drainage on the east to the western boundary of the San Gabriel Wilderness on the west.

Setting: The Angeles Uplands East Place is located between the Front and High Country Places of the Angeles National Forest. Elevations in the Place range between 2,500 feet to approximately 5,000 feet. The landscape consists of very steep terrain, with narrow deep canyons and sharp to rounded summits. Access to the area is through the San Gabriel Canyon, or from portions of the Angeles Crest Highway and the Mt. Baldy Road. There is a well developed trail system accessed from facilities located along these same routes. The majority of this Place is located within the boundaries of two designated wildernesses (Sheep Mountain and San Gabriel Wilderness). Several other areas within the Place have been evaluated for wilderness.

The narrow, rocky canyons are the dominant feature of the landscape within the Place. The upper reaches of several watersheds are located within the Place. The steeper reaches and slopes are barren and show evidence of erosion, landslides, and rapid runoff. The canyon bottoms are often filled with large boulders. Water originating from this Place is impounded downstream and is a source of municipal water for the communities in the northern Los Angeles Basin.

Looking towards Angeles Uplands (East) Place, as seen from Highway 2 near Mt. Williamson

The area is characterized by hot to temperate climates that affect the vegetation types and availability of water in the Place. Mixed chaparral is the dominant plant community on south facing slopes. Canyon and coast live oaks are found in dense woodlands on the north facing slopes and in the canyon bottoms. Deciduous trees and shrubs are typically located in the riparian areas. Year-round water is present only in the largest creeks and springs. Noxious weeds are a problem, particularly along road corridors within the Place.

There is a diversity of animal communities in the Place. These include species such as the Santa

Ana sucker and California spotted owl. Nelson's bighorn sheep are also found in the area. Riparian areas within the Place include important habitat for numerous riparian dependent species and serve as linkages and corridors between the national forest and habitat on adjacent private land. The balance between high levels of recreation use, the threat of fire and the maintenance of habitat are critically important.

Mt. Baldy Educational Center, Angeles Uplands (East) Place

The cultural landscape consists of settings that range between modified and natural appearing. The majority of the Place is designated wilderness and accounts for its natural appearance. Human influence is most apparent in the form of developed campsites, dispersed camping and travel ways (roads and trails). Human use is most visible in the area around Mt. Baldy Village. Trails are located along drainages, on flats or on the ridgetops, offering visitors a dramatic range of views depending on location. Historically, there has been mineral exploration and development within the Place. The Place is an important source of spiritual renewal for several tribes that historically lived in the area. The opportunity for solitude and self-reliance is an important attribute drawing many visitors to the wildernesses in the Place. The focus of recreation use in the area is toward wilderness related opportunities. Recreation use tends to be concentrated in riparian areas where water play is an important activity. Dispersed camping and other forms of dispersed use are popular. The Mt. Baldy Educational Center is a popular facility. Developed recreation opportunities are less abundant and occur in areas near Mt. Baldy Village or recreation residence tracts. Vandalism, graffiti and trash dumping are problems occurring near roads and trails.

Eligible Wild and Scenic Rivers:

- San Antonio Canyon Creek 1.4 miles
- San Gabriel River (East and North Forks) 7.9 miles

Existing Wilderness:

- Cucamonga 400 acres
- San Gabriel Wilderness 25,605 acres
- Sheep Mountain Wilderness 127,636 acres

Recommended Wilderness:

Sheep Mountain (Sheep Mountain Wilderness) 6,765 acres

Total national forest acres--Angeles Uplands East Place: 56,049

Desired Condition: The Angeles Uplands East Place is maintained as a naturally evolving and a natural appearing landscape that functions as wilderness and remote for primitive, dispersed recreation use. The valued landscape attributes to be preserved over time are open views to steep, rock slopes punctuated with bigcone Douglas-fir and associated oaks, and a well-defined age class mosaic in chaparral. Habitat conditions for threatened, endangered, proposed, candidate and sensitive species are improving over time. Exotic species are reduced and controlled over time.

Program Emphasis: Managers expect emphasis to focus on forest health, particularly relative to community protection from fire around Mt. Baldy Village and recreation residence tracts. Urban and national forest infrastructure will be sustainable. A Wilderness Implementation Schedule will be developed. Management emphasis is also expected to be focused on maintaining the sense of remoteness and solitude throughout the area. Maintaining water quality and quantity will have high priority. Protection and enhancement of threatened, endangered, proposed, candidate and sensitive species such as the Santa Ana sucker, California spotted owl, Nelson's bighorn sheep, and a wide array of rare and sensitive plants will be emphasized in all activities. Exotic species eradication will also be emphasized.

Angeles Uplands West

Theme: The Angeles Uplands West Place is a popular, expansive, chaparral-covered landscape that serves as a mid-elevation gateway to the high country (Angeles High Country Place). This area provides dramatic canyon panoramas along the Angeles Crest Scenic Byway. Visitors can also find recreation experiences that provide challenge in a remote setting. It is one of the "Key Places" representing the most picturesque national forest locations, containing its own landscape character.

Setting: The Angeles Uplands West Place is located between the Front and High Country Places. Elevations in the Place range between approximately 2,500 feet to approximately 6,300 feet. The slopes are steep on the southern aspect of the Place, with sharp to rounded summits and deep narrow canyons similar to other mid-elevation Places on the Angeles National Forest. The Place is accessed from routes that pass through the Front Country Place. These routes (including the Angeles Crest Scenic Byway) lead visitors to dramatic canyon panoramas and rugged mountain background views. This Place includes portions of designated wilderness areas that have been proposed for wilderness evaluation, and Inventoried Roadless Areas. The Falls Canyon Research Natural Area is also located here, which was established in 1998 to provide study opportunities of bigcone Douglas-fir.

The steeper reaches of slopes are barren and show evidence of erosion. The canyons have steep rocky sides and are dense with upland vegetation. This Place contains the midslope portions of the major watersheds that drain into the Pacific Ocean including the Los Angeles and the San Gabriel Rivers. Water quantity and quality is a management concern since the watersheds drain into various reservoirs (Cogswell and Big Tujunga) that are used for flood control and water table replenishment.

Angeles Uplands (West) Place, as seen from Clear Creek Station

There is a lot of diversity in the vegetation between the north and south facing slopes. Chaparral is more prevalent on the hotter and drier south facing slopes. Pines and conifers are dominant on the cooler north facing slopes. Mixed chaparral is the most

dominant plant community and is visible as dense continuous patterns of patches interrupted by openings of various sizes. Canyon and coast live oak are present in dense woodlands along the shaded slopes and in the canyons. Deciduous trees and shrubs are common in the riparian areas. Year-round water is present only in the largest creeks and springs. Air quality is compromised from the urban areas surrounding the national forest and is a factor in forest health; causing stressed plant communities and lowered water quality and quantity. Noxious weed infestations occur along travel routes and riparian areas within the Place.

The majority of the vegetation in the Place is in a relatively healthy condition. Some vegetative treatments for forest health are needed in some locations, and there are communities on private land and developments on public land that require treatment for fire protection. The fire-flood sequence is a threat to property in areas downstream from the Place.

The Place includes habitat for the arroyo toad, California red-legged frog, least Bell's vireo and southwestern willow flycatcher. The majority of the Big Tujunga Canyon is considered to be critical habitat for the California red-legged frog. There are numerous areas within the Place that offer linkages to other areas of the national forest and habitat on adjacent private land. Heavy recreation use of all kinds and fire are factors in the management of habitat for threatened and endangered wildlife and other riparian dependent species.

The cultural landscape of the Angeles Uplands West Place is generally natural or near-natural in appearance. Human influence is most apparent in the developed and dispersed recreation facilities and travel ways. Developed recreation is limited by the character of the landscape within the Place. Dispersed recreation is emphasized, including hiking, backpacking, equestrian use, bicycling, mountain biking, hang gliding, hunting, fishing, and OHV use. The condition of trails varies, and other infrastructures such as campgrounds and trailheads are aging. The intense level of recreation use generates user conflicts on roads, trails and other areas. There are a variety of special-uses authorized under permits within the Place including organization camps, communication sites, and recreation residence tracts. This area also has a high level of unauthorized uses including trash disposal, car dumping, graffiti, illegal OHV use, partying, gang activities, illegal fires, illegal parking, and entry into closed areas.

San Gabriel Peak, Angeles Uplands (West) Place

The Place supports multiple-uses that are valuable to the public. Many of the utility service infrastructures that support the greater Los Angeles urban area are present within the landscape. Several county roads and California State highways serve as major high-speed commuter routes from inland valleys and desert, which exceeds infrastructure design criteria and creates potential unsafe conflicts.

Existing Research Natural Areas:

- Falls Canyon 1,440 acres

Proposed Critical Biological Zones (see table 524: Angeles NF Critical Biological Land Use Zones, page 10):

- Upper Big Tujunga Canyon

Total national forest acres--Angeles Uplands West Place: 68,792

Desired Condition: The Angeles Uplands West Place is maintained as a natural appearing landscape that functions as a mid-elevation recreation gateway to the High Country. The valued landscape attributes to be preserved over time are dramatic canyon panoramas along the scenic byway, the presence of bigcone Douglas-fir and Coulter pine, and a well-defined age class mosaic in chaparral. Habitat conditions for threatened, endangered, proposed, candidate and sensitive species are improving over time. Exotic species are reduced and controlled over time.

Program Emphasis: Management emphasis is focused on forest health, particularly protection of pockets of large conifers. Management is also focused on the high levels of recreation use, as well as the urban and national forest infrastructure present, in a balanced and sustainable manner

consistent with preserving the dramatic canyon panoramas. Culturally and ethnically diverse visitors are served in a relevant manner. Historic Vetter Lookout will be a focal point for interpretation and community outreach. The Angeles Crest Scenic Byway Corridor Management Plan is implemented and rural routes showcase key destinations of the Scenic Byway. Community defense from wildland fire will be emphasized. Protection and enhancement of threatened, endangered, proposed, candidate and sensitive species such as the arroyo toad, California red-legged frog, southwestern willow flycatcher, San Diego horned lizard, two-striped garter snake, western pond turtle and rare and sensitive plants will be emphasized in all activities. Surveys will be conducted and critical habitat will be protected for the California red-legged frog. In order to restore healthy riparian systems, Arundo and other exotic species eradication efforts will be emphasized.

Big Tujunga Canyon

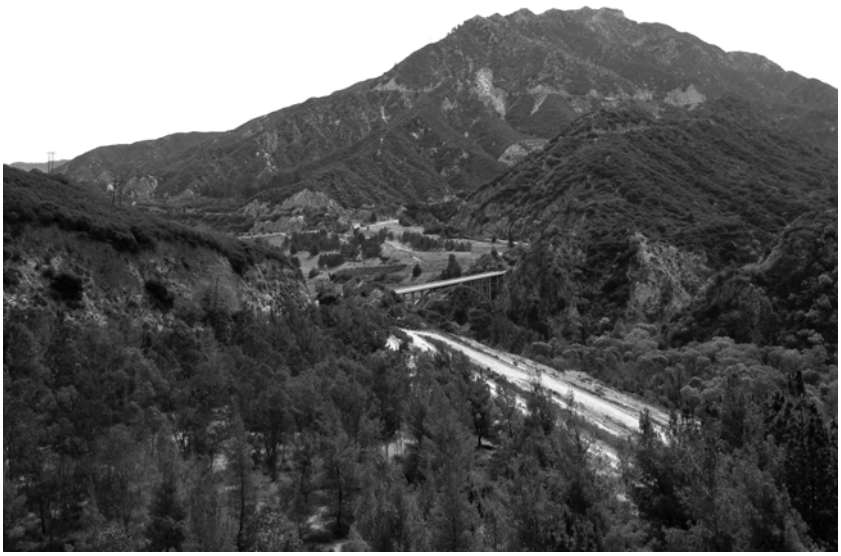
Theme: The Big Tujunga Canyon Place functions as a year-round day-use recreation landscape for families seeking a gathering spot in a river-based woodland setting. This major tributary of the Los Angeles River links the San Gabriel Mountains to the Pacific Ocean offering residents of the Los Angeles area a link to a natural environment. The Place's wooden riparian area serves as an important wildlife corridor, as well as a habitat for sensitive animal species.

Setting: The area of Big Tujunga Canyon is generally defined as down stream from the Big Tujunga Dam to Pipe Canyon, flanked by the steep canyon walls. This lower section of the canyon ranges in elevation from about 2,000 feet at Pipe Canyon up to 2,290 feet at the Big Tujunga spillway. Highly erosive, very steep slopes, with sharp to rounded summits and narrow canyons are the predominant landforms found in this Place. The area is generally accessed from well-maintained and highly used county roads from Mt. Gleason Ave along the California Interstate 210 corridor. This Place offers access to the Upland and High Country Places.

Big Tujunga Creek constitutes a major portion of this Place in terms of human use and scenic associations. The main canyon runs east to west, and is fed by a series of small intermittent streams. The river has created pools and extensive floodplains along its course creating stream fishing opportunities. The channel terminates in a wide wash in the Front Country Place.

The riparian woodlands of the Big Tujunga Canyon Place provide a contrast to the contiguous mixed chaparral of the larger landscape. These riparian woodlands consist of dense stands of sycamore, white alder and willow. Upland vegetation is seen as tight clumps and scattered groups of canyon and coast live oaks. These shaded areas are valued for recreation uses along the length of the river. Degradation of air quality is affecting forest health by stressing vegetation and resulting in lower water quality and productivity. Noxious weed infestations also occur within the Place.

Big Tujunga Canyon Road



There is a potential for flooding, especially following fires. Much of the Place is in Condition Class 1, and will require treatments to help maintain that condition. Users are

usually responsible for fire starts. Larger fires typically originate in other areas of the national forest.

Big Tujunga Creek provides habitat for the Santa Ana sucker, least Bell's vireo and southwestern willow flycatcher. Critical habitat for the California red-legged frog encompasses a majority of Big Tujunga Canyon. Big Tujunga Canyon is an important corridor for wildlife movement between the Front Country, adjacent Places and areas downstream and off-forest. Heavy recreation use, exotic plant species, as well as flood control and water conservation practices are currently impacting habitat for threatened and endangered wildlife and other riparian dependent species.

The cultural landscape of the Big Tujunga Canyon Place is generally modified and natural appearing. Early nineteenth century use of the area focused on recreation, recreation camps, and mining. These historical uses, along with modern modes of transportation, introduced and extended the range of invasive and exotic plants and animals. Other human influences are most apparent near recreation facilities, such as trailheads and paths along the river; however, the remainder of the landscape is subject to the effects of ecological change. Human impacts that create strong visual contrast in this landscape include: intensive recreation and special-use authorization areas, graffiti, litter, utility corridors, water, flood control and retention basins, sediment disposal areas and road cuts. Most facilities and trails are located along the canyon bottom, on flats or cut into hillsides. Human impacts are more evident on the private property within the Place.

Vogel Flats,
Big Tujunga Canyon Place

Due to the accessibility to water, this area is marked by concentrated public use, mostly family-based, and with cultures associated with recent immigration to this country. Recreation uses are varied but mostly oriented to water. It is an area that is enjoyed by many people and that enjoyment leads to chronic overuse. Recreation uses are conflicting with other resource values such as TEPS. Infrastructure supporting developed recreation is aging, and does not meet the Americans with Disabilities Act or the Built Environment Image Guide. The focus of recreation along low elevation riparian areas is reaching or exceeds capacity. The intensive use is resulting in impacts to vegetation and resources: soil compaction, loss of vegetation, pollution of riparian

environments, and erosion near the river. Currently, opportunities for environmental education are not developed to meet public and agency needs.

The remote nature of the canyon provides opportunities for illegal activities to occur undetected. User conflicts do occur. The views of the Big Tujunga County Flood and Water Conservation dam and reservoir are equally impressive, and include vistas that lend themselves to commercial and amateur filming opportunities.

Water-centered recreation in Big Tujunga Canyon is strongly influenced by the low flow releases from the dam. Surface and groundwater extraction that supports local, as well as municipal supplies occurs in and throughout the canyon and wash.

The paths through this landscape lead visitors to dramatic canyon scenery and shady areas along the river. Areas of concentrated use such as trailheads and easily accessible water areas are reaching or exceeding their carrying capacity to provide a safe and enjoyable experience to the public.

There are no special designations.

Total national forest acres--Big Tujunga Canyon Place: 5,495

Desired Condition: Big Tujunga Canyon is maintained as a natural appearing landscape that functions as a year-round, day-use recreation landscape for families seeking a gathering spot in a river-based woodland setting. The valued landscape attributes to be preserved over time are riparian woodlands along stream zones consisting of dense stands of sycamore, white alder, and willow, groupings of canyon and coast live oaks, and visitor access to free-flowing water. Habitat conditions for threatened, endangered, proposed, candidate and sensitive species are improving over time. Exotic species are reduced and controlled over time.

Program Emphasis: Management emphasis is focused on day-use, water oriented recreation, and urban and forest infrastructure that is sustainable, compatible with the natural setting and integrity, and has minimal effects to species of management concerns and their habitat. Recreation use carrying capacity levels will be developed. Forest health in terms of water quality and water needs will be managed to provide for forest ecosystem needs and instream flows necessary to support surface and subsurface resources. A conservation/environmental education program will be developed. Protection and enhancement of threatened, endangered, proposed, candidate and sensitive species such as the Santa Ana sucker, California red-legged frog, arroyo toad, southwestern willow flycatcher, least Bell's vireo, San Diego horned lizard, two-striped garter snake, slender horned spineflower and other rare and sensitive plants will be emphasized in all activities. Arundo and other exotic species eradication to restore health riparian systems will continue to be emphasized.

The national forest will continue working with the Los Angeles County Department of Public Works and the City of Los Angeles to establish flow releases from Big Tujunga Dam during the critical dry summer months to maintain and improve habitat for riparian dependent species.

I-5 Corridor

Theme: The I-5 Corridor Place functions as a scenic gateway and transitional landscape for visitors to southern California. The flow of people and materials through this gateway landscape links the greater Los Angeles area, as well as southern California, to the rest of California and the nation. It also serves as an important wildlife corridor between the Angeles and Los Padres National Forests.

Setting: The I-5 Corridor Place runs north and south along both sides of Interstate 5. This landscape is commonly defined as the area between Marple Canyon at the southern end, and the intersection of California State Highway 138 at the northern end. The east and west boundaries are defined by the ridges visible from Interstate 5. The western boundary of this Place is shared with the Los Padres National Forest.

The elevations in the Place range from approximately 2,100 to 3,000 feet. The deep canyon of Pyramid Lake, along with its various lesser side canyons, dominates this landscape. Steep slopes with rounded summits and deep narrow canyons are other dominant landforms within this Place.

The mostly hot to temperate climate affects vegetation types and water availability in the I-5 Corridor. All but the larger streams are dry through the summer. The predominant plant community at lower elevations is mixed chaparral. Chaparral is continuous on most slopes. Pine and juniper are present at higher elevations. Canyon and coast live oaks are present in dense woodlands along shaded slopes and canyons. Degradation of air quality is impacting forest health by stressing vegetation and resulting in lower water quality and productivity.

Pyramid Lake, I-5 Corridor Place

Numerous fire starts originate from Interstate 5. Fire safe conditions along the interface are inconsistent and private landowners look to the national forest to create community defense zones. The urban development in the south is creating issues of community defense, as well as encroachment and unauthorized activities. Fuel treatments have been limited in the past. Most of the fire occurrence has been within the historic range of variability, but there are areas (e.g., along

the highway corridor) that have been identified with excessive fire occurrence.

Riparian areas within the I-5 Corridor provide habitat for several riparian dependent species, including the federally listed southwestern willow flycatcher, least Bell's vireo, and the California condor, which has historically nested adjacent to Pyramid Reservoir.

Piru Creek is one of two streams on the national forest being managed for wild trout by the California Department of Fish and Game. The I-5 Corridor may also provide a significant habitat linkage between the Angeles and Los Padres National Forests. Potential threats to riparian dependent species and the California condor include recreation, wildland fire, and hazardous material spills into active stream channels.

Monarchs Hand Crew working to put out hot spots on the Interstate Fire, 2004.

The Monarchs Crew is composed of students from the Fire Science program at LA Valley Community College

The cultural landscape of the I-5 Corridor is generally rural and natural appearing. Some of the most significant heritage resource sites occur within this area and are being impacted by special-use authorizations. Human influence is most apparent in developed recreation sites and along travel routes. Human influences that create strong visual contrast to the natural landscape within this Place include: intensive administrative and recreation use areas, utility corridors, road cuts, and water retention basins. Most recreation, administrative facilities, and paths are located along drainages, ridge tops, or cut into hillsides. The paths through this landscape lead visitors past dramatic canyon and rugged mountain background views.

Hiking, backpacking, equestrian use, bicycling, mountain biking, hunting, OHV use, and water-based recreation are the most popular recreation activities occurring within this Place and require a support network of trails and roads. The dramatic changes in scenery and vegetation also provide for a viewshed that promotes driving for pleasure (especially along the Old Ridge Route). Recreation is centered at Pyramid Lake, with dispersed and developed recreation opportunities located in close proximity of major travel ways. Pyramid Lake offers year-round access to water-based recreation and also creates a downstream area for catch and release fishing. OHV opportunities exist within the Back Country Discovery Trail and a portal to the Hungry Valley State OHV Area. The demand for low elevation recreation along riparian areas (especially Frenchman's Flat) is reaching or exceeding capacity. Riparian areas are overused and under

supported in terms of infrastructure (i.e., sanitation and trash facilities). Recreation and non-recreation special- use authorizations are affecting significant heritage resource sites.

Adjacent developments are creating their own social trails on National Forest System land (mainly illegal OHV trails). The Place is continually having problems due to trash, car dumping, graffiti, illegal OHV use, and partying, with minimum enforcement capability due to inadequate law enforcement coverage, especially at night.

The I-5 Corridor Place is a major utility corridor for electricity, fiber optics, natural gas, and crude oil. Many of the utility service infrastructures that support the greater Los Angeles urban area are present within the Place, and have been constructed to conform to the natural integrity of the landscape. This highly engineered infrastructure has resulted in conflicts with other national forest resources such as heritage resources, water quality, and endangered species. Past oil and gas development has occurred in or near this Place, and there may be a potential for future oil and gas exploration and development.

Existing Wilderness:

- Sespe, 934 acres (see Los Padres National Forest Strategy, Appendix A)

Eligible Wild and Scenic Rivers:

- Lower Piru 3.7 miles (also see Los Padres National Forest Strategy, Appendix A)

Total national forest acres--I-5 Corridor Place: 37,701

Desired Condition: The I-5 Corridor Place is maintained as a natural appearing landscape that functions as a scenic transportation gateway for visitors to southern California and corridor for utilities and water. The valued landscape attributes to be preserved over time are dramatic natural appearing canyon and rugged mountain views from the interstate, the presence of coast live oaks along shaded slopes and canyons, and a well-defined age class mosaic in chaparral. Wildlife linkages connecting the Castaic Mountains to the Los Padres National Forest and the Tehachapi Mountains have been established and are functioning. Habitat conditions of threatened, endangered, proposed, candidate and sensitive species are improving over time. Exotic species are reduced and controlled over time. Heritage resources are managed to standard with significant heritage resources formally designated to the National Register of Historic Places.

Program Emphasis: Management emphasis is expected to focus on an urban and forest infrastructure that is sustainable, sympathetic to the natural setting and integrity, and mitigates effects to species of management concern and their habitat, as well as heritage resources. Heritage resources will be protected through the development of management plans designed to reduce the effect of impacting uses and authorizations. The Old Ridge Route will be managed to maintain historic integrity for future interpretation of its role in southern California history. Community protection needs, boundary management and protection of open space in the urban interface will be recognized as a growing emphasis due to the increasing development along the national forest border. Forest health (in terms of water quality and water needs) will be managed to provide for forest ecosystem needs and in-stream flows necessary to support surface and subsurface resources. Management emphasis will be on water-based recreation opportunities at Pyramid Lake and Frenchman's Flat. Carrying capacity levels for Pyramid Lake and Frenchman's Flat will be developed. Working with the appropriate agencies and partners, the backcountry route to the Los Padres National Forest will be completed. The national forest will focus open space protection of boundary management in anticipation of adjacent development.

The national forest is active in regional planning efforts to establish wildlife linkages connecting the Castaic Mountains to the Los Padres National Forest and Tehachapi Mountains. Uses and activities are managed to provide opportunities for establishment of regional wildlife linkages in the I-5 Corridor Place. Protection and enhancement of threatened, endangered, proposed, candidate and sensitive species will be emphasized in all activities. Exotic species eradication will be emphasized.

Liebre-Sawmill

Theme: The Liebre-Sawmill Place functions year-round as a low elevation open space for Los Angeles and Antelope Valley residents. It portrays a sense of remoteness due to its steepness and minimal use. Major drainages that flow into the Antelope Valley are focal points for water-based recreation and link the Mojave Desert to the Liebre Mountains. This desert interface landscape includes portals from the Antelope Valley to the Angeles National Forest as well as the northern entry point for the Pacific Crest Trail into southern California. It is one of the "Key Places" representing the most picturesque national forest locations, containing its own landscape character.

Setting: The Liebre-Sawmill Place rises up from the Mojave Desert at elevations from approximately 3,500 feet up to 5,500 feet, reflecting a transition from the desert floor to the forest. This area is generally accessed from major entries along California State Highway 138 and County Road N2. The paths through this landscape lead visitors to dramatic desert panoramas and rugged fault-zone background views. A Botanical Special Interest Area for black oak is recommended within this area.

The San Andreas Fault Zone defines the lower elevation edge. The higher elevation edge is marked by a series of peaks and ridges. Northern aspects include steep to very steep slopes with sharp to rounded summits and narrow canyons. The action of the San Andreas Fault greatly affects this landscape (including the presence of historic sag ponds, such as Lake Hughes and Elizabeth Lake). Canyons have steep rocky sides and are littered with large boulders. Year-round water is available only in the largest creeks.

Elizabeth Lake, Liebre-Sawmill Place

The climatic influence of the Mojave Desert affects vegetation types and water availability in the Liebre-Sawmill Place. The predominate plant community at lower elevations is mixed sage. Pine and juniper are present at higher elevations. Sycamore and cottonwood are present in drainages and shaded canyons. The area marks a transition from desert floor to forest, characteristically defined by rolling oak-covered hilltops. Mistletoe infestations are present on a large scale, especially in the black oaks

within the recommended Special Interest Area. Degradation of air quality is affecting forest health by stressing vegetation, resulting in lower water quality and productivity.

Conditions to protect property and resources from fire along the national forest boundary are inconsistent, and private landowners look to the Forest Service to provide community defense zones. Fuel treatments have been limited in the past. This area has not been subjected to wildland fire on a large scale for some time resulting in a buildup of hazardous fuels. Most of the existing areas are in the range of historic fire occurrence.

The Liebre-Sawmill Place includes important habitat features for the California spotted owl, which occupies a majority of the north-slope drainages. A wide array of rare and sensitive plants occupy this Place. The Liebre-Sawmill Place may also offer a habitat linkage between the Liebre and Tehachapi Mountains. Threats to wildlife and habitat include recreation activities and wildland fire.

Sawmill Mountain

The cultural landscape of the Liebre-Sawmill Place ranges between semi-primitive and a modified natural appearance. Heritage resources reflect a span of human use in the area from Native American inhabitance to early Forest Service and Civilian Conservation Core activities. Human influence is most apparent in the developed and dispersed recreation facilities and paths leaving the majority of the landscape subject to ecological change. Developed recreation is limited, focusing mainly on water-based recreation (boating, fishing, picnicking) at the Elizabeth Lake Day-Use Facility. Dispersed Recreation is the emphasis within the Place. Hiking, backpacking, equestrian use, bicycling, mountain biking, hunting, and OHV use are the predominate activities. The Pacific Crest Trail follows an east-west course through the entire Place.

Recreation uses and water extraction authorizations constitute the majority of the special- uses for the area. Other human influences exist within the Place and can create strong visual contrasts within the landscape including road cuts, utility corridors and intensively used areas. Most facilities and trails are located along drainages, on flats or cut into hillsides. A recreation residence tract is present that is oriented to the lake.

Most of the residents adjacent to the national forest rely on water generated from the national forest to meet or supplement their needs. Surface groundwater supply in many locations is overextended, causing stress on riparian and aquatic ecosystems. Watercourses carry pollutants, including bacteria, which affect the human environment.

Encroachment across national forest boundaries has increased due to urban development adjacent to the Place. Boundary trespass is particularly occurring along the northeastern edge of

the Place. National Forest boundary lines are not consistently marked, which affects the ability to address encroachments and unauthorized activities. Residents in developments and ranches adjacent to the national forest are creating their own social trails on national forest land, and this unauthorized use is resulting in resource damage and degradation. The area within this Place also provides a variety of small forest products such as, pinecones, fuelwood, and traditional plants.

Special Interest Areas:

- Liebre Mountain - 3,357 acres

Total national forest acres--Liebre-Sawmill Place: 17,094

Desired Condition: The Liebre-Sawmill Place is valued as a desert-interface landscape and is identified as a "key place" for the attractiveness of its landscape and is maintained as a natural appearing landscape that functions as year-round open space for Los Angeles and Antelope Valley residents. The valued landscape attributes to be preserved over time are the dramatic desert panoramas and rugged fault-zone background views, the marked transition of plant communities from desert to mixed sage, black oak, pine and juniper at higher elevations, visitor access to free-flowing water in drainages, and the undeveloped appearance of the landscape showing little visible human influence on the natural setting. Habitat conditions for threatened, endangered, proposed, candidate and sensitive species are improving over time. Exotic species are reduced and controlled over time.

Program Emphasis: The management emphasis is expected to focus on forest health, particularly on oak mortality and spotted owl habitat protection. It will also focus on those activities that maintain and promote the sense of remoteness and minimal use. The rural routes of the southern California Scenic Byway Interforest Transportation Route showcases key locations in the Place and connects the Angeles National Forest with the Los Padres National Forest. The PCT is managed to maintain spectacular vistas and a route through semideciduous oak forest. Use by recreationists (as well as limited urban and forest infrastructure) will be that which is sustainable, sympathetic to the natural setting and integrity, and has minimal effects to species of management concerns and their habitat. Forest health in terms of water quality and water needs will be managed to provide for forest ecosystem needs and in-stream flows. Priority will be given to managing an accurate and marked boundary line to minimize encroachment and unauthorized uses. Intensive management of the Back Country Discovery Trail will be implemented. The national forest will focus on open space protection and boundary management in anticipation of adjacent development.

Protection and enhancement of threatened, endangered, proposed, candidate and sensitive species such as the California spotted owl and a wide array of rare and sensitive plants will be emphasized in all activities. Exotic species eradication will be emphasized.

San Gabriel Canyon

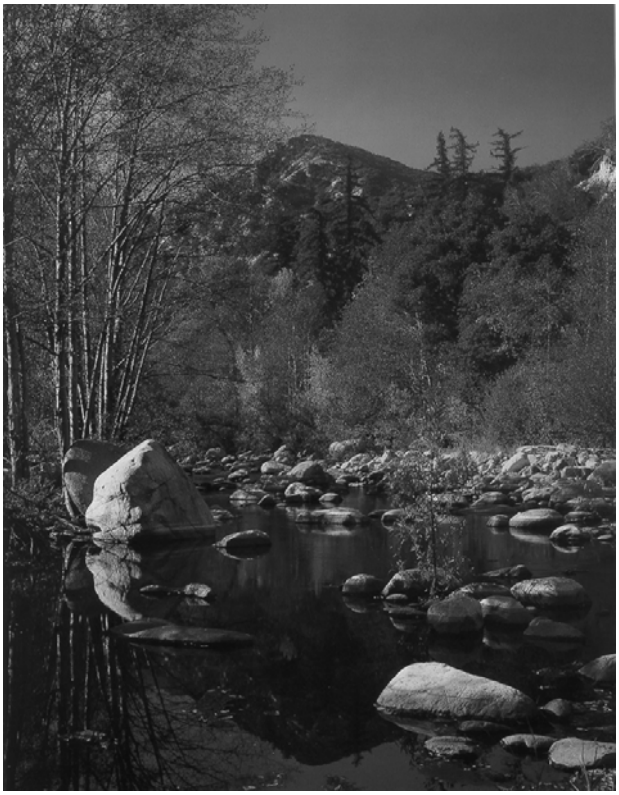
Theme: The San Gabriel Canyon Place serves as year-round day-use recreation landscape for families seeking a gathering spot, as well as for those interested in motorized recreation opportunities, in a river-based woodland setting. This major river system flows through the Los Angeles Basin and links the San Gabriel Mountains to the Pacific Ocean. This river system landscape provides residents of the Los Angeles Basin a link to a natural environment.

Setting: The area of San Gabriel Canyon Place is generally defined as north of San Gabriel Reservoir, east of Cogswell Reservoir, west of Heaton Flat and south of Smith Mountain.

It includes the San Gabriel OHV area. These higher and cooler parts of the San Gabriel River canyon range in elevation from about 2,500 up to 5,000 feet. The main canyon runs north to south. The forks of the San Gabriel River run east to west. Steep to very steep slopes with sharp to rounded summits and narrow canyons are the dominant landforms of this landscape.

The higher reaches of slopes are barren and show evidence of fractured rock and landslides, whose deposits form terraces along the north fork. Canyons have steep rocky sides and are littered with large boulders. The San Gabriel Fault runs east-west through the canyon bottom. It is a portion of the largest producing watershed on the national forest, that of the San Gabriel River. The river itself constitutes a major portion of this Place in terms of human use and visual associations.

San Gabriel Canyon West Fork.
Photo by Roy Murphy



The riparian woodlands of the San Gabriel Canyon provide contrast to the contiguous mixed chaparral of the larger landscape. These riparian woodlands consist of dense stands of sycamore, white alder, and willow. Upland vegetation is seen as tight clumps and scattered groups of canyon and coast live oaks. One of the largest contiguous stands of bigcone Douglas-fir and canyon oaks exist in the West Fork portion of this area. Areas of closed canopies are valued as shady nodes along the river course. Fall colors are also evident in this Place. The degradation of air quality is impacting forest health by stressing vegetation and resulting in lower water quality and productivity. Noxious weed infestations are also present within this Place.

There is a high potential for flooding in the

canyon, especially following fire (much of the canyon is characterized by a frequent fire regime and high reoccurrence).

A rich diversity of plant and animal species is present within the San Gabriel Canyon Place. Of significant importance is the federally threatened Santa Ana sucker. Riparian areas within the East, West, and North Forks of the San Gabriel River provide important habitat linkages between adjacent Places, and sensitive resource areas for wildlife. The West Fork of the San Gabriel River is one of two streams on the national forest being managed as a wild trout area. Potential threats to riparian dependent species and other sensitive habitat include recreation, wildland fire, flood control, and water conservation activities.

The cultural landscape of the San Gabriel Canyon is generally urban and modified to natural appearing. Human influence is most apparent in developed and dispersed recreation areas and paths along the river leaving the larger landscape to ecological change. Human impacts that create strong visual contrast in this landscape include: intensive use areas, graffiti, litter, utility corridors, reservoirs and dams, borrow sites, sediment placement sites, water retention basins and road cuts. Most areas and paths are located along the canyon bottom, on flats or cut into hillsides. Public access is limited in general and not designed to accommodate the high levels of use. This area is generally accessed from California State Highway 39. The paths through this landscape lead visitors to dramatic canyon scenery and shady areas along the river. Opportunities exist to better define the built image and create stronger links to adjacent landscape units.

Due to the accessibility to water, concentrated public use exists, mostly in the form of family-based activities, or with cultures associated with recent immigration to this country. A developed OHV open area is located within the flood plain of the San Gabriel River. Recreation uses are varied but mostly oriented to water. Many people enjoy the area, and that enjoyment leads to

Forest visitors enjoy the San Gabriel River, San Gabriel Canyon Place

chronic overuse. Recreation uses are conflicting with other resource values such as threatened, endangered, proposed, candidate and sensitive species. Infrastructure supporting developed recreation is aging, and does not meet the Americans with Disabilities Act or the Built Environment Image Guide. The focus of recreation along low elevation riparian areas is reaching or exceeds capacity. The majority of recreation facilities support riparian or other dispersed area recreation. Currently, opportunities for environmental education are not developed to meet public and agency needs.

Private lands within the Place promote a level of public use and recreation (i.e., gold panning) that is often in conflict with surrounding public lands. Also, activities exist that are not authorized.

The Place is used intensively, resulting in user conflicts (e.g., among, hikers, bikers, equestrian users), nonpermitted OHV use, or other depreciative uses (party place). The intensive use is resulting in soil compaction, loss of vegetation, and erosion near the river. The extraction of water, as well as the use of dams is affecting the riparian-dependent species. Chronic problems, such as trash, car dumping, graffiti, unauthorized OHV use, and maintaining closures exist in the Place, and there is inadequate law enforcement coverage.

Eligible Wild and Scenic Rivers:

- San Gabriel River (West Fork, Lower Portion) 7.4 miles

Existing Wilderness:

- San Gabriel Wilderness 4,182 acres
- Sheep Mountain Wilderness 147 acres

Recommended Wilderness:

- Sheep Mountain (Sheep Mountain Wilderness) 5,358 acres

Proposed Critical Biological Zones (see table 524: Angeles NF Critical Biological Land Use Zones, page 10):

- West Fork San Gabriel River

Total national forest acres--San Gabriel Canyon Place: 23,288

Desired Condition: The San Gabriel Canyon Place is maintained largely as a natural appearing landscape that functions as a location for streamside day-use, family-oriented recreation. The valued landscape attributes to be preserved over time are the majestic views of the canyon, the presence of large sycamores and alders along the riparian zone, visitor access to free-flowing water, the presence of oaks, and a well-defined age class mosaic in chaparral. Habitat conditions for threatened, endangered, proposed, candidate and sensitive species are improving over time. Exotic species are reduced and controlled over time.

Program Emphasis: The management emphasis is expected to focus on extremely high use by recreationists, and urban and forest infrastructure that is sustainable, sympathetic to the natural setting and integrity, and has minimal effects to species of management concern and their habitat. A key component of management will be focused on environmental education in this high-use Place. High quality and accessible opportunities for fishing are provided. Numerous trailheads are managed to provide access to the wilderness. The historic integrity of the gold mining sites will be maintained for future interpretation. A carrying capacity assessment will be developed

and implemented. Intensive management will be implemented to protect water supply and water quality as they relate to the Clean Water Act Section 303(d) impaired waterway mandate (TMDL). Forest health in terms of water quality and water needs will be managed to provide for forest ecosystem needs and in-stream flows necessary to support surface and subsurface resources while recognizing the needs for domestic water supply. The national forest will manage for 'critical habitat' designation by the U.S. Fish & Wildlife Service for the Santa Ana sucker and will implement the terms and conditions of the biological opinion. Protection and enhancement of threatened, endangered, proposed, candidate and sensitive species such as the Santa Ana sucker, southwestern willow flycatcher, two-striped garter snake, and western pond turtle and sensitive plants will be emphasized in all activities. Exotic species eradication to restore healthy riparian systems will be emphasized.

Santa Clara Canyon

Theme: The Santa Clara Canyons Place function year-round as a low elevation remote open space for the greater Los Angeles area and the Antelope Valley. Major drainages that flow into the Santa Clara River are focal points for water-based recreation. The Santa Clara River links the national forest to the Pacific Ocean. This canyon landscape offers visitors access to remote and semi-primitive experiences. The Pacific Crest National Scenic Trail is a portion of the Place. It is one of the "Key Places" representing the most picturesque national forest locations, containing its own landscape character.

Setting: The Santa Clara Canyons rise up from the Santa Clara River Basin at elevations starting at about 1,200 feet and reaching up to 5,000 feet. This area is generally accessed from major portals along the Interstate 5, Interstate 14, and California State Highway 138 travel corridors. A recommended Special Interest Area focusing on a botanical theme (large tracts of black oaks) reflects the character of this area. The paths through this landscape lead visitors to dramatic canyon panoramas and rugged mountain background views.

The southern aspect includes steep to very steep ridges with sharp to rounded summits, and deep narrow canyons. The lower elevation edge is marked by the urban interface with the community of Santa Clarita. The higher elevation edge is marked by a series of peaks and ridges. The steeper reaches of slopes are barren and show evidence of erosion. Canyons have steep rocky sides with large boulders. There are major north-south trending drainages such as San Francisquito, Bouquet Canyon, Elizabeth Lake, and Castaic. Two man-made lakes exist on the borders of this area (Bouquet Reservoir and Castaic Lake).

San Francisquito Canyon, Santa Clara Place

The mostly hot to temperate climate affects vegetation types and water availability in the Santa Clara Canyons. Mixed chaparral is the most dominant plant community. Canyon and coast live oaks are present in dense woodlands along shaded slopes and canyons. Black oaks

occur in dense patches at the higher elevations. Deciduous trees and shrubs occupy riparian areas. Year-round water is present only in the largest creeks and rivers. Mistletoe infestations are present on a large scale, especially in the black oaks present within the recommended Special Interest Area. Degradation of air quality is affecting forest health by stressing the vegetation and resulting in lower water quality and productivity. Noxious weed infestations also occur within this Place.

Conditions designed to promote the protection of improvements from fire are inconsistent along the urban interface of this Place, and private landowners look to the Forest Service to create community defense zones. Fuel treatments have been limited in the past. Recently, large wildland fires have occurred where there has been a buildup of fuels. Most of the existing areas are included in the historic fire occurrence; however, some areas have been identified as having excessive fire reoccurrence.

Several federally listed and Region 5 sensitive plants and animals occur in this Place. One of three populations of the California red-legged frog known to occur in southern California exists here. The Place also contains habitat for the unarmored threespine stickleback, least Bell's vireo and southwestern willow flycatcher, numerous other riparian dependent species, and the California condor. Water releases from reservoirs are important for the long-term viability of the unarmored threespined stickleback, and the maintenance of riparian systems within major creeks. Some activities are affecting riparian dependent species including dispersed recreation, wildland fire, and the spill of hazardous materials into waterways.

Heritage resources reflecting the span of human use of the national forest are present in the Place. This Place has one of the highest density and variety of heritage resource sites in the national forest, and the sites are affected by the increasing use of the Place by people.

The cultural landscape of the Santa Clara Canyons generally range between semi-primitive to a modified natural appearance. Human influence is most apparent in the developed and dispersed recreation facilities and paths, leaving the majority of the landscape subject only to ecological change. Developed recreation sites are limited, focusing mainly on remote camping and day-use facilities along the canyon bottoms. Dispersed recreation is the emphasis including hiking, backpacking, equestrian, bicycling, mountain biking, hunting, and OHV. OHV opportunities exist in designated areas. Other activities such as hunting and fishing occur. Water recreation is also present at Bouquet Canyon Creek, but there is a lack of sanitation and trash facilities along the streamside and chronic overuse is occurring. The condition of the trails varies, and infrastructure is aging, and does not meet Americans with Disabilities Act or the Built Environment Image Guide (BEIG) requirements, nor the needs and desires of the users. The magnitude of recreation use in the Place has resulted in conflicts on National Forest System roads and trails, as well as effects on other resources.

A variety of special-use authorizations exist in this Place that range from electronic sites to recreation residence tracts to shooting areas. This area of the national forest also has many existing activities that are not authorized. Problems related to human use exist in the Santa Clara Canyons including, trash disposal, car dumping, graffiti, illegal OHV use, partying, gang activities, illegal fires, illegal parking, and maintaining closures. There is inadequate law enforcement coverage, especially at night.

The Place supports multiple-uses that are valuable to the public. Historic mining has occurred in this Place. Mining operations are active in the Place, and stone quarries are present. Many of the utility service infrastructures that support the greater Los Angeles urban area (including the Los

Angeles Aqueduct) are present within the landscape. Several county roads serve as major high-speed commuter routes from inland valleys and deserts, and the use exceeds infrastructure design criteria and creates potential unsafe conflicts. Past oil and gas development has also occurred in or near this Place, and there may be the potential for future oil and gas exploration and development.

Urbanization is resulting in an increase of housing adjacent to national forest boundaries and is affecting national forest land. Adjacent developments are creating their own social trails on national forest land (including uncontrolled OHV use) and this unauthorized use is resulting in resource damage degradation. The urban development in the south is creating issues of community defense, as well as encroachment and unauthorized activities. There are multiple access points that go through the area.

Eligible Wild and Scenic Rivers:

- San Francisquito Canyon, 13 miles

Critical Biological Zones (see table 524: Angeles NF Critical Biological Land Use Zones, page 10):

- Castaic/Fish Canyon
- San Francisquito Canyon

Special Interest Areas:

- Liebre Mountain - 5,672 acres

Total national forest acres--Santa Clara Canyons Place: 140,824

Desired Condition: The Santa Clara Canyons Place is identified as a "Key Place" for its natural appearing and pastoral landscape that functions as a remote Back Country open space. The valued landscape attributes to be preserved over time are the dramatic canyon panoramas and rugged mountain background views, oak woodlands, a well-defined age class mosaic in chaparral, and the pastoral qualities of grazing activities, which is important to the interpretation to the examples of important Native American history and historic mining. Habitat conditions for threatened, endangered, proposed, candidate and sensitive species are improving over time. Exotic species are reduced and controlled over time.

Program Emphasis: The management emphasis is expected to focus on community protection, recreation use, and urban and forest infrastructure that is sustainable, sympathetic to the natural setting and integrity, and has minimal effects to species of management concern and their habitat, as well as heritage resources. Heritage resources will be protected through the development of management plans designed to reduce the effect of impacting uses and authorizations. The national forest will focus on protection of open space and boundary management in anticipation of future adjacent development. Forest health in terms of water quality and quantity will be managed to provide for forest ecosystem needs and in-stream flows necessary to support surface and subsurface resources. An unclassified roads/trails decommissioning plan will be developed and implemented.

Protection and enhancement of threatened, endangered, proposed, candidate and sensitive species such as the arroyo toad, California red-legged frog, southwestern willow flycatcher, least Bell's vireo, San Diego horned lizard, two-striped garter snake, Nevin's barberry and sensitive

plants will be emphasized in all activities. Arundo and other exotic species eradication to restore healthy riparian systems will be emphasized with special emphasis on San Francisquito Canyon.

Soledad Front Country

Theme: The Soledad Front Country Place functions as a scenic backdrop and transitional landscape between the rapidly urbanizing Mojave Desert and Los Angeles Basin. The flow of people and materials through this transitional landscape link the greater Los Angeles area to the Mojave Desert. The growing communities along California Interstate 14 are transforming this area from rural to urban in character. Residents of these new communities have the scenic views of the San Gabriel Mountains from their homes and travel corridors. The Pacific Crest National Scenic Trail occurs on a portion of the Place.

Setting: The Soledad Front Country Place runs northeast to southwest along both sides of California State Highway 14 along the Santa Clara and Soledad Rivers. This landscape is commonly defined as the area between California Interstate 5 at the southern end and the intersection of California State Highway 138 at the northern end. The northwest and southeast boundaries are, in general, defined by the area visible from California Highway 14. There is a Special Interest Area that highlights the heritage resource values of the area.

Elevations in the area range from about 2,100 feet to 3,000 feet. The broad floodplain of the Soledad River (with its various side drainages) dominates this landscape. The broad floodplain (which leads to steep slopes with rounded summits) is the most prevalent landform in this Place.

The mostly hot to sometimes temperate climate affects vegetation types and water availability. The predominate plant community at the lower elevations is mixed chaparral. Pine and juniper are present at higher elevations. Chaparral is continuous on most slopes. The chaparral is seen as patterns of dense patches with large openings. Canyon and coast live oaks are present in dense woodlands along shaded slopes and in the canyons. All but the larger streams are dry through the summer. Several canyons, including Elsmere and Whitney, still exhibit pristine characteristics.

However, human influences on the viewshed include the altered vegetation composition resulting from an increase in fire starts. Degradation of air quality is affecting forest health by stressing vegetation, resulting in lower water quality and productivity.

Most of the vegetative communities within the area are in the expected fire regime; however,

there are areas that have a history of excessive fire occurrence. Safe conditions along the urban interface within this Place are inconsistent, and private landowners look to the Forest Service to create community defense zones. Fuel treatments have been limited in the past, and the focus of fire management is on property protection, concentrating on age class mosaics and fuelbreaks to reduce downstream flooding. The flood-fire sequence poses a problem to downstream housing developments. Wildland fires have resulted in high property and resources loss, and the numerous fire starts are moving vegetative communities towards type conversions.

A rich diversity of plant and animal species is present within Soledad Front Country.

Soledad Canyon includes habitat for the unarmored threespine stickleback, least Bell's vireo, southwestern willow flycatcher and numerous other riparian dependent species.

Opportunities for establishment of regional wildlife linkages to improve connectivity between the San Gabriel, Castaic and Santa Susana Mountains exist and are needed in this Place. Potential threats to sensitive habitat areas include developed and dispersed recreation, mining, wildland fire and groundwater extraction.

Soledad Canyon Wildlife Viewing Station, Soledad Front Country Place

The cultural landscape of the Soledad Front Country is rapidly converting from rural to urban due to the development of housing tracts along the national forest boundary. Human influences, such as urban development, intensive use areas, transportation corridors, utility corridors, sand and gravel mining, road cuts and flood control channels are creating strong visual contrasts and user conflicts within this Place. Most facilities and trails are located along drainages, ridge tops or cut into hillsides. Urban development is affecting access to National Forest System roads and trails, and residents of adjacent developments are creating social trails on national forest land. Encroachment has increased due to urbanization resulting in problems of trespass, fire, and resource damage.

Trailheads and travel routes offer visitors year-round access to the Angeles National Forest. The trails through the Place lead visitors by dramatic canyon and rugged mountain views. The area has a rich history and is known for a high occurrence of heritage resource sites. Recreation opportunities such as hiking the Pacific Crest National Scenic Trail and managed OHV areas occur within this Place. Recreation use is conflicting with other resources, and facilities are aging and do not meet Americans with Disabilities Act or the National Forests and Grasslands Built Environment Image Guide (BEIG). Environmental education venues (including the Placerita Nature Center) are present in the area, but there is no unifying, overview or integrated focus.

This area accommodates other human uses and needs, such as providing the backdrop for movies and television shows, mining activities, electric utility and distribution lines, and water extraction. However, the supply of both ground and surface water does not adequately provide for forest ecosystem health and other demands. A variety of special- use authorizations exist in this Place that range from electronic sites to shooting areas. Past oil and gas development has also occurred in or near this Place, and there may be the potential for future oil and gas exploration and development.

The Place has many existing activities that are not authorized. Problems in the canyons associated with human use, such as trash and car dumping, partying, graffiti, illegal OHV use, and closure maintenance are persistent. Law enforcement coverage is inadequate, especially at night.

Special Interest Areas:

- Aliso - Arrastre Middle and North 7,850 acres

Proposed Critical Biological Zones (see table 524: Angeles NF Critical Biological Land Use Zones, page 10)

- Soledad Canyon

Total national forest acres--Soledad Front Country Place: 59,338

Desired Condition: The Soledad Front Country Place is identified as a "Key Place" for its natural appearing area that functions as a scenic backdrop and transitional landscape. The valued landscape attributes to be preserved over time are the dramatic canyon and rugged mountain views, the presence of pine and juniper stands, and a well-defined age class mosaic with patches in chaparral. Heritage resources are managed to standard under a comprehensive and integrated management plan. Wildlife linkages connecting the San Gabriel Mountains to the Castaic and Santa Susana Mountains is established and functioning. Habitat conditions for threatened, endangered, proposed, candidate and sensitive species are improving over time. Exotic species are reduced and controlled over time. Private land between the two mountain ranges is acquired and the Pacific Crest National Scenic Trail is connected.

Program Emphasis: Management emphasis is expected to focus on the protection of communities from the threat of fire, the management of high levels of recreation use, and the maintenance of urban and forest infrastructures (facilities). The success of this emphasis is dependent on a sustainable level of development and the delicate balance between the needs of people and the effects of those uses on the plant and animal communities in the national forest. Uses must be balanced to promote the conservation of valuable natural resources and to sustain the needs of people. The significance of the heritage resources in the Place is recognized through the designation of special areas managed for the heritage resource value. Special emphasis will be given to acquiring private land between the San Gabriel and Sierra Pelona Mountain Ranges in order to connect the Pacific Crest National Scenic Trail. The national forest will focus on protection of open space and boundary management in anticipation of future adjacent development.

The national forest is active in regional planning efforts to establish a wildlife linkage connecting the San Gabriel Mountains to the Sierra Pelona and Santa Susana Mountains. Uses and activities are managed to provide opportunities for establishment of regional wildlife linkages in the Soledad Front Country Place. Protection and enhancement of threatened, endangered, proposed, candidate and sensitive species, such as the unarmored threespine stickleback, arroyo toad, southwestern willow flycatcher, least Bell's vireo, San Diego horned lizard, two-striped garter snake and sensitive plants will be emphasized in all activities. Arundo and other exotic species eradication to restore healthy riparian systems will continue to be emphasized.

Special emphasis will be given to acquiring private land between the San Gabriel and Castaic Mountain Ranges in order to connect the Pacific Crest National Scenic Trail.

Mojave Front Country

Theme: The Mojave Front Country Place functions year-round as a low elevation open space for Mojave Basin residents, as well as the metropolitan residents of Los Angeles and San Bernardino Counties. It serves as the backdrop for the Antelope Valley, while providing breathtaking distinct desert views from within the Place. This desert interface landscape provides portals from the Mojave Basin to the Angeles and San Bernardino National Forests. It is one of the "Key Places" representing the most picturesque national forest locations, containing it own landscape character.

Setting: The Mojave Front Country Place rises up from the Mojave Desert with elevations from about 3,000 feet up to 6,000 feet. The lower elevation edge is delineated by the interface with the Mojave Desert. The higher elevation edge is marked by a series of peaks and ridges and provides winter snowplay opportunities. The northern aspect's steep to very steep slopes with sharp to rounded summits and narrow canyons are the dominant landforms of this landscape.

The steeper reaches of slopes are barren and show evidence of fractured rock and landslides. Canyons have steep rocky sides that are covered with large boulders. The area is influenced by the San Andreas Fault zone, along with other faults, that result in unique geologic formations, such as those seen at Mormon Rocks and Devil's Punchbowl Special Interest Area. The presence of faulting has resulted in the movement and exposure of mineral resources that influences human activity, (i.e., limestone mining, and clay extraction).

The rain shadow from the San Gabriel Mountains affects vegetation types and water availability in the Mojave Front Country Place. It is a transition zone from high desert to forest. Desert scrub and pines are the most dominate plant communities. In higher elevations, pines are present as scattered individuals or tight clumps. Pinyon and Joshua trees are present at the lowest elevations. Sycamore and cottonwood are present in drainages and shaded canyons. Scattered large drainages provide limited perennial water play and fishing areas along this front.

High desert landscape and Joshua Trees, Mojave Front Country Place

The Mojave Front Country Place includes habitat for the arroyo toad, mountain yellow-legged frog, least Bell's vireo, the southwestern willow flycatcher, desert tortoise and several Region 5 sensitive plants and animals. Potentially important habitat linkages occur between the

national forest and adjacent private land. Potential threats to riparian dependent species and other sensitive habitat areas include developed and dispersed recreation, and wildland fire.

The supply (ground and surface water) does not meet the need for forest ecosystem health and other demands. Surface groundwater supply in many locations is overextended, causing stress on riparian and aquatic ecosystems. Watercourses carry pollutants, including bacteria, which affect the human environment. Abandoned mines are posing a safety hazard, and are a visual impact to the character of the area.

The cultural landscape of the Mojave Front Country is generally undeveloped. Some of the oldest and most varied heritage resource sites for the national forests exist within the Place. This area is quickly changing from a rural undeveloped landscape to an urbanized setting along the national forest boundary. Housing increases along the boundary are affecting access to national forest land. Human influence is most apparent in developed and dispersed recreation facilities and on trails, leaving the majority of the landscape subject to ecological change. Human impacts that create strong visual contrast within this landscape include road cuts, utility corridors, and intensive recreation use areas. Most facilities and trails are located along drainages, on flats, or are cut into hillsides. This area is generally accessed from portals along California State Highway 2, 14 and 138, and Big Pines Highway. The limited paths through this nearly inaccessible landscape lead visitors to dramatic desert panoramas and rugged mountain background views.

Little Rock Dam

Hiking, backpacking, equestrian use, bicycling, mountain biking, hunting, OHV use, and water-based recreation are the most popular recreation activities occurring within this Place and require a support network of trails and roads, and developed facilities. The dramatic changes in scenery and vegetation also create a viewshed that promotes driving for pleasure. Recreation is centered along Little Rock and Big Rock Creeks, in close proximity to major travel ways. OHV opportunities exist within the Back Country Discovery Trail and the Little Rock OHV Area. The

demand for low elevation recreation along riparian areas is reaching or exceeding capacity. Riparian areas are overused and under supported in terms of infrastructure (i.e., sanitation and trash facilities). Conflicts exist between recreationists and threatened, endangered, proposed, candidate and sensitive species.

The presence of urban development along the national forest boundary in this Place is not consistent with the buildup concentrated in the northwest and northeast sections of this Place. This presents a challenge to the local governments and the national forest to have a consistent management strategy along the national forest boundary, and places greater emphasis on the national forest to provide fire protection and habitat linkages in those areas of intense buildup along the boundary. Encroachment has increased due to the urban development resulting in access and trespass issues.

Adjacent developments are creating their own social trails on national forest land, primarily caused by an increase in unlawful OHV use. The Place is continually having problems due to trash, car dumping, graffiti, illegal OHV use, and partying, with enforcement capability at a minimum due to inadequate law enforcement coverage.

Establishment of a regional wildlife linkage to improve connectivity between the San Gabriel Mountains north to Saddleback Butte is needed.

Eligible Wild and Scenic Rivers:

- Little Rock Creek 10.9 miles

Existing Special Interest Areas:

- Devil's Punchbowl 1,166 acres

Proposed Critical Biological Zones (see table 524: Angeles NF Critical Biological Land Use Zones, page 10):

- Lower Little Rock Creek

Total Angeles National Forest acres--Mojave Front Country Place: 52,610

Desired Condition: The Mojave Front Country Place is maintained as a natural appearing and cultural landscape that functions as a year-round, low elevation open space for Mojave Basin residents and the residents of Los Angeles and San Bernardino Counties. It also serves as a scenic backdrop for the Antelope Valley and this desert-interface landscape is identified as a "Key Place" for the Angeles National Forest. The valued landscape attributes to be preserved over time are distinct desert views from within the Place and rugged mountain background views, desert scrub, scattered pinyon pines, Joshua trees, sycamore, and cottonwood in drainages and shaded canyons, as well as the remnants of Native American history.

A wildlife linkage connecting the San Gabriel Mountains north to Saddleback Butte has been established and is functioning. Habitat conditions for threatened, endangered, proposed, candidate and sensitive species are improving over time. Exotic species are reduced and controlled over time.

Program Emphasis: Management is expected to focus on community protection, recreation use, and urban and forest infrastructure that is sustainable, consistent with the natural setting and integrity, and has minimal effects to species of management concern and their habitat, as well as heritage resources. Management will also emphasize the interpretation and protection of the heritage resource sites of the Place, which are some of the oldest in the national forest. Forest health in terms of water quality and quantity will be managed to provide for forest ecosystem needs and the instream flow necessary to support surface and subsurface resources. Uses will be balanced and promote the conservation of resource qualities that sustain these uses and provide attractions for this area. The national forest will focus on open space protection and boundary management in anticipation of adjacent development.

The national forest is active in regional planning efforts to establish a wildlife linkage connecting the San Gabriel Mountains north to Saddleback Butte. Uses and activities are managed to provide opportunities for establishment of a regional wildlife linkage in the Mojave Front Country Place.

Protection and enhancement of threatened, endangered, proposed, candidate and sensitive species such as the arroyo toad, southwestern willow flycatcher, least Bell's vireo, San Diego horned lizard, two-striped garter snake, California spotted owl, joint beavertail cactus and other sensitive plants will be emphasized in all activities. Arroyo toad surveys will be completed. In the Little Rock area, the current Monitoring and Use Assessment Plan will be evaluated and redesigned. Exotic species eradication to restore healthy riparian systems will be emphasized.

Forest-specific Design Criteria

Place-specific Standards

ANF S1 - Pacific Crest Trail - Protect scenic integrity of foreground views as well as from designated viewpoints. Where practicable, avoid establishing nonconforming land uses within the viewshed of the trail (Liebre-Sawmill, Santa Clara Canyons, Soledad Front Country and Angeles High Country).

Wilderness Standards

ANF S2 - Open campfires and glass containers are not allowed within any wilderness. Visitors must use gas, jellied petroleum, pressurized liquid fuel or other portable camp stoves that are completely enclosed.

ANF S3 - The maximum visitor group size is 25 people. Exceptions may be approved by the authorized officer.

Forest-wide Guidance

Functional management plans (both existing and anticipated) that provide more specific direction are listed below:

- Wilderness Plans and Implementation Schedules
- Wild and Scenic River Management Plans
- Forest Fire Management Plans
- Special Interest Area Plans
- Research Natural Area Establishment Reports and Implementation Plans
- Scenic Byway Plans
- Management Plan for the San Dimas Experimental Forest
- Facilities Master Plan
- Species Guidance Documents (see Appendix H in Part 3)

Performance Risks

The national forest operates in a dynamic environment, characterized by uncertainties in both internal and external operating conditions, due to fluctuations in the natural environment and the institutional environment. If events unfold in a manner that was not anticipated when this prospectus was prepared, attainment of the objectives shown above will be affected.

Risks Related to the Natural Environment

Fires, insect or disease outbreaks, and other disturbances are likely to occur, and could significantly alter current conditions.

The national forest has experienced large wildland fires in the last 10 years. Where and when future fires will burn is an inexact science. If future wildland fire disturbance events exceed historical averages, or are concentrated in areas that are particularly vulnerable (urban interface, riparian areas, or special habitats) then the extent, location, and timing of management activities could all be affected.

Risks Related to the Institutional Environment

The national forest budget could differ from projections.

The trends in accomplishment of objectives shown above are dependent on the national forest receiving an operating budget that is similar to its experienced budget over the last three years. Fluctuations in the budget (either upward or downward) would likely cause a change in the direction and/or magnitude of projected accomplishments. In addition, changes in the mix of funds between program areas also have the potential to affect the rate or magnitude of performance.

National or regional strategic initiatives may emerge in response to broad-scale issues.

This forest plan is linked to the agency's National Strategic Plan (see Part 1: Southern California National Forests Vision) that is updated every three to five years. Historically, both Congress and the Executive Branch have also instituted program initiatives outside of the forest planning process that affect much or all of the National Forest System (e.g., the Roadless Rule, the National Fire Plan, and the National Energy Policy). Such changes in national direction have the potential to add to, override, or otherwise adjust the performance objectives of the national forest.

Appendix A - Special Designation Overlays - Angeles National Forest

Wilderness

Existing Wilderness

Cucamonga	Places: The Front Country, Angeles High Country	**4,201 Acres**

Located on the eastern flank of the San Gabriel Mountains near Cajon Pass, this area is adjacent to some of the most densely populated areas of southern California. It is jointly managed by the San Bernardino National Forest and may be accessed by Forest Roads 2N58 and 1N34.

Elevations in the Cucamonga Wilderness range from 4,920 to 9,008 feet (Telegraph Peak rises to 8,985 feet). Movement of the nearby San Andreas Fault has left landslides as visual reminders on the landscape. Vegetation at the lower elevations is predominantly chaparral, with conifer stands blanketing the high country. The area is characterized by extremely rough and precipitous terrain. The headwaters of Lytle, Cucamonga, Deep and Day Creeks lie immediately south of the wilderness boundary. A herd of bighorn sheep inhabits the area. There are three dispersed campsites within the wilderness (two on the San Bernardino National Forest side, and one on the Angeles National Forest side), and human use of the area is heavy (Tilton).

San Gabriel Wilderness	Places: San Gabriel Canyon, Angeles Uplands East, Angeles High Country	**36,118 Acres**

This wilderness is located in the San Gabriel River Ranger District. The boundaries of the San Gabriel Wilderness are the Angeles Crest Scenic Byway, (California State Highway 2) on the west, the San Gabriel Mountains summit and the Angeles Crest Scenic Byway on the north, California State Highway 39 on the east, and the West Fork of the San Gabriel River on the south. Access is from: Bear Creek Trail, an eleven-mile trail, with trailheads near Rincon and Coldbrook Ranger Stations, both off Highway 39; the Mt. Waterman Trail, a ten mile trail, from Three Points to Buckhorn, with a one mile side trail to Twin Peaks Saddle; or Devil's Canyon Trail, a four mile trail down into Devil's Canyon.

The area encompasses some extremely rugged terrain, including steep, fractured slopes. Elevations range from 1,600 to 8,200 feet. The predominant vegetative type is chaparral, which covers about 75 percent of the wilderness in the lower elevations. Dense chaparral rapidly changes to pine and fir-covered slopes and majestic peaks, with glimpses of wildflowers and a variety of wildlife as you enter the upper elevations. The remainder of the vegetation is woodland, grasslands and mixed conifers. Wildland fires are a threat to the area, especially during periods of hot, dry Santa Ana Winds.

In 2000, the entire wilderness on the Angeles National Forest had 100,000 visits, which accounted for less than 3 percent of total national forest use. The riparian woodlands located in canyon bottoms receive the most use. Much of the use is concentrated on the few trails within the wilderness, causing some overuse and congestion. Popular recreation activities that occur in this area include hiking, fishing, waterplay and picnicking.

As one of the original wilderness areas nationally designated in 1964, the San Gabriel Wilderness is in a Class 1 air resource. There is no grazing within the wilderness.

Sheep Mountain Wilderness	Places: Angeles Uplands East, Angeles High Country, San Gabriel Canyon	**39,482 Acres**

In 1984, the Sheep Mountain Wilderness was set-aside as one of the nation's truly unique wild areas. The Sheep Mountain Wilderness is located in the San Gabriel River Ranger District; however, an additional 400 acres of this wilderness lie on the adjacent San Bernadino National Forest. The Sheep Mountain Wilderness is generally bounded by: California Highway 2 (Angeles Crest Scenic Byway) on the north; California Highway 39 on the west; the East Fork of the San Gabriel River on the south; and the Mt. Baldy Village Road and Devils Backbone Trail to the east. The area can be accessed from East Fork trailhead, Coldwater Canyon, California State Highway 2 at Vincent's Gap, and from the Pacific Crest National Scenic Trail. Vegetation (consisting primarily of chaparral) offers high-quality scenery.

The wilderness land is rugged and not easily accessible, but is still highly used by Los Angeles residents. With elevations ranging from 2,400 ft. to over 10,000 ft., this area offers something for everyone. Whether you are a novice hiker, an experienced backpacker, a fisherman, or just interested in the 'great outdoors', this rugged terrain provides a variety of opportunities for all.

Mining activities that pre-date 1964 are still present within the area. Concern exists about the stockpiles of tailings next to the wilderness, and the potential raveling of these piles to the canyon bottoms. Special-use authorizations provide reasonable access to these private areas and development of mining operations.

Recommended Wilderness

Cucamonga A (Cucamonga Wilderness)	Places: The Front Country

Acres: 448

The recommended Cucamonga A addition is composed of several segments of land adjacent to the existing Cucamonga Wilderness on the Angeles National Forest. The southern most piece is located in Angeles Front Country Place and a small area in Cedar Canyon is in the Icehouse Creek drainage. This area is within the San Antonio watershed. The steep, rocky terrain and lack of additional developed trails make this area very challenging to both novice and experienced hikers and backpackers. The Cucamonga Wilderness itself has a trail system that enables travel from the Icehouse Trailhead east to the San Bernardino National Forest, as well as north and south to a number of peaks. The ridge trail (7W06) northerly ties into the Pacific Crest Trail.

Sheep Mountain (Sheep Mountain Wilderness)	Places: San Gabriel Canyon, Angeles Uplands East, Angeles High Country, Mojave Front Country

Acres: 12,727

The areas proposed are rugged and not easily accessible, but are still highly used by Los Angeles and San Bernardino residents. Elevations range from 2,400 feet to over 10,000 feet, offering a variety of recreation opportunities. The vegetation consists primarily of chaparral at the lower elevations and mixed conifer in the higher elevations.

The proposed addition can provide improved connectivity and expand the wildlife corridor, which is habitat for three groups of bighorn sheep: Iron Mountain, Cattle Canyon and Middle Fork.

There is one large in-holding within the Inventoried Roadless Area, the Gold Ridge Mine. A special-use authorization provides reasonable access to this private land and development of the mining operations.

Wild and Scenic Rivers

Eligible

Little Rock Creek	Places: Mojave Front Country, 10.9 miles; Angeles High Country, 7.5 miles

The Eligibility Study for this river shows that its undisturbed and primitive condition gives it local scenic significance. This desert and high country setting attracts visitors for picnicking, waterplay and driving opportunities. A diverse array of wildlife species, including threatened, endangered, and sensitive species are found within this portion of Little Rock Creek, along with prehistoric sites valued by local Native American tribes. Little Rock Creek and its tributary (Cooper Canyon) are eligible for classification as a Wild and Scenic River.

Lower Piru	Places: I-5 Corridor, 3.7 miles

This segment of Piru River on the Angeles National Forest starts 300 feet below Pyramid Lake Dam and continues downstream to the Sespe Wilderness boundary. Along this stretch of the river, geological values were determined to be outstandingly remarkable, including scenic tilted layers of sedimentary rocks as well as faults and rock formations with features crucial to the understanding of geological formation on the west coast of North America.

San Antonio Canyon Creek	Places: Angeles Uplands East, 1.4 miles; Angeles High Country, 2.2 miles

The Eligibility Study for this portion of the river recognizes its recreation values, especially its year-round flowing water. Numerous dispersed recreation activities occur along this river, including waterplay, picnicking and barbequing. Manker Flats Campground, along with the Ice House Canyon Trail that enters the Cucamonga Wilderness are located near this portion of the river. The 3.7-mile upper portion of the river (which lies outside of privately owned property) is eligible to be classified as a recreational river.

San Francisquito Canyon	Places: Santa Clara Canyons, 13 miles

The entire length of the San Francisquito Canyon flows freely into the Santa Clara River, qualifying it as outstandingly remarkable. The lower segment of the river is considered outstandingly remarkable as a result of the combination of geologic processes and historical values in the corridor. The dam site has become the archetypical example for dam design and engineering. The entire river is eligible for classification as a recreational river.

San Gabriel River (East, West and North Forks)	Places: San Gabriel Canyon, 18.9 miles; Angeles Uplands East, 7.9 miles; Angeles High Country, 0.6 miles.

East Fork: The river-related values determined to be outstandingly remarkable in the eligibility inventory are scenery (upper segment), recreation (upper segment), fisheries (both segments), and historic values (both segments). The scenery value is considered to be regionally important due to the variety and seasonal variation of landscape elements. The recreation value is considered to be of regional importance, as the peace and solitude offered by this wilderness environment attracts visitors from outside the local areas. There is also a presence of significant historic mining sites. Finally, an assemblage of native fish and the rarity of the Santa Ana sucker lend a national significance to the fish values of the East Fork San Gabriel River. The 8.4-mile segment within the wilderness is eligible for classification as a wild river, while the free-flowing 7.3-mile segment outside of the wilderness is eligible for classification as a recreational river.

North Fork: Fisheries values on this 4.2-mile segment of the San Gabriel River are outstandingly remarkable. The North Fork supports a regionally and nationally significant assemblage of native fishes, including the presence of the Santa Ana sucker, a federally threatened species. The North Fork is eligible for classification as a recreational river.

West Fork: Recreational values in both the upper and lower segments of the West Fork San Gabriel River are considered to be outstandingly remarkable and attractive to both local and regional recreationists. There are ample recreation opportunities including three National Recreation Trails, year-round flowing water and high quality fishing opportunities, several campgrounds and group campgrounds, and access to the San Gabriel Wilderness. The assemblage of native fishes, including the presence of the Santa Ana sucker, a federally threatened species, along with the State of California Wild trout stream designation, give the lower segment of West Fork San Gabriel River a regional and national significance for fish resources. Due to the existing road that parallels the river, the West Fork is eligible for classification as a recreational river.

Research Natural Areas

Established

Falls Canyon	1,440 acres	Place: Angeles Uplands West

Falls Canyon Research Natural Area (RNA) (1,440 acres) was established in 1998 to preserve the bigcone Douglas-fir (*Pseudotsuga macrocarpa*) and canyon live oak (*Quercus chrysolepis*) woodland target elements. Bigcone Douglas-fir grows in relatively dense stands on steep slopes in this RNA, where it has been largely protected from fire. The oldest trees have been determined to be over 350 years old and have survived several historic fires. Falls Canyon is a tributary of the west fork of the San Gabriel River on the slopes of Mount Wilson. Elevations range from about 3,400 to 5,700 feet within the RNA. Access is from the Mount Wilson road and various trails that border and traverse the area.

Fern Canyon	1,400 acres	Places: The Front Country

Fern Canyon Research Natural Area was established to protect the target elements of chamise (*Adenostoma fasciculatum*) chaparral and canyon live oak (*Quercus chrysolepis*) woodland. A relict stand of low-elevation ponderosa pine (*Pinus ponderosa*) also occurs in the RNA at Brown's Flat, a shallow 80-acre bowl created by an ancient land slump. The RNA covers 1,400 acres and ranges in elevation from 2,592 to 5,512 feet. Fern Canyon RNA falls entirely within the San Dimas Experimental Forest, which is managed by the Pacific Southwest Research Station and is closed to general public use. Researchers can gain access via special-use authorization. The entire RNA was affected by the 2002 Williams Fire. Burned and partially burned vegetation is expected to recover naturally.

Special Interest Areas

Devil's Punchbowl	Botanical, Geological	Places: Mojave Front Country

The Devil's Punchbowl Special Interest Area (SIA) is located in Los Angeles County (T4N, R9W Sections 19, 20, 29, 30). The 1,255-acre area is managed by both Los Angeles County Parks and the Angeles National Forest.

Prominent biological features include the chaparral to conifer transition between 4,000-6,000 feet and riparian associations along a small, permanent stream.

The area has a geologic theme, emphasizing the area's folds and faults, plate tectonics, and sculpture of the land. Devil's Punchbowl is a unique assemblage of spectacular rock formations illustrating various geologic processes. Geology of this area provides insight into the history and effects of the San Andreas Rift Zone. This SIA also contains a desert riparian plant community and provides nesting habitat for the prairie falcon. Most of the area is currently managed as a Los Angeles County Park. It is a very beautiful area of lush vegetation and striking rock formations at the base of the San Gabriel Mountains.

Mt. Baden-Powell	Botanical	Places: Angeles High Country

The 252-acre Mt. Baden-Powell Special Interest Area is located in Los Angeles County (T3N, R8W Section 7; T3N, R9W Section 12).

The north slope of this peak supports one of the best examples of limber Pine (*Pinus flexilis*) in southern California. The peak and adjacent area contain elements of subalpine habitat, including at least three San Gabriel endemic plant species.

Mt. San Antonio	Alpine and subalpine vegetation	Places: Angeles High Country

The 164-acre Mt. San Antonio Special Interest Area is located in both Los Angeles and San Bernardino Counties (T2N R7W, Sections 5 and 6). Elevations here range from 7,000 to 10,000 feet.

The major theme of the SIA is subalpine and alpine vegetation, especially lodgepole pine forest. Mt. San Antonio exhibits one of the best examples of subalpine habitat with a unique proximity to thousands of square miles of arid and semi-arid landscapes. Block faulting has lifted Mt. San

Antonio to 10,064 feet above sea level, almost 9,000 feet above the surrounding valley floors. It is adjacent to the Sheep Mountain Wilderness. Four endemic plant species also grow here and the area provides summer habitat for Nelson's bighorn sheep.

Aliso - Arrastre Middle and North	Cultural	Places: Soledad Front Country

Acres: 7,850

This area is known for its heritage resource values. The Special Interest Area (SIA) includes many Native American archaeological sites ranging from long-term occupation sites, seasonal encampments and special-use resource procurement, processing, and storage sites. Of particular interest may be the numerous stone circle features so far found within the SIA, many of which are interpreted as house rings, storage caches, or religious sites. This concentration of stone circles may be unique in southern California. Also located within the SIA are several sites containing cupule rock art features. One of these sites is currently being nominated to the National Register of Historic Places.

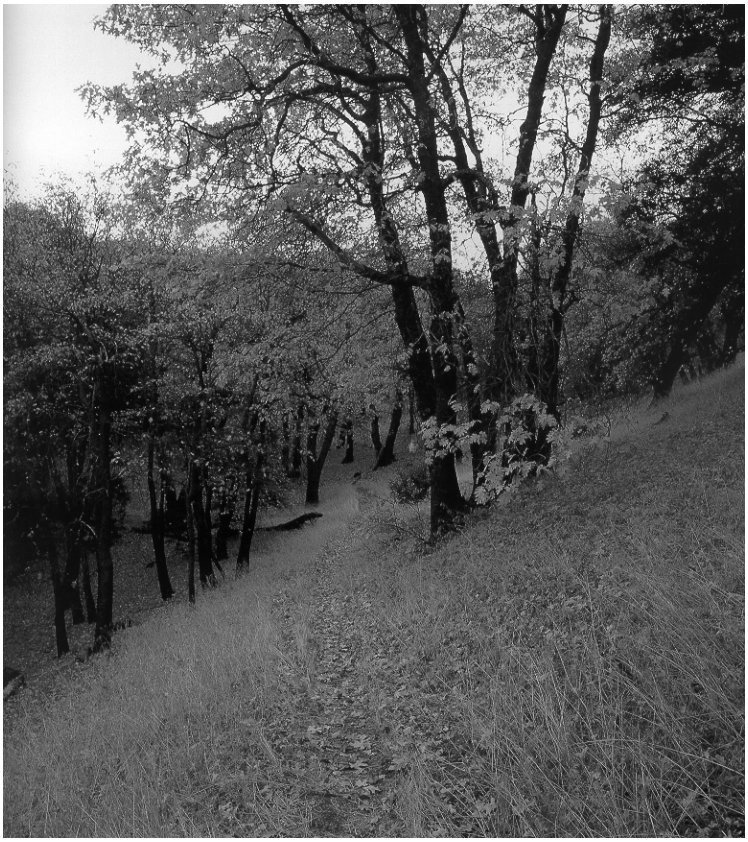
The span of Native American habitation ranges from the historic period to the Late and Middle Prehistoric Periods, and likely even earlier. Glass trade beads show evidence of Native American habitation in the historic period, and dates from arrow points, shell bead types, and C14 from earth ovens prove habitation in the Late and Middle Prehistoric Periods. Artifacts include objects manufactured from steatite obtained from the Channel Islands and obsidian obtained from the Owens Valley. These provide strong evidence of trade networks with desert and coastal groups. The SIA contains archaeological materials that provide a unique opportunity to obtain invaluable data related to past human life-ways and environmental adaptations, as well as paleoenvironmental conditions.

The SIA encompasses Angeles National Forest administered lands within the Aliso, Arrastre, and Kentucky Springs Watersheds on the Santa Clara-Mojave Rivers Ranger District. The area of the SIA has many other national forest uses occurring, including a transmission line corridor (lines, roads), clay mining operation, National Forest System roads, Los Angeles County Roads, plantations, private in-holdings, and hiking and riding trails. Elevations range from 2,950 to 5,900 feet for the combined SIA with the elevations ranging from 2,950 to 4,000 feet for the segment of the SIA that appears in the alternative. The vegetation is primarily chaparral at the lower elevations and a montane chaparral mix with stands of Coulter pine, canyon oak, and incense cedar at the higher elevations.

The SIA is located south of the town of Acton and north of the Santa Clara Divide. Access from the north is from California State Highway 14 along Aliso Canyon Road and from the east along the Angeles Forest Highway. National Forest System roads 4N24 and 4N32 travel through the interior of the SIA, and 3N17 provides access from the south.

Liebre Mountain	Botanical	Places: Liebre-Sawmill, Santa Clara Canyons

This 9,521 acre Special Interest Area (SIA) offers an interesting mix of several plant communities. The Liebre Mountains are noteworthy for the diversity of *Quercus* and oak-dominated vegetation. Important arborescent species of oaks include *Quercus kelloggii* (black oak), *O. douglasii* (blue oak), *Q. chrysolepis* (canyon live oak), *Q. agrifolia* (coast live oak), and *Q. lobata* (valley oak). Within the SIA, the black oak series is best developed along the crest of Liebre Mountain. This series is characterized by rather open and savanna like stands of black oak with scattered canyon live oak. On northerly slopes, black oak woodland grades into mixed oak, canyon live oak, and bigcone Douglas-fir woodland, while on the southerly slopes it generally gives way to chaparral dominated by shrub species of *Quercus*, especially *Q. wislizeni* var. *frutescens* (interior live oak scrub). Other various dominant or codominant shrub forms of *Quercus* present on south slopes within the SIA include Brewer oak (*Quercus garryana var. breweri*) and canyon live oak shrub (*Q. chrysolepis*). Stands of the blue oak series are limited to the northwestern end of the SIA in the vicinity of Sandberg on the northwestern foot of Liebre Mountain.



Liebre Mountain Special Interest Area. Photo by Roy Murphy

Another unique feature of the SIA is the occurrence of the California spotted owl (*Strix occidentalis occidentalis*), a Region 5 sensitive species. This rare bird inhabits portions of the SIA. Of particular importance is the north slope of Liebre Mountain where mixed oak, canyon live oak, and bigcone Douglas-fir woodlands intermix to provide high quality habitat for this species. Spotted owl densities within this area are possibly higher than any other location on the forest.

The SIA is approximately 75 miles north of the city of Los Angeles.

Experimental Forest

San Dimas Experimental Forest		

Experimental forests and ranges provide lands for conducting research that serves as a basis for the management of forests and rangelands.

The San Dimas Experimental Forest (SDEF) is a protected field laboratory under the joint management of Pacific Southwest Research Station and the Angeles National Forest for studies of hydrology, fire, and other topics relating to the ecology of chaparral and related ecosystems. Located in the San Gabriel Mountains north of Glendora, it covers 17,163 acres and has been closed to the general public, except under special written permit, since establishment in January 1933.

The San Dimas Experimental Forest is also a Biosphere Reserve under UNESCO's Man and the Biosphere Program. It contains the 1,370-acre Fern Canyon Research Natural Area (RNA). The Williams Fire burned through most of the SDEF in September 2002, which destroyed several experimental plots and structures. Most of the buildings at the Tanbark Flats headquarters were saved, but the plant cover and instrumentation at the lysimeters (unique in-ground facilities originally built to measure water movement through the soil) were mostly lost. The archived soil samples taken when the lysimeters were filled in 1937 and the building that housed them were also lost. The Pacific Southwest Research Station and Angeles National Forest will implement the Joint Management Plan for the SDEF, which will be tiered to the forest plan revision.

There are a number of other uses within the SDEF, including 14 recreation residences in the Main and West Fork San Dimas tracts, several apiaries, and a communications site. These uses are authorized by special-use authorization and access is controlled.

The primary objective at the San Dimas Experimental Forest is long-term environmental monitoring. This includes the elements of:

- Climate and weather
- Stream-water discharge
- Stream-water nitrate concentration and discharge
- Remote sensing
- Avian populations
- Soil erosion
- Vegetation biomass

The San Dimas Experimental Forest will be managed to retain important scientific research values according to its Establishment Record, management plan and land management plan.

Appendix B - Program Strategies and Tactics

This section details the program strategies the national forests may choose to emphasize to progress toward achieving the desired conditions and goals described in Part 1. The national forests will prioritize which strategies they choose to bring forward in any given year using the program emphasis objectives, national and regional direction, and available funding. Lists of more specific tactics are included to help the reader understand what may be involved in implementing these strategies. Finally, each strategy that supports a Government Performance and Results Act (GPRA) goal and objective is linked to the 2004-2008 National Strategic Plan. Please note, the strategies may not be numbered consecutively. The strategies listed in Appendix B are those the Angeles National Forest managers intend to emphasize in the next three to five years (2006 through 2008-2010).

Tribal 1 - Traditional and Contemporary Uses

Allow traditional uses, access to traditionally used areas, as well as contemporary uses and needs by tribal and other Native American interests:

- Protect, conserve, and restore traditionally or contemporarily used resources. Opportunities for traditional use of the national forest and national forest resources are improved and provisions are made to offer access to sites with cultural significance. Use opportunities during project planning and implementation to identify, enhance, and protect traditionally or contemporarily used resources.
- Maintain opportunities for spiritual solitude for tribal groups and individuals. Retain the character of traditional sites in conditions consistent with traditional cultural uses.
- Establish effective partnerships to address issues of mutual concern (plant material propagation, etc).
- Work collaboratively with tribes to determine appropriate locations and levels for gathering traditional plant materials.

Tribal 2 - Government to Government Relations

Establish effective relationships with federally recognized tribes:

- Using the National Tribal Relations Strategy, develop government-to-government protocols with all recognized tribes and organized groups of local Native Americans within this planning cycle.
- Develop protocols to promote collaborative partnerships for heritage resource management, ecosystem restoration, comprehensive fire planning, and to recognize historic Native American access rights to land areas and resources.

AM 1 - Land Management Plan Monitoring and Evaluation

Report the results of land management plan monitoring and evaluation questions in the annual monitoring and evaluation report, including the actions taken to respond to new information learned through the adaptive management cycle:

- Amend the land management plan as necessary in response to monitoring and evaluation.
- Implement adaptive management measures designed to redirect activity outcomes toward improved environmental protection.
- Manage recreation opportunities to respond to changing visitor demographic profiles.

Linked to National Strategic Plan

Goal 6 - Mission related work in addition to that which supports the agency goals, objective 5.

AM 2 - Forest-wide Inventory

Develop and maintain the capacity (processes and systems) to provide and analyze the scientific and technical information needed to address agency priorities including:

- Develop and use databases and monitor the results to track and display the cumulative effects of forest plan implementation.
- Conduct surveys within suitable habitat to determine presence of threatened and endangered species.
- Survey suitable habitat for federally listed and Region 5 sensitive species. Update all maps and databases as information is obtained.
- Survey wetlands, vernal pools, meadows, springs and stringer meadows for plant and wildlife species (e.g., spring snails, etc).
- Identify and map all riparian areas.
- Inventory geologic resources (fossils, caves, groundwater basins and extractions, geologic special interest areas, geologic features along scenic corridors, etc.) that are available to the public, affecting other resource areas, or needing special management or protection.
- Identify and mitigate geologic hazards (seismic activity, landslides, land subsidence, flooding and erosion) through landscape and watershed planning, sediment placement site planning, engineering design, reclamation and maintenance.
- Inventory water extractions, diversions, miles/acres of streams, acres of water bodies, acres of riparian, etc.
- Study and identify how rock types and geomorphic processes directly affect soil type development, geo-technical conditions for excavations and construction activities, vegetative type distribution and development, and variation in species habitat. Develop an improved understanding of the relationships of geologic resources and hazards to ecologic functions and patterns as they apply to the management of national forest lands and the effects of fire.
- Conduct integrated inventories of ecologic functions (ecological unit inventory) at the scale appropriate to the need.

- Complete invasive nonnative plant and animal inventories based on regional protocol methods.
- Work with the appropriate agencies and academic sources to develop protocols and survey guidelines, gathering current information and identifying additional research needs for resource management. Implement research as opportunities occur. Priority wildlife studies:
- Ecological revegetation and restoration and mine reclamation techniques.
- Effects of nonnative species and effects of management activities on threatened, endangered, proposed, candidate and sensitive species habitat.
- Effects of cowbird interactions to vireos and flycatchers.
- Best methods for removal of exotic species (bullfrog, etc.).
- Results of the removal of nonnative species from threatened, endangered, proposed, candidate and sensitive species habitat.
- Effects of off-highway vehicle disturbances and other recreation activities on wildlife.
- Validation of use of habitat linkages.
- Effects of national forest product removal on other resources.
- Effects of management activities on oak regeneration.
- Additional information on species specific habitat use and distribution on National Forest System land.
- Validation of watershed standards for cumulative effects (less than 20 percent manipulation/yr and less than 40 percent over five years).

Linked to National Strategic Plan
Goal 5 - Improve watershed condition, objective 3; and
Goal 6 - Mission related work in addition to that which supports the agency goals, objective 3.

WL 1 - Threatened, Endangered, Proposed, Candidate, and Sensitive Species Management

Manage habitat to move listed species toward recovery and de-listing. Prevent listing of proposed and sensitive species.

- Implement priority conservation strategies (see table 528 Angeles NF Conservation Strategy).
- Use vegetation management practices to reduce the intensity of fires to reduce habitat loss due to catastrophic fires.
- Work with the U.S. Fish and Wildlife Service (USFWS) to develop recovery plans for federally listed species. Implement Forest Service actions as recommended in recovery plans for federally listed species.
- Establish and maintain a working relationship with county and city governments to ensure coordination on development projects adjacent to the national forest, as well as implementation of multi-species habitat conservation plans.
- Coordinate with California Department of Fish and Game (CDF&G) regarding fish stocking and nonnative fisheries management to implement measures to resolve conflicts with threatened, endangered, proposed, candidate, and sensitive species and habitats.
- Recommend mineral withdrawal when needed to provide species protection over the long-term.

Linked to National Strategic Plan
Goal 5 - Improve watershed condition, objective 3; and
Goal 6 - Mission related work in addition to that which supports the agency goals, objective 3.

Table 528. Angeles NF Conservation Strategy

Conservation Strategy Emphasis – Priority tasks for next 3-5 years.

Strategy	Specific Species
Education/ Information/ Interpretation	Importance of riparian and aquatic species and habitat: arroyo chub, Santa Ana speckled dace, Santa Ana sucker, unarmored threespine stickleback and other native fishes, arroyo toad, California red-legged frog, mountain yellow-legged frog, southern Pacific pond turtle, coast range newt, American dipper, least Bell's vireo, southwestern willow flycatcher, *Dodecahema leptoceras, Lilium humboldtii* ssp. *ocellatum, Lilium parryi,* and *Nasturtium gambellii*
	Value of vegetation management to species at risk: San Gabriel Mountains elfin butterfly, California spotted owl, flammulated owl, golden eagle, and long-eared owl
	Importance of keeping vehicles on roads: arroyo toad, California red-legged frog, *Astragalus brauntonii, Berberis nevinii, Brodiaea filifolia, Calochortus palmeri* var. *palmeri, Calochortus plummerae, Calochortus striatus, Canbya candida,* and *Castilleja gleasonii*
	Habitat fragmentation, species linkages and corridors and biological diversity: American badger, mountain lion, Nelson's bighorn sheep, *Androsace elongata* ssp. *acuta,* and *Orobanche valida* ssp. *valida*
Survey/ Inventory/Increase Knowledge Base	Riparian and aquatic species: aquatic invertebrates, arroyo chub, Santa Ana speckled dace, Santa Ana sucker and other native fishes, arroyo toad, California red-legged frog, mountain yellow-legged frog, southern Pacific pond turtle, least Bell's vireo, southwestern willow flycatcher, *Dodecahema leptoceras, Lilium humboldtii* ssp. *ocellatum, Lilium parryi,* and *Nasturtium gambellii*
	Species with limited distribution: California diplectronan caddisfly, San Gabriel Mountains elfin butterfly, California gnatcatcher, *Botrichium crenulatum, Potentilla glandulosa* ssp. *ewanii,* and *Thelypteris puberula* var. *sonorensis*
	Terrestrial species: American badger and Nelson's bighorn sheep (San Gabriel)
	Upland plants: *Arenaria macradenia* var. *kuschei, Aster greatae, Opuntia basilaris* var. *brachyclada, Orobanche valida* ssp. *valida, Packera ionophylla,* and *Sidalcea hickmanii* spp. *parishii*

Strategy	Specific Species
Habitat Restoration/ Improvement	**Streambank stabilization, riparian area plantings:** arroyo chub, Santa Ana speckled dace, Santa Ana sucker and other native fishes, least Bell's vireo, and southwestern willow flycatcher
	Control of invasive, nonnative species--water loving plant species such as arundo and tamarisk, warm water fish, bullfrogs, and weeds in the upland areas: partially armored threespine stickleback, Santa Ana sucker and other native fishes, arroyo toad, California red-legged frog, coast range newt, mountain yellow-legged frog, southern Pacific pond turtle, *Brodiaea filifolia*, *Calochortus palmeri* var. *palmeri*, *Calochortus plummerae*, *Calochortus striatus*, *Canbya candida*, *Castilleja gleasonii*, *Dodecahema leptoceras*, and *Opuntia basilaris* var. *brachyclada*
	Control of feral animals--domestic sheep and dogs : Nelson's bighorn sheep
	Vegetation and fuel treatments, prescribed burning: partially armored threespine stickleback, Santa Ana sucker and other native fishes, California red-legged frog, mountain yellow-legged frog, California spotted owl, flammulated owl, purple martin, Nelson's bighorn sheep, and *Brodiaea filifolia*
Monitor/Study	**Generally focus on federally listed species:**
	Riparian or aquatic species: Santa Ana speckled dace, Santa Ana sucker, arroyo toad, California red-legged frog, mountain yellow-legged frog, least Bell's vireo, southwestern willow flycatcher, *Chorizanthe parryi* var. *fernandina*, and *Dodecahema leptoceras*
	Species responsive to vegetation treatments: California spotted owl and Nelson's bighorn sheep
	Species recovery after wildfire (burned area monitoring): Santa Ana speckled dace, Santa Ana sucker, California red-legged frog, mountain yellow-legged frog, California spotted owl, *Astragalus brauntonii*, *Berberis nevinii*, *Brodiaea filifolia*, and *Sidalcea hickmanii* ssp. *parishii*
	Upland plant species: *Astragalus brauntonii*, *Berberis nevinii*, *Brodiaea filifolia*, *Castilleja gleasonii*, *Claytonia lanceolata* ssp. *piersonii*, *Dudleya densiflora*, and *Sidalcea hickmanii* ssp. *parishii*

Strategy	Specific Species
Habitat Protection	**Proposed project planning (e.g. reduce type conversion, minimize additional developments, timing of projects to avoid critical life stages):** all species of concern benefit from sound project planning
	Prescribed fire or vegetation treatment: arroyo chub, partially armored threespine stickleback, Santa Ana speckled dace, Santa Ana sucker, arroyo toad, California red-legged frog, mountain yellow-legged frog, American dipper, California spotted owl, calliope hummingbird, least Bell's vireo, long-eared owl, purple martin, and southwestern willow flycatcher
	Coordination with other agencies: Santa Ana sucker, California red-legged frog, mountain yellow-legged frog, California condor, California spotted owl, American badger, mountain lion, and Nelson's bighorn sheep
	Habitat acquisition: unarmored threespine stickleback and other aquatic species, California spotted owl, flammulated owl, least Bell's vireo, long-eared owl, southwestern willow flycatcher, American badger, mountain lion, *Berberis nevinii*, *Brodiaea filifolia*, and *Dodecahema leptoceras*
	Restrict human access during critical life stages (barriers, gates, re-routes, etc. where appropriate): arroyo toad, California red-legged frog, bald eagle, golden eagle, and prairie falcon
	Prevent the spread of invasive nonnative species (plant and animal): Santa Ana speckled dace, Santa Ana sucker and other native fishes, arroyo toad, California red-legged frog, mountain yellow-legged frog, southern Pacific pond turtle, least Bell's vireo, southwestern willow flycatcher, *Brodiaea filifolia*, *Calochortus palmeri* var. *palmeri*, *Calochortus plummerae*, *Calochortus striatus*, *Canbya candida*, *Castilleja gleasonii*, *Dodecahema leptoceras*, and *Opuntia basilaris* var. *brachyclada*
	Fire prevention and suppression: arroyo toad, California red-legged frog, coast range newt, mountain yellow-legged frog, southern Pacific pond turtle, California gnatcatcher, California spotted owl, flammulated owl, least Bell's vireo, MacGillivray's warbler, southwestern willow flycatcher, mountain lion, and *Opuntia basilaris* var. *brachyclada*

WL 2 - Management of Species of Concern

Maintain and improve habitat for fish, wildlife, and plants, including those with the following designations: game species, harvest species, management indicator species, and watch list species.

- Manage State of California designated Wild Trout streams to maintain high quality habitat for wild trout populations.
- Coordinate and form partnerships with the CDF&G and other cooperators such as Partners in Flight to maintain and improve fish, wildlife and plant habitat.
- ~~Monitor management indicator species (MIS)~~.
- Monitor habitat for ecological health indicators (e.g., tamarisk, aquatic macroinvertebrates, bullfrogs).
- Develop and maintain wildlife water sources and other habitat improvement structures.
- Protect habitat during fire suppression activities where feasible.
- Cooperate with other agencies, partners, and other national forest programs to maintain and improve landscape level habitat conditions and ecological processes over the long-term for landscape linkages, wildlife movement corridors, key deer and bighorn sheep fawning, lambing, and winter ranges, and raptor nesting sites.

Linked to National Strategic Plan,
Goal 5 - Improve watershed condition, objectives 1 and 3, and
Goal 6 - Mission related work in addition to that which supports the agency goals, objectives 1, 3, and 5.

IS 1 - Invasive Species Prevention and Control

Prevent the introduction of new invaders, conduct early treatment of new infestations, and contain and control established infestations:

- Implement the Noxious Weed Management Strategy for the four southern California national forests (see Part 3, Appendix M.).
- Limit ground disturbance to the minimum area necessary during project activities. Promote conditions to enhance the recovery of vegetation in project planning, design, and implementation. Use native plant materials as needed to restore disturbed sites to prevent the introduction or reintroduction of invasive nonnative species. Conduct follow-up inspections of ground disturbing activities to monitor the effectiveness of restoration efforts in reducing or preventing the introduction or re-introduction of invasive non-native plants.
- When setting priorities for treating invasive species, consider the rate of spread, the likeliness of environmental harm resulting from the establishment and spread of the invasive non-native species; the geographical location within the watershed, and the sensitivity of the location, especially invasions occurring within occupied or potential habitat for threatened, endangered or proposed species or within special management areas, such as research natural areas, special interest areas, and wildernesses; and the probability that the treatment(s) will be successful.
- Prevent the introduction of invasive species and coordinate the treatment of invasive species across jurisdictional boundaries. Coordinate internally, as well as with local, state and federal agencies and permittees to prevent future introductions of invasive species through stocking, recreation use, special-use authorizations and all other national forest management and emergency activities or decisions that could promote additional invasions. Emphasize using weed management areas to consolidate and coordinate weed prevention and treatment efforts across jurisdictional boundaries.
- Routinely monitor noxious weed control projects to determine success and to evaluate the need for follow-up treatments or different control measures. Monitor known infestations as appropriate in order to determine changes in density and rate of spread.
- Treatments may include herbicide application if approved through environmental analysis.
- Facilitate research opportunities for invasive nonnative species management on National Forest System lands.

Linked to: National Strategic Plan
Goal 2 - Reduce the impacts from invasive species, objective 1.

FH 1 - Vegetation Restoration

Restore vegetation through reforestation or other appropriate methods after stand replacing fires, drought, or other events or activities that degrade or cause a loss of plant communities.

- Where needed, implement reforestation using native tree species grown from local seed sources. In such plantings, consider long-term sustainability of the forest vegetation by taking into account factors such as fire regime and regional climate. Consider small nursery operations to facilitate reforestation and to improve restoration success where direct seeding is ineffective. Use noxious-weed-free seed in all plantings.

Linked to National Strategic Plan

Goal 5 - Improve watershed condition, objective 3.

FH 2 - Prevention of Fire Induced Type Conversion

Minimize vegetation type conversion (permanent or long-term loss of plant communities) resulting from frequent fires:

- Promote intervals greater than 35 years between fires in all coastal sage scrub types to reduce the likelihood that they will be converted to annual grasslands or other vegetation types. Within the range of the California gnatcatcher, treat chaparral adjacent to coastal sage scrub to reduce the threat of wildland fire and/or to reduce the intensity of fires that burn into it.
- Protect subalpine forest and woodlands from stand-replacing fires.
- Protect closed-cone woodlands and forests (Coulter) with developing cone banks until they are sufficiently large to perpetuate stands after fire. In Coulter pine woodlands not growing in chaparral, or other highly flammable vegetation types, reduce the potential for high-intensity, stand-replacing fires.
- Protect desert woodlands (e.g., pinyon-juniper) and desert scrub vegetation from burning outside the desired range of variability. After fires, protect these types from disturbances and additional fires to ensure natural regeneration, except where more frequent fires have played a role in the maintenance of the vegetation type.
- Emphasize fire prevention and fuelbreak maintenance to reduce the number of fires burning at excessively short fire-return intervals (less than 25 years) that have degraded, or could degrade, low-elevation (below 2,000 feet) chaparral.

Linked to National Strategic Plan

Goal 5 - Improve watershed condition, objectives 1 and 3.

FH 3 - Restoration of Forest Health

Protect natural resource values at risk from wildland fire loss that are outside the desired range of variability, or where needed for wildlife habitat improvement:

- Implement vegetation management activities to reduce tree densities and fuel loading in yellow pine and mixed conifer forests to levels similar to those that characterized forests of the pre-suppression and early suppression eras (ca. 1880-1930). Restore species composition comparable to forests of the same era with an emphasis on increasing the relative abundance of large-diameter (greater than 24 inches diameter breast height), shade-intolerant conifer species.
- Implement vegetation treatments that improve the health of Coulter pine forests and woodlands growing in chaparral. Focus treatments on stands greater than 35 years, except where it is necessary to protect life and property. In the latter case, treatments may occur in stands greater than 20 years so long as cone-seed banks are adequate to perpetuate the stands.
- Remove ladder fuels and forest floor fuel accumulations to protect stands of bigcone Douglas-fir from stand-replacing crown fires. Reduce fuel loading in chaparral adjacent to fir stands so that future wildland fires are less likely to initiate crown fires from surrounding shrublands.
- Treat fuel loading in montane chaparral to reduce the likelihood that fires originating in this type will generate crown fires in adjacent forested stands.
- Manage chaparral in selected locations to protect the life and property of human inhabitants (e.g., the urban interface), to improve wildlife forage, and to protect watersheds from the adverse impacts of large, destructive, high intensity fires. In selected watersheds, manage for even-aged patch sizes of less than 5,000 acres.

Linked to National Strategic Plan
Goal 1- Reduce the risk from catastrophic wildland fire, objective 1.

FH 4 - Insect and Disease Management

Protect natural resource values that are at risk due to insect or disease loss at levels outside of the desired range of variability or where needed to improve habitat:

- Thin conifer stands to prevent water stress and damage by bark beetles.
- Report unusual mortality of vegetation promptly to the Forest Vegetation Manager or Natural Resources/Planning Officer. The Forest Resource Department investigates detection reports and coordinates funding requests from the national forest for pest suppression and prevention projects.
- Consider desired pest management suppression projects when economically viable, such as suppression of dwarf mistletoe in high value trees at developed recreation sites.

Linked to National Strategic Plan
Goal 1- Reduce the risk from catastrophic wildland fire, objective 1.

Air 1 - Minimize Smoke and Dust

Control and reduce smoke and fugitive dust to protect human health, improve safety and/or reduce or eliminate environmental impacts.

- Incorporate visibility requirements into project plans.
- Use emission reduction techniques (ERT).

Air 2 - Forest Air Quality Emissions

Maintain and update the inventory for wildland fire emissions and other forest resource management emissions within the State Implementation Plan (SIP). The State Implementation Plan inventories and establishes levels of air pollution that meet the long-term federal air quality goals for bringing the non-attainment areas to attainment of the National Ambient Air Quality Standards.

- Describe the magnitude and timing of prescribed and wildland fire emissions in each Air Pollution Control District.

WAT 1 - Watershed Function

Protect, maintain and restore natural watershed functions including slope processes, surface water and groundwater flow and retention, and riparian area sustainability:

- Assess impacts of proposed groundwater extraction proposals to assure that developments will not adversely affect aquatic, riparian or upland ecosystems.
- Restore, maintain and improve watershed conditions. Assure approved and funded rehabilitation and emergency watershed treatments are implemented in an effective and timely manner.
- Maintain or restore soil properties and productivity to ensure ecosystem health (soil microbiota and vegetation growth), soil hydrologic function, and biological buffering capacity.
- Manage Riparian Conservation Areas (RCA) to maintain or improve conditions for riparian dependent resources. Riparian Conservation Areas include aquatic and terrestrial ecosystems and lands adjacent to perennial, intermittent, and ephemeral streams, as well as around meadows, lakes, reservoirs, ponds, wetlands, vernal pools, seeps, and springs and other bodies of water. Riparian dependent resources are those natural resources that owe their existence to the area, such as fish, amphibians, reptiles, fairy shrimp, aquatic invertebrates, plants, birds, mammals, soil and water quality.
- Achieve and maintain natural stream channel conductivity, connectivity and function.
- Assess and manage geologic resources and hazards to integrate earth science principles and relationships into ecosystem management, reduce risks to people and resources, and interpret and protect unique values.
- Identify, prioritize based on risk, and mitigate impacts of abandoned and inactive landfills on water, soil and other resources. Stabilize and reclaim where necessary abandoned and inactive landfills to maintain proper watershed function, public safety and resource benefit.
- Inventory, analyze and prioritize abandoned mines to identify chemical and physical hazards, historic significance, and biological resources prior to reclamation. Mitigate safety hazards and adverse environmental impacts, conduct reclamation as needed, and assure that water quality standards are met.
- Maintain watershed integrity by disposing of displaced soil and rock debris in approved placement sites.
- Develop direction and policy (southern California, national forest, or place-wide as appropriate) for protecting, collecting, curating, and distributing paleontologic resources.

Linked to National Strategic Plan
Goal 5 - Improve watershed condition objectives 1, 2, and 3.

WAT 2 - Water Management

Manage groundwater and surface water to maintain or improve water quantity and quality in ways that minimize adverse effects:

- Assess impacts of proposed groundwater and surface water extraction proposals to assure that developments will not adversely affect aquatic, riparian or upland ecosystems and other uses, resources or rights (e.g., tribal water rights).
- Assess impacts of existing surface water extraction on critical habitats or when authorizations are issued or re-issued.
- Promote water conservation at all national forest administrative and authorized facilities. Protect and improve water quality by implementing best management practices and other project-specific water quality protection measures for all national forest and authorized activities. When reviewing non-forest water-related projects that may affect national forest resources, include appropriate conservation and water quality mitigation measures in the review response.
- Conserve and protect high quality water sources in quantities adequate to meet national forest needs.
- Take corrective actions to eliminate the conditions leading to California State listing of 303(d) impaired waters on National Forest System land. For those waters that are both on and off National Forest System land, ensure that Forest Service management does not contribute to listed water quality degradation.
- Actively pursue water rights and water allocation processes to secure instream flows and groundwater resources for current and future needs sufficient to sustain native riparian dependent resources and other national forest resources and uses.
- Identify the need for and encourage the establishment of water releases, for current and future use, to maintain instream flow needs including channel maintenance, and to protect and eliminate impacts on riparian dependent resources.
- Participate in all Federal Energy Regulatory Commission licensing and re-licensing efforts on National Forest System land to ensure sufficient consideration and protection is provided for riparian dependent resources. Incorporate instream flow, riparian, and other natural resource management requirements into 4(e) license conditions.
- Monitor water development projects to ensure that instream flows are meeting riparian dependent resource needs.
- To maintain or improve habitat containing threatened, endangered, proposed, candidate and sensitive species coordinate activities with CDF&G, NOAA Fisheries, USFWS, State Water Resource Control Board and other appropriate agencies involved in recommending instream flow and surface water requirements for waterways.
- Cooperate with federal, tribal, state and local governments and private entities to secure the instream flow needed to maintain, recover, and restore riparian dependent resources, channel conditions and aquatic habitat.

Linked to National Strategic Plan
Goal 5: Improve watershed condition objective 1.

WAT 3 - Hazardous Materials

Manage known hazardous materials risks:

- Maintain a written Hazardous Materials Response Plan that addresses risk and standard cleanup procedures.
- Coordinate with federal, tribal, state, city and county agencies and local landowners to develop emergency response guidelines for hazardous spills on National Forest System land or on adjacent land with potential to affect threatened, endangered, proposed, candidate and sensitive fish and amphibian habitat. In the event of hazardous material spills in known habitat on National Forest System land, the Forest Service will contact the USFWS within 24 hours. Quickly contact resource personnel and use them as consultants to minimize impacts to habitat and to initiate emergency consultation with the USFWS if necessary. Provide habitat maps to response personnel for hazardous spills.

Link 1 - Habitat Linkage Planning

Identify linkages to surrounding habitat reserves and other natural areas for maintaining biodiversity. Collaborate with local government, developers, and other entities to complement adjacent federal and non-federal land use zones and associated design criteria:

- Participate in regional planning efforts to identify linkages to surrounding habitat reserves and other natural areas for maintaining biodiversity.
- Work with land conservancies, local government and others to secure long-term habitat linkages.
- Manage national forest use and activities to be compatible with maintaining habitat linkages.
- Actively participate with local government, developers, and other entities to protect national forest values at intermix and interface zones.

Linked to National Strategic Plan

Goal 6 - Mission related work in addition to that which supports the agency goals, objective 3.

SD 1 - Wilderness

Protect and manage wilderness to improve the capability to sustain a desired range of benefits and values and so that changes in ecosystems are primarily a consequence of natural forces. Protect and manage areas recommended for wilderness designation to maintain their wilderness values:

- Within the life of the plan manage all wilderness areas to standard, including areas designated as new wildernesses when they are established.
- Upon designation of new wilderness areas and wilderness additions, implement legislative direction as specified by law.
- Ensure that current and future issues and management needs, including adequate biophysical and social monitoring, are addressed in all wilderness planning. Identify all use that results in adverse impacts and develop measures to alleviate those impacts to an appropriate level using state-of-the-art processes such as limits of acceptable change.
- Prescribed fire may be used in wilderness to retain wilderness values or where community protection needs exist due to development on private lands near the wilderness. Community protection projects have been identified within the Cucamonga and Sheep Mountain Wilderness Areas. Use prescribed fire in wilderness only to meet wilderness fire management objectives.
- Emphasize Minimum Impact Suppression Tactics in all wilderness wildand fire responses (see Appendix B in Part 3 of the forest plan). Suppression operations in the three wilderness areas and any subsequent wilderness additions may be conducted under control, contain, or confine suppression strategies.
- Wilderness resource advisors will be assigned as necessary to all wilderness fires.
- When new wilderness is recommended, include legislative wording that identifies "where a wilderness area is adjacent to or is in close proximity to inhabited areas, the Secretary may take appropriate measures to control or prevent wildland fire through federal, state, and/or local agencies and jurisdictions."

SD 2 - Wild and Scenic Rivers

Manage designated wild and scenic river segments to perpetuate their free-flowing condition and designated classifications, and to protect and enhance their outstandingly remarkable values and water quality.

- For those designated wild and scenic rivers, a Comprehensive River Management Plan and boundary declaration will be prepared and implemented as specified in the designation language.

Manage eligible wild and scenic river segments to perpetuate their free-flowing condition and proposed classifications, and to protect and enhance their outstandingly remarkable values and water quality through the suitability study period, and until designated or released from consideration:

- For those eligible wild and scenic river segments, interim protection measures will be applied to the bed, bank, and one-quarter mile on either side of the ordinary high-water mark.

SD 3 - Research Natural Areas

Protect and manage research natural areas (RNAs) to maintain unmodified conditions and natural processes. Identify a sufficient range of opportunities to meet research needs. Compatible uses and management activities are allowed:

- Submit Establishment Reports for designated research natural areas to the Regional Forester.

Linked to National Strategic Plan
Goal 6 - Mission related work in addition to that which supports the agency goals, objective 3.

SD 4 - Special Interest Areas

Protect and manage special interest areas (SIAs) for the values and features for which they are established. Use and management activities, including access, that complement or are subordinate to the values and features are allowed:

- Within the life of the forest plan update or prepare management plans, implementation schedules and monitoring protocols for existing and newly designated SIAs.

Her 1 - Heritage Resource Protection

Protect heritage resources for cultural and scientific value and public benefit:

- Document known significant cultural properties to identify any activity that adversely affects, or has the potential to adversely affect, or does not complement the site. Develop measures to mitigate the adverse effects or impacts.
- Use partnerships to implement site management plans for heritage resource sites, focusing on those sites with recognized significance or at risk from public or land use effects.
- Evaluate historic sites for appropriate management. Develop site management plans for noteworthy heritage resources wherever they occur.

Linked to National Strategic Plan
Goal 6 - Mission related work in addition to that which supports the agency goals, objectives 1 and 2.

Her 2 - Public Involvement Program

Provide public involvement programs with opportunities for the public to partner in the stewardship of heritage resource sites:

- Develop public involvement programs to foster partnerships in heritage resource stewardship to aid in identifying and evaluating heritage sites.
- Work with local communities to understand, document, preserve, and interpret the national forest history for the public. Develop opportunities for partnerships with the public to maintain and reuse historic heritage resources.

Her 3 - Forest-wide Heritage Inventory

Increase knowledge of the occurrence, distribution, and diversity of site types for heritage resources on the national forest:

- Increase the heritage resource database through the survey of nonproject associated acreage. Prioritize inventories for those places where the percentage of uninventoried acres within the high heritage resource sensitivity zone exceeds 50 percent of the total high heritage resource sensitivity zone acres for the place.

Linked to National Strategic Plan
Goal 6 - Mission related work in addition to that which supports the agency goals, objectives 1 and 3.

Her 4 - Heritage Research

Document and strengthen the linkages between heritage research and ecosystem management and research, and integrate knowledge and appreciation of past cultures into today's diversity:

- Identify research needs and opportunities for research programs for qualified persons or groups by developing cooperative agreements.

Linked to National Strategic Plan
Goal 6 - Mission related work in addition to that which supports the agency goals, objective 3.

REC 1 - Recreation Opportunity

Manage national forest land to achieve recreation opportunity spectrum (ROS) classes.

- Wilderness ROS will be mapped and implemented when existing wilderness schedules are updated and/or when new wilderness schedules are written.

REC 2 - Sustainable Use and Environmental Design

Analyze, stabilize and restore areas where visitor use is negatively affecting recreation experiences, public safety and environmental resources. Manage visitor use within the limits of identified capacities: Implement recreation capacity control measures in specific high-use areas as use levels become a concern. Conduct threatened, endangered, proposed, candidate and sensitive species occupancy surveys within potential threatened, endangered, proposed, candidate and sensitive species recreation conflict areas. Implement Adaptive Mitigation for Recreation Uses (Appendix D) in existing and new recreation sites and uses whenever a conflict between uses or sensitive resources is detected.

Linked to National Strategic Plan
Goal 3 - Provide outdoor recreation opportunities, objective 1.

REC 3 - Recreation Participation

Offer a wide range of high quality, environmentally sustainable developed and dispersed recreation opportunities to a rapidly growing and culturally diverse visitor population, with minimal visitor conflicts and effects to other resources:

- Develop new, environmentally sustainable recreation opportunities, areas and infrastructure to relieve concentrated demand within existing high-use areas and to accommodate future growth and new uses elsewhere.
- Improve, remove or replace aging developed recreation infrastructure to better meet current needs and future demand. Replacing opportunities lost to closures will be a high priority.
- Inventory and analyze existing and potential dispersed use, including, but not limited to, hiking, motorized recreation, day-use, recreational target shooting, waterplay, snowplay and camping opportunities. Identify areas where that use is consistent with resource protection and public safety, and mitigate or eliminate problems over time.
- Implement adaptive management processes at recreation facilities to proactively respond to persons with disabilities, contemporary urban visitors, aging populations, diverse ethnic groups, and day-use emphasis (see Appendix C, Monitoring Requirements).

Linked to National Strategic Plan

Goal 3 - Provide outdoor recreation opportunities, objective 1.

REC 4 - Conservation Education

Visitors have a greater understanding about the significance and importance of forest ecosystems, heritage resources, and the interrelationship between people and the natural environment:

- The Forest Service plays a leadership role in environmental stewardship and conservation education partnerships with non-profits, volunteer groups, communities, governments, organization camps and private entities, emphasizing and enhancing the capability of field program and project delivery, especially to underserved populations. Coordination between national forests is promoted for maximum results and cost efficiencies of programs and projects.

Linked to National Strategic Plan

Goal 6 - Mission related work in addition to that which supports the agency goals, objective 3.

REC 5 - Recreation Special Use Authorizations

- Manage recreation residences as a valid use of National Forest System land.
- Complete Recreation Residence Consistency Review and Continuance Determinations including Recreation Residence Compliance Inspections.
- Manage all recreation special-uses in compliance with law, regulation and policy.
- Administer all recreation special-use authorizations to standard.
- Establish authorization holder responsibility for public education about threatened, endangered, proposed, candidate and sensitive species approved by the Forest Service for recreation special-use events within all threatened, endangered, proposed, candidate and sensitive species habitats.

LM 1 - Landscape Aesthetics

Manage landscapes and built elements to achieve scenic integrity objectives:

- Use best environmental design practices (BEIG) to harmonize changes in the landscape and advance environmentally sustainable design solutions.
- Mitigate ground disturbance to maintain scenic integrity objectives.

LM 2 - Landscape Restoration

Restore landscapes to reduce visual effects of nonconforming features:

- Prioritize landscape restoration activities in key places. Integrate restoration activities with other resource restoration.

LM 3 - Landscape Character

Maintain the character of key places to preserve their intact nature and valued attributes:

- Maintain the integrity of the expansive, unencumbered landscapes and traditional cultural features that provide the distinctive character of the place.
- Promote the planning and improvement of infrastructure along federal and state scenic travel routes.
- Promote the consideration of key landscape character in other landscape analyses such as Fireshed.

Law 1 - Enforcement and Investigations

Provide law enforcement (LE) services for safety and resource protection. Opportunities to supplement LE resources include but are not limited to:

- Supplement staff with law enforcement officers (LEOs) from other agencies, and by recruiting and deploying additional reserve law enforcement officers. Pursue alternate funding sources to supplement LE programs, such as the State of California Off-Highway Vehicle grant program.
- Utilize cooperative agreements with local law enforcement agencies. Supplement field personnel and provide additional law enforcement support primarily on high-use weekends or holidays when visitor use is highest, or as a response unit in locations where LEO presence is limited.
- Improve LE services by recruiting and employing Spanish speaking officers whenever possible. Provide training for officers that do not currently speak Spanish. Adapt to changes in interpreter/interpretation needs with the inclusion of people that are conversant in any of the other languages that are, or will become, predominant in the future by recruiting these people into the ride-along-program with the LEO cadre.
- As soon as practical, develop, update, or revise Forest Orders to define the long-term protection that apply to national forest needs.

Linked to National Strategic Plan
Goal 3 - Provide outdoor recreation opportunities, objectives 1 and 3.

Fac 1 - Facility Maintenance Backlog

The backlog of facilities that do not meet the desired condition or complement the recreation setting is reduced by replacing outdated substandard facilities with safe, efficient, durable, environmentally sensitive infrastructure. Accommodate the facilities needs of new employees and equipment:

- Identify and evaluate applicable property or buildings of potential historic value in support of the facility master plan. Remove facilities no longer needed or abandoned, and restore sites to natural conditions.
- Remove excess facilities and restore sites to natural conditions.
- Reduce the backlog with priority for health and safety and accessibility compliance.
- Increase the operating efficiency of existing buildings.
- Upgrade site utilities for efficient operation. Remodel or construct new buildings to conform to approved facilities master plans.
- Accommodate the 2003 supplementary fire employees and equipment.

Trans 1 - Transportation System

Plan, design, construct, and maintain National Forest System roads and trails to meet plan objectives, to promote sustainable resource conditions, and to safely accommodate anticipated levels and types of use:

- Implement landscape scale transportation system analysis on a priority basis. Coordinate with state, county, local and regional government entities, municipalities, tribal governments, other agencies, and the public.
- Add unclassified roads to the National Forest System of roads when site-specific road analysis determines there is a public need for the road.
- Enhance user safety and offer adequate parking at popular destinations on high traffic passenger car roads, while also minimizing adverse resource effects.
- Using priorities identified in the Roads Analysis Process, reduce the road maintenance backlog to provide safe, efficient routes for recreationists and through-traveling public, and to safely accommodate fire protection equipment and other high clearance vehicles.
- Implement Corridor Management Plan for the Angeles Crest Scenic Byway.

Linked to National Strategic Plan
Goal 3 - Provide outdoor recreation opportunities, objective 1, and
Goal 1- Reduce the risk from catastrophic wildland fire, objective 2.

Trans 2 - Unnecessary Roads

Reduce the number of unnecessary or redundant unclassified roads and restore landscapes:

- Decommission roads and trails that have been determined to be unnecessary for conversion to either the road or trail system through site-specific road analysis.
- Establish levels of restoration through project planning.

Linked to National Strategic Plan
Goal 3 - Provide outdoor recreation opportunities, objective 2.

Trans 3 - Improve Trails

Develop an interconnected, shared-use trail network and support facilities that complement local, regional and national trails and open space, and that also enhance day-use opportunities and access for the general public:

- Construct and maintain the trail network to levels commensurate with area objectives, sustainable resource conditions, and the type and level of use. Convert roads planned for decommissioning into trails if ecologically sustainable.
- Manage the Pacific Crest National Scenic Trail to protect the trail experience, and provide for the conservation and enjoyment of its nationally important scenic, historic, natural, and cultural qualities.
- Maintain and/or develop access points and connecting trails linked to surrounding communities and create opportunities for non-motorized trips of short duration.

Linked to National Strategic Plan

Goal 3 - Provide outdoor recreation opportunities, objective 1.

Trans 4 - Off-Highway Vehicle Opportunities

Improve off-highway vehicle opportunities and facilities for highway licensed and non-highway licensed vehicles:

- Improve 4-Wheel Drive opportunities in the easy, more, and most difficult route categories.
- In conjunction with the designation of low maintenance standard roads (and where applicable OHV areas) develop motorized trails that address the needs of off-highway vehicle enthusiasts.
- Submit candidate roads and trails to the State of California, Off-Highway Motor Vehicle Division, for designation as the California Back Country Discovery Trail as opportunities to afford this experience are identified.

Linked to National Strategic Plan

Goal 3 - Provide outdoor recreation opportunities, objective 2.

SFP 1 - Offer Special Forest Products

Provide miscellaneous forest products at appropriate levels to sustain resource values. In a manner consistent with adjacent Ranger Districts, manage special forest products to reduce or eliminate impacts to other resources:

- Record forest product permits to analyze magnitude of the removals.
- Use public fuelwood sales to remove large pockets of drought induced tree mortality in locations of urban interface where high fire danger is present.
- Limit collection of woody species under miscellaneous forest product permits to fuel reduction treatment areas or other project areas with completed NEPA project planning.

Lands 1 - Land Ownership Adjustment

Consolidate the National Forest System land base to support resource management objectives, improve management effectiveness, enhance public benefits, and/or improve habitat condition and linkage:

- Acquire lands or interest in lands through purchase, donation, exchange, rights-of-way acquisition, transfer, interchange, and boundary adjustment in order to address the issues associated with complex ownership patterns such as urban interface fire protection and occupancy trespass.
- Acquire lands or rights-of-way for road and trail access to support appropriate national forest activities and public needs.
- Work with land conservancies, local government, and others in order to secure long-term habitat linkages.

Linked to National Strategic Plan

Goal 6 - Mission related work in addition to that which supports the agency goals, objective 3.

Lands 2 - Non-Recreation Special Use Authorizations

Optimize utilization of encumbered National Forest System land and efficiently administer special-use authorizations (SUAs):

- Special-uses comply with law, regulation, and policy. Upon termination, restore special-use authorization areas to a specified condition. Administer existing SUAs in threatened, endangered, proposed, candidate and sensitive species habitats or heritage resource site locations to ensure they avoid or minimize impacts to threatened, endangered, proposed, candidate and sensitive species and their habitats and heritage resource sites.
- Work with special-use authorization holders to better administer National Forest System land and reduce administrative cost.
- Require SUAs to maximize opportunities to co-locate facilities and minimize encumbrance of National Forest System land.
- Phase out water diversion authorizations that adversely affect threatened, endangered, proposed, candidate and sensitive species.
- In threatened, endangered, proposed, candidate and sensitive species habitat that has been degraded by water withdrawals work to amend existing authorizations as necessary to provide suitable water flows for threatened, endangered, proposed, candidate and sensitive species.
- Where overhead transmission lines occur in California Condor habitat work with utility companies or authorization holders to install high-visibility or avoidance devices and raptor guards on poles and other structures potentially used as perching sites by California Condors.
- For special-use authorization holders operating within threatened, endangered, proposed, candidate and sensitive species key and occupied habitats, or areas of heritage resource sites develop and provide information and education (e.g., workshops, annual meetings) on ways to avoid and minimize effects of their activities on occupied threatened,

endangered, proposed, candidate and sensitive species habitat and heritage resource sites present.

- Use signing, barriers, or other suitable measures to protect threatened, endangered, proposed, candidate and sensitive species key and occupied habitats within special-use authorization areas.

Linked to National Strategic Plan
Goal 6 - Mission related work in addition to that which supports the agency goals, objective 3, and
Goal 4 - Help meet energy resource needs, objective 1.

Lands 3 - Boundary Management

Reduce the backlog of landline posting and incidents of trespass:

- Survey and post key boundaries to eliminate occupancy trespass and prevent unauthorized occupancy.

Lands 4 - Mineral Withdrawals

Monitor and manage withdrawal status to document the condition of lands that could affect other actions (e.g., watershed protection, mining):

- ~~Review existing withdrawals to determine if continuation is consistent with the statutory objectives of the programs for which the lands were dedicated.~~
- ~~Recommend for withdrawal from mineral entry TEP species key habitats in areas of mineral potential where habitat is not protected by any other means and would benefit by withdrawal. Protective measures will be maintained for the period of time needed to provide the necessary protection for TEP species and key habitats. Implement in occupied habitats for the arroyo toad, California red-legged frog, mountain yellow-legged frog, southwestern willow flycatcher, and least Bell's vireo.~~

ME 1 - Minerals Management

Manage minerals and energy resources commensurate with the conservation of forest resource values and the long-term health and biological diversity of ecosystems.

- ~~Limit withdrawals from mineral entry to maintain opportunities to access mineral and energy resources where environmentally sustainable and threatened, endangered, proposed, candidate, and sensitive species are not impacted.~~
- ~~Assure long-term access and availability for leasing of oil and gas resources from environmentally suitable lands for regional, statewide and national energy needs.~~
- Use terms and conditions of the operating plan to offset the effects of mining consistent with the conservation of habitat for threatened, endangered, or sensitive species, and preserving significant heritage resources.
- Eliminate unapproved and noncompliant minerals operations.
- Facilitate environmentally and culturally sensitive exploration, development, and production of mineral and energy resources on National Forest System land open to these activities, or on withdrawn lands consistent with valid existing rights, and integrate these activities with the planning and management of other resources.
- Work with California Department of Fish and Game to prohibit suction dredging to protect threatened, endangered, proposed, candidate, and sensitive species. Participate with the state to identify for the public those sections of streams that are open or closed to dredging.
- Coordinate with California Department of Fish and Game on applying and enforcing state suction dredge regulations on the San Gabriel River. Participate with the state to identify for the public those sections of streams that are open or closed to dredging.
- For approved mining operations within occupied threatened, endangered, proposed, candidate and sensitive species habitat, riparian habitat, or other areas with species of concern, monitor mining operations as needed to ensure compliance with plans of operation.

ME 2 - Biomass Utilization

Seek opportunities to use debris from forest thinning and mortality removal for producing energy.

LG 1 - Livestock Grazing

Livestock grazing areas are maintained and remain sustainable and suitable over the long-term.

- Administer each livestock grazing area to standard within a three year period. Administering a livestock grazing area to standard includes: ensuring compliance with terms and conditions of the permit, allotment management plans, annual operating instructions, biological opinions, and forest plan standards. Permittees monitor for compliance with the permit standards and guides. The permittee submits monitoring and allotment management reports to the national forest officer in charge when requested (FSH 2209.13, 15.14b).
- Review and consider the Region 5 Permit Suspension and Cancellation Guidelines for non-compliance with permit terms and conditions (FSH 2209.13, 16.2, 16.21d). Plan and implement range structural improvements, such as but not limited to, water developments, and barbed wire fences are maintained in a serviceable condition. Structural improvements will incorporate wildlife protection measures when allotment management plans are revised or new improvements are planned.
- Utilize suitable vacant allotments, other livestock grazing areas, and transitory range for available forage or utilize these areas to move active livestock grazing areas toward meeting resource and rangeland management desired conditions.
- Review and apply the appropriate rangeland management practices necessary to meet or move toward desired conditions. Rangeland management practices include, but are not limited to: regulation of livestock numbers and distribution; season and degree of use; salt placement locations; and placement of structural improvements. Fencing should be considered as a last resort after other management practices have been determined to be ineffective. Water developments should be considered outside of riparian areas and where such developments would lessen the degree of riparian use.

Linked to National Strategic Plan
Goal 5 - Improve watershed condition, objectives 1, 2, and 3, and
Goal 6 - Mission related work in addition to that which supports the agency goals, objectives 1 and 3.

LG 2 - Rangeland Health

Rangelands are healthy and sustainable over the long-term. Rangelands are meeting or moving toward forest plan, ecosystem, and site-specific desired conditions.

- Prioritize and perform an interdisciplinary team rangeland assessment (e.g., long-term condition and trend transects and proper functioning condition assessments (PFC)) to determine if key areas are meeting or moving toward desired conditions and resource objectives. Adjust livestock management as necessary.
- Evaluate ecosystem health. Indicators used in the evaluation include, but are not limited to: measures of riparian structure and function; the amount and distribution of noxious weeds and invasive non native species; soil health; threatened, endangered, proposed, candidate and sensitive species habitat; rare plant species vigor; plant community composition and structure; sensitive heritage resources; and water quality. Adjust livestock management as necessary.
- Review and incorporate the Forest Plan Noxious Weed Management Strategy.
- Implement Best Management Practices for water quality.

Linked to National Strategic Plan
Goal 2 - Reduce the impacts from invasive species, objective 1,
Goal 5 - Improve watershed condition, objectives 1, 2, and 3, and
Goal 6 - Mission related work in addition to that which supports the agency goals, objectives 1 and 3.

Fire 1 - Fire Prevention

Reduce the number of human-caused wildland fires and associated human and environmental impacts. Focus fire prevention programs on the urban interface, threatened, endangered, proposed, candidate and sensitive species habitat, vegetative areas threatened with type conversion and areas of major recreation use:

- Continue environmental and fire prevention classroom education in local schools to reach the diverse communities the Forest Service serves.
- Implement Forest Fire Restrictions and Closure Plan as appropriate, including an internal/external public communication plan.
- Continue the activation and utilization of the National Fire Prevention and Education Teams as appropriate in order to augment local fire prevention resources.
- Develop and implement a plan to expand structure hazard reduction from 30' zones to 100' zones of clearance.
- Continue to refine the process of implementing partial or full national forest closure as appropriate in order to increase the margin of public and firefighter safety.

Linked to National Strategic Plan
Goal 1- Reduce the risk from catastrophic wildland fire, objective 2.

Fire 2 - Direct Community Protection

Reduce the number of high risk/high value, and high and moderate risk acres using mechanical treatments, grazing, and prescribed fire. Identify and schedule for treatment the high risk and high value acres near communities and developed recreation sites, including the installation of Wildland/Urban interface (WUI) Defense and Threat Zone vegetation treatments. Highest priority should be given to those areas with substantial drought and insect-killed vegetation that present a significant threat to life and property in entire communities:

Member of Arroyo Fuels Crew during Charlton Flat Project (removing trees killed by bark beetle). April, 2004

- Promote removal of tree mortality adjacent to structures as the first step in reducing threats to human life and investments.
- When National Forest System lands are managed for direct community protection, consider the use of Memorandums of Understanding with Fire Safe Councils as a means of allowing residents to meet state fire law or county brush clearance ordinances on a combination of private and public lands.
- Herbicides or the repetitive use of prescribed fire may be used in the WUI Defense zone on National Forest System land to avoid expensive treatments of resprouting chaparral species.

Linked to National Strategic Plan

Goal 1- Reduce the risk from catastrophic wildland fire, objectives 1 and 3.

Texas Canyon Hotshot Crew hiking off the fireline.
Crew is from Santa Clara-Mojave Rivers Ranger District.

Fire 3 - Fire Suppression Emphasis

All fires either on the national forest or that threaten the national forest will be suppressed. Wildland fires that pose life safety threats, threaten communities, improvements or infrastructure will receive a management response commensurate with minimizing acres burned. An appropriate management response (including a full range of suppression strategies) may be used elsewhere on the national forest where natural and cultural resource impacts along with fire suppression costs are primary concerns.

- Cross train with other fire agencies to improve suppression coordination and performance on fires burning in the Wildland/Urban Interface or developed area intermix.
- Continue to expand mutual aid agreements with fire cooperators in order to ensure the coverage of key fire stations during periods of fire resource drawdown.
- Continue the evaluation of current and future fire station locations with respect to strategic location, changing demographics, suitability and operating costs.
- Implement a "Fireshed" analysis of the national forest to either validate or modify current fire management strategies and tactics.

Linked to National Strategic Plan
Goal 1- Reduce the risk from catastrophic wildland fire, objective 2.

Fire 4 - Firefighter and Public Safety

Improving firefighter and public safety is the primary objective in fire management. All other activities are tiered to this core value. Integrate fire management activities with those of other government agencies that share a mutual interest or benefit in fire activities on the national forest. Conduct fire management activities in a cost effective manner:

- Improve residential inspection capability to enhance the defensible space around structures.
- In concert with other agencies and Fire Safe Councils develop evacuation and structure protection plans that will enhance both firefighter and public safety.
- Maintain program reviews, training and qualification standards contained in the Fire Management Plan.
- Coordinate meetings, training and workshops with employees and cooperating fire agencies to improve fire and emergency operations capability and preparedness.
- Cooperate with local agencies to develop and build-out an inter-operable radio communications system for emergency response and incident management in southern California.

Linked to National Strategic Plan
Goal 1- Reduce the risk from catastrophic wildland fire, objective 2.

Fire 5 - Fuelbreaks and Indirect Community Protection

Maintain the existing system of roadside fuelbreaks and fuelbreaks along watershed boundaries to minimize fire size and the number of communities threatened by both fires and floods. Consider constructing new fuelbreaks on land outside of wilderness or other special designations.

- Consider an opportunistic approach to fuels management. Take advantage of previously burned or treated areas to link future fuels and vegetation management or wildlife habitat improvement projects when doing fuels planning.
- Utilize fire landscape analysis to aid in the design of future fuelbreak systems, maintain multiple lines of community defense, and to minimize future wildland fire size.
- Develop a plan to minimize the propagation of invasive nonnative species during fire suppression and fuels or vegetation management activities.

Linked to National Strategic Plan
Goal 1- Reduce the risk from catastrophic wildland fire, objectives 1 and 3.

Dead tree removal project at Charlton Flat picnic area

Appendix C. Maps

Angeles National Forest

Land Use Zones

Recreation Opportunity Spectrum

Scenic Integrity Objectives

Inventoried Roadless Areas

Places

Applicable to the San Gabriel Mountains National Monument

United States Department of Agriculture

Forest Service

Pacific Southwest Region

R5-MB-080

September 2005

Land Management Plan

Part 3 Design Criteria for the Southern California National Forests

Angeles National Forest

Cleveland National Forest

Los Padres National Forest

San Bernardino National Forest

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Applicable to the San Gabriel Mountains National Monument

Land Management Plan

Part 3: Design Criteria for Southern California National Forests

Angeles National Forest

Cleveland National Forest

Los Padres National Forest

San Bernardino National Forest

R5-MB-080

September 2005

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Document Format Protocols

The following format protocols (font type, size, and strength, as well as indentation) are used throughout the Land Management Plan.

All headings are Arial bold, in varying font sizes and indentation.

Text is generally Times New Roman, 12 point regular.

Table Titles are Arial, bold, 11 point.

Table column headings are in Arial Narrow, 10 pt, with a shaded background.
Table cell contents are Times New Roman, 12 point. **Note:** Tables were managed in a database environment, and were assigned unique numbers as their need was identified. During the lifetime of the analysis, over 500 tables were created for potential use. Some tables were later determined to be redundent or unnecessary. The planning team decided not to renumber the tables for publication due to the amount of work required to locate and update every reference to every table. Thus, the table numbers are not consecutive, and all table numbers were not used in the final documents.

Photograph captions have a top and bottom border to separate them from regular text, and are 12 point Arial font. For example, this is a clip-art butterfly.

References to websites (URLs) are in OCR B MT, 10 point in the printed version. In the electronic version, these are live links. The electronic version is posted at:

http://www.fs.fed.us/r5/angeles/projects/lmp

http://www.fs.fed.us/r5/cleveland/projects/lmp

http://www.fs.fed.us/r5/lospadres/projects/lmp

http://www.fs.fed.us/r5/sanbernardino/projects/lmp

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Introduction

This document is Part 3 of the three-part forest plans for the southern California national forests. Part 3 is the design criteria or 'the rules' that managers will operate with as we work toward the realization of the desired conditions described in Part 1 (Vision). Part 3 includes two components. The first component contains the forest plan standards and guidelines, and the second component contains the laws, policy or other direction that may be applicable to proposed activities. The standards are the fundamental requirements that define the parameters for the activities that the Forest Service anticipates. Standards can be changed by a forest plan amendment. The Forest Service's intent is to use these standards in combination with other guidance that will be identified based on project analysis and planning. Other guidance means using information specific to the various resources that is described in Forest Service Manuals and Handbooks, Best Management Practices (BMPs), the Built Image Guide, Species Accounts, Soil and Water Conservation Handbooks, and more. The design criteria offer managers the flexibility to use the appropriate guidance according to the conditions on the ground. The criteria are expected to enable sustainable resource use and conservation. The design criteria are used in combination with the description of desired conditions (Part 1), the objectives, program emphasis and strategies (Part 2), and the land management zoning map to define the strategic direction and guide the management of the southern California national forests.

The first component or section of the design criteria includes the standards that are legally required and described in 36 CFR 219 and the other standards that are required for sustainable forest management. Many of the standards include the use of the term 'mitigate'. Mitigation is defined in the National Environmental Policy Act at 40 CFR 1508.20(a) through (e). The definition states that:

"Mitigation" includes:

a) Avoiding the impact altogether by not taking a certain action or parts of an action.
b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
e) Compensating for the impact by replacing or providing substitute resources or environments.

The implementation of the design criteria will be evaluated annually using the implementation monitoring strategies (such as monitoring sample projects) that are described in this section.

Please note that standards that only apply to certain areas on the individual national forests are described in Part 2 of the individual forest plan.

The second component or section is Appendix A through K and references the other design criteria or guidance that will be referenced and incorporated as projects are designed to implement the direction in the forest plan, and move along the pathway toward the realization of desired conditions over time. The laws and policy specific to public land management are listed in Appendix A and constitute the overarching legal context for the management of the national

forests. The laws are very specific in describing the legal requirement for managing natural resources. Appendix B through M includes a glossary of terms (Appendix L) and reference to other guidance, such as minimum impact suppression tactics (MIST), riparian management, weed management, monitoring and more. Managers are required to reference this and other applicable guidance, and to use the information that is appropriate to the situation they are working with on the ground.

Plan Standards Required by (36 CFR 219)

Vegetation Management Standards

S1: Long-Term Sustained Yield (36 CFR 219.27 (c) (2)). No land is currently identified as suitable for timber sale production in southern California, and the allowable sale quantity (ASQ) is zero. Harvest may occur to meet wildlife, fuels, watershed or other needs.

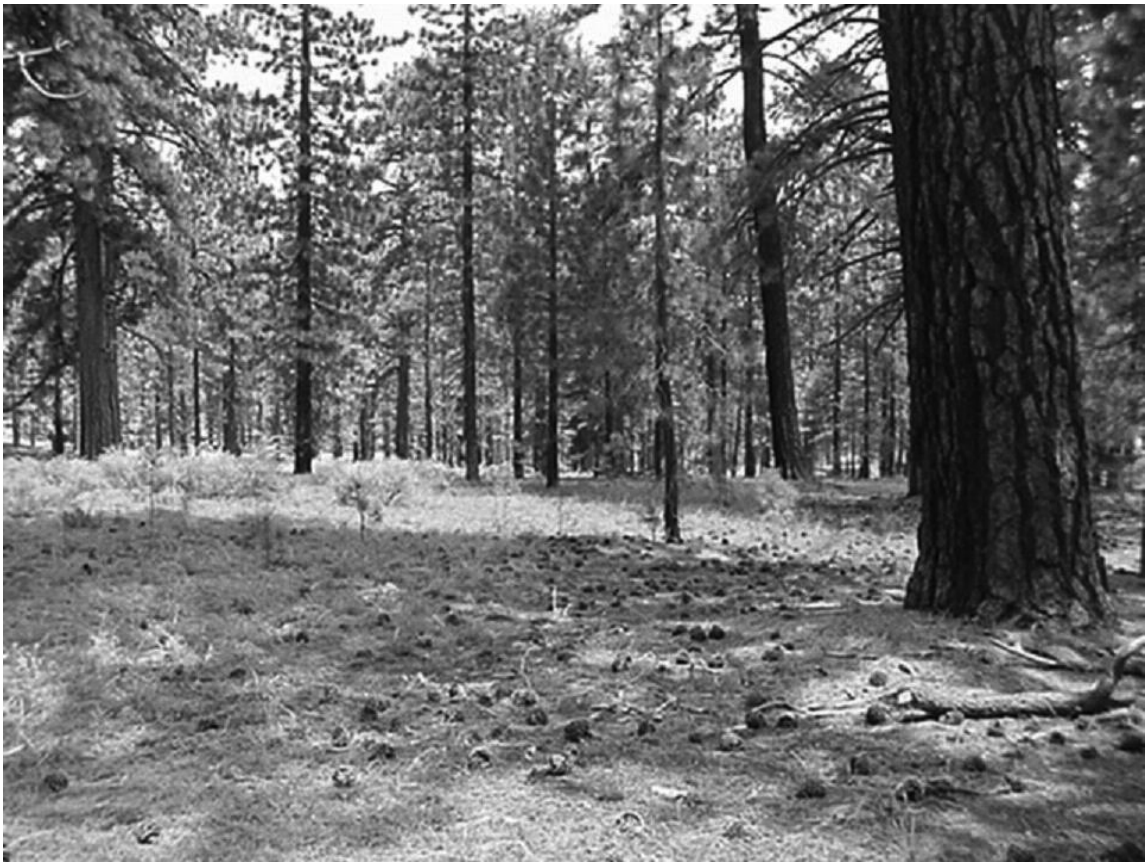
S2: Appropriate Vegetation Management Practices (Including Limitations on Even-Aged Timber Harvest Methods) (36 CFR 219.27 (c) (6)). The silvicultural systems shown, by forest and rangeland cover-types in table 3.1: Appropriate Silviculture Systems and Vegetation Treatments by General Forest Type, which meet the management objectives for the landscape or individual stands of trees within a landscape setting are acceptable. These silvicultural systems are to be applied in a manner that will favor natural regeneration when possible. Artificial regeneration will be necessary following uncharacteristic wildland fires, insect and disease attacks, and damaging weather events. Ground based harvest systems will normally operate on slopes up to 35 percent, and on short steep pitches up to 50 percent. Ground based equipment will be used on steep slopes when supported by site and operation specific analysis. Cable or aerial systems will generally be used on sustained slopes greater than 35 percent.

Table 3.1. Appropriate Silviculture Systems and Vegetation Treatments by General Forest Type

Management Activity	Subalpine	Mixed Conifer Yellow Pine	Closed Cone Conifer	Big-Cone Douglas-Fir and Canyon Oak	Coast Redwood	Pinyon /Juniper	Oak Woodland
Maximum size of openings	N/A	1/4-3 ac.	1/4-3 ac.	1/4-3 ac.	1/4-3 ac.	1/4-1 ac.	N/A
Even-Aged	Not Acceptable	Not Acceptable	When Justified	Not Acceptable	Not Acceptable	When Justified	Not Acceptable
Uneven-Aged Group Selection	Not Acceptable	Acceptable	When Justified	When Justified	When Justified	Not Acceptable	Not Acceptable
Uneven-Aged Single-tree Selection	Not Acceptable	Acceptable	When Justified	When Justified	When Justified	When Justified	When Justified
Stocking Control: (thinning)	Not Acceptable	Acceptable	Acceptable	When Justified	When Justified	When Justified	When Justified
Stocking Control: (thinning)Rx fire	Not Acceptable	Acceptable	Acceptable	When Justified	When Justified	When Justified	When Justified
Salvage of Dead Material	Not Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable
Site Preparation	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable

Management Activity	Subalpine	Mixed Conifer Yellow Pine	Closed Cone Conifer	Big-Cone Douglas-Fir and Canyon Oak	Coast Redwood	Pinyon /Juniper	Oak Woodland
Reforestation / Restoration	When Justified	Acceptable	When Justified	When Justified	Acceptable	When Justified	When Justified
Regeneration Protection	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable
Tree Improvement	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable

S3: Maximum Size Openings Created by Timber Harvest (36 CFR 219.27 (d) (2)). Table 3.1: Appropriate Silviculture Systems and Vegetation Treatments by General Forest Type identifies the maximum allowable opening acreage for forest types. This limit shall not apply where harvests are necessary as a result of catastrophic conditions, such as fire, insect and disease attack, windstorm, or drought.



This forest stand has had thinning and slash burning treatments (Los Padres NF photo)

S4: Design fuelbreaks in forests to be open; averaging no more than 40 percent crown closure along the center corridor with an understory of grasses, forbs, and small shrubs. Thinning of forests should favor retention of large-diameter trees. Crown closure and understory vegetation increase gradually, moving from the inside toward the outside of the shaded fuelbreak.

S5: Treat all freshly cut live or recently dead conifer stumps with a registered fungicide to prevent the establishment of annosus root disease.

S6: Seed to be used on National Forest System lands will be certified to be free of noxious weeds. Where available, only locally collected native seed will be used, or seeds will be used from species that are noninvasive and nonpersistent. When available, wattles, mulch and livestock feed to be used on National Forest System lands will be certified to be free of noxious weeds.

S7: There are extensive areas within and adjacent to the national forests of southern California meeting the definition of Wildland/Urban Interface (WUI) as described in the Healthy Forests Restoration Act of 2003. WUI (as defined by the Act) is a variable width up to 1.5 miles from communities at risk or as defined in individual community fire protection plans. This forest plan further identifies a direct protection buffer (WUI Defense Zone) and an indirect protection buffer (WUI Threat Zone) that fall within the broader definition WUI. A WUI Defense Zone is the area directly adjoining structures and evacuation routes that is converted to a less-flammable state to increase defensible space and firefighter safety. The WUI Threat Zone is an additional strip of vegetation modified to reduce flame heights and radiant heat. The Threat Zone generally extends approximately 1.25 miles out from the Defense Zone boundary. Yet, actual extents of Threat Zones are based on fire history, local fuel conditions, weather, topography, existing and proposed fuel treatments, and natural barriers to fire and community protection plans, and therefore could extend well beyond the 1.25 mile. The two zones together are designed to make most structures more defendable. Following are the minimum and maximum widths for the WUI Defense Zone by general vegetation type:

WUI Defense Zone Widths

Vegetation	Min Width (ft) WUI Defense Zone	Max Width (ft) WUI Defense Zone
Grass	50	100
Chaparral	100	300
Forests	300	1,500

S8: Community protection needs within the WUI Defense Zone take precedence over the requirements of other forest plan direction, including other standards identified in Part 3 of the forest plan. If expansion beyond the 300-foot minimum width of the defense zone is needed due to site-specific conditions, projects will be designed to mitigate effects to other resources to the extent possible.

Aesthetic Management Standards

S9: Design management activities to meet the Scenic Integrity Objectives (SIOs) shown on the Scenic Integrity Objectives Map.

S10: Scenic Integrity Objectives will be met with the following exceptions:

- Minor adjustments not to exceed a drop of one SIO level is allowable with the Forest Supervisor's approval.
- Temporary drops of more than one SIO level may be made during and immediately following project implementation providing they do not exceed three years in duration.

Fish and Wildlife Standards

When Implementing All Activities

S11: When occupied or suitable habitat for a threatened, endangered, proposed, candidate or sensitive (TEPCS) species is present on an ongoing or proposed project site, consider species guidance documents (see Appendix H) to develop project-specific or activity-specific design criteria. This guidance is intended to provide a range of possible conservation measures that may be selectively applied during site-specific planning to avoid, minimize or mitigate negative long-term effects on threatened, endangered, proposed, candidate or sensitive species and habitat. Involve appropriate resource specialists in the identification of relevant design criteria. Include review of species guidance documents in fire suppression or other emergency actions when and to the extent practicable.

S12: When implementing new projects in areas that provide for threatened, endangered, proposed, and candidate species, use design criteria and conservation practices (see Appendix H) so that discretionary uses and facilities promote the conservation and recovery of these species and their habitats. Accept short-term impacts where long-term effects would provide a net benefit for the species and its habitat where needed to achieve multiple-use objectives.

S13: Manage Critical Biological land use zones so that activities and discretionary uses are either neutral or beneficial for the species and habitats for which the area was established. Accept short-term adverse impacts to threatened, endangered, and proposed species if such impacts will be compensated by the accrual of long-term benefits to habitat for threatened, endangered, and candidate species.

S14: Where available and within the capability of the site retain a minimum of six downed logs per acre (minimum 12 inches diameter and 120 total linear feet) and 10 to 15 hard snags per five acres (minimum 16 inches diameter at breast height and 40 feet tall, or next largest available). Exception allowed in Wildland/Urban Interface Defense Zones, fuelbreaks, and where they pose a safety hazard.

S15: Within riparian conservation areas retain snags and downed logs unless they are identified as a threat to life, property, or sustainability of the riparian conservation area.

S17: In areas outside of Wildland/Urban Interface Defense Zones and fuelbreaks, retain soft snags and acorn storage trees unless they are a safety hazard, fire threat, or impediment operability.

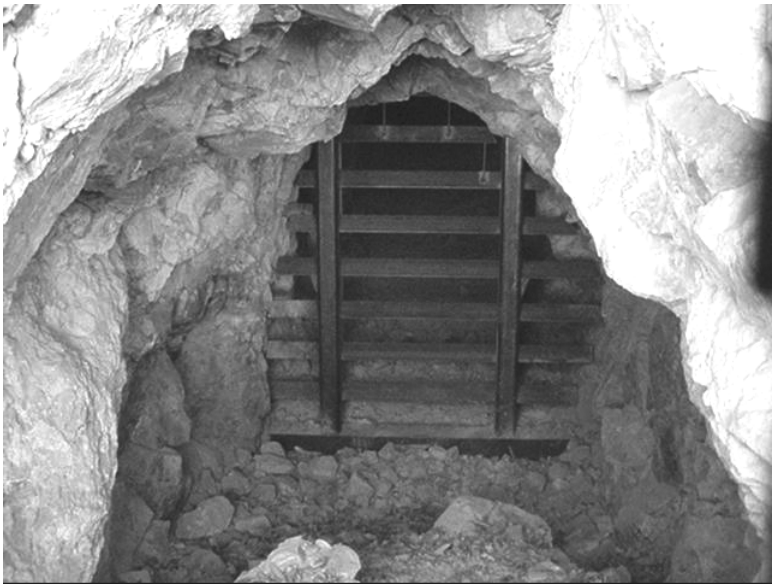
S18: Protect known active and inactive raptor nest areas. Extent of protection will be based on proposed management activities, human activities existing at the onset of nesting initiation, species, topography, vegetative cover, and other factors. When appropriate, a no-disturbance buffer around active nest sites will be required from nest-site selection to fledging.

S19: Protect all spotted owl territories identified in the Statewide California Department of Fish and Game database (numbered owl sites) and new sites that meet the state criteria by maintaining or enhancing habitat conditions over the long-term to the greatest extent practicable while protecting life and property. Use management guidelines in the species conservation strategy (or subsequent species guidance document; see Appendix H) to further evaluate protection needs for projects, uses and activities.

S20: Maintain a limited operating period (LOP) prohibiting activities within approximately .25 miles of a California spotted owl nest site, or activity center where nest site is unknown, during the breeding season (February 1 through August 15), unless surveys confirm that the owls are not nesting. Follow the USDA Forest Service (1993, 1994 or subsequent) protocol to determine whether owls are nesting. The LOP does not apply to existing road and trail use and maintenance, use of existing developed recreation sites, or existing special-uses, such as recreation residence tracts. When evaluating the need to implement a limited operating period, site- and project-specific factors need to be considered (use species management strategy or subsequent guidance; see Appendix H).

S21: California spotted owl habitat that is lost to development for a compelling reason should be mitigated up to a two-to-one basis considering quality of habitat lost, number of territories affected, reproductive history of pair(s) displaced, location, and related factors. Development includes ski area creation or expansion, new roads or trails, special-use sites and corridors, new recreation or administrative facilities, land exchanges, etc. Mitigation land should be sought first within the mountain range where the impacts occur; if this is not possible, mitigation land should be acquired within the San Gabriel or San Bernardino Mountains.

S22: Except where it may adversely affect threatened and endangered species, linear structures such as fences, major highways, utility corridors, bridge upgrades or replacements, and canals will be designed and built to allow for fish and wildlife movement.



S23: When it is necessary to close abandoned mines or buildings for public safety or to protect the environment, do so in a manner that will maintain habitat for bat species of concern, to the extent practicable.

"Bat gates" bar human entry to abandoned mines but allow for continued access to bats (Cleveland NF photo)

S24: Mitigate impacts of on-going uses and management activities on threatened, endangered, proposed, and candidate species.

S25: Conduct road and trail maintenance activities during the season of year that would have the least impact on threatened, endangered, and proposed wildlife species in occupied habitats, except as provided by site-specific consultation.

S26: Prohibit use by domestic sheep and goats within nine miles of occupied bighorn sheep habitat.

S27: Use seasonal closures as specified by site-specific analysis to protect occupied bald eagle wintering, breeding, or nesting habitat.

S28: Avoid or minimize disturbance to breeding and roosting California condors by prohibiting or restricting management activities and human uses within 1.5 miles of active California condor nest sites and within 0.5 miles of active roosts. Refer to California condor species account (or subsequent species guidance document; see Appendix H) for additional guidance.

S29: Avoid collection of special forest products where it may negatively affect recovery or occupied habitat of threatened, endangered and proposed species, except where it is appropriate in response to requests from Native Americans.

S30: Avoid activities that result in removal, crushing, burying, burning, or mowing of host plants within critical and occupied habitat for threatened, endangered, and proposed butterfly species; unless guided differently by a species-specific consultation.

S31: Design new facilities or expansion of existing facilities to direct public use away from occupied habitat for threatened, endangered, proposed and candidate species.

S32: When surveys for species presence/absence are done for threatened, endangered, and proposed species, use established survey protocols, where such protocols exist.

S33: Manage Special Interest Areas so that activities and discretionary uses are either neutral or beneficial for the resource values for which the area was established. Accept short-term adverse impacts to these resource values if such impacts will be compensated by the accrual of long-term benefit.

When Implementing Recreation Activities

S34: Where a threatened, endangered, proposed, candidate, or sensitive species occurs in a recreation site or area, take steps to avoid or minimize negative impacts to the threatened, endangered, proposed, candidate or sensitive species and its habitat. Use the least restrictive action that will effectively mitigate adverse impacts to the species and habitat (refer to Appendix D).

S35: Manage dispersed recreation activities to ensure that environmental sustainability is maintained by utilizing the following measures:

- Discourage camping within 100 feet of sensitive resources and habitats, including meadows and bodies of water (springs, streams, ponds and lakes), or within 1/4 mile of developed recreation facilities.
- Discourage camping within 600 feet of any wildlife water source developments, such as guzzlers and water holes, in accordance with state laws.

- Motorized and non-motorized vehicle travel is restricted to National Forest System roads and trails and limited areas that are designated for vehicle use.

S36: Recreational target shooting will only be allowed in designated areas and ranges. Shooters shall remove their targets and spent shells when departing designated shooting areas. Shooters shall not use paintballs or other forms of ammunition that would result in visible residue except where authorized in ranges that operate under special-use permit.

When Implementing Fire Management Activities

S37: Design and manage fuel treatments to minimize the risk that treated areas will be used by unauthorized motorized and mechanized vehicles. Mitigate impacts where such use does occur.

S38: Avoid establishment of staging areas, helibases, base camps, firelines or other areas of human concentration and equipment use within threatened, endangered and proposed species suitable and occupied habitats and riparian areas to the maximum extent possible when suppression of wildland fire and human safety are not compromised.

S39: Avoid fuel treatments in coastal sage scrub within the range of the California gnatcatcher, except in Wildland/Urban Interface Defense Zones and on fuelbreaks.

When Implementing Lands and Special-Uses Activities

S40: No recreation residence lots or tracts will be approved outside of established tracts.

S41: When a recreation residence is destroyed, substantially damaged or becomes property of the United States, the lot must comply with, and not limited to, the following criteria to be safely occupied in the future, and be available for re-building. When a proposal is received for a recreation residence in-lieu lot, the lot must comply with criteria that include but are not limited to the following list in order to be safely occupied in the future and be available for building consideration:

- Outside of the 100 year floodplain
- Outside of the area of geologic hazards such as landslides and falling rock
- Safely accessible by emergency, passenger, and official vehicles

S42: Include provisions for raptor safety when issuing permits for new power lines and communication sites (see guidelines in Appendix G). Also implement these guidelines for existing permits within one year in identified high-use flyways of the California condor, and within five years in other high-use raptor flyways. Coordinate with California Department of Fish and Game, U.S. Fish & Wildlife Service, and power agencies to identify the high-use flyways**.**

Raptor safe measures may include radomes (covers over the microwave dishes) as shown at Santiago communication site, Cleveland NF.

S43: Do not approve new commercial mineral material operations that are likely to negatively affect occupied or critical habitat for federally listed threatened and endangered species, or occupied habitat for proposed, candidate or sensitive species.

S44: Perform surface use determinations for proposed locatable mining operations that are likely to cause significant surface disturbance to threatened, endangered, proposed, candidate and sensitive species habitat, and require measures to protect these species and their habitats.

Soil, Water, Riparian and Heritage Standards

When Implementing All Activities

S45: All construction, reconstruction, operation and maintenance of tunnels on National Forest System lands shall use practices that minimize adverse effects on groundwater aquifers and their surface expressions.

S46: Surface water diversions and groundwater extractions, including wells and spring developments will only be authorized when it is demonstrated by the user, and/or agreed to by the Forest Service, that the water extracted is excess to the current and reasonably foreseeable future needs of forest resources.

- Consideration of beneficial uses, existing water rights, and the absence of other available water sources will be part of the water extraction application.
- Approved extractions and diversions will provide for long-term protection and reasonable use of surface water and groundwater resources.
- Feasibility and sustainability assessments should be appropriately scaled to the magnitude of the extraction or diversion proposed.

This riparian area is within a grazing allotment (Los Padres NF).

Applicable Within Riparian Conservation Areas

S47: When designing new projects in riparian areas, apply the Five-Step Project Screening Process for Riparian Conservation Areas as described in Appendix E - Five-Step Project Screening Process for Riparian Conservation Areas.

S48: For non-hydroelectric and exempt hydroelectric surface water development proposals (such as flood control reservoirs and municipal water supplies), instream flows favorable to the maintenance and restoration of riparian dependent and aquatic resources and channel conditions will be required.

S49: Require fish passage instream flows associated with dams and impoundments where fish passage will enhance or restore native or selected nonnative fish distribution and not cause adverse effects to other native species.

When Implementing Recreation Activities

S50: Mitigate negative long-term impacts from recreation use to soil, watershed, riparian or heritage resources (refer to Appendix D - Adaptive Mitigation for Recreation Uses).

When Implementing Livestock Grazing Activities

S51: Allotment specific review of rangeland capability and suitability guidelines (Appendix J - Livestock Capability and Suitability Guidelines) shall occur as part of a site-specific allotment or livestock grazing area level National Environmental Policy Act (NEPA) analysis. Permits will not be issued for livestock grazing areas determined to be not suitable or have insufficient grazing areas for sustaining a livestock operation.

S52: Soil Cover: Maintain an effective soil cover of 60 percent to provide for soil protection, water infiltration, and reduce the risk of accelerated soil erosion within designated livestock grazing areas. Soil cover includes: living vegetation (grasses, forbs, and prostrate plants); plant litter; and surface rock fragments greater than 3/4 inch.

S53: Salt and Mineral Locations: Salt and/or other supplements will be located greater than ¼ mile from all water sources including: ponds; riparian areas; meadows; springs; seeps; vernal pools; susceptible threatened, endangered, proposed, candidate and sensitive species and habitats; livestock and wildlife water developments; concentrated and developed recreation areas; and other sensitive areas including sensitive heritage resources, unless approved by the responsible Forest Service officer.

Monitoring a grazing allotment (Los Padres NF).

S54: Burned Areas: After a wildland fire, prior to initiating grazing, a site-specific analysis will be performed for designated livestock areas to determine the level and location(s) of livestock use, if any.

S55: Evaluate new proposals for concentrated stock areas (e.g., livestock handling and management facilities, pack stations, equestrian campgrounds, and corrals) located within five miles of occupied southwestern willow flycatcher and least Bell's vireo habitats. Apply broad

landscape level analysis in the biological assessment for the project to determine if such action will increase brood parasitism pressure by the brown-headed cowbird.

S56: Retain the following: average amounts of residual dry matter (RDM) until the onset of the rainy season; percent utilization; and percent streambank alteration on grazed rangelands. Precipitation is based on long-term averages. Streambank alteration is defined as alteration and displacement of rooted plants and physical soil structure by livestock per stream reach in wet montane meadows and Rosgen C3 channels. Percent woody browse is based on current year's growth of shrubs, unless required to meet other vegetation management objectives. Livestock will be moved from grazing units when thresholds are met as determined by established protocols (see table 3-2. Livestock Grazing Utilization Standards).

Table 3-2. Livestock Grazing Utilization Standards

Location*	Habitat Grouping	RDM (lbs/acre)	Woody Browse percent Allowable Use	Perennial Grass and Grass-like Plants percent Allowable Use	Streambank Alteration by Livestock percent Allowable
LBV/SWWF Occupied Habitat	Nesting Season	No Grazing During Occupancy			
	Suitable Habitat Non-Nesting Season/No Occupancy	N/A	35	35	≤ 10
Riparian Areas	N/A	N/A	40	35	≤ 20
Wet Montane Meadows	N/A	N/A	40	4" - 6" Stubble Height (based on condition)	≤ 20
Uplands	Annual grasslands and oak woodlands with > 10 inches annual precipitation	700	40 (20 - On advanced oak tree regeneration)	50	N/A
	Annual grasslands and oak woodlands with ≤ 10 inches annual precipitation	400			
	Annual grassland/pinyon	200-400	40	50	
	Mixed conifer forests	600			
	Chaparral/desert scrub	200-400			
WUI/Fuelbreaks	N/A	600	N/A	N/A	N/A

*Notes: LBV = least Bell's vireo; SWWF = southwest willow flycatcher; WUI = wildland/urban interface

When Implementing Minerals and Energy Activities

~~**S57:** Free use rock, invertebrate fossil, and mineral collecting for non-commercial personal uses must be approved by the authorized officer.~~

S58: Evaluate geologic hazards and develop mitigations where risks to life, property or resources are identified when planning and implementing management activities.

Wild and Scenic River Standards

S59: Manage eligible wild and scenic river segments to perpetuate their free-flowing condition and proposed classifications, and protect and enhance their outstandingly remarkable values and water quality through the suitability study period and until designated or released from consideration. When management activities are proposed that may compromise the outstandingly remarkable value(s), potential classification, or free-flowing character of an eligible wild and scenic river segment, a suitability study will be completed for that eligible river segment prior to initiating activities.

Cultural and Historic Standards

S60: Until proper evaluation occurs, known heritage resource sites shall be afforded the same consideration and protection as those properties evaluated as eligible to the National Register of Historic Places.

S61: Leave human remains which are not under the jurisdiction of the County Coroner undisturbed unless there is an urgent reason for their disinterment. In case of accidental disturbance of human remains, excavation of human remains, or subsequent re-internment of human remains follow national forest, federal and tribal policies.

S62: Protect the access to and the use of sensitive traditional tribal use areas.

Rock art on the Los Padres NF.

Geographic Place Specific Standards

Look for place-specific standards in Part 2 of the forest plan for each national forest:

- R5-MB-076, Angeles National Forest
- R5-MB-077, Cleveland National Forest
- R5-MB-078, Los Padres National Forest
- R5-MB-079, San Bernardino National Forest

Other Design Criteria

The forest plan is a single integrated plan. The references found in **Appendix A** - Relevant Laws, Regulations, Agreements and Other Management Direction:

- Forest Service Directives (Manual and Handbook)
- Federal Statutes
- Federal Regulations
- Executive Orders and Memorandums
- Agreements
- Federal Agency Management Direction
- State and Local Laws and Regulations

These have been reviewed to assure consistency with other parts of the plan, and are incorporated by reference. As these design criteria change over time, updates are hereby incorporated by reference.

Appendix B - Minimum Impact Suppression Tactics (MIST) details Minimum Impact Suppression Tactics guidelines referenced by management standards.

Appendix C - Monitoring Requirements.

Appendix D - Adaptive Mitigation for Recreation Uses includes an adaptive mitigation protocol to be used for resolving resource and user conflicts with recreation activities.

Appendix E - Five-Step Project Screening Process for Riparian Conservation Areas includes Riparian Conservation Area Guidance.

Appendix F - Guidelines for Aerial Application of Retardants and Foams in Aquatic Environments.

Appendix G - Guidelines for Protection and Conservation of Bird Species at Mountain Top Communications Sites, USDA Forest Service

Appendix H - Species Guidance Summary lists species-at-risk. Conservation considerations for each species are also provided.

Appendix I - Land Adjustment Prioritization Guide contains criteria for **Land Adjustment Map and Guidelines.** A land adjustment map will be maintained and updated to express the desired future condition of the national forests and illustrate where acquisition may likely occur.

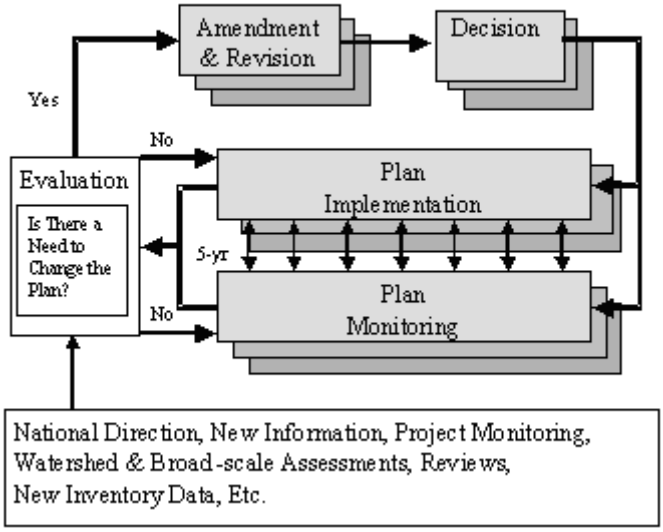
Appendix J - Livestock Capability and Suitability Guidelines lists project specific criteria for allotment suitability analysis.

Appendix K - Guidelines for Development and Maintenance of WUI Defense and Threat Zones.

Monitoring of Design Criteria

Monitoring and evaluation are part of the Adaptive Management Cycle and are separate, sequential activities that provide information to determine whether programs and projects are meeting forest plan direction. Monitoring collects information, on a sample basis, from sources specified in the forest plan. Evaluation of monitoring results is used to determine the effectiveness of the forest plan and the need to either change the plan through amendment or revision, or to continue with the plan.

The Three Parts of a Plan in the Adaptive Cycle



Implementation and effectiveness monitoring for Part 3 of the forest plan are conducted at the project level. All project activities are documented in reporting systems. Annually, a randomly selected sample of projects and on-going activities (at least 10 percent) will be reviewed. A small review team will visit the selected projects to review the effectiveness of applying forest plan design criteria. If problems in implementation are detected or if the design criteria are determined to be ineffective then the team will recommend corrective actions. Corrective actions may include land management plan amendment(s) if necessary to improve the effectiveness of the design criteria. Results of this monitoring will be reported annually in the forest plan monitoring and evaluation report. In addition, design criteria (including new laws or regulations referenced in Appendix A) will be updated.

Appendix A - Relevant Laws, Regulations, Agreements and Other Management Direction

This appendix contains a listing of relevant statutes, regulations, Executive Orders and Memorandums, agreements and other management direction applicable to the Forest Service or to the local Forest Service unit. (This is not an all inclusive list.) Together, they provide overarching management direction for the southern California revised land management plans. Links to websites containing the full text of the federal statutes are provided where available.

Forest Service Directives (Manual and Handbook)

The following is a partial listing of national and regional Forest Service policies that apply to (but are not repeated in) this revised land management plan. A complete listing can be found in the Forest Service Manuals and Forest Service Handbooks. Together, these are known as the Forest Service Directives System. The Forest Service Directives System is available on the national website, `http://www.fs.fed.us/im/directives`.

The Directives System is the primary basis for the management and control of all internal programs and serves as the primary source of administrative direction for Forest Service employees. The system sets forth legal authorities, management objectives, policies, responsibilities, delegations, standards, procedures, and other instructions.

The Forest Service Manual (FSM) contains legal authorities, goals, objectives, policies, responsibilities, instructions, and the necessary guidance to plan and execute assigned programs and activities.

The Forest Service Handbooks (FSH) are directives that provide instructions and guidance on how to proceed with a specialized phase of a program or activity. Handbooks are either based on a part of the manual or they incorporate external directives.

A supplement is any issuance which adapts or interprets higher level or external directives for national, regional, or local application. Many supplements listed below apply to the Pacific Southwest Region of the Forest Service (Region 5).

Here follows a listing of the Forest Service Manual system and referenced Handbooks (some direction contained therein may be highlighted):

Forest Service Manuals and Supplements

1010 - Laws, Regulations, and Orders

1020 - Forest Service Mission

1500 - External Relations

1563 - American Indian Tribe and Alaska Native Relations

1900 - Planning

2080 - Noxious Weed Management

Includes the following direction: When any ground disturbing action or activity is proposed, it is Forest Service policy to determine the risk of introducing or spreading noxious weeds associated with the proposed action. For projects having moderate to high risk of introducing

or spreading noxious weeds, the project decision document must identify noxious weed control measures that must be undertaken during project implementation.

2150 - Pesticide Use Management and Coordination

2200 - Range Management

Region 5 Supplement 2200-92-4 to FSM 2200 outlines the "wild free-roaming horses and burros" cooperative agreement between the Forest Service, California Dept. of Food and Agriculture, USDI, and BLM.

2300 - Recreation, Wilderness, and Related Resource Management

Region 5 Supplement 2300-94-1 allows mineral information gathering in wilderness areas only for scientific or educational purposes; a written authorization is required.

Region 5 Supplement 2300-92-2 prohibits competitive events in wilderness areas under order No. 83-1.

2320 - Wilderness

2350 - Trail, River, and Similar Recreation Opportunities

2354 - Wild and Scenic Rivers

2360 - Special Interest Areas (2361 Cultural Resources)

2370 - Special Recreation Designations

2400 - Timber Management

2460 - Uses of Timber Other Than Commercial Timber Sales (Special Forest Products)

2500 - Watershed and Air Management

Region 5 Supplement 2500-92-4 to FSM 2540 gives guidance on water uses and developments.

Region 5 Supplement 2500-92-2 to FSM 2526 discusses riparian area management.

2550 - Soil Management

2580 - Air Resource Management

Class I areas are listed in Region 5 Supplement 2500-92-5.

2600 - Wildlife, Fish, and Sensitive Plant Habitat Management

Region 5 Supplement 2610-96-1 to FSM 2610 outlines the FS Memorandum of Understanding with the California Department of Fish and Game.

2670 - Threatened, Endangered and Sensitive Plants and Animals

Includes the following direction: The Regional Forester identifies sensitive species, requires that management decisions do not result in a trend towards federal listing and loss of viability, and requires that a biological evaluation be prepared for all Forest Service activities to address potential impacts to sensitive species.

Region 5 Supplement 2600-97-1 discusses the consultation process. Region 5 Supplement 2600-92-3 to FSM 2672 lists the sensitive species protected by the Regional Forester.

2700 - Special-Uses Management (including Region 5 and Forest Supplements)

2720 - Special-Use Administration

2800 - Minerals and Geology (including Washington Office Amendments and Region 5 Supplements)

3400 - Forest Pest Management

4062 - Experimental Forest and Ranges

4063 - Research Natural Areas

FSM 4063.3 provides direction regarding protection and management standards for Research Natural Areas (RNAs). The standards cover a broad range of activities including the following: Do not permit roads, trails, fences, or signs on an established RNA unless they contribute to the objectives or to the protection of the area.

4500 - Integrated Pest Management

5100 - Fire Management (including Region 5 Supplements)

5300 - Law Enforcement

5400 - Landownership

5500 - Landownership Title Management

5700 - Aviation Management

7300 - Facilities

Region 5 Supplement 7300-92-1 to FSM 7310 discusses buildings and other facilities.

7400 - Public Health and Pollution Control Facilities (including Region 5 Supplements)

7500 - Water Storage and Transmission

Region 5 Supplement 7500-94-2 to FSM 7510 gives direction on the management of dams.

7700 - Transportation System

Region 5 Supplement 7700-93-1 to FSM 7720 gives direction on transportation design.

Forest Service Handbooks

1909.12 - Land and Resource Management Planning Handbook

Chapter 7 directs national forests to: "... identify and inventory all roadless, undeveloped areas that satisfy the definition of wilderness found in section 2 (c) of the 1964 Wilderness Act" and also details the means by which the capability, availability, and need for potential wilderness areas are assessed.

Chapter 8 directs the Forest Service to evaluate rivers for inclusion in the National Wild and Scenic River System during the forest planning process and details the study process.

2109.14 - Pesticide-Use Management and Coordination Handbook

2209.13 - Grazing Permit Administration Handbook

2309.18 - Trails Management Handbook

2409.18 - Timber Sale Preparation Handbook

Chapter 80 (Uses of Timber Other Than Commercial Sales) contains direction on special forest products.

2509.18 - Soil Management Handbook

Region 5 Supplement 2509.18-95-1 establishes regional soil quality standards.

2509.22 - Watershed Conservation Practices Handbook (Forest Supplement for the Angeles, Cleveland, Los Padres and San Bernardino National Forests)

2709.11 - Special Uses Handbook

2709.12 - Road Rights-of-Way Grants Handbook.

5109.19 - Fire Management Analysis and Planning Handbook

5409.13 - Land Acquisition.

7509.11 - Management of Dams Handbook

3409.11 - Forest Pest Management Handbook

Federal Statutes

Each Federal statute has a brief description and, if available, a website address to view the full text.

Acceptance of Gifts Act of 1978

This Act authorizes Forest Service acceptance of cash, as well as donations of real personal property.

Act of May 26, 2000, Photographic Activities on Federal Lands

`http://www.fs.fed.us/recreation/permits/pl106-206.html`

Augments the Forest Service's existing authorities (Organic Administration Act of 1897 and FLPMA of 1976) to regulate commercial filming and still photography activities on federal lands. Clarifies policy on the requirements for such permits and establishes limitations on filming activities for the protection of resources.

Act of September 3, 1954, Permits for Public Buildings and Other Public Works

This Act authorizes permits, term permits, leases, or easements at the fair market value (not to exceed 30-years duration) to states, counties, cities, municipalities, or other public agencies without acreage limitation for the construction and operation of public buildings or other public works, exclusive of rights-of-way.

Age Discrimination Act of 1975

Prohibits discrimination based on age.

Alaska National Interest Lands Conservation Act of 1980

`http://www.fws.gov/asm/anilca/toc.html`

Directs the Secretary of Agriculture to provide adequate access to non-Federal land within the boundaries of the National Forest System including Congressionally designated areas.

American Indian Religious Freedom Act of 1978

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=42&sec=1996

Makes it policy for the Federal Government to protect and preserve American Indians' inherent right of freedom to believe, express, and exercise traditional religions of American Indians, Eskimo, Aleut and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonial and traditional rites. It directs federal agencies to assess their policies and procedures, in consultation with tribes, on ways to ensure this use.

Americans with Disabilities Act of 1990

http://www.usdoj.gov/crt/ada/statute.html

Provides a clear and comprehensive national mandate for the elimination of discrimination against individuals with disabilities; for clear, strong, consistent enforceable standards addressing discrimination against individuals with disabilities; to ensure that the Federal Government plays a central role in enforcing the standards established in this Act on behalf of individuals with disabilities; and to invoke the sweep of congressional authority, including the power to enforce the fourteenth amendment and to regulate commerce, in order to address the major areas of discrimination faced by people with disabilities. Provides additional standards so that disabled persons will not be discriminated against and have opportunities for access and use of facilities, services and programs.

Anderson-Mansfield Reforestation and Revegetation Act of 1949

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=581j

Provides for the reforestation and revegetation of National Forest System lands and other lands under the administration or control of the Forest Service.

Animal Damage Control Act of 1931, as amended

http://laws.fws.gov/lawsdigest/andamag.html

Provided broad authority for investigation, demonstrations and control of mammalian predators, rodents and birds.

Antiquities Act of 1906

http://www.cr.nps.gov/local-law/FHPL_AntiAct.pdf

As implemented by the Uniform Rules and Regulations, the Act has the purpose of protecting any historic or prehistoric ruin or monument, or any object of antiquity on federal lands. It authorizes the President to designate historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest as national monuments; regulates public archaeological activities; and provides penalties for people who damage these sites and ruins. Includes both heritage resources and paleontological resources.

Archaeological Resources Protection Act of 1979, as amended

http://www2.cr.nps.gov/laws/archprotect.htm

This Act secures the protection of archaeological resources and sites on public and tribal lands and to foster increased cooperation and exchange of information between governmental

authorities, the professional archaeological community and private individuals having access to and information related to these resources. It provides civil and criminal penalties for the unauthorized excavation, removal, damage, alteration, or defacement of archaeological resources. The Act also authorizes the use and protection of National Forest System lands for paleontological resources associated with archeological resources. Collection of rocks, minerals and fossils for non-commercial use is allowed without a permit.

Architectural Barriers Act of 1968, as amended

`http://www.access-board.gov/about/ABA.htm`

Establishes that buildings, facilities and vehicles meet standards suitable for persons with disabilities. This Act requires that buildings and facilities that are designed, constructed, or altered with federal funds, or leased by a federal agency, comply with federal standards for physical accessibility. Requirements are limited to architectural standards in new and altered buildings and in newly leased facilities.

Bald Eagle Protection Act of 1940, as amended

`http://www.nwi.org/Laws/EagleProtAct.html`

Provides for the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession and commerce of such birds.

Bankhead-Jones Farm Tenant Act of 1937

`http://laws.fws.gov/lawsdigest/bankjon.html`

Directs the Secretary of Agriculture to develop a program of land conservation and utilization in order to correct maladjustments in land use and thus assist in such things as control of soil erosion, reforestation, preservation of natural resources, and protection of fish and wildlife.

Big Sur Wilderness and Conservation Act of 2002

`http://data2.itc.nps.gov/parks/pinn/ppdocuments/Big percent20Sur percent20Wilderness percent20and percent20Conservation percent20Act percent20of percent202002.doc`

Designates certain lands in the State of California as components of the National Wilderness Preservation System, and for other purposes. Includes the Pinnacles and Silver Peak Wildernesses.

Cabin User Fee Fairness Act of 2000

Establishes procedures for appraising recreation residence lots and determining fees for recreation residence lots located on National Forest System lands.

California Desert Protection Act of 1994

`http://www.ca.blm.gov/caso/ca_desert_protection_act.html`

Designates certain lands in the State of California as components of the National Wilderness Preservation System including the Bighorn Wilderness.

California Wilderness Act of 1984

Designates certain lands in the State of California as components of the National Wilderness Preservation System including: Dick Smith Wilderness, Machesna Mountain Wilderness, Sheep Mountain Wilderness, Pine Creek Wilderness and San Mateo Canyon Wilderness. Enlarges: Cucamonga Wilderness, San Rafael Wilderness, San Gorgonio Wilderness, San Jacinto Wilderness and Ventana Wilderness.

Civil Rights Act of 1964, as amended

`http://usinfo.state.gov/usa/infousa/laws/majorlaw/civilr19.htm`

Prohibits racial discrimination in public accommodations, publicly owned or operated facilities, employment and union membership, and voter registration. Title VI prohibits discrimination on the basis of race, color, or national origin in all federally-assisted programs. Title VII forbids employers with 15 or more employees to discriminate on the basis of race, color, sex, religion or national origin. The law applies to federal, state and local employers. It also prohibits an employer from discriminating against an employee or applicant who makes a discrimination charge or testifies, assists, or participates in an investigation, proceeding, or hearing.

Clarke-McNary Act of 1924

`http://agriculture.senate.gov/Legislation/Compilations/Forests/cma.pdf`

Authorizes cooperative agreements with the States, and expands on the Weeks Act land purchase authority.

Clean Air Act of 1977, as amended

`http://www.epa.gov/oar/caa/contents.html`

Enacted to protect and enhance the quality of the nation's air resources; to initiate and accelerate a national research and development program to achieve the prevention and control of air pollution; to provide technical and financial assistance to state and local governments in connection with the development and execution of their air pollution prevention and control programs; and, to assist the development and operation of regional air pollution prevention and control programs. Areas of the country were designated as Class I, II, and III airsheds for the prevention of significant deterioration purposes. Class I areas include National Parks and wilderness areas designated before 1977 and over 5,000 acres in size. Class I provides protection to designated wilderness lands by severely limiting the amount of additional human-caused air pollution from stationary sources that can be added to these areas. General Conformity Regulation (November 1993). These regulations require federal agencies to determine if their actions will adversely affect the NAAQS attainment status of the state air pollution control districts.

Clean Water Act (Federal Water Pollution Control Act) of 1948, as revised and reenacted by the Federal Water Pollution Control Act Amendments of 1972, by the Water Quality Act of 1987 and other laws.

`http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=33&sec=1251`

Passed to maintain and restore the chemical, physical, and biological integrity of the nation's waters. It requires compliance with state and federal pollution control measures; no degradation of instream water quality needed to support designated uses; control of nonpoint sources of water

pollution through conservation or best management practices; federal agency leadership in controlling nonpoint pollution from managed land; and rigorous criteria for controlling pollution discharges into waters of the United States.

Color of Title Act of 1928

http://www4.law.cornell.edu/uscode/43/ch25A.html

Granted the Secretary of the Interior the authority to issue patents up to 160 acres to claimants that had held a tract of public land in good faith and in peaceful, adverse possession and had made valuable improvements on the land or reduced it to cultivation. The Act reserved the rights to coal and all other minerals contained therein to the United States. It authorizes the Secretary of Agriculture to recognize an adverse possession of public land under claim or color of title based on designated conditions.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986 and as otherwise amended.

http://www4.law.cornell.edu/uscode/42/ch103.html

Commonly known as Superfund, this law created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. This act provides for liability, compensation, cleanup, and emergency response for hazardous substances released into the environment. It also provides for the cleanup of inactive waste disposal sites, as well as requires federal agencies to provide information and certain warranties to purchasers of federal lands concerning the presence of hazardous materials.

Cooperative Forestry Assistance Act of 1978

http://www4.law.cornell.edu/uscode/16/2101.html

Authorizes the Secretary of Agriculture, to assist in the establishment of a coordinated and cooperative federal, state, and local forest stewardship program for the management of non-federal forest lands and forest lands in foreign countries.

Cooperative Funds Act of 1914

Authorizes the Forest Service to accept money received as contributions toward cooperative work in forest investigations or protection and improvement of the national forests.

Department of Agriculture Organic Act of 1956

Provides additional land purchase authority.

Disaster Relief Act of 1974

http://www4.law.cornell.edu/uscode/42/ch68.html

Provides an orderly and continuing means of assistance by the Federal Government to state and local governments in developing, coordinating, and carrying out their disaster relief programs, and provides federal assistance programs for both public and private losses sustained in disasters.

Economy Act of 1932

http://www4.law.cornell.edu/uscode/31/1535.html

Section 601 of this Act authorizes one federal agency to requisition work, services, supplies, materials, or equipment within the same agency or another agency as outlined.

Educational Land Grant Act of 2000

http://agriculture.senate.gov/Legislation/Compilations/Forests/elga.pdf

Provides for conveyance of National Forest System lands for educational purposes.

Emergency Flood Prevention Act (Agricultural Credit Act) of 1978

http://www4.law.cornell.edu/uscode/16/2201.html

Authorizes the Secretary of Agriculture to undertake emergency measures for runoff retardation and soil-erosion prevention, in cooperation with land owners and users, as the Secretary deems necessary to safeguard lives and property from floods, drought, and the products of erosion on any watershed whenever fire, flood, or other natural occurrence is causing or has caused a sudden impairment of that watershed.

Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986

http://www4.law.cornell.edu/uscode/42/ch116.html

Provides for emergency response planning to cope with the accidental release of toxic substances into the air, land and water. This includes hazardous chemical inventory disclosure and emergency spill response planning and training. The Act also helps to increase the public's knowledge and access to information on the presence of hazardous substances in their communities, as well as information concerning the release of these substances into the environment.

Endangered American Wilderness Act of 1978

Designated certain endangered public lands for preservation as wilderness, and for other purposes. The Act added 13 new wilderness areas and expanded four others (including Ventana Wilderness) in ten western states for a total addition of 1.3 million acres of National Forest System lands to the National Wilderness Preservation System, including the Santa Lucia Wilderness.

Endangered Species Act of 1973

http://endangered.fws.gov/esa.html;
http://laws.fws.gov/lawsdigest/esact.html

Authorizes the determination and listing of species as endangered and threatened; prohibits unauthorized taking, possession, sale, and transport of endangered species; provides authority to acquire land for the conservation of listed species, using Land and Water Conservation Funds; authorizes establishment of cooperative agreements and grants-in-aid to states that establish and maintain programs for endangered and threatened wildlife and plants; authorizes the assessment of civil and criminal penalties for violating the Act or regulations; and, authorizes the payment of rewards to anyone furnishing information leading to arrest and conviction for any violation of the Act or any regulation issued there under. Section 7 of the Act requires federal agencies to insure

that any action authorized, funded or carried out by them is not likely to jeopardize the continued existence of listed species or modify their critical habitat. Section 7(a)(1) of the Act identifies the affirmative conservation duties of agencies and requires all federal agencies to carry out programs aimed at recovery of listed species.

Energy Policy Act of 1992

Prescribes energy conservation standards for efficiency in buildings, industries, and transport, and for certain major household appliances. It increases conservation and energy-efficiency requirements for government, energy, and consumers.

Energy Security Act of 1980

Authorizes the Secretary of Agriculture to make available timber resources of the National Forest System, in accordance with appropriate timber appraisal and sale procedures, for use by biomass energy projects. Directs the Secretary of Agriculture to process applications for leases and permits to explore, drill, and develop resources on National Forest System lands, notwithstanding the current status of any management plan being prepared.

Federal Advisory Committee Act of 1972

`http://www.fda.gov/opacom/laws/fedadvca.htm`

Sets standards and uniform procedures to govern the establishment, operation, administration, and duration of advisory committees.

Federal-Aid Highway Act of 1968, as amended

Establishes the National Bridge Inspection Standards and the requirement that each state have a current inventory of bridges on all public roads, including those on National Forest System roads open to public travel.

Federal Cave Resources Protection Act of 1988

`http://www4.law.cornell.edu/uscode/16/4302.html`

Requires the Secretary of Agriculture to consider significant caves in the preparation of any land management plan and keep the locations of significant caves confidential unless it is determined that disclosure will not create a risk of harm, theft, or destruction to caves' resources.

Federal Coastal Zone Management Act of 1972, as amended

`http://coastalmanagement.noaa.gov/czm/czm_act.html`

Requires that federal actions in the coastal zone of a state shall be consistent to the maximum extent practicable with enforceable policies of approved State management plans, including: California Coastal Act of 1976; and Big Sur Coast Land Use Plan.

Federal Insecticide, Fungicide, and Rodenticide Act of 1972, as amended

`http://www.epa.gov/region5/defs/html/fifra.htm`

Requires the Administrator of the Environmental Protection Agency to prescribe standards for the certification of individuals authorized to use or supervise the use of any pesticide that is classified for restricted use; regulates the sale of restricted use pesticides; and provides penalties for the unauthorized use or sale of restricted use pesticides. Also affects the use of herbicides.

Through later amendments to the law, users must also take exams for certification as applicators of pesticides.

Federal Land Policy and Management Act (FLPMA) of 1976, as amended

http://www.blm.gov/flpma/FLPMA.pdf

Requires that public land be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values; that, where appropriate, will preserve and protect certain public land in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use. Also states that the United States shall receive fair market value of the use of the public land and their resources unless otherwise provided for by law. It provides authority for the majority of non-recreation special-use authorizations on National Forest System lands. In 1986, Title V of FLPMA was amended by the Colorado Ditch Bill to authorize the Secretary of Agriculture to issue permanent easements (Ditch Bill easements) without charge for qualifying water conveyance systems used for agriculture irrigation or livestock watering.

Federal Lands Recreation Enhancement Act of 2004

This 10-year Act, passed in the 2005 Consolidated Appropriations Act (PL 108-447), authorizes the Secretaries of the Interior and Agriculture to establish, modify, charge and collect recreation fees at federal recreation lands and waters as provided for in the Act.

Federal Noxious Weed Act of 1975

http://www.aphis.usda.gov/ppq/weeds/sec2814.PDF

The Federal Noxious Weed Act is superseded by the Plant Protection Act, except for the section 2814, Management of Undesirable Plants on Federal Lands. Authorizes the Secretary of Agriculture to designate plants as noxious weeds by regulation; to prohibit the movement of all such weeds in interstate or foreign commerce except under permit; to inspect, seize and destroy products, and to quarantine areas, if necessary to prevent the spread of such weeds; and to cooperate with other federal, state and local agencies in the application and enforcement of all laws and regulations relating to the management and control of noxious weeds.

Federal Onshore Oil And Gas Leasing Reform Act of 1987

Amended the Minerals Lands Leasing Act of 1920 regarding competitive leasing of oil and gas for onshore federal lands. Expands the authority of the Secretary of Agriculture in the management of oil and gas resources on National Forest System lands. Sets forth guidelines for the promulgation of regulations regarding lease sales, and prohibits the issuance of oil or gas leases upon certain lands allocated or designated as wilderness areas. Without the Forest Service's approval, the BLM cannot issue leases for oil and gas on National Forest System lands. The Forest Service must also approve all surface-disturbing activities on National Forest System lands before operations commence.

Federal Power Act of 1920

http://laws.fws.gov/lawsdigest/fedpowr.html

Provides for cooperation between the Federal Energy Regulatory Commission, and other federal agencies, including resource agencies, and licensing and relicensing power projects.

Federal Seed Act of 1939

http://www.invasivespecies.gov/laws/fedacts.shtml#fsa

Prohibits importation and movement of adulterated or misbranded seeds.

Federal-State Cooperation for Soil Conservation Act of 1944

Authorized the adoption of eleven watershed improvement programs in various states for the improvement of water runoff, water flow retardation, and soil erosion prevention.

Federal Water Project Recreation Act of 1965

Requires that recreation and fish and wildlife enhancement opportunities be considered in the planning and execution of federal water development.

Fish and Wildlife Conservation Act of 1960

Requires the Secretaries of the Interior and Agriculture, in cooperation with state agencies, to plan, develop, maintain, and coordinate programs for the conservation and rehabilitation of wildlife, fish, and game on public lands under their jurisdiction.

Fish and Wildlife Coordination Act of 1934

http://laws.fws.gov/lawsdigest/fwcoord.html

Authorizes the Secretaries of Agriculture and Commerce to provide assistance to and cooperate with other federal and state agencies to protect, rear, stock, and increase the supply of game and fur-bearing animals, as well as to study the effects of domestic sewage, trade wastes, and other polluting substances on wildlife. The Act also authorizes the preparation of plans to protect wildlife resources, the completion of wildlife surveys on public lands, and the acceptance by federal agencies of funds or lands for related purposes provided that land donations receive the consent of the state in which they are located.

Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act of 1976

http://www4.law.cornell.edu/uscode/16/ch36.html

Directs the Secretary of Agriculture to prepare a Renewable Resource Assessment every ten years; to transmit a recommended Renewable Resources Program to the President every five years; to develop, maintain, and, as appropriate, revise land and resource management plans for units of the National Forest System; and to ensure that the development and administration of the resources of the National Forest System are in full accord with the concepts of multiple-use and sustained yield. Includes direction to "...recognize the fundamental need to protect and, where appropriate, improve the quality of soil, water and air resources." The Act includes recreation among resources for which forest planning is required.

Forest and Rangeland Renewable Resources Research Act of 1978, as amended

http://ipl.unm.edu/cwl/fedbook/frrrra.html

This Act authorizes the Secretary of Agriculture to conduct renewable resources research activities on national forests and rangelands, including research relating to fish and wildlife and their habitats.

Freedom of Information Act of 1974

http://www4.law.cornell.edu/uscode/5/552.html

Governs which government records are released to the public either automatically or upon request.

General Exchange Act of 1922

Authorizes land adjustments within national forest boundaries.

Geothermal Steam Act of 1970

http://www4.law.cornell.edu/uscode/30/1001.html

Authorizes the Secretary of the Interior to issue leases for the development and utilization of geothermal steam and associated geothermal resources in any lands administered by the Secretary of the Interior, or by the Department of Agriculture, and to prescribe such rules and regulations as the Secretary of the Interior deems appropriate to carry out the provisions of the Act.

Government Performance and Results Act of 1993

http://www.whitehouse.gov/omb/mgmt-gpra/gplaw2m.html#h2

Holds federal agencies accountable for using resources wisely and achieving program results. The Act requires agencies to develop plans for what they intend to accomplish, measure how well they are doing, make appropriate decisions based on the information they have gathered, and communicate information about their performance to Congress and to the public.

Granger-Thye Act of 1950

http://www4.law.cornell.edu/uscode/16/581i-1.html

Authorizes the use of grazing fee receipts for rangeland improvement; the issuance of grazing permits for terms up to 10 years; Forest Service participation in funding cooperative forestry and rangeland resource improvements; and special-use permits not to exceed 30 years duration for the use of structures or improvements under the administrative control of the Forest Service and for the use of land in connection therewith, without acreage limitation.

Healthy Forests Restoration Act of 2003

http://thomas.loc.gov/cgi-bin/bdquery/z?d108:H.R.1904:

Improves the capacity of the Secretary of Agriculture and the Secretary of the Interior to plan and conduct hazardous fuels reduction projects on National Forest System land and Bureau of Land Management land aimed at protecting communities, watersheds, and certain other at-risk land from catastrophic wildland fire, to enhance efforts to protect watersheds and address threats to forest and rangeland health, including catastrophic wildland fire, across the landscape, and for other purposes.

Highway Safety Act of 1966

Authorizes state and local governments and participating federal agencies to identify and survey accident locations; to design, construct, and maintain roads in accordance with safety standards; to apply sound traffic control principles and standards; and to promote pedestrian safety.

Historic Sites, Buildings, Objects and Antiquities Act of 1935, as amended

http://www.blm.gov/heritage/docum/histsite.pdf

Popularly known as the Historic Sites Act, this Act declared it national policy to preserve historic sites, buildings, and objects of national significance. It provided procedures for designation, acquisition, administration and protection of such sites. Among other things, National Historic and Natural Landmarks are designated under authority of this Act.

Intermodal Surface Transportation Efficiency Act of 1991

http://iti.acns.nwu.edu/clear/infr/istea_lst.html

Provides conditions and authorization for flow of federal highway revenue to states for roads, transit, ferries, and other transportation purposes.

Knutson-Vandenberg Act of 1930

http://www4.law.cornell.edu/uscode/16/576.html

Authorizes the Secretary of Agriculture to establish forest tree nurseries; to deposit monies from timber sale purchasers to cover the costs of planting young trees, sowing seed, removing undesirable trees or other growth, and protecting and improving the future productivity of the land; and to furnish seedlings and/or young trees for the replanting of burned-over areas in any national park.

Lacey Act of 1900, as amended

http://invasives.fws.gov/Index.LaceyAct.html

Prohibits import of: a) A list of designated species; b) Other vertebrates, mollusks, and crustacea that are "injurious to human beings, to the interests of agriculture, horticulture, forestry, or to wildlife or the wildlife resources of the United States." Declares importation or transportation of any live wildlife as injurious and prohibited, except as provided for under the Act, but allows import of almost all species for scientific, medical, education, exhibition, or propagation purposes.

Land Acquisition Act of 1925

http://www4.law.cornell.edu/uscode/16/ch3.html

Authorizes the Secretary of Agriculture to purchase land for National Forest Headquarters, Ranger Stations, dwellings, or other sites required for the effective performance of the authorized activities of the Forest Service.

Land Acquisition - Declaration of Taking Act of 1931

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=40&sec=258a

Provides for condemnation authority to the United States, and for just compensation for such lands.

Land Acquisition - Title Adjustment Act of 1943

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=7&sec=2253

Authorizes the Secretary of Agriculture to execute and deliver title adjustments, if, after the acquisition of the land, the title thereto is legally insufficient for the purposes for which the land

was acquired or if the land was acquired through mistake, misunderstanding, error, or inadvertence.

Land and Water Conservation Fund Act of 1964

Authorizes the appropriation of funds for federal assistance to states in planning, acquisition, and development of needed land and water areas and facilities and for the federal acquisition and development of certain land and other areas for the purposes of preserving, developing, and assuring accessibility to outdoor recreation resources. Also defines admission and recreation fee collection guidelines, and allows the district to retain 15 percent of fees collected from recreation events, and outfitter and guide special-use permits.

Law Enforcement Authority Act of 1905

`http://www4.law.cornell.edu/uscode/16/559.html`

Authorizes all Forest Service employees to make arrests for the violation of the laws and regulations relating to the national forests.

Leasing Act for Acquired Lands Act of 1947

`http://www4.law.cornell.edu/uscode/30/351.html`

Extended the provisions of the “mineral leasing laws” to those lands previously acquired by the United States for which they had not been extended, and lands thereafter acquired by the United States.

Los Padres Condor Range and River Protection Act of 1992

Designates certain lands in the State of California as components of the National Wilderness Preservation System: Chumash Wilderness, Garcia Wilderness, Matilija Wilderness, Sespe Wilderness and Silver Peak Wilderness. Enlarges: San Rafael and Ventana wildernesses.

Migratory Bird Treaty Act of 1918

Controls the taking, killing, possessing, transportation, and importation of migratory birds.

Mineral Leasing Act of 1920, as amended

`http://ipl.unm.edu/cwl/fedbook/minerall.html`

Authorizes the Secretary of the Interior to lease various minerals on land administered by the government, including national forests and grasslands. This act also gives the conditions of leases, and the procedures under which leasing occurs.

Mineral Materials Act of 1947

`http://www4.law.cornell.edu/uscode/30/601.html`

Authorizes the Secretary of the Interior to dispose of mineral materials (common variety minerals) by sale or free use.

Mining and Minerals Policy Act of 1970

`http://www4.law.cornell.edu/uscode/30/21a.html`

States that it is the policy of the Federal Government to foster and encourage the development of economically sound and stable domestic mining, minerals, metal, and mineral reclamation

industries; the orderly and economic development of domestic mineral resources, reserves, and reclamation of metals and minerals to help assure satisfaction of industrial, security, and environmental needs; mining, mineral, and metallurgical research to promote the wise and efficient use of our natural and reclaimable mineral resources; and the study and development of methods for the disposal, control, and reclamation of mineral waste products and the reclamation of mined land.

Multiple-Use Mining Act of 1955

Requires the disposal of common varieties of sand, gravel, stone, and other mineral materials under provisions of the Mineral Materials Act of 1947.

Multiple-Use Sustained-Yield Act of 1960

`http://ipl.unm.edu/cwl/fedbook/multiu.html`

States that it is the policy of Congress that the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes, and authorizes and directs the Secretary of Agriculture to develop and administer the renewable surface resources of the national forests for the multiple-use and sustained-yield of the products and services obtained there from. The Act adds outdoor recreation as a use for which national forests were established.

National Energy Conservation Policy Act of 1978

Specifies the use of a life-cycle costing methodology as the basis for energy procurement policy and specified the rate for retrofit of federal buildings with cost-effective energy measures.

National Environmental Education Act of 1970

`http://ipl.unm.edu/cwl/fedbook/natened.html`

Enacted to establish and support a program of environmental education for students and personnel working with students in schools, institutions of higher education, and related educational facilities, and to encourage postsecondary students to pursue careers related to the environment.

National Environmental Policy Act of 1970

`http://ceq.eh.doe.gov/nepa/regs/nepa/nepaeqia.htm`

Directs all federal agencies to consider and report the potential environmental impacts of proposed federal actions, and establishes the Council on Environmental Quality. Also states that it is the continuing responsibility of the federal government to use all practicable means to assure for all Americans, aesthetically and culturally pleasing surroundings.

National Forest Management Act of 1976

`http://ipl.unm.edu/cwl/fedbook/nfma.html`

The National Forest Management Act reorganized, expanded and otherwise amended the Forest and Rangeland Renewable Resources Planning Act of 1974, which called for the management of renewable resources on National Forest System land. The Act requires the Secretary of Agriculture to assess national forest land, develop a management program based on multiple-use, sustained-yield principles, and implement a resource management plan for each unit of the

National Forest System. Identification of areas suitable and available for timber harvest and determination of the allowable sale quantity from those lands is required. This is the primary statute governing the administration of national forests.

National Forest Roads and Trails Act of 1964

Authorizes the road and trail systems for the national forests. Authorizes the granting of easements across Forest Service administered lands, the construction of maximum economy roads and methods for financing them, and the imposing of requirements on road users for maintaining and reconstructing roads, including cooperative deposits for such work.

National Forest Ski Area Permit Act of 1986

Allows the Forest Service to issue special-use permits to the private sector to construct and operate ski areas on an unlimited number of acres of National Forest System land for a period of up to 40 years.

National Forest System Drug Control Act of 1986, as amended (16 USC 559b-g)

Authorizes Special Agents and Law Enforcement Officers to carry firearms, make arrests, serve warrants, conduct searches, seize evidence, conduct investigations of violations, and enforce 21 USC 841, Controlled Substance Act, on National Forest System lands.

National Historic Preservation Act of 1966, as amended

`http://www4.law.cornell.edu/uscode/16/470.html`

States that it shall be the policy of the Federal Government to provide leadership in the administration of the National Preservation Program in partnership with states, tribes, Native Hawaiians, and local governments. It requires agencies to take into account the effect of management activities on significant heritage resources (Section 106). It also requires development of long-term management plans that locate and protect sites, and then integrate sites and information into overall agency programs and goals (Section 110). The implementing regulations for Section 106 (36 CFR 800) were amended in 1999 (and revised in 2004). It also established the National Register of Historic Places (36 CFR 60, 36 CFR 63), State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation (ACHP) whose purpose is to advise the President and the Congress on matters relating to historic preservation. It provides procedures for identifying, recording, and reporting sites for federal undertakings; outlines consultation process with SHPO, ACHP, and tribes.

National Trails System Act of 1968

`http://ipl.unm.edu/cwl/fedbook/nattrail.html`

Established a national system of recreation, scenic, and historic trails by designating the initial components of the system and prescribing the methods and standards through which additional components may be added. Includes planning, rights-of-way acquisition, and construction of trails designated by Congress or the Secretary of Agriculture.

Native American Graves Protection and Repatriation Act of 1990

`http://www4.law.cornell.edu/uscode/25/3001.html`

This Act directs the recovery, treatment, and repatriation of human remains, sacred objects, and objects of cultural patrimony to appropriate tribes. It also calls for consultation with tribes to

develop procedures for use in the event that human remains are discovered either by intentional excavation or inadvertent discovery.

Nonindigenous Aquatic Nuisance Prevention and Control Act (NANPCA) of 1990, as amended by the National Invasive Species Act of 1996

`http://www.invasivespecies.gov/laws/fedacts.shtml`

The NANPCA , as reauthorized and amended by the National Invasive Species Act, further authorizes federal agencies to prevent and control infestations of the coastal and inland waters of the United States by nonindigenous aquatic nuisance species.

Occupancy Permits Act of 1915, as amended

Authorizes term permits for structures or facilities on National Forest System land, and sets maximum limits of 80 acres and 30 years.

Occupational Safety and Health Act

Ensures safe and healthful working conditions by encouraging efforts to reduce hazards, setting mandatory standards, requiring training programs, and requiring medical surveillance programs for hazardous materials.

Office of Federal Procurement Policy (OFFP) Act of 1974

Created the OFFP in the Office of Management and Budget (OMB), among other purposes, to provide Government-wide procurement policies "...which shall be followed by Executive agencies..." in the procurement activities.

Organic Administration Act of 1897

`http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=473`

Authorizes the President to modify or revoke any instrument creating a national forest; states that no national forest may be established except to improve and protect the national forest within its boundaries, for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States. Authorizes the Secretary of Agriculture to promulgate rules and regulations to regulate the use and occupancy of the national forests, to establish penalties for violating those rules and regulations, and to execute, or cause to be executed, all laws affecting the National Forest System. The authority to permit, under regulations, use of timber and stone includes the use of National Forest System lands to qualified parties for collection of vertebrate and invertebrate fossil resources. The Act also directs making provisions for the protection of national forests against destruction by fire.

Paleontological Resource Protection Act of 1979

Makes collecting fossilized plants and vertebrates illegal without a permit.

Pipelines Act of 1920

`http://www4.law.cornell.edu/uscode/30/185.html`

Authorizes the Secretary of the Interior, or appropriate agency head, to grant rights-of-way through any federal lands for pipeline purposes for the transportation of oil, natural gas, synthetic

liquid or gaseous fuels, or any refined product produced there from, to any applicants assessing the qualifications provided in the Act.

Plant Protection Act of 2000

`http://www.aphis.usda.gov/ppq/weeds/PPAText.PDF`

Consolidates and modernizes all major statutes pertaining to plant protection and quarantine (Federal Noxious Weed Act, Plant Quarantine Act). Permits the Department of Agriculture to address all types of weed issues.

Pollution Prevention Act of 1990

`http://www.epa.gov/opptintr/p2home/p2policy/act1990.htm`

Establishes a national policy that pollution should be prevented or reduced at the source whenever possible; that pollution that cannot be prevented should be recycled; and that pollution that cannot be prevented or recycled should be treated. Disposal or other release into the environment should be a last resort.

Preservation of Historical and Archaeological Data Act of 1974

`http://www2.cr.nps.gov/laws/archpreserv.htm`

Authorizes the Secretary of the Interior to undertake the recovery, protection, and preservation of significant scientific, prehistorical, historical, or archaeological data whenever any federal agency fines or is notified that activities in connection with any federal construction project or federally licensed project, activity, or program may cause irreparable loss or destruction of such data.

Public Lands Surveys Act of 1899

Provides that all standard, meander, township, and section lines of the public land surveys shall be established under the direction and supervision of the Commissioner of the General Land Office, whether the lands to be surveyed are within or without reservations, except that where the exterior boundaries of public forest reservations are required to be coincident with standard, township, or section lines, such boundaries may, if not previously established in the ordinary course of the public land surveys, be established and marked under the supervision of the Director of the United States Geological Survey. This act made the surveying of forest-reserve lands identical, in all but the establishment of boundaries, with that of the public domain.

Public Law 90-271 of March 21, 1968

Designates the San Rafael Wilderness.

Public Law 90-318 of May 24, 1968

Designates the San Gabriel Wilderness.

Public Law 91-58 of August 18, 1969

Designates the Ventana Wilderness.

Public Law 101-539 of November 8, 1990

Enlarges the Ventana Wilderness.

Public Rangelands Improvement Act of 1978

http://caselaw.lp.findlaw.com/casecode/uscodes/43/chapters/37/sections/section_1901.html

Establishes and reaffirms the national policy and commitment to inventory and identify current public rangeland conditions and trends; manage, maintain and improve the condition of public rangelands so that they become as productive as feasible for all rangeland values in accordance with management objectives and the land use planning process; charge a fee for public grazing use which is equitable; continue the policy of protecting wild free-roaming horses and burros from capture, branding, harassment, or death, while at the same time facilitating the removal and disposal of excess wild free-roaming horses and burros which pose a threat to themselves and their habitat and to other rangeland values.

Receipts Act of 1938, as amended

This purchase law applies only for purchase of lands within San Bernardino and Cleveland National Forests in Riverside County, California.

Receipts Act of 1940

These purchase laws apply only for purchase of lands within the Angeles National Forest, California (54 Stat. 299) and purchase of lands within the Cleveland National Forest in San Diego County, California (54 Stat. 297).

Rehabilitation Act of 1973, as amended

http://www4.law.cornell.edu/uscode/29/701.html

States that it is national policy that the federal government plays a leadership role in promoting the employment of individuals with disabilities, and in assisting states and providers of services in fulfilling the aspirations of such individuals with disabilities for meaningful and gainful employment and independent living.

Religious Freedom Restoration Act of 1993

Mandates that the "government should not substantially burden the free exercise of religion without compelling justification." The Act further provides a claim or defense to persons whose religious exercise is substantially burdened by the government.

Rescission Act of 1995

http://rangelandswest.org/policy/nepa/rescissionact1995.html

Required each national forest to establish and adhere to a schedule for completing site-specific NEPA analyses and decisions on all grazing allotments within a 15 year period.

Resource Conservation and Recovery Act (RCRA) of 1976, as amended by the Solid Waste Disposal Act Amendments (1980), Hazardous and Solid Waste Amendments (1984), and Federal Facilities Compliance Act (1992) and as otherwise amended.

http://www4.law.cornell.edu/uscode/42/ch82.html

This Act makes the guidelines for solid waste management mandatory for federal agencies, and they direct federal agency compliance with all federal, state, and local requirements, both substantive and procedural. Promotes conservation of valuable material and energy resources;

provides for promulgation of guidelines for solid waste management; development of solid waste management plans (including resource recovery and resource conservation systems); regulation of the treatment, storage (e.g., underground storage tanks), transportation, and disposal of hazardous wastes; and phase out land disposal of hazardous waste; and waives sovereign immunity for the United States making federal facilities subject to civil penalties and fines from the Environmental Protection Agency, and state and local environmental agencies. RCRA (Subtitle C) replaced the Solid Waste Disposal Act of 1965.

Right of Eminent Domain Act of 1888

Grants the Secretary of the Treasury or any other officer of the Government, who has been authorized to procure real estate for the erection of a building or for other public uses, the authority to acquire such real estate by condemnation, provided such acquisition is otherwise authorized by statute.

Safe Drinking Water Act of 1974, as amended

Requires federal agencies having jurisdiction over any federally owned or maintained public water system to comply with all authorities respecting the provision of safe drinking water. The State of California has primary enforcement responsibility through its drinking water regulations.

Santa Rosa and San Jacinto Mountains National Monument Act of 2000

`http://www.ca.blm.gov/pdfs/palmsprings_pdfs/PL_106-351.pdf`

Establishes the Santa Rosa and San Jacinto Mountains National Monument in California.

Sikes Act (Fish and Wildlife Conservation) of 1960, as amended

`http://www4.law.cornell.edu/uscode/16/670a.html`

Provides for carrying out wildlife and fish conservation programs on federal lands including authority for cooperative state-federal plans and authority to enter into agreements with states to collect fees to fund the programs identified in those plans.

Sisk Act of 1967

Provides for the exchange of land with states and local governments.

Small Tracts Act of 1983

`http://www4.law.cornell.edu/uscode/16/521e.html`

Authorizes the Secretary of Agriculture to sell, exchange, or interchange by quitclaim deed all right, title and interest, including the mineral estate, of the United States in and to certain lands within the national forest when he/she determines it to be in the public interest.

Smokey Bear Act of 1952

`http://caselaw.lp.findlaw.com/casecode/uscodes/18/parts/i/chapters/33/sections/section_711.html`

Prohibits the unauthorized use of the “Smokey Bear” character or name.

Soil and Water Resources Conservation Act of 1977

http://ipl.unm.edu/cwl/fedbook/soilwate.html

Provides for a continuing appraisal of the United States' soil, water and related resources, including fish and wildlife habitats, and a soil and water conservation program to assist landowners and land users in furthering soil and water conservation.

Supplemental National Forest Reforestation Fund Act of 1972

http://www4.law.cornell.edu/uscode/16/576c.html

Directs the Secretary of Agriculture to establish a supplemental national reforestation fund, and states that money transferred to this fund shall be available to the Secretary for the purpose of supplementing programs of tree planting and seeding on national forest lands determined by the Secretary to be in need of reforestation with.

Surface Mining Control and Reclamation Act of 1977

Authorizes the Secretary of Agriculture to enter into agreements with landowners, providing for land stabilization, erosion, and sediment control, and reclamation through conservation treatment, including measures for the conservation and development of soil, water, woodland, wildlife, and recreation resources, and agricultural productivity of such land.

Surface Transportation Assistance Act of 1978, as amended

Supersedes the Forest Highway Act of 1958. Authorizes appropriations for national forest highways and public lands highways. Establishes criteria for national forest highways; defines national forest roads, National Forest System roads and trails; and limits force account project size for national forest roads. Establishes the Federal Lands Highway Program.

Telecommunications Act of 1996

http://www.fcc.gov/Reports/tcom1996.txt

Provides for a pro-competitive, de-regulatory national policy framework.

Title 7, United States Code, Sections 2217, 2218 (Act of January 31, 1925, as amended)

Provides authority for employees designated by the Secretary of Agriculture to administer oaths and take affidavits on matters where the Secretary has an interest (e.g., witness statements).

Title 16, United States Code, Section 551a (Act of August 10, 1971)

Authorizes the Secretary of Agriculture to cooperate with and provide reimbursement to any State or political subdivision for the enforcement of their laws on the National Forest System.

Title 16, United States Code, Section 553 (Act of May 23, 1908)

Authorizes employees to aid state, local, and other federal agencies to enforce laws in regard to livestock, to prevent and extinguish fires, to protect fish and game, and to perform duties that relate to the National Forest System.

Title 16, United States Code, Section 559 (Act of March 3, 1905)

Authorizes Forest Officers to make arrests for violations of federal laws and regulations relating to the National Forest System.

Title 18, United States Code, Section 3559, Sentencing classification of offenses

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=18&sec=3559

Establishes categories of offenses based on the maximum amount of imprisonment for each offense and are punishable as Class B Misdemeanors.

Title 18, United States Code, Section 3571, Sentence of Fine

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=18&sec=3571

Prescribes a wide range of fines for Class B Misdemeanors depending on specific circumstances associated with the violation.

Title Adjustment Act of 1930

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=43&sec=872

Authorizes the Secretaries of the Interior and Agriculture to execute a quitclaim deed where an application for a conveyance of land has been withdrawn or rejected.

Toxic Substances Control Act of 1976

http://caselaw.lp.findlaw.com/casecode/uscodes/15/chapters/53/subchapters/i/sections/section_2601.html

Grants the Administrator of the Environmental Protection Agency the authority to regulate chemical substances and mixtures that present an unreasonable risk of injury to the public health or the environment, and to take action with respect to chemical substances and mixtures, which are imminent hazards. Includes addressing lead and asbestos abatement.

Transfer Act of 1905

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=472

Transferred the management and control of the Forest Reserves from the General Land Office in the Department of the Interior to the Bureau of Forestry in the Department of Agriculture.

Tribal Forest Protection Act of 2004

Authorizes the Secretary of Agriculture and the Secretary of the Interior to enter into an agreement or contract with tribes meeting certain criteria to carry out projects to protect tribal forest land.

Twenty-Five Percent Fund Act of 1908

http://www.wildrockies.org/appeals/60-136.htm

Provides that twenty-five percent of all monies received from the sale of timber or other forest products shall be paid to the state in which such national forest is located to be expended as the state may prescribe for the benefit of public schools and roads.

Uniform Federal Accessibility Standards U.S. Criminal Code (Title 18 USC Chapter 91-Public Lands) Act of 1948

http://caselaw.lp.findlaw.com/casecode/uscodes/18/parts/i/chapters/91/toc.html

Defines the crimes of and criminal procedure for crimes committed against public lands.

U.S. Mining Laws (Public Domain Lands) Act of 1872

http://www4.law.cornell.edu/uscode/30/22.html

Allows public land to be patented into private land and mined. Provides that all valuable mineral deposits in lands belonging to the United States, both surveyed and unsurveyed, are free and open to exploration and purchase, and the lands in which they are found to occupation and purchase by citizens of the United States and those who have declared their intention to become such, under regulations prescribed by law, and according to the local customs or rules of miners, so far as the same are applicable and not inconsistent with the laws of the United States. There are a number of Acts which modify the mining laws as applied to local areas by prohibiting entry altogether or by limiting or restricting the use which may be made at the surface and the right, title, or interest which may pass through patent.

Ventana Wilderness Act of 1969

To designate the Ventana Wilderness (98,000 acres), Los Padres National Forest, in the State of California.

Volunteers in the National Forests Act of 1972

http://www4.law.cornell.edu/uscode/16/558a.html

Authorizes the Secretary of Agriculture to recruit, train, and accept without regard to the civil service classification laws, rules, or regulations the services of individuals without compensation (other than possibly incidental expenses) as volunteers for or in aid of interpretive functions, visitor services, conservation measures and development, or other activities in and related to areas administered by the Secretary through the Forest Service.

Water Resources Development Act of 1992

Reauthorizes the Army Corps of Engineers Civil Works Construction Program to improve the Nation's infrastructure, and provides for the "conservation and development of water and related resources."

Watershed Protection and Flood Prevention Act of 1954

http://www4.law.cornell.edu/uscode/16/1001.html

Establishes policy that the Federal Government should cooperate with states and their political subdivisions, soil or water conservation districts, flood prevention or control districts, and other local public agencies for the purposes of preventing erosion, floodwater, and sediment damages in the watersheds of the rivers and streams of the United States; furthering the conservation, development, utilization, and disposal of water, and the conservation and utilization of land; and thereby preserving, protecting, and improving the Nation’s land and water resources and the quality of the environment.

Weeks Act of 1911

Provides for land acquisition, exchange, condemnation and rights-of-way easements. Lands acquired by the United States under this act are reserved and not subject to appropriation under mineral law except as provided by the Secretary of Agriculture. Also provides that both state and local civil and criminal jurisdiction over persons within national forests shall not be affected or

changed by reason of their existence; except for the punishment of offenses against the United States.

Wild Horse Protection Act of 1959

http://www4.law.cornell.edu/uscode/18/47.html

Established the use of a motor vehicle to hunt (for the purpose of capturing or killing) any wild horse, mare, colt, or burro running at large on the public lands. Also prohibits the pollution of watering holes on public lands for the purposes of trapping, killing, wounding, or maiming any of these animals.

Wild Horses and Burros Act of 1971

http://www4.law.cornell.edu/uscode/16/1331.html

Protects wild free-roaming horses and burros from capture, branding, harassment, or death; and states they are to be considered in the area where presently found an integral part of the natural system of the public lands. It directs the Bureau of Land Management of the Department of the Interior and Forest Service of the Department of Agriculture to manage such animals on public lands under their jurisdiction.

Wild and Scenic Rivers Act of 1968

http://www4.law.cornell.edu/uscode/16/1271.html

Preserves selected rivers or sections thereof in their free-flowing condition, to protect water quality of such rivers and to fulfill other vital national conservation measures. Instituted a National Wild and Scenic Rivers System by designating the initial components of that system, and by prescribing the methods by which and standards to which additional components may be added to the system. Designated rivers have requirements with time frames for preparing and implementing a Comprehensive River Management Plan and a boundary declaration.

Wilderness Act of 1964

http://www4.law.cornell.edu/uscode/16/1131.html

Established a National Wilderness Preservation System to be composed of federally owned areas designated by Congress as "wilderness areas" and administered for the use and enjoyment of people in such manner as will leave them unimpaired for future use and enjoyment as wilderness. Provides for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness. States that no federal land shall be designated as "wilderness areas" except as provided for in the act or by a subsequent act. It withdrew wilderness areas from all forms of appropriation and disposition under the mining and mineral laws. The Act also: provides that livestock grazing is allowed to continue in wilderness when such grazing was established before designation; directs the Forest Service to preserve and protect the natural condition of wilderness, including the intrinsic wilderness value of air quality; authorizes taking such measures as may be necessary in the control of fire within designated wilderness; and establishes requirements for special-use authorizations in designated wilderness areas for temporary structures, commercial public services and access to valid mining claims and non-federal lands. Designated areas included: Cucamonga Wilderness, San Gorgonio Wilderness, and San Jacinto Wilderness.

Federal Regulations

The following list is not intended to be comprehensive. Full text of the Code of Federal Regulations (CFR) may be found at the following website: `http://www.gpoaccess.gov/cfr/index.html.`

Biodiversity/Fish, Wildlife and Plants

36 CFR 219 Planning: Part 219.19 directs the Forest Service to maintain habitat for viable populations of existing native and desired nonnative vertebrate species, to select management indicator species, to consult with biologists from other agencies, consider access and dispersal problems of hunting, fishing, and other uses, and evaluate the effects of pest and fire management.

36 CFR 241 Fish and Wildlife.

36 CFR 323 Permits for Discharges of Dredged or Fill Material into Waters of the United States.

Invasive Species

40 CFR 1500-1508 Invasive Species.

Geological Resources and Hazards

36 CFR 251, Subpart B, Special-Uses: Provides direction for managing special-uses including paleontological resources.

Special Designations

36 CFR 219 Planning: Part 219.17(a) states that: "... roadless areas within the National Forest System shall be evaluated and considered for recommendation as potential Wilderness during the forest planning process." Part 219.25 states that forest planning shall provide for the establishment of Research Natural Areas. To be identified are examples of important forest, shrubland, grassland, alpine, aquatic, and geologic types that have special or unique characteristics of scientific interest and importance and that are needed to complete the national Research Natural Area network.

36 CFR 292 National Recreation Areas.

36 CFR 293 Wilderness and Primitive Areas.

36 CFR 297 Wild and Scenic Rivers.

Lands

36 CFR 254 Landownership Adjustments.

Heritage Resources

36 CFR 60 National Register of Historic Places.

36 CFR 63 Determinations of Eligibility for Inclusion in the National Register of Historic Places.

36 CFR 65 National Historic Landmarks Program.

36 CFR 67 Secretary of the Interior’s Standards for Rehabilitation.

36 CFR 68 Secretary of the Interior’s Standards for the Treatment of Historic Properties.

36 CFR 67 Rehabilitation.

36 CFR 79 Curation of Federally Owned Archaeological Collections.

36 CFR 219 Planning: Part 219.24 states that forest planning shall provide for the identification, protection, interpretation, and management of significant cultural resources on National Forest System lands.

36 CFR 800 Protection of Historic and Cultural Properties.

43 CFR 10 Native American Graves Protection and Repatriation Act regulations.

Recreation

36 CFR 291 Occupancy and Use of Developed Sites and Areas of Concentrated Public Use.

36 CFR 294 Special Areas, Recreation.

Law Enforcement

7 CFR 2.7 Delegations of Authority by the Secretary of Agriculture and General Officers of the Department: This is the basic authority for the Chief of the Forest Service to issue directives concerning Forest Service operations.

36 CFR 261 Prohibitions. (This part applies to a number of programs including fire, livestock, fish and wildlife, occupancy and use, forest development, roads and trails, use of vehicles off-roads, developed recreation sites, wilderness, Pacific Crest National Scenic Trail, special-use authorizations and more. It defines resources and describes prohibited activities, in some cases specific to Region or area).

36 CFR 262 Law Enforcement Support Activities.

Infrastructure (Fire, Administrative and Other; and Recreation)

18 CFR 4 Conservation of Power and Water Resources: Licenses (Federal Energy Regulatory Commission licensing process), permits, exemptions, and determination of project costs.

29 CFR 1910 Occupational Safety and Health Standards.

29 CFR 1960 Basic Program Elements for Federal Employee Occupational Safety and Health Programs.

33 CFR 208 Dams, Flood control, Intergovernmental Relations, and Reservoirs.

36 CFR 800 - Protection of Historic Properties. (Incorporates amendments effective August 5, 2004).

Roads and Trails

23 CFR 625 and 650: Establish national bridge design specifications and guides, and bridge inspection standards, and are applicable to bridges on National Forest System roads.

23 CFR 668: Set forth procedures for the Emergency Relief-Federally Owned (ERFO) program that are applicable to transportation system facilities owned by Federal agencies.

23 CFR 1230: Makes the Highway Safety Act of 1966 applicable to all federal agencies that control roads.

29 CFR 1910 Occupational Safety and Health Standards.

29 CFR 1960 Basic Program Elements for Federal Employee Occupational Safety and Health Programs.

36 CFR 212: Provides the principle regulations for administration of the forest development transportation system. Part 212.21 relates to the Pacific Crest National Scenic Trail.

36 CFR 251 Special Uses.

36 CFR 295: Establishes direction for the management and monitoring of off-road vehicle use on National Forest System land.

49 CFR 1.48 Delegations to Federal Highway Administrator.

Management and Administration

36 CFR 219 - Planning. This Forest Plan revision is being issued under the 1982 planning rule.

Special Forest Products

36 CFR 223 Sale and disposal of National Forest System timber.

Special-Uses

36 CFR 251 Special-uses.

Minerals and Energy

36 CFR Part 228, Subpart A: Describes how locatable mineral activity will be managed on lands open to operations under the General Mining Law of 1872. Provides regulations for the mining operation regarding suction dredging operations. The California Department of Fish and Game issues permits for suction dredging.

36 CFR Part 228, Subpart C: Describes how the Forest Service will manage salable minerals.

36 CFR Parts 228 and 261: These are the regulations and procedures to implement the 1987 Reform Act. They establish a staged decision process designed to accommodate the nature of oil and gas exploration and development.

Grazing

36 CFR 211.18 Administrative Review Procedures.

36 CFR 213 Administration of Lands Under Title III of the Bankhead-Jones Farm Tenant Act by the Forest Service.

36 CFR 219 Planning: Part 219.3 provides detailed definitions and terminology of capability and suitability.

36 CFR 222 Range Management.

Executive Orders

EO 11593 Protection and Enhancement of Cultural Environment (1971)

States that the Federal Government shall provide leadership in preserving, restoring and maintaining the historic and cultural environment of the Nation, and that federal agencies shall administer the cultural properties under their control in a spirit of stewardship and trusteeship for future generations. It institutes procedures to assure that federal plans and programs contribute to

the preservation and enhancement of non-federally owned sites, structures and objects of historical, architectural or archaeological significance.

EO 11644 (1972) and EO 11989 (1977) Off-Road Vehicles on Public Lands

Establishes direction for the management of off-road vehicle use and provides for closing areas to off-road vehicles where resources would, or are, being negatively impacted.

EO 11988 Floodplain Management (1977) and 11990 Protection of Wetlands (1977)

Direct federal agencies to avoid to the extent possible the impacts associated with the destruction or modification of floodplains and wetlands. Agencies are directed to avoid construction and development in flood plains and wetlands whenever there are any feasible alternatives.

EO 12088 Federal Compliance with Pollution Control Standards (1978). (Revoked in part by EO 13148 (2000)).

`http://rc.gsa.gov/ResourceCenter/Laws_Regs_All/Exeorders/eo12088.htm`

Ensure federal compliance with applicable pollution control standards.

EO 13123 Efficient Energy Management (1999)

Directs the Federal Government to improve its energy management in order to save taxpayer dollars and reduce emissions that contribute to air pollution and global climate change.

EO 12580 Superfund Implementation (1987), as amended

`http://www.epa.gov/fedsite/eo12580.html`

Delegates to the Forest Service the authority to conduct all investigations and take the necessary response actions (excluding emergency response) relating to releases of hazardous substances on National Forest System lands and lands leased by the Forest Service.

EO 12699 Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction (1993)

Requires that all new buildings that are owned, leased, constructed, partially paid for by U.S. Government funds, or regulated by the Federal Government, be constructed to ensure that appropriate seismic design and construction requirements are applied.

EO 12862 Setting Customer Service Standards (1993)

`http://govinfo.library.unt.edu/npr/library/direct/orders/2222.html`

Requires all executive departments and agencies that provide significant services directly to the public to provide those services in a manner that seeks to meet the customer service standard established in the Order.

EO 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994)

`http://www.fs.fed.us/land/envjust.html`

Requires each federal agency to take action to achieve environmental justice as part of its mission by identifying and addressing disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.

EO 13007 Indian Sacred Sites (1996)

http://hydra.gsa.gov/pbs/pt/call-in/eo13007.htm.

Requires each executive branch agency with statutory or administrative responsibility for the management of federal lands, to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites. Where appropriate, agencies shall maintain the confidentiality of sacred sites.

EO 13084 Consultation and Coordination with Indian Tribal Governments (1998)

http://www.cr.nps.gov/nagpra/AGENCIES/EO_13084.HTM

Provides direction regarding consultation and coordination with Indian Tribes relative to regulatory policy.

EO 13112 Invasive Species (1999)

http://www.invasivespecies.gov/laws/eo13112.pdf

States that each federal agency whose actions may affect the status of invasive species shall (to the extent practicable and permitted by law) take steps to control damage caused by such species.

EO 13123 Greening the Government Through Efficient Energy Management (1999)

Directs federal agencies to increase energy efficiency and water conservation at federal facilities, and promote the use of solar and other renewable energy sources.

EO 13212 Actions To Expedite Energy-Related Projects (2001)

http://ceq.eh.doe.gov/nepa/regs/eos/eo13212.html

Establishes policy to expedite the increased supply and availability of energy to our Nation, by expediting projects that will increase the production, transmission, or conservation of energy.

EO 13287 Preserve America (2003)

States that it is the policy of the Federal Government to provide leadership in preserving America's heritage by actively advancing the protection, enhancement, and contemporary use of the historic properties owned by the Federal Government, and by promoting intergovernmental cooperation and partnerships for the preservation and use of historic properties.

EO 13327 Federal Real Property Asset Management (2004)

Promotes the efficient and economical use of Federal real property resources.

Executive Memorandums

Dam Safety (October 4, 1979)

Directs federal agencies to implement "Federal Guidelines for Dam Safety."

Government-to-Government Relations (April 29, 1994)

States that each executive department and agency shall consult with tribal governments prior to taking actions that affect federally recognized tribal governments on a government-to-

government basis. All such consultations are to be open and candid so that all interested parties may evaluate for themselves the potential impact of proposals.

Agreements

Administration of Emergency Relief-Federally Owned (ERFO) Program for Federal Roads Off the Federal-Aid System

Federal Highway Administration and the USDA Forest Service, Memorandum of Understanding (MOU) of 1979. Establishes procedures through which the agencies administer emergency relief for federal roads under the jurisdiction of the Forest Service.

Carbonate Habitat Management Strategy

USDA Forest Service, San Bernardino National Forest, USDI Bureau of Land Management, San Bernardino County, OMYA, Inc., Specialty Minerals Incorporated, Mitsubishi, California Native Plant Society, and Cushenbury Mine Trust, MOU of 2003. This agreement states that the signatories will implement the Carbonate Habitat Management Strategy dated April 2003, for the dual purpose of conserving threatened and endangered carbonate plants and streamlining mining operations.

Cooperative Relationships

San Manuel Band of Mission Indians and USDA Forest Service, Angeles and San Bernardino National Forests, MOU of February 1, 2001. This agreement between the San Manuel Band of Serrano Mission Indians and the Angeles and San Bernardino National Forests provides for increased cooperation between the national forests and the tribe in order to develop community opportunities and partnerships in the areas of mutual interests.

Salinan Tribe and USDA Forest Service, Los Padres National Forest, MOU of August 11, 2001. This agreement between the Salinan Tribe and the Los Padres National Forest commits to continue to enhance their mutually beneficial relationship for including Native American Cultural and Ancestral Concerns as part of the management of the Los Padres National Forest.

Santa Ynez Band of Chumash Indians and USDA Forest Service, Los Padres National Forest, MOU of September 5, 2002. This agreement between the Santa Ynez Band of Chumash Indians and the Los Padres National Forest commits to continue to enhance their mutually beneficial relationship for including Native American Cultural and Ancestral Concerns as part of the management of the Los Padres National Forest.

Endangered Species Act application to proposals for access to non-federal lands

USDI Bureau of Land Management, U.S. Fish and Wildlife Service, and USDA Forest Service, MOU of January 30, 2003.

Pacific Crest Trail

USDA Forest Service, USDI National Park Service, USDI Bureau of Land Management, California State Parks, and the Pacific Crest Trail Association, MOU of October 21, 2003.

Prescribed Burning

California Air Resources Board and the USDA Forest Service, Pacific Southwest Region, MOU of January 2003.

Programmatic Agreement

USDA Forest Service, Pacific Southwest Region, the California State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation (ACHP), programmatic agreement of 1996, amended 2001. Regards the process for compliance with section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, for undertakings on the national forests of the Pacific Southwest Region. Simplifies the case-by-case consultation requirements for "no effect" findings under Section 106 of the NHPA (36 CFR 800). By eliminating some of the burdensome and redundant requirements, more resources should be available for achieving greater compliance with the broader historic preservation goals found in Section 110 of the NHPA.

Safety standards applicable to the Forest Service

Federal Highway Administration and the USDA Forest Service, MOU of October 17, 1975. Amendment #1 (November 16, 1982) defines roads open to public travel and passable by four-wheel standard passenger cars.

Federal Agency Management Direction

This section contains a partial listing of applicable Department of Agriculture and other federal agency direction (Strategies, Guides, Initiatives, Agreements, Circulars, etc.):

Vegetation Condition and Forest Health

Healthy Forest Initiative (2002): This initiative provides administrative procedures and processes governing preparation of projects to reduce hazardous fuel and restore healthy ecological conditions on federal land.

Biodiversity/Fish, Wildlife and Plants

Departmental Regulation 9500-4: Provides USDA policy on wildlife, fish, and plant habitat management pertinent to public lands on 1) National Forest System land, 2) threatened and endangered species and 3) economic losses from plant and animal pests.

Invasive Species

Pulling Together: A National Strategy for Invasive Plant Management (1998).

Pacific Southwest Region Noxious Weed Strategy and Action Plan (2000).

National Guide to Noxious Weed Prevention Practices (2001).

National Strategy and Implementation Plan for Invasive Species Management (FS-805, October 2004). This national strategy and proposed actions will guide Forest Service programs to employ an integrated, comprehensive, and science-based approach for addressing the invasive species problem.

Soil Resources

USDA Forest Service, Region 5 letter 2350-5 of November 8, 2002: Standards and Guidelines for Mechanized OHV Trail Work.

Water Resources

Water Quality Management for Forest System Lands in California - Best Management Practices Handbook (USDA Forest Service, Pacific Southwest Region, September 2000). (*Note: Public access to this website is not available. This is an intranet site accessible to Forest Service employees*).

`http://fsweb.r5.fs.fed.us/unit/ec/water/bmp.html`

Air Resources

Natural Events Policy: Issued by the Environmental Protection Agency (EPA), this policy includes a provision to prevent an area from being redesignated as "non-attainment" for particulates when high concentrations result from wildland fires.

Interim Air Quality Policy on Wildland and Prescribed Fires (1998): Issued by the EPA, this policy provides guidance on mitigating air pollution impacts caused by wildland and prescribed fires while recognizing the current role of fire in wildland management.

Regional Haze Rule (EPA 1999).

Forest Service Region 5 Guidelines For Evaluating Air Pollution Impacts on Class I Wilderness Areas in California (1992).

Special Designations

Interagency National Wild and Scenic Rivers System: Final Revised Guidelines for Eligibility (1982) (USDA and USDI) provides guidance on Wild and Scenic River eligibility.

Research Natural Areas: National Strategy of July 19, 1993.

Region 5 policy on fire suppression in Research Natural Areas.

Heritage Resources

The Secretary of the Interior provides published standards and guidelines for Archaeology and Historic Preservation including Professional Qualifications.

Landscape Management

Landscape Aesthetics Handbook, USDA Forest Service Agriculture Handbook No. 701, 1995. This handbook replaced the Visual Management System, Agriculture Handbook No. 462, which provided direction for the current forest plans.

The Scenery Management System (SMS) presents a vocabulary for managing scenery and a systematic approach for determining the relative value and importance of scenery on National Forest System land.

Best Environmental Design Practices - The following references constitute the Landscape Management Best Environmental Design Practices for utilities, range, roads, timber, fire, ski areas, and recreation activities:

U.S. Department of Agriculture, Forest Service. National Forest Landscape Management: Volume 1. Agriculture Handbook 434. Washington, DC: U.S. Department of Agriculture; 1973. 76 pages.

U.S. Department of Agriculture, Forest Service. National Forest Landscape Management: Volume 2, Chapter 2: "Utilities." Agriculture Handbook 478. Washington, DC: U.S. Department of Agriculture; 1975. 147 pages.

U.S. Department of Agriculture, Forest Service. National Forest Landscape Management: Volume 2, Chapter 3: "Range." Agriculture Handbook 484. Washington, DC: U.S. Department of Agriculture; 1977. 44 pages.

U.S. Department of Agriculture, Forest Service. National Forest Landscape Management: Volume 2, Chapter 4: "Roads." Agriculture Handbook 483. Washington, DC: U.S. Department of Agriculture; 1977. 62 pages.

U.S. Department of Agriculture, Forest Service. National Forest Landscape Management: Volume 2, Chapter 5: "Timber." Agriculture Handbook 559. Washington, DC: U.S. Department of Agriculture; 1980. 223 pages.

U.S. Department of Agriculture, Forest Service. National Forest Landscape Management: Volume 2, Chapter 6: "Fire." Agriculture Handbook 608. Washington, DC: U.S. Department of Agriculture; 1985. 89 pages.

U.S. Department of Agriculture, Forest Service. National Forest Landscape Management: Volume 2, Chapter 7: "Ski Areas." Agriculture Handbook 617. Washington, DC: U.S. Department of Agriculture; 1984. 71 pages.

U.S. Department of Agriculture, Forest Service. National Forest Landscape Management: Volume 2, Chapter 8: "Recreation." Agriculture Handbook 666. Washington, DC: U.S. Department of Agriculture; 1987. 86 pages.

Administrative Infrastructure

Departmental Regulation 1043-18: Establishes policies, standards, and criteria for the investigation, design, construction, emergency planning and response, maintenance, and operation of water storage and transmission structures administered or permitted by the Forest Service. Water storage structures include class A, B, C, and D dams, including settling ponds and tailing dams. Water transmission structures include ditches, flumes, tunnels and penstocks.

Office of Management and Budget (OMB) Circular A-45: Employee Housing Design Criteria.

The Built Environment Image Guide (BEIG) establishes guidelines for sustainability, fitting the landscape, and National consistency for facilities within the national forests.

Roads and Trails

Forest Order No. 88-4, Pacific Crest National Scenic Trail, Pacific Southwest Region, Pacific Northwest Region, Intermountain Region, August 1988.

The National Forest System Road Management and Transportation System; Final Rule and Policy, approved January 12, 2001, provides direction for a road system that is safe, responsive to public needs, environmentally sound, and affordable and efficient to manage. The purpose is to help ensure that additions to the National Forest System network of roads are those deemed essential for resource management and use; that construction, reconstruction, and maintenance of roads minimize adverse environmental impact; and that unneeded roads are decommissioned and restored.

Roads Analysis: Informing Decisions About Managing the National Forest Transportation System (USDA Forest Service 1999) is an integrated ecological, social and economic approach to transportation planning based on science that provides a process to analyze existing and future road needs and management.

Comprehensive Plan for the Pacific Crest National Scenic Trail, January 1982.

USDA Forest Service Trail Accessibility Guidelines, March 2003 (Draft).

USDA Standard Specifications for Construction and Maintenance of Trails, September 1996.

Social and Economic

Departmental Regulation 5600-2: Provides direction for integrating environmental justice into programs and activities.

Tribal Relations and Interests

American Indian/Alaska Native Policy Statement (USDA Forest Service): Promulgates Executive Memorandum of April 29, 1994. It states that the Forest Service will maintain a governmental relationship with federally recognized tribal governments, implement programs and activities honoring Indian treaty rights and fulfill legally mandated trust responsibilities to the extent they are applicable to National Forest System lands, as well as to address and be sensitive to traditional native religious beliefs and practices; and provide research, transfer of technology, and technical assistance to Indian governments.

Minerals and Energy

National Energy Plan, May 2001.

Fire and Aviation Management

The Federal Wildland Fire Policy (1995, 1998, and reviewed in 2001) outlines policies on fire suppression and integrating fire on the landscape. The policy is being integrated into FSM 5100.

The National Fire Plan (2000) provides guidance and direction for firefighting, restoration and rehabilitation of burned lands, hazardous fuels reduction, and community assistance.

State and Local Laws and Regulations

Air Resources

California Clean Air Act of 1988: This Act clearly spells out in statute California's air quality goals, planning mechanisms, regulatory strategies, and standards of progress, providing the State with a comprehensive framework for air quality planning regulation.

California's Agricultural Burning Guidelines in Title 17 of the California Code of Regulations.

Air Pollution Control District Significance Criteria.

Grand Canyon Visibility Transport Commission.

Pertinent Air Pollution Control District Rules:

San Diego County
Rule 50 - Visible Emissions
Rule 101 - Burning Control

South Coast Air Quality Management District

Rule 401 - Visible Emissions
Rule 444 - Open Burning
Rule 1186 - PM_{10} Emissions from Paved and Unpaved Roads, and Livestock Operations
Rule 403 - Fugitive Dust

Ventura County

Rule 50 - Opacity
Rule 56 - Open Fires

Santa Barbara County

Rule 401 - Agricultural and Prescribed Burning
Rule 312 - Open Fires

San Luis Obispo County

Rule 401 - Visible Emissions
Rule 502 - Agricultural Burning

Monterey Bay Unified

Rule 438 - Open Outdoor Fires
Rule 400 - Visible Emissions

San Joaquin Valley Unified

Rule 3160 - Prescribed Burning Fee
Rule 4101 - Visible Emissions
Rule 4103 - Open Burning
Rule 4106 - Prescribed Burning and Hazard Reduction Burning

Antelope Valley Air Quality Management District

Rule 1186 - PM_{10} Emissions from Paved and Unpaved Roads, and Livestock Operations
Rule 401 - Visible Emissions
Rule 403 - Fugitive Dust
Rule 444 - Open Fires

Mojave Desert Air Quality Management District

Rule 208 - Permit for Open Burning
Rule 401 - Visible Emissions
Rule 403 - Fugitive Dust
Rule 444 - Open Fires

Big Sur Coast Land Use Plan

Provides guidance for land uses in the jurisdiction of the Monterey County coastal zone (see Federal Coastal Zone Management Act).

California Coastal Act of 1976

Provides for protection of California coastal resources (see Federal Coastal Zone Management Act).

Fire and Aviation Management

California State Fire Law is applicable to facilities on National Forest System lands.

Appendix B - Minimum Impact Suppression Tactics (MIST)

The intent of MIST is to suppress a wildland fire with the least impact to the land. Fire conditions and good judgment dictate the actions taken. Consider what is necessary to halt fire spread and contain it within the fireline or designated perimeter boundary (Interagency Standards for Fire and Fire Aviation Operations "Redbook").

A. Safety

Safety is of utmost importance. Constantly review and apply the “Watch Out Situations” and “Fire Orders.” Be particularly cautious with:

- Unburned fuel between you and the fire.
- Burning snags allowed to burn.
- Burning or partially burned live and dead trees.

Be constantly aware of surroundings; anticipate fire behavior and possible fire perimeter one or two days hence.

B. Fire Line Phase

Select procedures, tools, and equipment that have the least amount of impact on the environment. Seriously consider use of water as a fireline tactic; fireline constructed with nozzle pressure, wetlining.

In light fuels consider:

- Coldtrail line.
- Allowing fire to burn to natural barrier.
- Burning out and use of “gunny” sack or swatter.
- Constantly rechecking coldtrailed fireline.
- If constructed fireline is necessary, using minimum width and depth to check fire spread.

In medium/heavy fuels consider:

- Using natural barriers and coldtrailing.
- Cooling with dirt and water, and coldtrailing.
- If constructed fireline is necessary, using minimum width and depth to check fire spread.
- Minimizing bucking to establish fireline. Preferably move or roll downed material out of the intended constructed fireline area. If moving or rolling out is not possible, or the downed bole is already on fire, build line around and let material be consumed.

In aerial fuels—brush, trees, snags:

- Adjacent to fireline: limb only enough to prevent additional fire spread.
- Inside fireline: remove or limb only those that if ignited would have potential to spread fire outside the fireline.

- Brush or small trees that are necessary to cut during fireline construction will be cut flush with the ground.

In trees, burned trees, and snags:

- Minimize cutting of trees, burned trees and snags.
- Live trees will not be cut, unless determined they will cause fire spread across the fireline or endanger workers. If tree cutting occurs, cut the stumps flush with the ground.
- Scrape around tree bases near fireline if hot and likely to cause fire spread.
- Identify hazardous trees with an observer (i.e., flagging, and/or glow sticks).

When using indirect attack:

Do not fall snags on the intended unburned side of the constructed fireline, unless they are a safety hazard to crews.

Appendix C - Monitoring Requirements

Monitoring requirements are found in all three parts of the forest plans. Part 1 monitoring is focused on measuring movement toward desired conditions over the long-term. Part 2 documents individual program accomplishments and is reported annually. Finally, Part 3 measures how well project implementation follows forest plan direction. All three parts use an adaptive management approach designed to lead to continuous improvement in the national forests' environmental performance.

Part 1 Monitoring

Monitoring and evaluation provide knowledge and information to keep the forest plan viable. Appropriate selection of indicators, and monitoring and evaluation of key results helps the Forest Service determine if the desired conditions identified in the forest plan are being met. Monitoring and evaluation also help the Forest Service determine if there should be changes to goals and objectives, or monitoring methods.

Adaptive management is the foundation for planning and management. The planning regulations require that forest plans be revised every 10-15 years after forest plan approval (36 CFR 219.10(g)). Forest plans need to be dynamic to account for changed resource conditions, such as large-scale wildland fire or listing of additional species under the Endangered Species Act; new information and science such as taking a systems approach, and changed regulation; and policies such as the Roads Analysis Policy.

Monitoring and evaluation are critical to adaptive management. Other component parts include inventory, assessment, planning, and implementation. No single component can be isolated from the whole of adaptive management.

Monitoring and evaluation processes begin by identifying key questions Forest Service managers need to answer about forest plan implementation. Understanding the questions help to identify information needs, data collection designs, and tools needed to turn data into information and knowledge. Managers must also have a clear understanding of baseline conditions (current resource condition at the time of signing the ROD) versus desired conditions and the evaluation strategies that will help determine if movement towards desired conditions is occurring. Appropriate selection of indicators help assess resource status and trends, and progress towards meeting the desired conditions identified in the forest plan.

The aggregated outcome of project level work reflects progress towards achieving the desired conditions of the forest plan and the contribution to agencies priorities. This emphasizes the importance of using the National Strategic Plan desired conditions, goals and objectives that apply to the planning area in the forest plan and to use common criteria and indicators as appropriate in the forest plan. This approach will enable monitoring and evaluation efficiencies and provide critical information on the national forests' contribution to the agency’s mission, goals, and objectives (see table 3-3. Part 1 Monitoring Summary).

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Table 3-3. Part 1 Monitoring Summary

Goal	Activity, Practice Or Effect To Be Measured	Monitoring Question	Indicators	Data Reliability	Measuring Frequency (Years)	Report Period (Years)
1.1	Vegetation Treatments in WUI	Has the forest made progress in reducing the number of acres that are adjacent to development within WUI defense zones that are classified as high risk?	Fire Hazard/Risk	High	1	5
1.2.1	Vegetation Condition	Is the forest making progress toward increasing the percentage of montane conifer forests in Condition Class 1?	Condition Class	Mod	5	5
1.2.2	Vegetation Condition	Is the forest making progress toward maintaining or increasing the percentage of chaparral and coastal sage scrub in Condition Class 1?	Condition Class	Mod	5	5
1.2.3	Vegetation Condition	Has the forest been successful at maintaining long fire-free intervals in habitats where fire is naturally uncommon?	Veg. Type Extent Fire	Mod	5	5
2.1	Invasive species	Are the national forests' inventory of invasive plants and animals showing a stable or decreasing trend in acres of invasives?	Invasive Plants and Animals	Mod	1	5
3.1	Visitor Use of the Forest	Are trends in indicators and visitor satisfaction surveys indicating that the forest has provided quality, sustainable recreation opportunities that result in increased visitor satisfaction?	Visitor Satisfaction	Mod	5	5
3.2	Wilderness Use	Are trends in indicators and visitor satisfaction surveys depicting the forest has provided solitude and challenge in an environment where human influences do not impede the free play of natural forces?	Natural Processes Wilderness	Mod	5	5
4.1a	Mineral and Energy Development	Has the forest been successful at protecting ecosystem health while providing mineral and energy resources for development?	Energy Success at protecting Ecosystem Health	Mod	1	5

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Goal	Activity, Practice Or Effect To Be Measured	Monitoring Question	Indicators	Data Reliability	Measuring Frequency (Years)	Report Period (Years)
4.1b	Mineral and Energy Development	Has the forest been successful at protecting ecosystem health while providing renewable resources for development?	Renewable Resources Success at protecting Ecosystem Health	Mod	1	5
4.2	Energy Infrastructure Support	Are designated utility corridors being fully utilized prior to designation of new corridors serving similar market needs?	Utility Corridors	Mod	1	5
5.1	Watershed	Is the forest making progress toward sustaining Class 1 watershed conditions while reducing the number of Condition Class 2 and 3 watersheds?	Sustaining Class 1 watershed conditions while reducing the number of Condition Class 2 &3 watersheds	High	1	5
5.2	General Forest Activities	Is the forest making progress toward reducing the number of streams with poor water quality or aquatic habitat conditions?	Stream Condition– in Impaired State listed 303(d) streams	Mod	5	5
6.1	Livestock Grazing	Is forest rangeland management maintaining or improving progress towards sustainable rangelands and ecosystem health by increasing the number of key areas in good and fair condition?	Rangeland Condition	Mod	1	5
6.2	General Forest Activities	Are trends in resource conditions indicating that habitat conditions for fish, wildlife, and rare plants are in a stable or upward trend?	MIS	Mod	5	5

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Goal	Activity, Practice Or Effect To Be Measured	Monitoring Question	Indicators	Data Reliability	Measuring Frequency (Years)	Report Period (Years)
7.1	Built Landscape Extent Land Adjustment	Is the forest balancing the need for new infrastructure with restoration opportunities or land ownership adjustment to meet the desired conditions?	Road Density Inventories Road Miles Land Ownership Complexity	High	5	5

Forest Land and Resource Management Plan Evaluation and Reports

Evaluation is more than reporting facts and figures. Forest plan evaluation tells how decisions have been implemented, how effective the implementation has proved to be in accomplishing desired conditions, what was learned along the way, and how valid management assumptions are that led to forest plan decisions.

The Forest Supervisor will maintain monitoring information, including internet-based reports, for public reviews, and will evaluate such information on a periodic basis to determine, among other things, need for amendment or revision of the forest plan. Formal evaluation and reporting will occur every five years, unless the Forest Supervisor deems it necessary that a shorter timeframe is warranted for some evaluations. The five-year review will provide a comprehensive evaluation of information in response to monitoring questions and regulatory review requirements.

Part 2 Monitoring

Monitoring in Part 2 of the forest plan is focused on program implementation including inventory. The national forests currently use the budget formulation and evaluation system (BFES) performance indicators for tracking program accomplishments. The current system is expected to be replaced by a performance accountability system integrating annual budgets with programs of work and linking these to tracking of strategic plan performance indicators (see table 3-4. Part 2 Monitoring Summary).

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Table 3-4. Part 2 Monitoring Summary

Monitoring Question: Are Projects Being Implemented As Planned?

Indicators	Data Reliability	Measuring Frequency (Years)	Report Period (Years)
Acres of Terrestrial Habitat Enhanced	High	1	1
Miles of Aquatic Habitat Enhanced	High	1	1
Acres of Noxious Weeds Treated	High	1	1
Acres of Vegetation Improved (also see Hazardous Fuels Reduction)	High	1	1
Acres of Watershed Improved	High	1	1
Acres of Land Ownership Adjusted	High	1	1
Number of Heritage Resources Managed to Standard	Mod	1	1
Products Provided to Standard (Interpretation and Education)	Mod	1	1
Recreation Special Use Authorizations Administered to Standard	Mod	1	1
PAOT Days Managed to Standard (Developed Sites)	Mod	1	1
Recreation Days Managed to Standard (General Forest Areas)	Mod	1	1
Land Use Authorizations Administered to Standard	Mod	1	1
Number of Mineral Operations Administered	High	1	1
Manage Grazing Allotments	High	1	1
Acres of Hazardous Fuel Reduction	High	1	1
Miles of Passenger Car Roads Maintained to Objective Maintenance Level	High	1	1
Miles of High Clearance & Back Country Roads Maintained to Objective Maintenance Level	High	1	1
Miles of Road Decommissioned	High	1	1
Miles of Trail Operated and Maintained to Standard	Mod	1	1

Actual performance is tracked over time through annual documentation of accomplishment and these trends are evaluated periodically to determine if the national forests need to shift program strategies. These data are reported in the annual monitoring and evaluation report as part of the national forests' implementation monitoring efforts.

Additional forest-specific monitoring questions are included in Part 2 of the forest plan for the San Bernardino National Forest. These two questions are:

Outcome Evaluation Question(s): Is pebble plain habitat being conserved over the long-term through the implementation of conservation strategies? Are resource conditions at pebble plain complexes indicating a stable or upward trend towards meeting desired conditions?

Outcome Evaluation Question(s): Is carbonate habitat being conserved over the long-term through the implementation of the Carbonate Habitat Management Strategy (CHMS) actions?

Part 3 Monitoring

Implementation and effectiveness monitoring for Part 3 of the forest plan are conducted at the project level. All project activities are documented in reporting systems. Annually, a randomly selected sample of projects and on-going activities (at least 10 percent) will be reviewed. A small review team will visit the selected projects to review the effectiveness of applying forest plan design criteria. If problems in implementation are detected, or if the design criteria are determined to be ineffective, then the team will recommend corrective actions. Corrective actions may include forest plan amendment(s) if necessary to improve the effectiveness of the

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design criteria. Results of this monitoring will be reported annually in the forest plan monitoring and evaluation report. In addition, design criteria (including new laws or regulations referenced in Appendix A) will be updated (see table 3-5. Part 3 Monitoring Summary).

Table 3-5. Part 3 Monitoring Summary

Activity, Practice Or Effect To Be Measured	Monitoring Question	Indicators	Data Reliability	Measuring Frequency (Years)	Report Period (Years)
Sample of ongoing activities and projects.	Are projects being implemented consistent with forest plan direction? How well have objectives been met and how closely have management standards and guidelines been applied?	Project Design Criteria	Mod	1	1
Assigned sample of ground disturbing activities for BMPEP monitoring.	Are projects being implemented consistent with forest plan direction? Have project mitigation measures been effective at improving environmental conditions as expected?	Best Management Practices	Mod	1	1

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Appendix D - Adaptive Mitigation for Recreation Uses

Recreation Implementation Guidelines

These guidelines apply to all existing and new recreation sites and uses whenever a conflict between uses or sensitive resources is detected. Sensitive resources include threatened, endangered, proposed, candidate, and sensitive species and habitats, riparian habitats, soil and watersheds, heritage resources, user conflicts, or other resources.

The management actions will be implemented in the order (education; perimeter control; management presence; redirection of use – if appropriate) listed below unless analysis of the conflict clearly indicates that a stronger measure is immediately necessary. The actions and practices include, but are not limited to:

1. Conservation Education

- Use information networks, including public service announcements, internet sites and links, and visitor guides and newsletters to communicate information regarding sensitive resources.
- Install and maintain appropriate multilingual information boards, interpretive panels and regulatory signs at developed sites and dispersed areas within sites of sensitive resources.
- Develop interpretive and environmental education programs for the public, Forest Service personnel, concessionaires, other special-use authorization holders, and volunteers about sensitive resources and habitats. Engage the services of special-use authorization holders that provide services to the public (i.e., concessionaires, organization camps, outfitter guides) to assist in the development and delivery of these programs. Provide authorization holders with messages about sensitive resources/management issues so that they can use them to educate people. Ensure that the methods chosen do not result in unacceptable effects to sensitive resources. Coordinate efforts between the four southern California national forests for maximum results and cost efficiencies. Use existing visitor centers where appropriate.
- De-emphasize the site or area and develop an information strategy to direct visitors to national forest recreation opportunities that do not affect sensitive resources.

2. Perimeter Control

- Modify visitor access to manage use. Install and maintain appropriate fencing or other barriers to protect sensitive resource areas. Limit the number of users at the site or area.
- Install and maintain appropriate multi-lingual informational, interpretive and regulatory signing in conjunction with perimeter controls to engage national forest visitors with protection of sensitive resources at recreation sites and areas.

3. Presence

- Provide adequate management presence to ensure protection of sensitive resources. This presence could include Forest Service personnel, peer education, contractors, concessionaires, other permit holders, and volunteer support.

4. Direct Action

- Limit visitor use of recreation sites and areas through diurnal, seasonal or temporary closures during critical life cycle periods for affected threatened, endangered, proposed, candidate, and sensitive species.
- Where visitor use is allowed - Seek opportunities to proactively rehabilitate, design, reconstruct, rehabilitate and harden the site and/or locate new facilities and areas for redistributing human use away from sensitive resources.
- Where visitor use is restricted – a) Limit or control use at developed recreation sites and areas through permit system (e.g., group campgrounds); b) When other actions are ineffective enact and enforce Forest Orders to protect sensitive resource areas through use of seasonal or temporary closures of developed recreation sites and areas; c) Seek opportunities to proactively design and locate new facilities and areas for re-distributing human use away from sensitive resources.
- Where visitor use is prohibited - When seasonal or temporary closures are ineffective, enact and enforce Forest Orders to close recreation sites or areas. If monitoring and evaluation indicate that closure is ineffective, then take steps to decommission facilities and permanently discontinue visitor use.

Appendix E - Five-Step Project Screening Process for Riparian Conservation Areas

The ***Five-Step Project Screening Process for Riparian Conservation Areas*** described below is used to assist in ensuring that riparian conservation areas (RCAs) are recognized, emphasized and managed appropriately during new project planning and implementation.

This screening process is used in addition to the land allocation restrictions that apply to the project area. For example, mechanized fuels treatments are allowed in riparian conservation areas (based on consistency with the riparian management objectives). However, where a riparian conservation area overlaps with a wilderness area, treatments are limited to non-mechanized and non-motorized methods.

The management objectives for riparian conservation areas are listed in Part 2 of the forest plan, Appendix B, WAT 1 - Watershed Function and WAT 2 - Water Management. The riparian management objectives serve as a check for evaluating management prescriptions to determine if a proposed activity will move an area toward the riparian desired conditions described in Part 1, Goal 5.2 - Improve Riparian Conditions, of the forest plan.

Activities are designed to protect, maintain, or restore the riparian ecosystem. In the riparian conservation areas that include perennial and intermittent streams, lakes, and wetlands allow only those actions that maintain or improve long-term aquatic and riparian ecosystem health including quantity, quality, and timing of stream flows.

Five-Step Project Screening Process for Riparian Conservation Areas:

Step 1:

Determine riparian conservation area width by stream type based on the following criteria:

Stream Type	Width Of The Riparian Conservation Area
Perennial Streams	328 feet (100 meters) on each side of the stream, measured from the bank full edge of the stream
Seasonally Flowing/Intermittent Streams	98 feet (30 meters) on each side of the stream, measured from the bank full edge of the stream
Streams In Inner Gorge (*)	Top of inner gorge
Special aquatic features (**) or perennial streams with riparian conditions extending more than 164 feet (50 meters) from edge of streambank, or seasonally flowing/intermittent streams with riparian conditions extending more than 33 feet (10 meters) from edge of streambank	328 feet (100 meters)from edge of feature or riparian vegetation, whichever width is greater
Other hydrological or topographic depressions without a defined channel (meadows, vernal pools)	RCA width and protection measures determined through project level analysis

(*) Inner gorge is defined by adjacent stream slopes greater than 70 percent gradient
(**) Special Aquatic Features include: lakes, ponds, wetlands, seeps, and springs

Step 2:

Use the environmental GIS layer and species accounts to determine additional protective RCA widths specific to individual species or suites of species (e.g., arroyo toad has a topographical contour distance from water, etc.).

Step 3:

Screen new projects against the riparian and aquatic desired conditions (Part 1, Strategic Goals - Goal 5.2 - Riparian Condition and Goal 6.2 - Biological Resource Conditions), and recovery plans for federally listed riparian dependent species to determine if the proposal is either neutral or will move the area closer towards the desired conditions. If it does, then proceed to Step 4. If it does not, there is a need to modify the project proposal, deny the proposal or complete a project-driven land management plan amendment.

Step 4:

Screen new projects against the forest plan riparian management objectives (Part 2, Appendix B Program Strategies and Tactics, WAT-1 and WAT-2) to ensure that the project incorporates one or more of the listed strategies. As part of the analysis consider physical factors, such as soil characteristics, groundwater and surface water characteristics, geology and geologic hazards, slope, and stream characteristics; and biological factors, such as aquatic and riparian dependent species present, their habitat needs (see species guidance documents in Part 3, Appendix H), and the ability of the existing environment to provide needed habitat.

Step 5:

Refer to *Forest Service Handbook (FSH 2509.22) - Forest Supplement* for specific guidance about management tactics to apply when conducting activities within RCAs.

Note: Modification of specific RCA widths for individual projects is possible if a need is identified during the interdisciplinary team (IDT) process; an earth scientist or biologist has participated in the proposed change; and it has become part of the proposed action for Line Officer approval. Use a peer review process for vegetation treatments or other activities proposed within an RCA that are likely to significantly affect riparian or aquatic resources.

Appendix F - Guidelines for Aerial Application of Retardants and Foams in Aquatic Environments

Definition:

WATERWAY – Any body of water including lakes, rivers, streams and ponds whether or not they contain aquatic life.

Guidelines:

Avoid aerial application of retardant or foam within 300 feet of waterways.

These guidelines do not require the helicopter or airtanker pilot-in-command to fly in such a way as to endanger his or her aircraft, other aircraft, or structures or compromise ground personnel safety.

Guidance for pilots: To meet the 300-foot buffer zone guideline, implement the following:

Medium/Heavy Airtankers: When approaching a waterway visible to the pilot, the pilot shall terminate the application of retardant approximately 300 feet before reaching the waterway. When flying over a waterway, pilots shall wait one second after crossing the far bank or shore of a waterway before applying retardant. Pilots shall make adjustments for airspeed and ambient conditions such as wind to avoid the application of retardant within the 300-foot buffer zone.

Single Engine Airtankers: When approaching a waterway visible to the pilot, the pilot shall terminate application of retardant or foam approximately 300 feet before reaching the waterway. When flying over a waterway, the pilot shall not begin application of foam or retardant until 300 feet after crossing the far bank or shore. The pilot shall make adjustments for airspeed and ambient conditions such as wind to avoid the application of retardant within the 300-foot buffer zone.

Helicopters: When approaching a waterway visible to the pilot, the pilot shall terminate the application of retardant or foams 300 feet before reaching the waterway. When flying over a waterway, pilots shall wait five seconds after crossing the far bank or shore before applying the retardant or foam. Pilots shall make adjustments for airspeed and ambient conditions such as wind to avoid the application of retardant or foam within the 300-foot buffer zone.

Exceptions:

When alternative line construction tactics are not available due to terrain constraints, congested area, life and property concerns or lack of ground personnel, it is acceptable to anchor the foam or retardant application to the waterway. When anchoring a retardant or foam line to a waterway use the most accurate method of delivery in order to minimize placement of retardant or foam in the waterway (e.g., a helicopter rather than a heavy airtanker).

Deviations from these guidelines are acceptable when life or property are threatened and the use of retardant or foam can be reasonably expected to alleviate the threat.

When potential damage to natural resources outweighs possible loss of aquatic life, the unit administrator may approve a deviation from these guidelines.

Threatened and Endangered (T&E) Species:

The following provisions are guidance for complying with the Emergency Section 7 Consultation Procedures of the ESA with respect to aquatic species. These provisions do not alter or diminish an action agency's responsibilities under the ESA.

1. Where aquatic threatened and endangered species or their habitats are potentially affected by aerial application of retardant or foam, the following additional procedures apply:

- As soon as practicable after the aerial application of retardant or foam near waterways determine whether the aerial application has caused any adverse effects to a threatened and endangered species or their habitat. This can be accomplished by the following:
    - Aerial application of retardant or foam outside 300 feet of a waterway is presumed to avoid adverse effects to aquatic species and no further consultation for aquatic species is necessary.
    - Aerial application of retardant or foam within 300 feet of a waterway requires that the unit administrator determine whether there has been any adverse effects to threatened and endangered species within the waterway.

These procedures shall be documented in the initial or subsequent fire reports.

2. If there were no adverse effects to aquatic threatened and endangered species or their habitats, there is no additional requirement to consult on aquatic species with Fish and Wildlife Service (FWS) or National Marine Fisheries Service (NMFS).

3. If the action agency determines that there were adverse effects on threatened and endangered species or their habitats, then the action agency must consult with FWS and NMFS, as required by 50 CFR 402.05 (Emergencies). Procedures for emergency consultation are described in the Interagency Consultation Handbook, Chapter 8 (March, 1998). In the case of a long duration incident, emergency consultation should be initiated as soon as practical during the event. Otherwise, post-event consultation is appropriate. The initiation of the consultation is the responsibility of the unit administrator.

Each agency will be responsible for ensuring that the appropriate guides and training manuals reflect these guidelines.

Appendix G- Guidelines for Protection and Conservation of Bird Species at Mountain Top Communications Sites, USDA Forest Service

The four southern California national forests are comprised of the Angeles, Cleveland, Los Padres and San Bernardino National Forests. A major program administered by these national forests is the issuance and administration of special-use authorizations for communication facilities at designated communication sites. The following guidelines have been developed and adopted by the four southern California national forests as a supplement to Communications Site Plans, for the protection and conservation of bird species covered by the Migratory Bird Treaty Act and/or Endangered Species Act of 1973, as amended.

I: Guidelines for Communication Tower Siting, Construction, Operation, Maintenance and Decommissioning

New towers shall be the same or lesser tower height as existing towers at the site and no more than 199 feet above ground level (AGL), and shall not require guy wires.

Towers shall be unlighted if Federal Aviation Administration (FAA) regulations permit. If towers requiring lights for aviation safety must be constructed, the minimum amount of pilot warning and obstruction avoidance lighting required by the FAA should be used. Unless otherwise required by the FAA, only white (preferable) or red strobe lights should be used at night, and these should be the minimum number, minimum intensity, and minimum number of flashes per minute (longest duration between flashes) allowable by the FAA. The use of solid red or pulsating red warning lights at night should be avoided.

Any existing tower using guy wires shall have daytime visual markers on the wires to prevent collisions by diurnally moving species. Spacing of markers should be at 10-foot intervals for smaller 'tags' and at 20-foot intervals for larger more linear 'flight diverter' structures.

In order to reduce the number of towers needed in the future, providers shall design new towers structurally and electrically to accommodate the applicant/licensee’s antennas and comparable antennas for multiple users.

Security lighting for on-ground facilities and equipment should be down-shielded to keep light within the boundaries of the site.

Towers, facilities and structures no longer in use or determined to be obsolete should be removed.

Road access to mountain top communication sites must be adequate to support construction, maintenance and demolition of facilities. Communication service providers responsible for construction activities must notify the Forest Service prior to removal of equipment and structures to assess access needs.

II: Additional Guidelines for Other Structures Associated with Communication Towers and Sites

Place anti-perching materials along the top of open horizontal surfaces at tower tops or protruding arms of other tall vertical structures.

Place anti-perching materials or devices along the top edge of flat rooftops or roof ridges of equipment buildings or other similar structures located within the communication site.

Cover all microwave dishes with radome covers and place anti-perching materials or devices along the top quarter-arch of the front edge of dishes capable of supporting a perching condor (approximately 20 pounds per bird).

Place anti-perching materials or devices along the top surface of horizontal coverings or tracks holding wave-guides capable of supporting a condor.

Keep all trash, garbage or excess scrap materials removed from the communication site, or placed in enclosed structures not accessible to condors or other large bird species.

Secure all loose wires or netting to prevent accidental entrapment of large birds. Placement of wires in conduit is also recommended where feasible.

Cover or otherwise protect external fiberglass type insulation or other soft materials which could be ripped apart or ingested by condors or other large birds.

Cover all spill retention or catchment basins or other open structures that may collect and hold water or other liquids, which condors or other birds may attempt to drink.

Cover or screen all large drains, conduits or other similar openings, which are large enough for a condor to walk into to prevent potential entrapment.

All doors and windows on buildings or other structures shall be designed to ensure they remain closed when not occupied by personnel to prevent accidental entry and entrapment of condors or other species.

Cyclone type fencing or other similar security fencing or walls surrounding equipment or other structures should be designed and located to avoid the potential for accidental entrapment of condors or eagles.

Place raptor guards or other anti-perching materials or devices along the upper surface of the horizontal cross arms of electrical power poles at communication facilities, which could serve as perches for larger birds.

Fuel storage tanks associated with generators and other facilities shall meet current fire department, federal, state, and local safety and hazardous materials requirements. Fuel storage shall be consolidated into one tank large enough to accommodate all tenants in a facility.

(For guidance on markers and other anti-perching devices, see *Avian Power Line Interaction Committee (APLIC). 1994. Mitigating Bird Collisions with Power Lines: The State of the Art in 1994. Edison Electric Institute, Washington, D.C., 78 pp*, and *Avian Power Line Interaction Committee (APLIC). 1996. Suggested Practices for Raptor Protection on Power Lines. Edison Electric Institute/Raptor Research Foundation, Washington, D.C., 128 pp.* Copies can be obtained via the Internet at http://www.eei.org/resources/pubcat/enviro, or by calling 1-800-334-5453).

Appendix H - Species Guidance Summary

When planning projects or managing ongoing activities in areas that contain habitat for species of concern (including threatened, endangered, proposed, candidate, and sensitive species and other species identified by biologists as being in danger of population decline or habitat loss) use the information found in various types of species guidance documents to develop project-specific design criteria.

Species guidance documents include (as of December 2004):

1. Recovery plans for threatened and endangered species, prepared by U.S. Fish and Wildlife Service

   Animals: Conservancy fairy shrimp, longhorn fairy shrimp, San Diego fairy shrimp, vernal pool fairy shrimp; Quino checkerspot butterfly, Smith's blue butterfly; unarmored three-spine stickleback, Mojave tui chub, tidewater goby; arroyo toad, California red-legged frog; desert tortoise; California brown pelican, California condor, California least tern, least Bell's vireo, marbled murrelet, Pacific bald eagle, southwestern willow flycatcher; giant kangaroo rat, Stephen's kangaroo rat, Peninsular bighorn sheep, San Joaquin kit fox, southern sea otter;

   Plants: *Arenaria paludicola*; *Astragalus brauntonii*; *Caulanthus californicus*; *Dudleya cymosa* ssp. *ovatifolia*; *Rorippa gambellii* (now *Nasturtium gambellii)*; *Sidalcea pedata*; *Thelypodium stenopetalum*; carbonate endemic plants (*Astragalus albens*; *Erigeron parishii*; *Eriogonum ovalifolium* var. *vineum*; *Lesquerella kingii ssp. bernardina* [now *Physaria kingii* ssp. *bernardina*]; *Oxytheca parishii* var. *goodmaniana* [now *Acanthoscyphus parishii* var. *goodmaniana*])

2. Species management guides and strategies, prepared by or for USDA Forest Service

   Acanthomintha ilicifolia (San Diego thornmint); *Allium munzii* (Munz's onion); *Berberis nevinii*; *Castilleja gleasonii*; *Claytonia lanceolata* var. *peirsonii*; *Cupressus forbesii;* (Tecate cypress); *Cupressus stephensonii* (Cuyamaca cypress); *Delphinium hesperium* ssp. *cuyamacae*; *Dodecahema leptoceras; Downingia concolor* var. *brevior; Dudleya densiflora*; *Eriogonium microthecum* var. *johnstonii*; *Galium grande*; *Lillium parryi*; *Macheranthera asteroides* var. *lagunensis* (now *Dieteria asteroides* var. *lagunensis*) (Laguna aster); *Opuntia basilaris* var. *brachyclada*; *Orobanche valida* ssp. *valida*

3. Species conservation strategies, prepared by or for USDA Forest Service

   California spotted owl; mountain yellow-legged frog

4. Habitat management guides, plans and strategies, prepared by or for USDA Forest Service

   Cleveland National Forest montane meadow (*Delphinium hesperium* ssp. *cuyamacae, Lillium parryi, Limnanthes gracilis* ssp. *parishii, Poa atropurpurea*);

   San Bernardino National Forest meadow habitat (*Poa atropurpurea, Sidalcea pedata, Taraxacum californicum, Thelypodium stenopetalum; Androsace elongata* ssp. *acuta, Arabis hirsuta* var. *glabrata, Astragalus lentiginosus* var. *sierrae, Botrychium crenulatum, Botrychium simplex, Boykinia rotundifolia, Calochortus palmeri* var. *munzii, Calochortus palmeri* var. *palmeri, Calochortus striatus, Carex occidentalis, Castelleja lasiorhyncha, Delphinium hesperium* ssp. *cuyamacae, Epipactis gigantea, Fimbristylis thermalis, Gentiana fremontii, Gentianella amarella* ssp. *acuta, Gentianopsis simplex, Helianthus nuttallii* ssp.

parishii, Juncus cooperi, Juncus duranii, Lewisia brachycalyx, Lewisia nevadensis, Lilium humboldtii ssp. *ocellatum, Lillium parryi, Listera convallarioides, Malaxis monophyllos* var. *brachypoda, Mimulus exiguus, Mimulus purpureus, Muhlenbergia californica, Navarretia peninsularis, Parnassia californica, Perideridia parishii* ssp. *parishii, Phacelia exilis, Phacelia mohavensis, Plantanthera leucostachys, Platanthera sparsiflora, Polemonium occidentale, Pyrrocoma uniflora* ssp. *gossypina, Packera bernardina, Scutellaria bolanderi* ssp. *austromontana, Sphenopholis obtusata, Thelypteris puberula* var. *sonorensis, Trichostema micranthum*; Andrew's marble [butterfly], San Gabriel Mountains blue);

MOU conservation strategy for coastal sage scrub and interdigitated habitats (coastal California gnatcatcher);

Pebble plain habitat (*Arabis dispar, Arabis parishii, Arenaria ursina, Castilleja lasiorhyncha, Castilleja cinerea, Castilleja montigena, Castilleja plagiotoma, Dudleya abramsii* ssp. *affinis, Eriogonum evandium, Eriogonum kennedyi* var. *astromontanum, Eriogonoum kennedyi* var. *kennedyi, Ivesia argyrocoma, Linanthus killipii, Mimulus exiguus, Mimulus purpureus, Phacelia exilis, Phacelia mohavensis, Pyrrocoma uniflora* ssp. *gossypina*; Coxey Meadow [vernal] blue [butterfly], Baldwin Lake blue, Arrastre Creek blue, Ehrlich's checkerspot, whitish metalmark);

Southern rubber boa habitat (San Bernardino National Forest);

Carbonate Habitat Management Strategy (San Bernardino National Forest, Bureau of Land Management for *Astragalus albens, Erigeron parishii, Eriogonum ovalifolium* var. *vineum, Oxytheca parishii* var. *goodmaniana* [now *Acanthoscyphus parishii* var. *goodmaniana*]).

5. Species accounts prepared for this planning effort or subsequent to it (USDA Forest Service)

Species account – invertebrates:

Any listed above, plus: August checkerspot, bright blue copper, Clemence's silverspot, Dammer's blue, Duodoroff's elfin, Harbison's dun skipper, Hermes copper, Laguna Mountains skipper, Pratt's blue, San Emigdio blue, San Gabriel Mountains elfin, San Gabriel Mountains greenish-blue, Thorne's hairstreak; San Bernardino Mountains silk moth; bicolor rain beetle, Dorhn's elegant eucnemid beetle, greenest tiger beetle; desert monkey grasshopper; California diplectronan caddisfly

Species account – fish:

Any listed above, plus: arroyo chub, Pacific lamprey, partially-armored three-spine stickleback, Santa Ana speckled dace, Santa Ana sucker, Shay Creek stickleback, southern steelhead

Species account – amphibians:

Any listed above, plus: arboreal salamander, California tiger salamander, Coast Range newt, large-blotched ensatina salamander, Monterey ensatina salamander, Pacific giant salamander, San Gabriel Mountains slender salamander, Tehachapi slender salamander, yellow-blotched ensatina salamander; foothill yellow-legged frog; western spadefoot toad

Species account – reptiles:

Any listed above, plus: Belding's orange-throated whiptail, California legless lizard, coast horned lizard, Coronado skink, northern sagebrush lizard, southern sagebrush lizard, small-

scaled lizard; coast patch-nosed snake, coastal rosy boa, coast mountain kingsnake, San Bernardino mountain kingsnake, San Diego mountain kingsnake, mountain garter snake, south coast red-sided garter snake, two-striped garter snake, red-diamond rattlesnake, San Bernardino ringneck snake, San Diego ringneck snake; southern Pacific pond turtle

Species account – birds:

Any listed above, plus: mountain plover, western snowy plover; American peregrine falcon, prairie falcon; Cooper's hawk, northern goshawk, sharp-shinned hawk, Swainson's hawk, zone-tailed hawk; turkey vulture; osprey, golden eagle; burrowing owl, flammulated owl, long-eared owl, northern pygmy owl, northern saw-whet owl, western screech owl; mountain quail, Mount Pinos blue grouse; common nighthawk; white-headed woodpecker, Williamson's sapsucker; calliope hummingbird; black swift, purple martin, tree swallow, Vaux's swift; yellow-breasted chat, yellow-billed cuckoo, American dipper, gray flycatcher, Lawrence's goldfinch, pinyon jay, yellow-billed magpie, American (water) pipit, loggerhead shrike, Bell's sage sparrow, Lincoln's sparrow, rufous-crowned sparrow, summer tanager, hepatic tanager, Bendire's thrasher, Le Conte's thrasher, hermit thrush, Swainson's thrush, gray vireo, Cassin’s solitary vireo, plumbeus solitary vireo, warbling vireo, Macgillivray's warbler, Nashville warbler, Virginia's warbler, Wilson's warbler, yellow warbler, coastal cactus wren, common yellowthroat

Species account – mammals:

Any listed above, plus: California leaf-nosed bat, pallid bat, spotted bat, Townsend's big-eared bat, western mastiff bat, western red bat, fringed myotis, long-eared myotis, long-legged myotis, western small-footed myotis, Yuma myotis; Los Angeles pocket mouse, San Diego pocket mouse, San Bernardino white-eared pocket mouse, Tehachapi pocket mouse, Monterey dusky-footed woodrat, San Diego desert woodrat, San Bernardino kangaroo rat; California chipmunk, lodgepole chipmunk, Mt Pinos lodgepole chipmunk, Coachella Valley round-tailed ground squirrel, golden-mantled ground squirrel, Mohave ground squirrel, San Joaquin antelope squirrel, San Bernardino flying squirrel; San Bernardino dusky shrew; San Diego black-tailed jackrabbit; western spotted skunk, American badger; porcupine, ringtail; mountain lion; Nelson’s bighorn sheep; Stellar's sea lion

Species account – plants:

Most listed above, plus: *Abies bracteata, Abronia nana* ssp. *covillei, Abronia villosa* var. *aurita, Agrostis hooveri, Allium hickmanii, Allium howellii* var. *clokeyi, Allium marvinii, Allium parishii, Antennaria marginata, Arabis breweri* var. *pecuniaria, Arabis johnstonii, Arabis shockleyi, Arctostaphylos cruzensis, Arctostaphylos edmundsii, Arctostaphylos hooveri, Arctostaphylos luciana, Arctostaphylos obispoensis, Arctostaphylos otayensis, Arctostaphylos peninsularis* ssp. *peninsularis, Arctostaphylos pilosula, Arctostaphylos rainbowensis, Arctostaphylos refugioensis, Arenaria languginosa* ssp. *saxosa, Arenaria macradenia* var. *kuschei, Artemisia palmeri, Aster greatae, Astragalus albens, Astragalus bicristatus, Astragalus deanei, Astragalus douglasii* var. *perstrictus, Astragalus lentiginosus var. antonius, Astragalus lentiginosus* var. *coachellae, Astragalus leucolobus, Astragalus oocarpus, Astragalus pachypus* var. *jaegeri, Astragalus tricarinatus, Atriplex parishii, Baccharis plummerae* ssp. *glabrata, Baccharis vanessae, Bloomeria humilis, Brodiaea filifolia, Brodiaea orcuttii, Calochortus clavatus* var. *gracilis, Calochortus dunnii, Calochortus obispoensis, Calochortus plummerae, Calochortus simulans, Calochortus*

weedii var. *intermedius, Calochortus weedii* var. *vestus, Calycadenia villosa, Calyptridium pygmaeum, Calystegia peirsonii, Calystegia subacaulis* ssp. *episcipalis, Camissonia hardhamiae, Canbya candida, Carex obispoensis, Carlquistia [Raillardiopsis] muirri, Caulanthus amplexicaulis* var. *barbarae, Caulanthus coulteri* var. *lemmonii, Caulanthus simulans, Ceanothus cyaneus, Ceanothus ophiochilus, Centromadia [Hemizonia] pungens* ssp. *laevis, Chaenactis parishii, Chlorogalum pomeridianum* var. *minus, Chlorogalum purpureum* var. *reductum, Chorizanthe blakleyi, Chorizanthe breweri, Chorizanthe parryi* var. *parryi, Chorizanthe polygonoides* var. *longispina, Chorizanthe procumbens, Chorizanthe rectispina, Chorizanthe xanti* var. *leucotheca, Cirsium loncholepis, Clarkia delicata, Clarkia jolonensis, Cordylanthus eremicus* ssp. *eremicus, Cupressus sargentii, Deinadra [Hemizonia] floribunda, Deinadra [Hemizonia] mohavensis, Delphinium hutchinsonae, Delphinium inopinum, Delphinium parryi* ssp. *purpureum, Delphinium umbraculorum, Draba corrugata* var. *saxosa, Dudleya cymosa* ssp. *crebrifolia, Dudleya multicaulis, Dudleya viscida, Eriastrum densifolium* ssp. *sanctorum, Eriastrum hooveri, Eriastrum luteum, Ericameria cuneata* var. *macrocephala, Ericameria palmeri* var. *palmeri , Erigeron breweri* var. *jacinteus, Erigeron uncialis* var. *uncialis, Eriogonum butterworthianum, Eriogonum kennedyi* var. *alpigenum, Eriogonum microthecum* var. *corymbosoides, Eriogonum umbellatum* var. *minus, Eriophyllum lanatum* var. *hallii, Eriophyllum lanatum* var. *obovatum, Fritillaria falcata, Fritillaria liliacea, Fritillaria ojaiensis, Fritillaria viridea, Galium angustifolium* ssp. *gabrielense, Galium angustifolium* ssp. *jacinticum, Galium californicum* ssp. *primum, Galium californicum* ssp. *luciense, Galium clementis, Galium hardhamiae, Galium jepsonii, Galium johnstonii, Geraea viscida, Gilia leptantha* ssp. *leptantha, Githopsis diffusa* ssp. *filicaulis, Grindelia hirsutula* var. *hallii , Heuchera abramsii, Heuchera brevistaminea, Heuchera elegans, Heuchera hirsutissima, Heuchera parishii, Holocarpha virgata elongata, Horkelia cuneata* ssp. *puberula, Horkelia cuneata* ssp. *sericea, Horkelia truncata, Horkelia wilderae, Horkelia yadonii, Hulsea californica, Hulsea vestita* ssp. *callicarpha, Hulsea vestita* ssp. *gabrielensis, Hulsea vestita* ssp. *parryi, Hulsea vestita* ssp. *pygmaea, Ivesia callida, Juglans californica, Layia heterotricha, Layia jonesii, Layia ziegleri, Lepechinia cardiophylla, Lepechinia fragrans, Lepechinia ganderi, Lepidium flavum* var. *felipense , Lepidium virginicum* var. *robinsonii, Leptodactylon jaegeri, Lessingia glandulifera* var. *tomentosa, Limnanthes gracilis* ssp. *parishii, Linanthus concinnus, Linanthus floribundus* ssp. *hallii, Linanthus orcuttii, Lonicera subspicata* var. *subspicata, Lupinus excubitus* var. *johnstonii, Lupinus ludovicianus, Machaeranthera canescens* var. *ziegleri, Malacothamnus aboriginum, Malacothamnus davidsonii, Malacothamnus palmeri* var. *involucratus, Malacothamnus palmeri* var. *lucianus, Malacothamnus palmeri* var. *palmeri, Malacothrix saxatilis* var. *arachnoidea, Marina orcuttii* var. *orcuttii, Matelea parvifolia, Microseris douglasii* var. *platycharpha, Mimulus clevelandii, Mimulus diffusus, Monardella cinerea, Monardella hypoleuca* ssp. *lanata, Monardella linoides* ssp. *oblonga, Monardella macrantha* ssp. *hallii, Monardella nana* ssp. *leptosiphon, Monardella palmeri, Monardella viridis* ssp. *saxicola, Muilla coronata, Nolina cismontana, Nolina interrata, Oreonana vestita, Oxytheca caryphylloides, Oxytheca emarginata, Oxytheca parishii* var. *abramsii, Oxytheca parishii* var. *cienegensis, Oxytropis oreophila* var. *oreophila, Packera ganderi, Packera ionophylla, Parnassia cirrata, Pedicularis dudleyi, Penstemon californicus, Pentachaeta exilis* ssp. *aeolica , Perideridia gairdneri* ssp. *gairdneri, Phacelia suaveolens* ssp. *keckii, Phlox dolichantha, Pinus attenuata, Piperia leptopetala, Plagiobothrys uncinatus, Podistera nevadensis, Polygala cornuta* var. *fishiae, Populus*

tremuloides, Potentilla rimicola, Quercus dumosa, Quercus engelmannii, Quercus lobata, Ribes canthariforme, Romneya coulteri, Rupertia rigida, Sanicula maritima, Satureja chandleri, Sedum niveum, Sibaropsis hammittii, Sidalcea hickmanii ssp. *anomala, Sidalcea hickmanii* ssp. *hickmanii, Sidalcea hickmanii* ssp. *parishii, Streptanthus albidus* ssp. *peramoenus, Streptanthus bernardinus, Streptanthus campestris, Stylocline masonii, Swertia neglecta, Syntrichopappus lemmonii, Tetracoccus dioicus, Thermopsis californica* var. *semota, Thermopsis macrophylla, Triteleia ixioides* ssp. *cookii, Tropidocarpum capparideum, Viola aurea, Viola pinetorum* ssp. *grisea.*

These guidance documents are not static but are subject to change as new information becomes available and circumstances are altered. The most current version of these recovery plans, species management guides and strategies, habitat management guides and strategies, and species accounts shall take precedence over pre-existing documents.

Appendix I - Land Adjustment Prioritization Guide

Land Acquisitions

Land acquisitions will be guided by the following criteria:

Priority 1 Acquisitions:

- Land and associated riparian ecosystems on water frontage such as lakes, streams, and vernal pools.
- Land including water rights or land with riparian water right attributes needed to protect water or wildlife habitat.
- Critical habitat lands needed for the protection of federally listed endangered or threatened fish, wildlife, or plant species.
- Land needed for the protection of significant historical or cultural resources, when these resources are currently threatened, but may be better protected by public ownership.
- Land that enhances recreation opportunities, public access, and protection of aesthetic values.
- Land needed for protection and management of administrative and Congressionally designated areas.
- Land needed to enhance or protect watersheds and groundwater resources that affect the management of National Forest System lands.
- Environmentally sensitive land such as wetlands and old growth.
- Buffer land needed for protection of lands acquired for specific purposes listed above.

Priority 2 Acquisitions:

- Key tracts of an ecosystem that are not urgently needed, but will promote more effective management of the ecosystem and will meet specific needs for vegetative management, valuable watershed management, research, public recreation or other defined management objectives.
- Land or interest in land that protect Pacific Crest National Scenic Trail values and provide an unbroken public right-of-way for the trail, consistent with the current policy statement for acquisition.
- Land needed to protect resource values by eliminating or reducing fire risks and soil erosion.
- Land needed to reduce administration and utilization expenses to the Forest Service and the public. Consolidation of split estates.

Priority 3 Acquisitions:

- All other land desirable for inclusion in the National Forest System.

Land Conveyances

Federal land conveyances by exchange or other specific authority will be guided by the following criteria:

- Land inside or adjacent to communities or intensively developed private land and chiefly valuable for non-National Forest System purposes.
- Parcels that will serve a greater public need in state, county, city, or other federal agency ownership.
- Inaccessible parcels isolated from other National Forest System land.
- Parcels within major blocks of private land, the use of which is substantially for non-National Forest System purposes.
- Parcels having boundaries, or portions of boundaries, with inefficient configurations (projecting necks or long, narrow strips of land, etc.).

Access

Access should be acquired, or exchanged with other agencies, states, counties, and private interests to assure management objectives are met for all ownerships.

Appendix J - Livestock Capability and Suitability Guidelines

The determination of rangeland suitability is an interdisciplinary two-step process.

Step 1: The first step is the determination of those lands that are capable or have the potential of being grazed. Rangeland capability represents the biophysical determination of those areas of land that can sustain domestic livestock grazing. Capability depends on current and potential resource and site conditions. A unit of National Forest System land is generally capable where:

1. Slopes < 60 percent;
2. Ability to produce greater than 200-700 lbs/acre of residual dry matter based on site potential;
3. Accessible to livestock; and
4. Areas where livestock can be controlled or sustained within a designated area and management system.

On the four southern California national forests, capable rangeland requires approximately 1-11 acres, depending on vegetation type and physical factors such as slope and aspect, to produce 1 Animal Unit Month (AUM). One cow on range for a month represents 1 AUM, and a cow/calf represents approximately 1.32 AUM. Based on historical and current use, 1 AUM requires approximately 4 acres of capable land.

Livestock grazing is predominantly distributed among seven capable vegetation categories for the four southern California national forests. Using existing vegetation layers from the plan revision GIS database, the Calveg vegetation types for all designated grazing areas were grouped into seven broad vegetation categories based on estimated potential capability and forage production similarities: herbaceous; hardwoods; conifer; chaparral/coastal sage scrub; riparian; desert; and non-capable. The primary palatable forage for livestock is annual herbaceous vegetation, with a smaller amount of browse on woody species.

Step 2: The second step identifies which of those capable lands are suitable for grazing under various management scenarios or land use zones. Assessment of suitability is conducted by an interdisciplinary team to address whether livestock grazing is compatible with other land uses; ecological, social, and economic considerations; and the ability to meet or move towards forest plan desired conditions. Determine the suitability of capable lands by considering the following guidelines:

1. Capable lands are not suitable in:
   a) Critical Biological Land Use Zones;
   b) Specially designated National Forest System lands excluded from grazing by legislation. In wilderness areas, where livestock grazing was not established at the time of designation and where there is no recent history of grazing use prior to wilderness designation (Section 4(d)4(2) of the 1964 Wilderness Act);
   c) Critical Habitat for coastal California gnatcatcher;
   d) Peninsular bighorn sheep range; and
   e) San Dimas Experimental Forest.
2. Capable lands may not be suitable in some areas depending on the overall evaluation of potential significant adverse effects and where efforts to mitigate adverse effects have been

determined to be ineffective over the long-term based on site-specific information or analysis. Areas to be evaluated include but are not limited to:

a) Bighorn sheep habitat (see Standard 26).
b) Areas with significant social conflicts, developed recreation sites, special-use sites, heritage resource sites, Native American sites and traditional practices, mining, and other authorized uses.
c) Areas where livestock grazing is in conflict with the objectives for administrative sites and research facilities or study sites, except in areas where livestock grazing is for research purposes.
d) Areas where livestock grazing is impractical due to economic considerations, such as high agency administrative costs and where cooperative and collaborative contributions are absent. Livestock grazing may be impractical to support a small number of head or the inability to control or sustain livestock without a significant Forest Service investment to meet resource objectives and desired conditions.
e) Areas of important wildlife habitat where suitable habitat cannot be sustained or move towards desired conditions (e.g., threatened, endangered, proposed, candidate, and sensitive species).
f) Areas where ground cover (i.e., living vegetation, plant litter, and surface rock fragments greater than 3/4 inch) is insufficient to protect soil from erosion. The minimum percentage of effective soil cover is 60 percent unless local data are available for use in setting more specific ground cover requirements.
g) Areas where a noxious weed risk analysis has determined that livestock use is a key limiting factor in meeting or moving towards vegetation management objectives. Exceptions could be where livestock are used as a tool for noxious and invasive weed control.
h) Areas with unique habitats where suitable habitat cannot be maintained over the long term or move towards desired conditions (e.g., bogs, fens, vernal pools, and rare plant communities).
i) Areas where livestock grazing would be the key limiting factor in reaching or moving towards forest plan desired conditions.
j) Areas where existing condition or restoration needs require an extended (more than five years) rest from livestock grazing (e.g., watershed improvement projects). Exceptions could be where livestock grazing is needed to achieve desired vegetation management objectives (e.g., fuelbreak or WUI Defense or Threat Zones maintenance).
k) Areas where livestock grazing would be a key and significant contribution to landslide and/or soil erosion, stream incisement, or other unacceptable alteration of surface and subsurface conditions.

Appendix K - Guidelines for Development and Maintenance of WUI Defense and Threat Zones

There are extensive areas within and adjacent to the national forests of southern California meeting the definition of Wildland/Urban Interface (WUI) as described in the Healthy Forests Restoration Act of 2003. WUI (as defined by the Act) is a variable width up to 1.5 miles from communities at risk or as defined in individual community fire protection plans. This forest plan further identifies a direct protection zone (WUI Defense Zone) and an indirect protection zone (WUI Threat Zone) that fall within the broader definition of WUI. A WUI Defense Zone is the area directly adjoining structures and evacuation routes that is converted to a less-flammable state to increase defensible space and firefighter safety. The WUI Threat Zone is an additional strip of vegetation modified to reduce flame heights and radiant heat. The Threat Zone generally extends approximately 1 1/4 miles out from the Defense Zone boundary. Yet, actual extents of Threat Zones are based on fire history, local fuel conditions, weather, topography, existing and proposed fuel treatments, and natural barriers to fire and community protection plans, and therefore could extend well beyond the 1 1/4 mile. The two zones together are designed to make most structures more defendable. Following are the minimum widths for the WUI defense zone by general vegetation type.

This appendix addresses those activities directly related to the protection of structures located on National Forest System lands. These guidelines may also be useful to line officers in boundary projects with interagency partners and private landowners. National Forest System lands may be utilized as part of protecting existing communities. New developments planned on private lands adjacent to National Forest System lands must meet community protection needs without the use of National Forest System lands.

WUI Defense Zone

This is a strip of land where planned suppression activities involve both containment of the fire perimeter and protection of structures. The intensity of the vegetation management activities varies by vegetation type and topography. Vegetation is divided into three groups for purposes of providing guidelines: grass, chaparral, and forests. Flame lengths expected from wildland fires burning in these various vegetation types are the basis for the minimum and maximum widths of planned defense zones.

Grass: A width of 50 to 100 feet from the edge of structures will be sufficient in some conditions to provide community safety objectives in grass types; however on steep slopes, an expanded width of defense zone may be necessary. This condition may require defense zone widths of more than 100 feet. Defense Zone management activities take precedence over all other management activities within the Defense Zone and Standard 8 would apply. Some conditions may allow for less than the 50-foot width.

The first 50 feet should be maintained in a manner that prevents fire impingement to the structure. This non-flammability can be achieved through a variety of methods, such as irrigated landscaping, complete removal of vegetation through hand or mechanical clearing, or the use of herbicides to prevent the establishment of grass near structures. The second 50 feet should exhibit low or no flammability upon completion. Irrigated landscaping is one approach to achieving this as is cutting the grass to just a few inches in height to promote low flame heights.

Chaparral: Chaparral fires routinely produce flame lengths over twice the height of grass. Since this is the location where the firefighters will actually conduct fire suppression operations, prevention of flame impingement on the firefighters and the structure are imperative. The same examples of achieving less-flammability as given for grass are applicable here.

Generally, a width of 100-300 feet will be sufficient in some conditions to provide community safety objectives in chaparral types, however on steep slopes or areas of significant mortality, a greatly expanded width of defense zones may be necessary. These conditions may require defense zone widths over 300 feet. Defense Zone management activities take precedence over all other management activities within the Defense Zone and Standard 8 would apply. Some conditions may allow for less than the 100-foot width.

Isolated plants can be left intact within this zone as long they are maintained in such a way as to not ignite during a wildland fire. In that portion of the defense zone greater than 100 feet from structures, chaparral vegetation should be reduced to 18 inches in height to promote low flame lengths and to minimize the potential for soil erosion.

Forest: Under severe burning conditions, flame lengths in forested areas can reach several hundred feet in height. The amount of radiant heat produced by these fires results in the need for much larger defense zones.

A width of 300 feet will be sufficient in some conditions to provide community safety objectives in forested areas; however on steep slopes or in areas of significant tree mortality, a greatly expanded width of defense zones will be necessary. These conditions will require defense zone widths between 300 to 1,500 feet in most cases, although a larger defense zone could be necessary in an extreme situation. Defense Zone management activities take precedence over all other management activities within the Defense Zone and Standard 8 would apply. Some conditions may allow for less than the 300-foot width.

Activities associated with development of the defense zone include: tree thinning and pruning, mechanical or hand removal of brush, and the use of prescribed fire. The forest may need to be thinned within this zone to meet the standard of no more than 40 percent crown closure in the defense zone. This allows for a substantial number of trees to exist within the defense zone, but thinned and pruned in a manner that would minimize the potential for future fires that spread through the crowns to the location of the structure. Surface fuel management would be needed annually regarding the 50-100 foot strip of land directly adjacent to structures. The remainder of the defense zone greater than 100 feet from structures would need to be maintained every three to five years to maintain low flammability within this portion of the Defense Zone.

WUI Threat Zone

Activities within the Threat zone are less intensive than those implemented in the Defense Zone. There is no need to maintain any area in a less-flammable state within the Threat Zone. The object is to complete enough tree thinning and surface fuel management over time to reduce the potential for stand replacing fires in the Threat Zone. Emphasis will usually be the reduction of ladder fuels and periodic reduction of surface fuels.

In vegetation types such as grass and chaparral, there may be no need to conduct extensive treatments in the Threat Zone. In forested areas there may be significant treatment needs within the Threat Zone. In these areas, site-specific prescriptions will be jointly developed by vegetation and fire management staff and biologists to describe crown closure and forest

structure objectives. Depending on the site, thinning to achieve as low as 30 percent crown closure may occur; however, crown closure may be retained at 60 percent or higher to meet wildlife habitat objectives in some locations, such as highly productive sites, drainages and north facing slopes.

Maintenance

There will generally be some annual maintenance needs in the Defense Zone. Specifically, that portion of the Defense Zone that must be maintained in a less-flammable state, hand or machine projects or the use of herbicides may be utilized to perform this maintenance work. This pertains to the first 50 feet of grasslands adjacent to structures, or the first 100 feet of chaparral or forest adjacent to structures.

State Fire Law, County Ordinances, and the Insurance Industry

The State of California requires clearance around structures as a non-flammable zone for structure protection. Historically, the Forest Service has applied State Fire Law to structures located on National Forest System lands. This represents the minimum defense zone width for any structure located on National Forest System lands.

There are various ordinances in southern California that are applicable to private lands and supercede State Fire Law. Where special ordinances have been applied, State Fire Law has been superceded. Where existing developments cannot meet modern day ordinances, the Forest Service will consider use of National Forest System lands for the ordinance to be met. For new developments, the Forest Service will not allow the use of National Forest System for developers/homeowners to meet the ordinance. Developers must implement appropriate setbacks.

There have been numerous cases of insurance companies notifying homeowners that they need up to 500 feet of brush clearance to remain insured. Insurance company edicts are not a legal basis for the use of National Forest System lands.

There is no correlation between Defense Zone guidelines, State Fire Law, and county ordinances. The guidelines for National Forest System lands were developed by a panel of fire management personnel including two fully qualified Fire Behavior Analysts under the principle of best science as the basis for management of National Forest System lands.

Appendix L - Glossary

Abiotic: Not involving or produced by organisms.

Acre-foot (Ac-ft): The amount of water covering an area of one acre to a depth of one foot.

Adaptive management: A process for implementing management decisions that requires monitoring of management actions and adjustment of decisions based on past and present knowledge. Adaptive management applies scientific principles and methods to improve management decisions incrementally as experience is gained in response to new scientific findings and societal changes.

Adverse Effects (Heritage Resources): Any effect on a heritage resource that would be considered harmful to those characteristics that qualify the property for inclusion in the National Register of Historic Places.

Aerosol: Can be either wet or dry small particles in the atmosphere, also known as "particulate matter."

Aesthetics: The study of science, or philosophy dealing with beauty in nature with judgments concerning beauty. In scenery management, it describes landscapes that give visual and sensory pleasure.

Aggradation: A raise of elevation in a streambed, caused by sediment supply in excess of sediment-transport capacity.

Aggregate: Crushed rock material, used for road surfacing.

Air Pollution Control District (APCD): Is a regional government bureau responsible for attainment and management of air quality standards through permitting and regulating emission source.

Air Quality Attainment Plan (**AQAP):** Equivalent to Air Quality Management Plan, which outlines rules and regulations for improving the quality of air on the region to reach an attainment status (in attainment of standards).

Air Quality Management Plan (**AQMP):** Outlines rules and regulations for improving the quality of air on the region to reach standards.

Air Quality Standard: The specified average concentration of an air pollutant in ambient air during a specified period at or above which level the public health may be at risk, equivalent to Ambient Air Quality Standard.

Airtanker: A fixed wing aircraft that delivers fire retardant along the fire edge.

Algae: A collective term for several taxonomic groups of primitive chlorophyll-bearing plants, which are widely distributed in fresh, salt water and moist lands. This term includes the seaweeds, kelps, diatoms, pond scum and stoneworts.

Alternative, Preferred Alternative, Selected Alternative: One option for meeting the purpose and need for a proposed action (e.g., forest plan revision). Alternatives are described and analyzed in the Environmental Impact Statement (EIS).

The **Preferred Alternative** is the alternative recommended for implementation at the draft forest plan phase based on the evaluation completed in the planning process; it is not a decision. The

Selected Alternative is the alternative chosen by the Regional Forester for implementation in the forest plan based on the evaluation completed in the planning process. This decision is documented in the **Record of Decision** (ROD).

Ambient Air: Any unconfined portion of the atmosphere; the outside air.

Ambient Air Quality Standard (AAQS): Federal and state measure of the level of air contamination that is not to be exceeded in order to protect human health.

Ambient Noise Level (ANL): Noise from all sources near and far. ANL constitutes the normal or existing level of environmental noise at a given location.

Animal Unit Month (AUM): Equals the tenure of one animal unit (considered to be a cow and calf, based on the average daily forage consumption of 26 pounds of dry matter per day) on range for a period of one month.

Appropriate Management Response (AMR): Any specific action suitable to meet Fire Management Unit (FMU) objectives. Typically, the AMR ranges across a spectrum of tactical options (from monitoring to intensive management actions). The AMR is developed by the FMU strategies and objectives identified in the Fire Management Plan.

Aquatic Habitat: Water within a lake, river, stream or other body of water that supports plant and animal life.

Aquifer: Water-bearing rock formation or other subsurface layer. A body of rock that contains sufficient saturated permeable material to conduct groundwater and to yield significant quantities of water to wells and springs.

Arroyo: A stream channel or gully in arid country, usually with steep banks and dry much of the time.

Attribute: An inherent landscape characteristic, trait or quality.

Average: As a measure, the sum of the measurements (over a specified period) divided by the number of measurements.

Backfire: A fire set along the inner edge of a fireline to consume the fuel in the path of a wildland fire and/or change the direction of force of the fire's convection column.

Background: The distant part of the landscape area located from 4 miles to infinity from the viewer.

Badlands topography: Arid landscapes characterized by intricate, sharp erosion sculptures of highly erosive soft sedimentary rocks with a very fine drainage network and little to no vegetative cover.

Barranca: A ravine caused by rain, or a watercourse.

Basal area: The cross sectional area of a tree measured at breast height (4.5 feet or 1.37 meters above the ground) by use of a wedge prism or calculated from the diameter expressed in either square feet per acre or square meters per hectare. A way of measuring how much a site is occupied by trees.

Basal area increment (BAI): Increase in tree basal area during a specified period usually over one year or 10 years. BAI may be calculated on per tree, per acre, or hectare basis.

Baseline: A set of existing conditions against which change is to be described and measured.

Bedrock: The solid rock that underlies loose material, such as soil, sand, clay, or gravel.

Berm: Native or aggregate material built up adjacent to a traveled roadway. Reasons for installation vary and can include surface water control, hazard mitigation (in lieu of guardrail) or temporary stockpiling of slide debris.

Best Available Control Technology (BACT): An emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to refulation under the Clean Air Act, which would be emitted from any proposed major, new, or modified stationary source.

Best Environmental Design Practices: Environmentally sustainable landscape design solutions that improve ecosystem health and the quality of the outdoor recreation experience. These solutions provide project-level guidance for the implementation of the Chavez-Wambaugh Protocol.

Best Management Practice (BMP): A practice, or a combination of practices, that is determined by the State of California after problem assessment, examination of alternative practices, and appropriate public participation to be the most effective, practicable (including technological, economic, and institutional considerations) means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals.

Biogeochemical cycles: Nutrient and carbon flows and pools between biotic (living, biological) and abiotic (non-living, physical and chemical) elements in an ecosystem.

Biological diversity (biodiversity): The variety and abundance of life and its processes, including all living organisms, the genetic differences among them, and the communities and ecosystems in which they occur. Biological diversity also refers to the composition, structure, and function of species and habitats and their interactions.

Biomass: The amount and type of organic matter that is contained within a given area; the total weight of all living organisms in a biological community.

Biota: Living organisms; all the plant and animal life of a particular region.

Bitumens: Any of various mixtures of hydrocarbons (as tar) often together with their nonmetallic derivatives that occur naturally or are obtained as residues after heat-refining natural substances (as petroleum); specifically: such a mixture soluble in carbon disulfide.

Blading: A type of road surfacing activity to improve drivability.

Brackish: Pertaining to water; generally estuarine in which salinity ranges from 0.5 to 17 parts per thousand by weight.

Bridge: A road or trail structure including supports erected over a depression or an obstruction, such as water, a road, a trail, or railway and having a deck for carrying traffic or other loads.

Brushing: The act of removing brush along side of the roadway to improve visibility.

Burning index: An estimate of the potential difficulty of fire containment as it relates to the flame length at the most rapidly spreading portion of a fire's perimeter.

Cambial tissues: Active growth tissues of vascular plants.

Candidate Species: A plant and animal species that, in the opinion of the U.S. Fish and Wildlife Service, may become endangered or threatened. These are documented in a current Federal Register Notice of Review for threatened or endangered listing.

Canopy: The part of any stand of plants represented by the crowns or upper layers.

Capital Investment Program (CIP): Forest Service infrastructure construction and reconstruction funding program.

Carbon Monoxide (CO): A colorless, odorless, toxic gas produced by incomplete combustion of carbon in fossil fuels.

Catastrophic wildland fire: An especially intense and widespread fire that usually but not always occurs in forests outside the historical range of variability in terms of forest structure and forest fuels due to fire suppression.

Cenozoic: The youngest geologic era, ranging from present to 66 million years ago.

Channel Lining: Artificial hardening of the sides and/or bed of a stream channel to prevent erosion. Concrete, soil cement and rock riprap are typical channel linings.

Chaparral: Dense vegetation consisting mainly of thick-leaved, evergreen shrubs and small trees characteristic of middle elevations in California and the southwestern United States.

Characteristic: Qualities that constitute a character or that characterizes a landscape, a distinguishing trait, feature, quality, uniqueness or attribute.

Chip seal: Thin layer of hard surface material that includes an emulsified material that adheres the material's particles to each other and the road surface it is placed on.

Coarse filter management: Land management that addresses the needs of all associated species, communities, environments and ecological processes in a land area (contrast to fine-filter management).

Coarse woody debris: Woody biomass that consists of snags (standing dead trees), logs and larger diameter branches (2.5 cm) on the forest floor.

Coastal Block: Geologic term describing area adjacent to the coast, which may be faulted or fractured.

Coastal Zone: That land and water area of the state of California extending seaward including all offshore islands and extending inland 1,000 yards from the mean high tide line of the ocean.

Code of Federal Regulations (CFR): The codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the federal government. The Code is divided into 50 titles that represent broad areas subject to regulation.

Cogeneration: Production of electricity using waste heat (as in steam) from an industrial process or the use of steam from electric power generation as a source of heat.

Commensurate: Equal in measure or extent

Community Noise Equivalent Level (CNEL): Averaging of noise levels on a measurement scale of decibels that increases the actual noise measurement, to account for an increased sensitivity to noise during late evening, nighttime and morning hours (the increments are 5 dB from 7 to 10 pm and 10 dB from 10 pm to 7 am).

Community Protection Area: Open and collaboratively developed plan by local and state government representatives, in consultation with federal agencies and other interested parties. Includes hazardous fuel reduction and treatment of structural ignitability.

Concern Level: The classification of travel routes or use areas based on the public's concern over the alterations in the landscape from those viewpoints. There are three Concern Levels representing degrees of scenery importance: (1) High, (2) Moderate and (3) Low.

Concessionaire: A special-use permit holder who provides goods and services primarily at Forest Service developed recreation sites (excluding ski areas).

Condition Class 1: Fire regimes are within a historical range, and the risk of losing key ecosystem components is low. Vegetation attributes (species composition and structure) are intact and functioning within the historical range.

Condition Class 2: Fire regimes have been moderately altered from their historical range. The risk of losing key ecosystem components is moderate. Fire frequencies have departed from historical frequencies by one or more return intervals (either increased or decreased). This results in moderate changes to one or more of the following: fire size, intensity and severity, and landscape patterns. Vegetation attributes have been moderately altered from their historical range.

Condition Class 3: Fire regimes have been significantly altered from their historical range. The risk of losing key ecosystem components is high. Fire frequencies have departed from historical frequencies by multiple return intervals. This results in dramatic changes to one or more of the following: fire size, intensity, severity, and landscape patterns. Vegetation attributes have been significantly altered from their historical range.

Confine a Fire: The least aggressive wildland fire suppression strategy, typically allowing the wildland fire to burn itself out within determined natural or existing boundaries, such as rocky ridges, streams, and possibly roads.

Conifer: Cone bearing tree.

Connectivity (habitat): the degree to which the structure of a landscape helps or hinders the movement of animal or plant species. A landscape is considered "well connected" when organisms (or natural processes) can readily move among or through habitat patches over the long-term.

Conservation Education: Communication strategies used to develop public awareness, appreciation and support for conservation issues and policies. Includes interpretation, environmental education and visitor information.

Contain a Fire: A moderately aggressive wildland fire suppression strategy, which can reasonably be expected to keep the fire within established boundaries of constructed firelines under prevailing conditions.

Control a Fire: The most aggressive wildland fire suppression strategy. Complete control line around a fire, any spot fire, and any interior island to be saved: burn out any unburned area adjacent to the fire side of the control lines, and cool down all hot spots that are immediate threats to the control line, until the lines can reasonably be expected to hold under foreseeable conditions.

Corridor: Elements of the landscape that connect similar areas, such as riparian areas.

Crossdrains: Drainage structure (culvert) located outside of a stream channel.

Crown fire: A fire that burns in the forest canopy. 'Passive' crown fires are those that are supported by surface fires with occasional burning of overstory trees, while 'active' crown fires are those that burn through overstory trees with no associated surface fire.

Cryptogamic crust: A thin crust on top of the soil made up of mosses, lichens, algae, and bacteria, known collectively as cryptogams. Cryptogams function as soil builders, forming a spongy layer that helps protect soil from erosion, absorbs moisture, and provides nitrogen and other nutrients for plant growth. Also referred to as cryptobiotic or microbiotic crusts.

Cultural landscape: A geographic area (including both cultural and natural resources and the wildlife or domestic animals therein) associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. There are four general types of cultural landscapes (and they are not mutually exclusive): historic sites, historic designed landscapes, historic vernacular landscapes and ethnographic landscapes.

Cultural use: Access to areas with significant pre-historical, historical, or contemporary Native American use.

Cutbank: A bank on the uphill side of a road that is a result of cutting into the hillside to create a road surface.

Cyclonic: A large air mass (in the northern hemisphere) that circulates counterclockwise.

Decibel (dB): Logarithmic unit which describes the wide range of sound intensities to which the human ear is sensitive.

Decibel-A-Weighted (dBA): Decibel unit scale that is modified to better represent the relative insensitivity of the human ear to low-pitched sounds.

Decommissioning: Permanently closing a road to vehicular use and left in a hydrological maintenance free condition. Decommissioning will include activities such as water barring, out sloping, re-contouring, decompaction of road surface, removal of drainage structures, and road barricades as needed.

Defensible Space: An area either natural or manmade where material capable of causing a fire to spread has been treated, cleared, reduced, or changed to act as a barrier between an advancing wildland fire and resources or lives at risk. In practice, defensible space is generally defined as an area of 30 feet or more around a structure that is cleared of flammable brush or vegetation or other fuels.

Degradation: Lowering of streambed elevation, caused by sediment-transport capacity in excess of the sediment supply. Degradation can be long-term (after the passage of many stream flows) or short-term (caused by a single stream flow).

De minimis: The least scope, requirement, or interpretation of a law or ruling.

Demographic: Relating to the dynamic balance of a population, especially with regard to density and capacity for expansion or decline.

Dendrochronology: The science of dating tree rings. Dendrochronology relies upon cross dating; the process of cross-matching in-common patterns of variability in ring features that are controlled by climate variability to discover calendar dates for individual growth rings.

Department of the Interior (DOI): A Federal Department responsible for administration of public lands not managed by other Federal Departments.

Depauperate: Term used to describe a biological community lacking many species found in similar habitat elsewhere.

Design Capacity: The maximum theoretical amount of use a developed recreation site was built to accommodate. This is usually expressed in persons at one time.

Desired Condition: A desired state for an ecosystem or ecosystem component that is based on its relationship with other interacting components. Usually implies a long-term goal for management.

Desired Landscape Character: Appearance of the landscape to be retained or created over time recognizing that a landscape is a dynamic and constantly changing community of plants and animals; the combination of landscape design attributes and opportunities, as well as biological opportunities and constraints.

Developed Recreation: This type of recreation is dependent upon facilities provided to enhance recreation opportunities in concentrated-use areas. Examples include campgrounds and picnic areas. Facilities in these areas might include roads, parking lots, picnic tables, drinking water, and toilets.

Developed Recreation Sites: Relatively small, distinctly defined areas where facilities are provided for concentrated public use, such as campgrounds, picnic areas and swimming beaches.

Development Scale:

Development Scale 1: Minimum site modification. Rustic or rudimentary improvements designed for protection of the site rather than comfort of the users. Use of synthetic materials excluded. Minimum controls are subtle. No obvious regimentation. Spacing informal and extended to minimize contacts between users. Motorized access not provided or permitted.

Development Scale 2: Little site modification. Rustic or rudimentary improvements designed for protection of the site rather than comfort of the users. Use of synthetic materials avoided. Minimum controls are subtle, little obvious regimentation. Spacing informal and extended to minimize contacts between users. Motorized access provided or permitted, primary access over primitive roads. Interpretive services are informal, almost subliminal.

Development Scale 3: Site modification moderate, facilities about equal for protection of natural site and comfort of users. Contemporary, rustic design of improvements is usually based on use on native materials. Inconspicuous vehicular traffic controls usually provided. Roads may be hard surfaced and trails formalized. Development density is about three family units per acre. Primary access may be over high standard roads. Interpretive services informal but generally direct.

Development Scale 4: Site heavily modified. Some facilities designed strictly for comfort and convenience of users. Luxury facilities not provided. Facility design may incorporate synthetic materials, extensive use of artificial surfacing of roads and trails. Vehicular traffic

control is usually obvious. Development density is about three to five family units per acre. Plant materials are usually native. Interpretive services are often formal or structured.

Development Scale 5: High degree of site modification. Facilities mostly designed for comfort and convenience of users and usually include flush toilets; may include showers, bathhouses, laundry facilities and electrical hook-ups. Synthetic materials commonly used. Formal walks or surfaced trails. Regimentation of users is obvious. Access is usually by high-speed highways. Development density is five or more family units per acre. Plant materials may be foreign to the environment. Formal interpretive services usually available. Designs formalized and architecture may be contemporary. Mowed lawns and clipped shrubs are not unusual.

Diameter at breast height (DBH): Tree diameter at a standard height of 4.5 ft (1.37 meters) above the ground surface.

Diffusion model: A model calculated by formula, graphs, or computer that estimates the dilution of an air pollutant as it is carried downwind. The models are based on physical principles with various simplifications to aid solvability.

Dike: A long mass of igneous rock that cuts across a structure of adjacent rock.

Direct attack: Any treatment of burning fuel: by wetting, smothering or chemically quenching the fire or by physically separating the burning from unburned fuel.

Dispersed Campsite: An individual/family-sized campsite that has a general size of about 500-1,000 square feet. It includes a hardened area around a fire pit, a barren area, and/or user-constructed facilities.

Dispersed Recreation: Those national forest-oriented outdoor recreation activities that normally take place outside of sites or areas that are developed or managed to concentrate recreation use. Dispersed recreation activities may require facilities for safeguarding visitors, protecting resources and enhancing the quality of visitor experiences.

Distance Zones: Landscape areas denoted by specified distances from the observer. Used as a frame of reference in which to discuss landscape attributes or the scenic effect of human activities in a landscape.

Distinctive Landscape: This corresponds to Scenic Attractiveness Class A. Areas where landform, vegetation patterns, water characteristics and cultural features combine to provide unusual, unique, or outstanding scenic quality. These landscapes have strong positive attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern and balance.

Disturbance: Any event that alters the structure, composition, or function of an ecosystem, including grazing, human trampling, logging, foraging by wildlife, wind, flood, insects, disease, and fire.

Disturbed land: Land where the surface soils or rock or vegetation has been altered.

Diversion dips: Constructed ditches or low spots across the road that allow water to flow across the road during high flow events or in the event that the culvert was plugged to allow the water to be diverted back into the channel (also drivable dips).

Diversion potential: The potential for water to be diverted away from drainage structures; causing erosion of road surface.

Duff: Tree, understory plant needles and leaves that constitute forest floor litter and detritus. Duff includes all soil organic horizons from undecomposed litter to very decomposed organic matter on top of mineral soil.

Ecological processes: The actions or events that link organisms and their environment, such as disturbance, successional development, nutrient cycling, productivity and decay.

Ecoregion: A continuous geographic area used as an ecological basis for management or planning.

Ecosystem: The dynamic complex of organisms and their environment contained within a specified area during a specified time. System elements include interaction and feedbacks between components. Ecosystems are open systems, with energy and material flowing into and out of the system.

Ecosystem function: The specific contribution of an ecosystem component to system behavior.

Ecosystem health: A condition where the parts and functions of an ecosystem are sustained over time and where the system's capacity for self-repair is maintained, such that goals for uses, values, and services of the ecosystem are met.

Ecosystem management: Scientifically-based land and resource management that integrates ecological capabilities with social values and economic relationships, to produce, restore, or sustain ecosystem integrity and desired conditions, uses, products, values, and services over the long-term.

Ecosystem processes: The mechanisms by which ecosystem components interact and change across space and through time.

Ecosystem resilience: The ability of an ecosystem to restore or maintain biodiversity, ecosystem functions, and ecological structure and processes after a disturbance. Ecosystem resilience implies a return to some stable trajectory or stable rate or type of system dynamics after system disturbance.

Ecosystem structure: The living and nonliving elements of an ecosystem and their spatial arrangement.

Ecosystem sustainability: The ability to sustain diversity, productivity, resilience to disturbance, ecosystem health, renewability and/or yield of desired values, resource uses, products, or services from an ecosystem, while maintaining the integrity of the ecosystem over time.

Ecotone: The transition zone between two adjacent ecological communities, such as between a forest and grassland.

Effects (on Heritage Resources): Impacts to the characteristics that qualify a heritage resource for the National Register of Historic Places. These can include alterations in location, setting, use, design, materials, feeling and association. Adverse effects include physical destruction or damage, isolation from or alteration of setting, introduction of visual, audible or atmospheric elements, physical deterioration from neglect or from any action, transfer, lease or sale.

Emission: Unwanted substances released by human activity into air or water.

Emission Control Device: Any piece of equipment that reduces the release of any air pollutant into the atmosphere; see Best Available Control Technology.

Emission Limit: Regulatory standard that restricts the discharge of an air pollutant into atmosphere.

Emission, primary: An emission that is treated as inert (non-reactive).

Emission, secondary: Unwanted substances that are chemical byproducts of reactive primary emissions.

Endangered Species: An animal or plant species designated by the U.S. Fish and Wildlife Service or National Marine Fisheries Service (NOAA Fisheries) to receive federal protection because it is in danger of extinction throughout all or a significant portion of its natural range.

Environmental Impact Report (EIR): Environmental impact assessment document prepared in accordance with the California Environmental Quality Act.

Environmental Impact Statement (EIS): Environmental impact assessment document prepared in accordance with the National Environmental Policy Act.

Estuary: Widening area at seaward end of river where its current is met and influenced by ocean tides.

Ethnobotanic: Ethnological information collected from plant types and functions.

Ethnographic landscape: A landscape containing a variety of natural and cultural resources (e.g., contemporary settlements, sacred religious sites, massive geologic structures) that are defined as heritage resources. Small plant communities, animals, subsistence and ceremonial grounds are often components of these landscapes.

Ethnohistoric: Ethnological information collected during historic times for instance that from the Spanish mission registers.

Executive Order: An order of regulation issued by the President or some administrative authority under his or her direction.

Existing Scenic Integrity: This is current scenic condition of the landscape considering previous human alterations.

Experimental Forests: National Forest System lands used for conducting research that serves as the basis for the management of forests and grasslands.

Exponentially: Characterized by or being an extremely rapid increase.

Extreme Fire Behavior: 'Extreme' implies a level of fire behavior characteristics that ordinarily precludes methods of direct control action. One or more of the following are usually involved: high rate of spread, prolific crowning and/or spotting, presence of fire whirls, a strong convection column. Predictability is difficult because such fires often exercise influence on their environment and behave erratically, sometimes dangerously.

Fault: A fracture or zone of fractures in rock strata which have undergone movement that displaces the sides relative to each other, usually in a direction parallel to the fracture. Abrupt movement on faults is a cause of most earthquakes.

Feature: A visually distinct or outstanding part, quality, or characteristic of a landscape.

Feeder Pipeline: A short pipeline connecting two petroleum facilities or pipelines.

Fill: Material brought to the site or moved within the site to build up a road surface.

Fine filter management: Management that focuses on the welfare of a single or only a few species rather than the broader habitat or ecosystem (contrast to coarse-filter management).

Fire Behavior: The manner in which a fire reacts to the influences of fuels, weather, and topography.

Firebreak: A natural or constructed discontinuity that is utilized to segregate, stop and control the spread of fire or to provide a control line from which to suppress a wildland fire.

Fire Intensity: A general term relating to the heat energy released by a fire.

Fire Management Plan (FMP): A strategic plan that defines a program to manage wildland and prescribed fires and documents the Fire Management Program in the approved land use plan. The plan is supplemented by operational plans, such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans.

Fire regime: The complex of temporal and spatial patterns of fires that occur over specified periods for a given area. Parameters of fire regimes include fire frequency, the amount of area burned, season of fire occurrences, fire severity, fire predictability, and relations with driving factors, such as climate and human activities.

Fire suppression: A coordinated effort to control or put out a fire. A resource management policy initiated in the early 1900s by the U.S. Forest Service after widespread natural occurring wildland fires burned hundreds of thousands of acres of public land. Subsequently, this policy was adapted by many other land management agencies. This policy was initiated in order to preserve forest lands and has been revised in recent decades as research has shown that fire is a necessary process in the maintenance of healthy forest ecosystems. Prescribed fire and allowing natural fires to burn when conditions are suitable are now widely used management methods.

Firing tactics: Any tactic using fire to help control fire. Backfiring is used to create a wide line of defense at the head of the fire to halt the forward spread of a fire. Burnout is the removal of small amounts of combustible fuel between the control line and the fire perimeter.

Floodplains: Are relatively flat areas adjoining a river way; which are formed by deposition of sediments during major floods and have evolved with these episodic events; every 50-100 years segments of many of the streams are 're-set' by the large flow events that remove riparian vegetation and re-arrange sandbars, channel banks, riffles and pools.

Fluvial: Pertaining to streams or rivers.

Forb: A broadleaf plant that has little or no woody material in it.

Foreground: Detailed landscape generally found from the observer to ½ mile away (see also immediate foreground).

Forest canopy: The uppermost layer of vegetation in a forest, which consists of the upper branches of trees.

Forest floor: The surface and ground layer beneath the forest canopy.

Forest Road Atlas: The Forest Road Atlas is a key component of the Forest Transportation Atlas and is consistent with the road inventory and includes all classified and unclassified roads on the forest lands. The road atlas includes (at a minimum): the location, jurisdiction and road

management objectives for classified roads and bridges; the location of unclassified roads and management actions taken to change the status of unclassified roads.

Forest roads: Any road wholly or partly within or adjacent to, and serving the National Forest System and which is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources.

Forest Transportation Atlas: The Transportation Atlas is the official repository of transportation facility decisions for the national forests. It contains a current record of forest transportation facilities. The Forest Service Infrastructure Database is used for the storage and analysis of information in the Transportation Atlas.

Forest Transportation Facility: A classified road, designated trail, or designated airfield, including bridges, culverts, parking lots, log transfer facilities, safety devices and other transportation network appurtenances under Forest Service jurisdiction that are wholly or partially within or adjacent to National Forest System lands.

Forest transportation system management: The planning, inventory, analysis, classification, record keeping, scheduling, construction, reconstruction, maintenance, decommissioning and other operations undertaken to achieve environmentally sound, safe, cost-effective, access for use, protection, administration and management of National Forest System lands.

Franciscan rocks: An association of sedimentary rocks and serpentine (including minor asbestos), outcropping along the Big Sur Coast roughly separating the Santa Ynez and San Rafael Mountains, and infamous for being landslide prone.

ft/ft: Feet of elevation change per foot of stream length.

Fuel loading: The oven dry weight of fuels in a given area, usually expressed in tons per acre.

Fuel Type: An identifiable association of fuel elements of a distinctive plant species, form, size, arrangement, or other characteristics that will cause a predictable rate of spread or difficulty of control under specified weather conditions.

Fuelbreak: A wide strip or block of land on which the native or preexisting vegetation has been permanently modified so that fires burning into it can be more readily extinguished.

Fuels: Plants and woody vegetation, both living and dead, capable of burning.

Fuels Reduction: Manipulation, including combustion or removal of fuels to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control. Often includes thinning and/or prescribed burning.

Fugitive Dust: Airborne pulverized soil particles that drift from an area of disturbance.

Gabbro: A dark colored intrusive igneous rock; the coarse-grained equivalent of basalt.

Gallons per day (gpd): A measure of flow rate.

Gallons per minute (gpm): A measure of flow rate.

Gaussian: Diffusion model named after the mathematician Gauss for representing pollution plumes. It is a statistical formulation of pollutant concentration in a downwind direction. The lateral spreading of the pollutants based on wind speed and stability of the atmosphere modified in various ways to take into account presence of an inversion layer and gravitational settling of particles in the plume.

General Scour: Degradation of a channel bed as a result of imbalance of channel sediment-transport capacity and supply during a single stream flow.

Geographic Information Systems (GIS): GIS is both a database designed to handle geographic data, as well as a set of computer operations that can be used to analyze the data. In a sense, GIS can be thought of as a higher order map.

Geologic hazard: A natural geologic feature or condition that can pose risks to humans, facilities and other resources. Examples include: landslides (many different types), earthquake fault zones, areas of subsidence, collapse or liquefaction, floods, snow avalanches, rocks containing natural toxicity, acid mine drainage, dust, coastal cliff erosion, abandoned mines, abandoned landfills, contaminated groundwater, volcanic activity, etc.

Geologic resource: A naturally occurring geologic feature of scientific, cultural, spiritual or economic value, or a human designation of such features. Examples include: fossils, caves, groundwater, minerals (including oil and gas and geothermal resources, sand and gravel, gemstones, etc.), geologic special interest areas, etc.

Geophysical Survey: General term for survey of land forms using geologist mapping, trenching, soil testing, percolation testing, echo sounding, or other techniques.

Gneiss: Banded metamorphic rock.

Grading: Road surfacing activity to improve drivability, to level or smooth to a desired gradient.

Gravities (g): Unit of acceleration equal to that produced on free falling bodies at the earth's equator.

Granite, Granitic: A coarse granular igneous rock/characteristic of granite.

Ground fire: Fire that burns in fuels on the surface of the ground, such as litter, grasses and other non-woody plants, as well as organic material in the soil layer. Propagates largely by creeping along the ground.

Ground litter: The top layer of the forest floor composed of loose debris of dead branches, twigs, and recently fallen leaves or needles altered little by decomposition.

Groundwater: Water found beneath the surface of the earth within the zone of saturation.

Habitat: The local environment occupied by an organism.

Habitat Conservation Plan (HCP): A document required by Endangered Species Act for an incidental take permit application; also known as a Conservation Plan.

Habitat fragmentation: The splitting or isolating of patches of similar habitat. Habitat can be fragmented by natural events or development activities.

Handcrew: A crew consisting of 10 to 20 people, whose specialty is constructing fire lines by hand.

Handline: A containment line (along the edge of a fire) built with chainsaws, and hand-tools.

Hardening (a recreation site): The protection of physical resources (usually from recreational impacts) accomplished through a variety of means (such as surfacing, graveling, adding signs, improving drainage, placing barriers or metal fire rings, etc.) that allows continued recreation use of the area.

Hazard Index: Estimated exposure to a given substance being discharged from a facility divided by the acceptable exposure level for that substance summed over all pollutants.

Headwall area: Usually at the top of swales and small channels where the natural upslope progression of a channel ends at a steep vertical face.

Healthy ecosystem: An ecosystem in which structure and functions allow the maintenance of the desired conditions of biological diversity, biotic integrity and ecological processes over time.

Herbicides: Chemicals (pesticides) used to kill plants.

Heritage Resources: Are non-renewable evidences of our national heritage. The physical and non-physical remains of districts, sites, structures, buildings, networks, events, or objects used by humans and cultures in the past. Heritage resources are considered to be historic, prehistoric, ethnographic, architectural, or archival in nature.

Heritage Resources Consultation:

- An active, affirmative process that identifies issues and seeks input from appropriate American Indian governments, community groups, and individuals. Considers their interests as a necessary and integral part of the BLM and Forest Service decision-making process.
- The legal obligation requiring the federal government, through consultation, to consider the interests of American Indian tribes and account for those interests in the decision-making process. This legal obligation is based on laws and numerous Executive Orders and statutes.
- A process that involves discussions between a federal agency and the U.S. Fish and Wildlife Service or the National Marine Fisheries Service under Section 7(a)(2) of the Endangered Species Act of 1973, as amended, regarding potential impacts on a species or critical habitat listed under Section 4 of the Act.

Herpetofauna: Biological term for amphibians and reptiles.

Herpetologist: Person who studies amphibians and reptiles.

High Scenic Integrity: This classification provides for conditions where human activities are not visually evident. This refers to landscapes where the valued (desired) landscape character “appears” intact. Deviations may be present but must repeat the form, line, color, texture, pattern and scale common to the landscape character. The landscape appears unaltered. This is synonymous with the Retention Visual Quality Objective under the original Visual Management System.

Historical conditions: Range of historical variation; range of the spatial, structural, compositional and temporal characteristics of ecosystem elements during a period specified to represent "natural" conditions.

Historical range of variability (HRV): The natural fluctuation of the components of a healthy ecosystem over time. A means to define the boundaries of ecosystem behavior and patterns that have remained relatively consistent over long periods. HRV is usually defined for centuries to millennia before the period of widespread human population increases and associated ecosystem changes that began in roughly the early to middle 1800s for many regions of western North America.

Historic Property: Any heritage resource that has been included or determined eligible for inclusion within the National Register of Historic Places.

Holistic: The integration of components of an ecosystem in some scale of ecological inquiry. In a holistic perspective, one ecosystem component cannot be isolated without reference to how it affects and is affected by other components in the system.

Human Dimension: An integral component of ecosystem management that recognizes people are part of ecosystems, that people's pursuits of past, present, and future desires, needs and values (including perceptions, beliefs, attitudes and values) have and will continue to influence ecosystems and that ecosystem management must include consideration of the physical, emotional, mental, spiritual, social, cultural and economic well-being of people and communities.

Hydrocarbons (HC): A mixture of hydrocarbon compounds usually referred to in the vapor state**.** Compounds composed principally of carbon and hydrogen; they occur in petroleum, natural gas, coal and bitumens.

> **Hydrocarbons, non-methane:** Mixture or concentration of hydrocarbons with the methane fraction ignored, one of the many formulations for reactive hydrocarbons.
>
> **Hydrocarbons, Reactive:** Mixture or concentration of hydrocarbons with fraction assumed to be non-reactive removed from consideration.

Hydrograph: The characteristic features (as flow or depth) of bodies of water.

Hydrological regimes: The spatiotemporal dynamics of water flow and associated fluvial process in an ecosystem.

Igneous rock: One of the three primary rock groups, composed of rocks formed by cooling of hot magma, that formed at great depth (plutonic rocks), or that extruded onto the surface (volcanic rocks).

Immediate Foreground: The detailed feature landscape found within the first few hundred feet of the observer, generally, from the observer to 300 feet away.This distance zone is normally used in project-level planning, not broad-scale planning.

Impoundment: Collection or confinement.

Inboard ditches: Drainage ditches that are located on the uphill side of the road.

Indicator species: A species, the presence or absence of which is indicative of a particular habitat, community, or set of environmental conditions.

Indistinctive Landscape: This corresponds to Scenic Attractiveness Class C. Areas where landform, vegetation patterns, water characteristics and cultural land use have low scenic quality. Often water and rock form of any consequence are missing in these landscapes. These landscapes have weak or missing attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern, and balance.

Infrastructure database (INFRA): Forest Service corporate database application that provides for a consistent and accurate inventory and financial data of Forest Service physical assets on Forest Service lands. Each National Forest enters, manages and reports information on the inventory of their constructed features. Roads, trails, and bridges among other constructed

features associated with the transportation system are managed within the Travel Routes application of INFRA.

In-lieu lots: Recreation residence open lots that are made available to special-use permit holders to rebuild their structures when lost to fire or other circumstances.

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

Integrated Weed Management (IWM): A system for planning and implementation of a program to select a method for containing or controlling an undesirable plant species or group of species using all available methods including: education, prevention, physical or mechanical methods, biological control agents, herbicide methods, cultural methods and general land management. It uses an interdisciplinary and ecological approach to managing unwanted plants-weeds.

Intermixed Lands: All other lands not included in the Forest Service system lands. They include private, state, local, and other federal lands.

Intrusive: A rock formed at depth from magma emplaced into pre-existing rock.

Invasive nonnative species: Species that have been introduced into an area in which they did not evolve and in which they usually have few or no natural enemies to limit their reproduction and spread. They are animal and plant species with an extraordinary capacity for multiplication and spread at the expense of native species. These species can cause environmental harm by significantly changing ecosystem composition, structure, or processes and can cause economic harm or harm to human health. Plants in this category may or may not be designated as noxious weeds.

Inversion: A layer of air in the atmosphere that is warmer than the air below it, in contrast to the usual decrease in temperature with increasing altitude. Pollutants tend to be trapped below the inversion.

Invertebrate: Animal that lacks a spinal column (backbone).

Isobath: A contour line that is at equal depth along its length.

Jurisdiction: The limits or territory within which authority may be exercised.

Key Area (Range): A key area is a portion of the range, which because of its location, grazing and browsing value, and/or uses, serves as an indicative sample of rangeland condition, trend, or degree of seasonal use.

km2 or km ^{2} : Square kilometer.

L50 (medium): The level of noise exceeded 50 percent of the time. Usually specified as either the daytime or the nighttime median noise level.

Ladder fuels: Vegetation located below the crown level of forest trees, which can carry fire from the forest floor to tree crowns. Ladder fuels may be low growing tree branches, shrubs, or smaller trees. Fire can move from surface fuels by convection into the crowns with relative ease.

Land management plan ("forest plan"): A strategic level document that guides all natural resource management and established management standards for a national forest, and that embodies the provisions of the National Forest Management Act of 1976.

Landform: One of the attributes or features that make up the Earth's surface such as a plain, mountain, or valley.

Landscape: An area composed of interacting ecosystems that are repeated because of geology, landform, soils, climate, biota, and human influences throughout the area. Landscapes are generally of a size, shape and pattern that are determined by interacting ecosystems.

Landscape Character: Particular attributes, qualities and traits of a landscape that give it an image and make it identifiable or unique.

Landscape Character Goal: A management prescription designed to maintain or modify the existing landscape character to a desired future state (see desired landscape character).

Landscape Restoration: An activity implemented to restore a landscape to achieve the landscape's assigned Scenic Integrity Objective.

Landslide: A general term covering a wide variety of mass; a movement landforms and processes involving a down-slope movement of rock and soil examples include: debris slide, rock fall, translational slide, block glide, avalanche, mudflow, liquefaction slide, slump, etc.

Large Fire:

1) For statistical purposes, a fire burning more than a specified area of land (e.g., 100 acres).

2) A fire burning with a size and intensity such that its behavior is determined by interaction between its own convection column and weather conditions above the surface.

Lateral Erosion: Horizontal movement of a channel, or a channel widening, caused by water-transport of bank material.

Law Enforcement and Investigations Management Reporting System (LEIMARS): The approved automated system currently in use by the Forest Service for reporting violations of law and of Title 36, Code of Federal Regulations and law violations (FSM 5330).

Level of Service (LOS): A measure of roadway congestion, ranging from A (free flowing) to F (highly congested).

Limits of Acceptable Change (LAC): A framework for establishing acceptable and appropriate resource and social conditions in recreation settings.

Linear Feet: Same as regular feet. If something is 20 linear feet tall, it is 20 feet tall.

Linkage (habitat): Areas of habitat that provide connectivity to other areas of habitat or potential dispersal routes.

Liquefaction: The process of making or becoming liquid (soils).

Litter: The freshly fallen or only slightly decomposed plant material on the forest floor. This layer includes foliage, bark fragments, twigs, flowers and fruit.

Local Scour: Lowering of a channel bed as a result of a local disturbance to flow, such as bridge piers, a sudden drop or a sharp channel bend.

Logger's choice: Also called high grading, it is the selective harvesting of the largest, most highly valued trees in a stand.

Loop Hikes: Paths that begin and end at the same location allowing a complete circuit.

Low Flow: Low rate of water flow due to scant rainfall and low runoff.

Low-Flow Incisement: Formation of a local, small channel inside a larger stream channel as a result of low-discharge flows.

Low Scenic Integrity: This classification refers to landscapes where the valued (desired) landscape characters "appears moderately altered." Deviations begin to dominate the valued landscape character being viewed, but they borrow valued attributes such as size, shape, edge effect and pattern of natural openings, vegetative-type changes or architectural styles outside the landscape being viewed. Deviations must be shaped and blended with the natural terrain (landforms) so that elements such as unnatural edges, roads, landings and structures do not dominate the composition. The landscape appears moderately altered. This is synonymous with the Modification Visual Quality Objective under the original Visual Management System.

Macroinvertebrate: Invertebrate animal that is visible to the naked eye.

Maintenance: The act of keeping fixed assets in acceptable condition. It includes preventive maintenance and normal repairs; replacement of parts, and structural components; and other activities needed to preserve a fixed asset so that it continues to provide acceptable service and achieves its expected life. Maintenance excludes activities aimed at expanding the capacity of an asset or otherwise upgrading it to serve needs different from, or significantly greater than those originally intended. Maintenance includes work needed to meet laws, regulations, codes and other legal direction as long as the original intent or purpose of the fixed asset is not changed (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998).

Maintenance Levels: Maintenance levels define the level of service provided by, and maintenance required for, a specific road. Maintenance levels must be consistent with road management objectives and maintenance criteria. Roads assigned to maintenance levels 2-5 are either constant service roads or intermittent service roads during the time they are open to traffic.

> **Level 1:** Assigned to intermittent service roads during the time they are closed to vehicular traffic. The closure period must exceed one year. Basic custodial maintenance is performed to keep damage to adjacent resources to an acceptable level and to perpetuate the road to facilitate future management activities. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level. Appropriate traffic management strategies are "prohibit" and "eliminate".
>
> **Level 2:** Assigned to roads open for use by high clearance vehicles. Passenger car traffic is not a consideration. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level. Appropriate traffic management strategies are either to discourage or prohibit passenger cars or accept or discourage high clearance vehicles.
>
> **Level 3:** Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. Roads in this maintenance level are typically low speed, single lane with turnouts and spot surfacing. Some roads may be fully surfaced with either native or processed material. Appropriate traffic management strategies are either "encourage" or "accept". "Discourage" or "prohibit" strategies may be employed for certain classes of vehicles or users.

Level 4: Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated. The most appropriate traffic management strategy is “encourage”. However, the “prohibit” strategy may apply to specific classes of vehicles or users at certain times.

Level 5: Assigned to roads that provide a high degree of user comfort and convenience. These roads are normally double lane, paved facilities. Some may be aggregate surfaced and dust abated. The appropriate traffic management strategy is “encourage”.

Major Transportation Corridor: County, state and federal highways.

Major Utility Corridor: Power transmission lines, pipelines, telecommunication lines and associated right of ways.

Management Indicator Species (MIS): Representative species whose habitat conditions and/or population changes are used to assess the impacts of management activities on species in similar habitats in a particular area.

Management prescription: Management actions and treatments that are implemented under specific environmental conditions to achieve specific desired results.

Marine sedimentary rocks: Sedimentary rocks formed in an ocean environment.

Mass Wasting: Large land area erosion and failures.

Matrix: A style of organization that encourages cross-departmental co-operation rather than a strict hierarchy.

Meaningful measures: A process that helps provide quality service to recreation visitors by setting quality standards for work, prioritizing work by visitor preferences and agreeing to a plan of work consistent with program funding.

Median: The mid-value is a series of values, with half having greater value and half lower value, to be distinguished from “average.”

Mercalli scale: A scale of earthquake intensity ranging from I for an earthquake detected only by seismographs to XII for causing total destruction of all buildings.

Merchantable: A tree with commercial value.

Mesozoic: The Geologic era ranging from 66 to 245 million years ago.

Metamorphic rock: One of the three primary groups of rocks, whereby the rock is derived from pre-existing rocks by mineralogical, chemical, and/or structural changes, in response to marked changes in temperature, pressure, sheering stress and chemical environment, generally at depth in the earth’s crust.

Metasedimentary: Partially metamorphosed sedimentary rock.

Metavolcanic: Partially metamorphosed volcanic rock.

Meter (m): Length equal to 39.37 inches.

Microclimate: Distinctive climate within a small geographic area.

Micron: One millionth of a meter.

Microwave: Radio communications, which are of sufficiently short wavelength (or high frequency) as to be focused on a line-of-sight between sending and receiving equipment. These radio signals carry information for control purposes.

Middleground: The zone between the foreground and the background in a landscape, located from ½ mile to four miles from the observer.

Millennium: A period of 1,000 years.

Mitigation (biological resources): Action taken to lessen the impact of an action or activity on biological resources; includes:

a) Avoiding the impact altogether by not taking a certain action or parts of an action.
b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
e) Compensating for the impact by replacing or providing substitute resources or environments.

Mitigation (for Heritage Resources): To lessen or minimize an adverse effect upon a heritage resource listed on or eligible for inclusion within the National Register for Historic Places.

Mixing Height: The distance from the ground to a daytime (temperature) inversion layer.

Moderate Scenic Integrity: This classification refers to landscapes where the valued (desired) landscape characters "appears slightly altered." Noticeable deviations must remain subordinate to the landscape character being viewed. The landscape appears slightly altered. This is synonymous with the Partial Retention Visual Quality Objective under the original Visual Management System.

Monitoring: The periodic evaluation of management activities to determine how well objectives were met and how management practices should be adjusted. See also, adaptive management.

Monitoring Station: A mobile or fixed site equipped to measure instantaneous or average ambient air pollutant concentrations.

Montane: A zone of relatively moist cool upland slopes below timberline dominated by large coniferous trees.

Mortality removal: The removal of dead vegetation including merchantable trees, non-merchantable trees and chaparral.

Multipathway Pollutants: Pollutants that pose a risk to public health through individual inhalation, ingestion (from food, water, or soil) or dermal absorption.

National Fire Plan (NFP): Developed in August 2000, following a landmark wildland fire season, with the intent of actively responding to severe wildland fires and their impact to communities while ensuring sufficient firefighting capacity for the future. The NFP addresses five key points: firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability.

National Forest System (NFS) lands: Federal lands designated by Executive Order or statute as National Forests, National Grasslands, or purchase units or other lands under the administration of the U.S.D.A. Forest Service.

National Forest System road (NFSR): A classified forest road under the jurisdiction of the Forest Service. The term "National Forest System roads" is synonymous with the term "forest development roads" as used in 23 U.S.C. 205.

National Monument: Areas created by law or Executive Order that have unique, ecological, geological, historical, pre-historical, cultural and scientific interest.

National Register of Historic Places: A register of heritage resources of national, state, or local significance that is maintained by the Department of Interior.

National Visitor Use Monitoring (NVUM): Provides sound and statistically reliable estimates of recreation and visitor use within national forests upon which to base land management planning decisions.

National Wild and Scenic River System: Rivers with outstanding scenic, recreational, geological, fish and wildlife, historic, cultural or other similar values designated by Congress under the Wild and Scenic Rivers Act for preservation of their free-flowing condition (see also Wild and Scenic Rivers).

National Wilderness Preservation System: All lands covered by the Wilderness Act and subsequent wilderness designations, irrespective of the department or agency having jurisdiction.

Native species: Species that have evolved in, or are indigenous to, a specific area.

Natural-Appearing Landscape Character: Landscape character that has resulted from human activities yet appears natural, such as historic conversion of native forests into farmlands, pastures and hedgerows that have reverted back to forests through reforestation activities or natural regeneration.

Natural disturbance: Periodic impact of natural events such as fire, severe drought, insect or disease attack, or wind.

Natural environment: The complex of biotic and abiotic factors that acts on an organism or a community in the absence of significant human intervention.

Natural Landscape Character: Landscape character that originated from natural disturbances, such as wildland fires, glaciations, succession of plants from pioneer to climax species, or indirect activities of humans, such as inadvertent plant succession through fire prevention.

Niche: A place or activity for which a thing is best fitted.

Nitric Oxide (NO): A molecule of one nitrogen atom and one oxygen atom. Results usually from combustion of organic substances containing nitrogen and from recombination of nitrogen decomposed in air during high temperature combustion.

Nitrogen Dioxide (NO_2): A molecule of one nitrogen atom and two oxygen atoms. Results usually from further oxidation of nitric oxide (NO) in the atmosphere. Ozone accelerates the conversion.

Nitrogen Oxides (NOx): Poisonous and highly reactive gases produced when fuel is burned at high temperatures causing nitrogen in the air to combine with oxygen. A gaseous mixture: nitric oxide (NO), nitrogen dioxide (NO_2), and symbolically represented as NO_3.

Noise Level (medium): The level of noise exceeded 50 percent of the time. Usually specified as either the daytime or the nighttime median noise level. Also given the designation L50.

Non-Native American settlement: Extensive and widespread settlement in the western U.S. that began in response to the Homestead Act and other legislation that promoted migration to western lands in the middle to late nineteenth century. Often referred to as Euro-American settlement, also included large numbers of African Americans after the Civil War, Asian Americans from the West Coast and Hispanic Americans from the New World.

Nonnative species: Species that have been introduced by various means into areas where they were not originally found; also called alien or exotic species.

Nonpoint source: A source of pollutants that flow into surface waters from agricultural run-off from fields, urban run-off from paved streets and parking areas, mining and forestry operations, and atmospheric deposition (contrast to point source).

Notice of Intent: Formal notice that an EIS will be prepared and considered. Published in the Federal Register. Includes a Proposed Action, the proposed scoping activities, and a contact within the agency that can answer questions about the Proposed Action and the EIS.

Noxious weed: Plant species so designated by the Secretary of Agriculture or by a responsible state official; they generally possess one or more of the following characteristics: aggressive or difficult to manage; poisonous, toxic, or parasitic; a carrier or host of serious insects or disease; and generally nonnative. There are regulations and reporting requirements in place to reduce the introduction and spread of noxious weeds.

Nutrient cycling: The transformation of chemical elements from inorganic form in the environment to organic form in organisms and via decomposition back to inorganic form.

Objective: A concise, time-specific statement of measurable planned results that respond to pre-established goals or desired conditions. An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving identified goals.

Occupational Safety and Health Administration (OSHA): A federal agency regulating the health safety of the work place.

Off-Highway Vehicle (OHV): Vehicles operated or used exclusively off-highway pursuant to Section 38010(a) and as defined in Sections 38006(a) and 38012(a), (b) of the California Vehicle Code. Typical vehicle types are all terrain-vehicles, “dirt bike” motorcycles, snowmobiles and dune buggies. Vehicles registered for use on State highways pursuant to Section 4000 of the California Vehicle Code and are defined as off-highway vehicles pursuant to Section 38006(b) when used off-highway; typically, all types of four-wheel drive vehicles, Sport Utility Vehicles and dual sport motorcycles.

Off-Road Vehicle (ORV): Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain (E.O. 11644, 1972).

Off-route impact: The effect of unauthorized vehicle travel off roads and trails on soils, vegetation or other resources. The impact can be a linear feature, such as a single motorcycle track or may be larger in scope and can be from a few to many acres in size, such as a vehicle "play" area or a series of hill climbs. Off-route impacts are generally located immediately adjacent to the forest road and trail systems.

Old growth: Old forests, which often contain several canopy layers, variety in tree sizes, species, decadent old trees, and standing and dead woody material.

Open Area: An area that is managed for unrestricted, cross-country vehicle travel both motorized and non-motorized.

Open Space: An area having no enclosing or confining barrier.

Operational Maintenance Level (OML): The type of maintenance required for specific road conditions. Levels are from 1-5, with 5 being the highest amount of maintenance required.

Outfitter/Guide: A special-use permit holder that provides all commercial outfitting operations involving services for accommodating guests, transporting persons, providing equipment, supplies, and materials. The permit holder also provides guiding activities wherein the guide furnishes personal services or serves as a leader or teacher.

Outslope: Roads that are sloped towards the downhill side of the roadway to better match the natural drainage patterns and minimize the potential for diversion.

Overstory: The upper tree canopy layer; the plants below comprise the understory.

Oxidant: A mixture of chemically oxidizing compounds formed from ultraviolet stimulated reactions in the atmosphere, with ozone a principal fraction.

Ozone (O_3): A molecule of three oxygen atoms; O_3. A principal component of "oxidant" in photo-chemically polluted atmospheres. A colorless gas formed by a complex series of chemical and photochemical reaction of reactive organic gases, principally hydrocarbons, with the oxides of nitrogen, which is harmful to the public health, the biota and some materials.

Paleozoic: The geologic era ranging from 245 to 570 million years ago.

Particulate matter: Very fine sized solid matter or droplets, typically averaging one micron or smaller in diameter, also called "aerosol".

Partnerships: Internal and external relationships that have mutual benefits, bridge communities and engage partners in meaningful ways.

Parts per billion (ppb): A measure of the amount of one substance in a second, which is the carrier.

Parts per million (ppm): Is a measure of concentration that is used where low levels of concentration are significant. The value is equivalent to the absolute fractional amount multiplied by one million.

Parts per thousand (ppt): A chemical concentration used to express the salinity of water.

Pastoral Landscape Character: Landscape character that has resulted from human activities, which contains positive cultural elements such as historic conversion of native forests into farmlands, pastures and hedgerows plus some remnants of native forests.

Patch cut: A silvicultural method where all trees in a localized area are harvested. Patch size varies depending upon the forest type and management goals but is typically 1 to 100 hectares in scale.

Pebble Plains: Remnants of a Pleistocene lakebed, with clay soils covered with quartzite. Characteristically treeless openings within the surrounding montane pinyon-juniper woodland or coniferous forest, located at elevations between 6,000 and 7,500 feet.

Perimeter: The exterior boundary.

Perpetuate: To cause to last indefinitely.

Persons At One Time (PAOT): A recreational capacity measurement term indicating the number of people who can use a facility or area at one time.

Perturbation: An event or shift in ecosystem properties that causes major disruption to or mortality of ecosystem components.

Pesticide: Pesticide is a general term used to describe chemicals that kill harmful organisms such as insects, fungi, plants, etc. Pesticides include herbicides (e.g., glyphosphate), insecticides (e.g., carbaryl), and fungicides (e.g., sporax).

pH: A measure of acidity or alkalinity.

Phenology: The study of the annual cycles of plants and animals and how they respond to seasonal changes in their environment. In botany, refers to the timing of flower emergence, sequence of bloom, fruiting, and leaf drop.

Photochemical Pollutant: Reactive organic compounds and nitrogen oxides, photochemical pollutants that absorb energy from sun and react chemically to form ozone.

Phytoplankton: Microscopic plants that form the base of the marine/aquatic food chain.

Plant communities: Assemblages of plants that grow together in space and time.

Pluton/plutonic: An intrusive igneous rock body formed at great depth, characteristic of a pluton.

PM(x)/PM(x): Standards set by the U.S. Environmental Protection Agency to control the amount of particulate matter in the atmosphere that is less than or equal to the amount in (variable indicated in parenthesis) micrometers in diameter.

Point source: A source of pollutants that is discernable and confined, such as a pipe, ditch, channel, conduit, or tunnel. Point sources exclude agricultural discharges (contrast to nonpoint source).

Pounds per square inch (Psig): A unit of pressure.

Preferred Alternative: The alternative recommended for implementation at the draft Forest Plan phase based on the evaluation completed in the planning process; it is not a decision.

Prehistoric Site: Archeology sites associated with American Indians and usually occurring before contact with Europeans.

Prescribed Fire: Any fire ignited by management actions under certain predetermined conditions to meet specific objectives related to hazardous fuels reduction or habitat improvement. A written approved prescribed fire plan must exist, and NEPA requirements must

be met prior to ignition. Prescribed fires are ignited and managed within a "window" of very specific conditions including winds, temperatures, humidity, and other factors specified in the burn plan.

Prescribed thinning: The use of mechanical treatments to remove trees from forest stands.

Pre-suppression: Prior to wildland fire suppression, generally speaking, prior to 1930.

Prevention (Wildland Fire): Activities directed at reducing the incidence of fires including public education, law enforcement, personal contact, and reduction of fuels hazards.

Productivity: The amount of biomass produced in an ecosystem or specific subsystems of an ecosystem (e.g., understory productivity) over a given period.

Proposed Action: A proposal made by the Forest Service to authorize, recommend, or implement an action on National Forest System lands to meet a specific purpose and need. The Proposed Action is subject to public notice and comment provisions.

Proposed species: Any species of fish, wildlife, or plant officially proposed by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service (NOAA Fisheries), via a notice in the Federal Register, to be listed as threatened or endangered.

Protected Activity Centers (PAC): Best 300 acres of habitat, if available, around California Spotted Owl nest or center of territory.

Public roads: Any road or street that is under the jurisdiction and maintained by a public authority and is open to public travel.

Q-curves: This is the ratio of one size class in a distribution of tree diameters compared to the ratio of the next smaller tree diameters.

Raptor: A bird of prey, such as an eagle or hawk.

Reactive Organic Compounds (**ROC):** Organic compounds chemically sensitive to the ultraviolet light in sunlight (see Air Quality).

Record of Decision (ROD): A public document separate from but associated with an Environmental Impact Statement that identifies all alternatives, provides the agency's final decision, the rationale behind that decision, and the agency's commitments to monitoring and mitigation of impacts.

Recreation (Outdoor): Any type of conscious enjoyment that occurs during leisure time; a refreshment of strength and spirits.

Recreation Carrying Capacity: The level of recreation use beyond which impacts exceed social or biological levels specified by evaluative standards.

Recreation Complex: A concentration of developed recreation facilities.

Recreation Opportunity: Availability of a real choice for a user to participate in a preferred activity within a preferred setting in order to realize desired experiences.

Recreational Opportunity Spectrum (ROS): A framework for stratifying and defining classes of outdoor recreation environments, activities and experience opportunities. The settings, activities and opportunities for obtaining experiences are arranged along a continuum or

spectrum divided into six classes: primitive, semi-primitive non-motorized, semi-primitive motorized, roaded natural, rural, and urban.

Recreation Residence: Cabins on National Forest System land that normally were established in tracts and built for recreation purposes with Agency approval and supervision. These cabins are authorized by special-use permit and are not the primary residences of the owners.

Recreation Visitor Day (RVD): Equals to twelve visit hours, which may be aggregated continuously, intermittently, or simultaneously by one or more persons. Recreation visitor days are used to measure recreational production or output capacity.

Reference conditions: Conditions characterizing ecosystem composition, structure, and function and their variability.

Refugia: Areas of relatively unaltered climate inhabited by plants and animals during a period of continental climatic change (as a glaciation) that remain as a center of relict forms from which a new dispersion and speciation may take place after climatic readjustment. Also, areas of remaining habitat preserved and managed for plants and animals whose habitat has otherwise been altered by human activities.

Regime: A regular pattern of occurrence or action.

Rehabilitation (Wildland Fire): Commonly referred to as "rehab," the work necessary to repair damage or disturbance caused by wildland fire or suppression activities. Often includes restoration of firelines or dozer work, and projects such as erosion control, installation of water bars or culverts, reseeding or other rehab of fire-damaged areas.

Renewable energy resources: Energy resources that are naturally replenishing but flow-limited. They are virtually inexhaustible in duration but limited in the amount of energy available per unit of time. Renewable energy resources include: biomass, hydro, geothermal, solar, wind, ocean thermal, wave action, and tidal action.

Research Natural Area (RNA): An area of land designated in perpetuity for research and education purposes, in which current natural conditions are maintained insofar as possible. These conditions are ordinarily achieved by allowing natural, physical and biological processes to prevail without human intervention. However, under certain circumstances, deliberate manipulation may be utilized to maintain the unique feature(s) (target element[s]) that the RNA was established to protect.

Resilience: The ability of an ecosystem to restore or maintain biodiversity, ecosystem functions, and ecological structure and processes after a perturbation.

Restoration: The process of returning ecosystem patterns or processes to a historical range of variability or other defined reference condition.

Right of Way (ROW): An area or strip of land to allow access or to allow a utility to pass through public or private lands.

Riparian: Related to, living, or located in conjunction with a wetland, on the bank of a river or stream, or at the edge of a lake or tidewater.

Riparian area: Habitat area along a stream, river or other body of water, distinguished by characteristic plant and animal communities.

Riparian-dependent resources: Natural resources that owe their existence to the riparian area, such as fish, amphibians, reptiles, fairy shrimp and other aquatic invertebrates, plants, birds, mammals, soil and water.

Riprap: Large rock (generally 8” diameter or larger) used to stabilize slopes or slow down the movement of water. A foundation constructed of broken stones or boulders loosely placed or thrown together, as in deepwater, on a soft bottom, or as a seawall to protect against erosion.

Road: A motor vehicle travel way over 50 inches wide, unless designated and managed as a trail. A road may be classified, unclassified, or temporary.

> **Classified Roads:** Roads wholly or partially within or adjacent to National Forest System lands that are determined to be needed for long-term motor vehicle access including state roads, county roads, privately owned roads, National Forest System roads and other roads authorized by the Forest Service.
>
> **Temporary Roads:** Roads authorized by contract, permit, lease, other written authorization, or emergency operation not intended to be a part of the forest transportation system and not necessary for long-term resource management.
>
> **Unclassified Roads:** Roads on National Forest System lands that are not managed as part of the forest transportation system, such as unplanned roads, abandoned travel ways, and off-road vehicle tracks that have not been designated and managed as a trail; and those roads that were once under permit or other authorization and were not decommissioned upon the termination of the authorization.

Road Analysis: An interdisciplinary science-based analysis of road system opportunities, needs and priorities that support land and resource management objectives.

Road Decommissioning: Activities that result in the stabilization and restoration of unneeded roads to a more natural state.

Road Improvement: Activity that results in an increase of an existing road’s traffic service level, expands its capacity, or changes its original design function.

Roadless Area Review and Evaluation (**RARE):** In 1972, the Forest Service began a review of National Forest System roadless areas (the Roadless Area Review and Evaluation, subsequently called RARE I) to determine their suitability for inclusion in the National Wilderness Preservation System. A second review for Wilderness consideration of roadless areas at the national scale was initiated in 1978 (RARE II).

Roadless Areas: Substantially natural landscapes in national forests that (1) are larger than 5,000 acres or, if smaller, contiguous to a designated wilderness or primitive area, (2) contain no constructed or maintained roads and (3) have been inventoried by the Forest Service for possible inclusion in the National Wilderness Preservation System.

Road maintenance: The ongoing upkeep of a road that is necessary to retain, or restore the road to the approved road management objective.

Road prism: Cross-section of roadway including cut or fill slopes, subgrade, subbase, surfacing, ditches and other drainage structures.

Road Reconstruction: Activity that results in improvement or realignment of an existing classified road as defined below:

Road Realignment: Activity that results in a new location of an existing road or portions of an existing road and treatment of the old roadway.

Roads subject to the Highway Safety Act: National Forest System roads open to use by the public for standard passenger cars. This includes roads with access restricted on a seasonal basis and roads closed during extreme weather conditions or for emergencies but which are otherwise open for general public use.

Rockform: A significant composition of mineral matter constituting the Earth's crust; one of the attributes or features that make up part of the Earth's surface, such as a mountain, cliff, peak, bluff, valley wall, or bedrock.

Rocking: Replacing of or adding to the road-wearing surface.

Roosting site: A place where birds or bats spend the night.

Rural/Agricultural Landscape Character: This is a landscape character that has resulted from extensive human activities and which no longer appears natural, such as conversion of native landscapes into extensively cultivated farmlands, vineyards, pastures, or an area of intensive domestic livestock production.

Salvage logging: Logging of dead trees prior to dead trees becoming non-merchantable.

Savanna: Open grassland with scattered trees, which often forms a broad ecotone between true grassland and true forest or woodland.

Scenery: General appearance of a place, general appearance of a landscape, or features of a landscape.

Scenery Management: The art and science of arranging, planning and designing landscape attributes relative to the appearance of places and expanses in outdoor settings.

Scenery Management System: The USDA Forest Service methodology for classifying the aesthetic values of landscapes are based upon the scenic attractiveness of the landscape, the landscape's visibility and the public's concern about changes in the landscape from a natural condition.

Scenic: Of or relating to landscape scenery; pertaining to natural or natural-appearing scenery; constituting or affording pleasant views of natural landscape attributes or positive cultural elements.

Scenic Attractiveness: The scenic importance of a landscape based on human perceptions of the intrinsic beauty of landform, rock-form, water-form, and vegetation pattern. Reflects varying visual perception attributes of variety, unity, vividness, intactness, coherence, mystery, uniqueness, harmony, balance and pattern. It is classified as: (1) Distinctive, (2) Typical and (3) Indistinctive.

Scenic Integrity: State of naturalness or, conversely, the state of disturbance created by human activities or alteration. Integrity is stated in degrees of deviation from the existing landscape character.

Scenic Integrity Objectives: The objectives that define the minimum level to which landscapes are to be managed from an aesthetics standpoint. There are six objectives that describe the

landscape in varying degrees from naturalness: Very High (Unaltered), High (Appears Unaltered), Moderate (Slightly Altered), Low (Moderately Altered), Very Low (Heavily Altered).

Scenic Quality: The essential attributes of the landscape that when viewed by people, elicit psychological and physiological benefits to individuals and therefore to society in general.

Scenic Resource: Attributes, characteristics and features of landscapes that provide varying responses from and varying degrees of benefits to humans.

Schist: A crystalline metamorphic rock with closely spaced linear features that tend to split into thin flakes of slabs.

Scoping: Determination of the significant issues to be addressed in an EIS.

Sedimentary rock: One of the three primary rock groups, composed of rocks formed by the deposition of sediment.

Seed tree cut: Removal of the mature timber crop from an area in one cut except for a certain number of trees left singly, in small groups, or in narrow strips as a source of seed for natural regeneration.

Seen Area: The total landscape area observed based upon landform screening. Seen areas may be divided into zones of immediate foreground, foreground, middle ground, background, and some landscapes are seldom seen by the public.

Seldom Seen: Remote areas of the landscape infrequently viewed by the public or only visible from aerial viewpoints.

Selected Alternative: The alternative chosen by the Regional Forester for implementation in the forest plan based on the evaluation completed in the planning process.

Sensitive Receptor: That segment of the population (because of age or weak health) more susceptible to the effects of air pollution, noise, oil spill, etc., than the population at large.

Sensitive species: A plant or animal species identified by a Regional Forester for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density or in habitat capability that would reduce a species' existing distribution. Sensitive species are not covered under the Endangered Species Act.

Serpentine: A mechanically weak, green rock, which is susceptible to failure or sliding, particularly on steep slopes.

Shrink-swell potential: Is the expansion or contraction of primarily clay-rich soils during alternating wetting and drying cycles.

Significance: The meaning or value ascribed to a heritage resource based on the National Register of Historic Places evaluation criteria. It normally stems from a combination of association and integrity.

Silviculture: The art and science that promotes the growth of single trees and the forest as a biological unit.

Size class: One of the intervals of tree stem diameters used to classify timber.

Ski Area: A site and attendant facilities expressly developed to accommodate alpine or Nordic skiing and from which the preponderance of revenue is generated by the sale of lift tickets and

fees for ski rental, skiing instruction and trail passes, or for the use of permit holder-maintained ski trails. A ski area also may include ancillary facilities directly related to the operation and support of skiing activities. Operation of Nordic and alpine ski areas for up to 40 years and encompassing such acreage as the forest officer determines sufficient and appropriate is authorized by the National Ski Area Permit Act of 1986.

Skiers at one time (**SAOT):** The daily capacity of a ski-based resort.

Slough: Vertical surface layer that is loose and eroding, place of deep mud or mire, bog, a stagnant swamp, backwater, bayou inlet, or pond in which water backs up.

Slumping: Road section failures.

Smoke Management: Application of fire intensities and meteorological processes to minimize degradation of air quality during prescribed fires.

Snags: Standing dead trees that provide important wildlife habitat, especially for cavity-nesting birds.

Hard Snag: A snag composed primarily of sound wood.

Soft Snag: A snag composed primarily of wood in advance stages of decay and deterioration.

Sociocultural: Involving a combination of social and cultural factors.

Soil compaction: A physical change in soil properties that results in a decrease in porosity, and an increase in soil-bulk density and strength: (1) to unite firmly, the act or process of becoming compact; (2) geology, the changing of loose sediment into hard, firm rock; (3) soil engineering, the process by which the soil grains are rearranged to decrease void space and bring them into closer contact with one another, thereby increasing the bulk density; (4) solid waste disposal, the reducing of the bulk of solid waste by rolling and tamping.

Soil erosion: The detachment and movement of soil from the land surface by gravity, water or wind.

Soil hydrophobicity: Soil that is water repellent, often due to dense fungal mycelial mats or hydrophobic substances vaporized and re-precipitated during fire. Hydrophobic molecules and surfaces have little or no affinity for water molecules. Also, the tendency for a soil particle or soil mass to resist hydration, usually quantified using the water drop penetration time test.

Soil productivity: The inherent capacity of a soil to support the growth of specified plants, plant communities or a sequence of plant communities. Soil productivity may be expressed in terms of volume or weight/unit area/year, percent plant cover, or other measures of biomass accumulation.

Special Forest Products (SFP): Renewable products derived from biological resources for personal, educational, commercial, and scientific use. Excludes saw-timber, pulpwood, cull logs, small round wood, house logs, utility poles, minerals, animals, animal parts, rocks, water, and soil.

Special Interest Areas (SIA): Areas of the national forest that are managed to protect or enhance their unique characteristics, and where appropriate, to enhance public education and recreation related to those characteristics. SIAs can be established for their botanical, cultural, zoological, paleontological, geological or other values. They can also be established to protect and manage threatened, endangered and sensitive species or other elements of biological diversity.

Special Uses: Improvements or activities owned or carried out by private individuals, corporations or other business entities on National Forest System lands under the authorization of a permit. Examples include organization camps, ski areas, apiaries and water systems.

Species of special interest: Native or nonnative species of plants and animals (e.g., rare and threatened species, invasive animals or weeds) that require special management and monitoring actions.

Stand (forest stand): A group of trees that occupy a specific area and are similar in species, age and condition.

Standard: A performance criterion indicating acceptable norms, specifications or quality that an action must meet to maintain the minimum consideration for a resource. Some standards might apply to all areas of the forest, others only to a specific area (e.g., "place").

Standard Cubic Foot (**SCF):** A measure of volume or rate-of-flow of liquid.

State Historic Preservation Officer (**SHPO):** The SHPO is usually involved in consultation procedures associated with the National Historic Preservation Act of 1966, as amended.

State Implementation Plan (SIP): A document required periodically from each county by EPA that indicates the progress and the planning of the county for improving the quality of its air (see Air Quality).

Stocking level: The number of trees in an area as compared to the desirable number of trees for best growth and management.

Stormproof: Improve drainage patterns to reduce erosion during storm events.

Stream Scour: Lowering of a streambed during the passage of a single stream flow. Stream scour can be local in nature (see Local Scour) or more widespread (see General Scour).

> **Local Scour**: Occurring at a specific site such as a bridge or other stream construction.
>
> **General Scour**: Occurring within a stream over long distances due to changes in hydrology controls.

Structure: How the parts of an ecosystem are arranged, both horizontally and vertically.

Subordinate: Landscape features that are inferior to, or placed below, another in size, importance, brightness and so on. Those features secondary in visual impact or importance.

Substrate: Geologic term describing soil or geologic layers underlying a project site or construction area.

Succession: The replacement in time of one plant or animal community with another. The initial seral stage (community or successional stage) often creates conditions favorable for the establishment of the next seral stage, or the next stage may simply consist of longer-lived or more persistent organisms.

Sulfates: Compounds in air or water that contain four oxygen atoms for each sulfur atom (see sulfur Oxides).

Sulfur Dioxide (SO_2): a corrosive and poisonous gas produced from the complete combustion of sulfur in fuels.

Sulfur Oxides (SOx): The group of compounds formed during combustion or thereafter in the atmosphere of sulfur compounds in the fuel, each having various levels of oxidation, ranging from two oxygen atoms for each sulfur atom to four oxygen atoms. A gaseous mixture of sulfur dioxide (SO_2), sulfur trioxide (SO_3) and symbolically represented as SOx. It also can include particulate species such as sulfate compounds (SO_4).

Suppression: All the work of extinguishing or containing a fire, beginning with its discovery.

Surface fire: Fire that spreads through ground fuels with a flaming front.

Sustainability: The ability of an ecosystem to maintain ecological processes and functions, biological diversity and productivity over time.

Sustainable ecosystem: An ecosystem with a balance of processes and components that promote ecosystem resilience and permit the ecosystem to persist into the future in a functional and productive manner.

Sustainable recreation: The design and maintenance of outdoor recreation facilities and corresponding activities that promote long-term health and provide high-quality outdoor recreation opportunities.

Sustained Yield: Production of a biological resource under management procedures, which ensure replacement of the harvest by regrowth or reproduction before another harvest occurs.

Tactics: Deploying and directing resources on an incident to accomplish the objectives designated by strategy.

Terrestrial: Related to or living on land.

Thinning: Use of mechanical treatments to remove tree biomass from forest stands.

Thinning from below: Removal of all trees from a stand below a certain diameter to favor larger trees in the stand.

Threatened Species: A plant or animal species designated by the U.S. Fish and Wildlife Service or National Marine Fisheries Service (NOAA Fisheries) as likely to become endangered within the foreseeable future throughout all or a specific portion of its range.

Topography: Configuration of a surface including its relief and the position of its natural and man-made features.

Total Suspended Particulates (TSP): Solid or liquid particles small enough to remain suspended in air. PM10 is the portion of TSP that can be inhaled.

Traditional Cultural Properties (TCPs): An area that is eligible for inclusion in the National Register of Historic Places because of its associations with cultural practices and beliefs of a living community. They are rooted in the community's history and are important in maintaining the continuing cultural identity of the community.

Traffic service level: Describes the significant characteristics and operating conditions of a road.

Transportation Facility Jurisdiction: The legal right to control or regulate use of a transportation facility derived from fee title, an easement, an agreement, or other similar method. While jurisdiction requires authority, it does not necessarily reflect ownership.

Troposphere ozone injury: Effects of ozone on physiological function of plant species.

Turbidity: Cloudiness or muddiness of water or ocean resulting from suspended or stirred up particles.

Typical Landscape: This corresponds to Scenic Attractiveness Class B. Areas where landform, vegetation patterns, water characteristics and cultural features combine to provide ordinary or common scenic quality. These landscapes generally have positive yet common attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern and balance.

Ubiquitous: Existing or being everywhere at the same time; constantly encountered.

ug/m3: Millionths of a gram per cubic meter; a unit of concentration in liquids or gases.

Ultramafic: Extremely basic.

Unacceptably Altered: A scenic integrity level (never an objective) where human activities of vegetation and landform alterations are excessive and totally dominate the natural or natural-appearing landscape character. Unacceptable alterations are "what not to do to any landscape," regardless of the distance from which the management activity may be observed.

Uncontrolled Fire: Any fire that threatens life, property, or natural resources.

Understory: Lower vegetation layers found beneath the canopy, including smaller trees, shrubs, grasses, grass-like plants and/or forbs, depending on the vegetation type.

Undesirable plant: Plant species classified as unwanted, noxious, harmful, exotic, injurious or poisonous pursuant to state or federal laws; including those designated by the Secretaries of Agriculture or the Interior.

Uneven-aged tree selection: The stand created or maintained includes three or more distinctly different age classes.

Untrammeled: An area with nothing impeding activity, progress, or freedom.

Upgrade culvert: Increase the size of a culvert to handle larger flows (storm events).

Urban: Landscape character that has resulted from extensive human activities; no longer appearing natural such as conversion of native landscapes into an extensively altered landscape (such as a town, city or metropolitan area).

Urban Infrastructure: Roads, bridges, pipelines, aqueducts, electric generation, transmission and distribution facilities, railroads, and similar public works associated with urbanized areas.

Urban/wildland interface: See Wildland/Urban Interface.

Variable point sampling: Does not require measurement of the plot radius or tree diameters to compute the basal area per acre. Stem counts are made with each tree tallied contributing equally without regard to diameter, and to the basal area estimate.

Variable radius plots: A method to determine tree sizes and densities in forest stands. The radius (limiting distance) of a plot varies by tree sizes and the basal area factor used.

Vegetation: Plant life or total plant cover.

Vernal pools: Seasonally flooded depressions found on soils with an impermeable layer such as a hardpan, claypan, or volcanic basalt. Vernal pools often fill and empty several times during a rainy season.

Very High Scenic Integrity: This classification generally provides for ecological changes only. This refers to landscapes where the valued (desired) landscape character is intact with only minute, if any, deviations. The existing landscape character and sense of place is expressed at the highest possible level. The landscape is unaltered. This is synonymous with the Preservation Visual Quality Objective under the original Visual Management System.

Very Low Scenic Integrity: This classification refers to landscapes where the valued (desired) landscape character, "appears heavily altered." Deviations may strongly dominate the valued landscape character. They may not borrow from valued attributes, such as size, shape, edge effect and pattern of natural openings, vegetative-type changes or architectural styles within or outside the landscape being viewed. However, deviations must be shaped and blended with the natural terrain (landforms) so that elements such as unnatural edges, roads, landings and structures do not dominate the composition. The natural landscape character should appear as natural occurrences when viewed at background distances. The landscape appears heavily altered. This is synonymous with the Maximum Modification Visual Quality Objective under the original Visual Management System.

Viable population: A species population that has the estimated numbers and distribution of reproductive individuals to ensure its continued existence.

View: Something that is looked toward or kept in sight, especially a broad landscape or panorama. Act of looking toward this object or scene.

Viewshed: Total visible area from a single observer position or the total visible area from multiple observer positions. Viewsheds are accumulated seen-areas from highways, trails, campgrounds, towns, cities or other viewer locations. Examples are: corridor, feature, or basin viewsheds.

Vista: This is a confined view especially one seen through a long passage as between rows of trees or down a canyon which focuses on a specific feature in the landscape. Unlike a view, the vista is often human-created, and is thereby subject to design.

Water jurisdiction: A category of water law that falls into one of three doctrines: riparian, prior appropriation and a hybrid combination.

Water rights: The legal right to make use of the water from a particular water source for a federal reserved use or a state recognized beneficial use.

Water table: The upper surface of the zone of groundwater saturation where all the pore spaces are filled with water.

Waterform: One of the attributes or features that make up the Earth's surface such as a pond, lake, stream, river, waterfall, estuary or ocean.

Watershed: The area contained within a drainage divide above a specified point on a stream.

Weed: A plant species introduced into an area unintentionally through human activities and not wanted.

Wetland: Land transitional between an obvious upland and an aquatic environment; an area inundated by surface or groundwater with a frequency sufficient to support vegetation or aquatic life that requires saturated or seasonally saturated soil conditions. Wetlands generally include marshes, bogs, wet meadows, river overflows, mud flats and natural ponds; they are generally

highly productive environments with abundant fish, wildlife, and aesthetic and natural resource values.

Wild and Scenic Rivers (WSRs): Rivers or sections of rivers designated by Congressional actions under the 1968 Wild and Scenic Rivers Act as wild, scenic or recreational by an act of the legislature of the state or states through which they flow (see also National Wild and Scenic Rivers System). Rivers may be classified and administered under one or more of the following categories:

Wild: A river or a section of a river that is free of impoundments with watersheds and is still largely primitive and the shorelines largely undeveloped, but accessible in places by roads.

Scenic: A river or a section of a river that is free of impoundments with watersheds and is still largely undeveloped, but accessible in places by roads.

Recreational: A river or section of a river that is readily accessible by road or railroad that may have some development along its shoreline and that may have undergone some impoundment or diversion in the past.

Wilderness: An area of undeveloped federal land that Congress designated as wilderness and that retains its primeval character, and influence without permanent improvements or human habitation and is protected and managed to preserve its natural conditions. An area that; (1) generally appears to have been affected primarily by the forces of nature with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) comprises at least 5,000 acres of land, or is of sufficient size to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic or historical value.

Wilderness Implementation Schedule: A document outlining how the wilderness management direction in a forest plan will be carried out; a three-to-five year schedule of actions that are needed to bring existing conditions into compliance with forest plan standards.

Wildfire: An unplanned unwanted wildland fire, including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fire where the objective is to put the fire out.

Wildland: Land which is uncultivated or unfit for cultivation.

Wildland Fire: Any non-structure fire that occurs in a wildland area. Three distinct types of wildland fire include: wildfire, wildland fire use, and prescribed fire.

Wildland Fire Use: The management of naturally ignited (usually lightning) wildland fires to accomplish specific pre-stated resource management objectives in predefined areas outlined in Fire Management Plans.

Wildland/Urban Interface (WUI): That line, area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. Often incorrectly referred to as the "interzone" or "urban/wildland interface".

Wildlife: Native animal species, as well as native animal communities.

Wildlife habitat diversity: The distribution and abundance of different plant and animal communities and species within a specific area.

Windthrow: Trees uprooted by wind.

Yellow Post Site: Designated place to disperse camp on the San Bernardino National Forest.

Zooplankton: Microscopic marine/aquatic animals generally carried within a water mass.

Appendix M - National Forests of Southern California Weed Management Strategy

Introduction

The spread of invasive weeds on the national forests of southern California is threatening the health of forest, chaparral, and grassland ecosystems. Current inventories indicate that weeds are spreading at an increasing rate within the southern California national forests, especially along roads, trails, and stream corridors. The spread of noxious weeds and nonnative invasive plant species reduces biological diversity; impacts threatened and endangered species, wildlife habitat, modifies vegetative structure and species composition; changes fire and nutrient cycles; and degrades soil structure.

Under the National Forest Management Act (NFMA), and the Forest and Range Renewable Resource Planning Act (RPA), the national forests were given the task of preparing Land and Resource Management Plans (forest plans) to establish management direction along with long-range goals and objectives. During the development of forest plans for the national forests of southern California in the late 1980s, the problems caused by noxious weeds were not as widely recognized as they are today. Initial efforts in education, prevention, inventory, control, and monitoring were piecemeal and uncoordinated. The national forests of southern California have revised their forest plans and this strategy as an appendix to the forest plans, which provides a bridge between forest plan direction of the past and the Forest Service's vision of future conditions.

In 1995, the Forest Service revised its national policy on noxious weed management (FS Manual 2080). The new policy places stronger emphasis on integrated weed management. It outlines responsibilities for integrated pest management, prevention and control measures, cooperation, and information collection and reporting.

In 1998, the Forest Service developed, in conjunction with other federal agencies, a strategy for the management of noxious weeds. That strategy (entitled *Pulling Together: A National Strategy for Invasive Plant Management)* focused on three primary goals: effective prevention, control, and restoration. The Forest Service also developed a national strategy focusing on five areas: prevention and education; control; inventory, mapping, and monitoring; research; and administration and planning.

In response to national direction and regional needs, the Pacific Southwest Region has subsequently developed a *Noxious Weed Management Strategy and Action Plan*. Tiered to the national strategy, the Regional strategy has three primary goals:

- Increase the understanding and awareness of noxious weeds and the adverse effects they have on wildland ecosystems.
- Develop and promote implementation of a consistent integrated pest management (IPM) approach. Institutionalize consideration of noxious weeds in all planning and project analyses.
- Develop strong partnerships and cooperation with private landowners, county governments, state and federal agencies, extension services, universities, and the research community for a consolidated and united approach to managing invasive species.

The Region's strategy uses six emphasis areas to address the goals identified above. They are:

- Coordination and Cooperation
- Prevention and Education
- Control
- Inventory, Mapping, and Monitoring
- Research
- Administration and Planning

Within each emphasis area, the strategy identifies objectives and proposed action items to carry the Regional Noxious Weed Program forward.

In a similar fashion, the southern California national forests' noxious weed strategy is tiered to the regional strategy. The purpose of the strategy is to transform these region-wide goals and emphasis areas into a three to five year action plan that results in on-the-ground accomplishments on the national forests of Southern California.

In 1999, *Executive Order 13112 on Invasive Species* was developed requiring federal agencies to prevent the introduction of invasive species and not authorize or carry out actions that are likely to cause the introduction or spread of invasive species unless the agency shows that benefits of actions clearly outweigh beneficial harm and feasible and prudent measure to minimize the risk of harm will be taken in conjunction with the actions. This order promotes the prevention of introductions of invasive species, rapid response to control and monitor populations, to provide for restoration of native species and habitat conditions in ecosystems that have been invaded, and to conduct research and provide education on invasive species. A management plan entitled *Meeting the Invasive Species Challenge* was completed in 2001 to comply with the executive order.

In 2003, invasive species management was brought to the forefront of the Forest Service Strategic Plan. In the FY 2003 Strategic Plan update, one of the six Priority Goals for the USDA Forest Service for 2003 through 2008 is to "Reduce the Impacts from invasive species: Restore the health of the nation's forests and rangeland to be resilient to the effects of animal, insect, pathogen and plant species." Objectives include: 1) survey of forests, grasslands, and water bodies to detect and monitor invasive species; 2) to improve effectiveness of treating invasive species; and 3) to provide scientific information, and develop and distribute scientific strategies to improve prevention, detection, and control of invasive species (`http://www.fs.fed.us/plan`). Baselines will be provided in June 2003 and performance measures will be tracked over the duration of the FY 2003 Strategic Plan Update.

In 2004, the National Strategy and Implementation Plan for Invasive Species Management was completed. It proposes actions to guide Forest Service programs to employ effective, integrated, comprehensive, and science-based approach for addressing the invasive species problem.

1. Coordination And Cooperation

The spread of invasive weeds ignores all boundaries. The only way that the national forests of southern California can succeed in the control and prevention of noxious weeds is through coordination and cooperation with neighbors and partners. Ranger Districts within the southern

California national forests have been active in the following weed management areas (WMAs): Big Sur, Kern County, Los Angeles County, San Diego County, Santa Barbara County, San Bernardino County, and San Luis Obispo County.

Objectives:

- Use WMAs to consolidate and coordinate weed control across jurisdictional boundaries.
- Ensure that adequate scientific expertise, organization skill, and administrative support is available for local weed management efforts.
- Minimize barriers to noxious weed prevention and control efforts.

Proposed Actions:

All National Forests

- All national forests/districts strive to be active participants and leaders in WMAs.
- Coordinate with California Department of Transportation (Caltrans) to:
- Control Spanish broom along California State Highways 2, 18, 33, 38, 39, 67, 74, 138, 330, and Interstate 8.
- Inventory and monitor weeds along California State highways.
- Coordinate with Los Angeles Department of Water and Power, Southern California Edison, and Pacific Gas and Electric to inventory and monitor weeds along their right-of-ways.
- Work with permittees to remove invasive plants from permit areas.
- Work with Native Americans to identify and control noxious weeds in areas of concern to tribal members and to assist in development of restoration techniques for habitats affected by noxious weeds.
- Work with other program areas to gain support and investment in the prevention, education, and control of noxious weeds.

Coordinate with partners to:

- Implement prevention programs to prevent spread of weeds along trails and roads.
- Develop education programs for national forest visitors.
- Control arundo and tamarisk.
- Control cheatgrass or other invasive plants in restoration sites
- Release biological control agents for yellow star-thistle and spotted knapweed where applicable.

Angeles National Forest

- Coordinate with Los Angeles WMA to continue controlling and/or removing:
    - Spotted knapweed in Tanbark Flats; German and English ivy, *Vinca*, and Spanish broom in Santa Anita, San Dimas, Bouquet, Arroyo Seco, and Millard canyons;

yellow star-thistle on the Santa Clara Mojave Rivers Ranger District; and distaff thistle in San Francisquito Canyon.

  - Tree of heaven, tamarisk, and arundo in San Francisquito, Bouquet, Soledad, Little Tujunga and Big Tujunga canyons; arundo and giant tree spurge at Chantry Flats; and tree of heaven, tamarisk, and arundo in San Gabriel, Big Dalton, and San Dimas canyons.
  - Spanish broom along Rincon-Redbox Glendora Mountain and Glendora Ridge Roads, and Scotch broom in upper Chantry Flats.

- Coordinate with the Los Angeles WMA to monitor status of:
  - Dalmatian toadflax near county line in Frazier Park, halogeton along California State Highway 14 near national forest boundary, and perennial pepperweed in the Santa Clara River near national forest boundary,
  - Apiary sites for yellow star-thistle, spotted knapweed, and other invasive plants.
- Coordinate with State of California for tamarisk removal in upper Castaic Creek.

Cleveland National Forest

- Coordinate with San Diego Water Utilities Department to control tamarisk in Santa Ysabel and Cottonwood Creeks.
- Coordinate with State Coastal Conservancy to control tamarisk in San Mateo Creek.
- Coordinate with California Department of Agriculture and San Diego County to control spotted knapweed in the Julian area and on Palomar Mountain.
- Coordinate with Orange County to control arundo, fig, and castor bean on the west side of the Trabuco Ranger District.

Los Padres National Forest

- Coordinate with Caltrans to control French Broom at the Hwy 1 Maintenance Yard and along West Camino Cielo.
- Coordinate with Sespe Flyfishers and Keep the Sespe Wild volunteers to control tamarisk in Sespe Creek.
- Coordinate with Habitat Works of southern California volunteers to control tamarisk in Piru Creek in concert with the USFS use of Triclopyr to treat larger trees.
- Coordinate with Kern County WMA:
  - to eradicate Dalmatian toadflax on 250 acres near Frazier Park.
  - to eradicate spotted knapweed in Pine Mountain Club.
- Coordinate with Big Sur WMA:
  - and California State Parks to control five acres of French broom along the Vicente Flat Trail.
  - and National Fish and Wildlife Foundation to control two acres of Cape ivy and 80 acres of Italian thistle.

- Coordinate with Monterey County Agricultural Commissioner to eradicate five acres of pampas grass at Kirk Creek Campground.
- Continue to allow San Luis Obispo County to test yellow star-thistle control techniques at Pozo Corrals.
- Coordinate with Santa Barbara Agricultural Commission to release a rust fungus, *Puccinia jaceae* var. *solstitialis*, for use in the control of yellow star-thistle.

San Bernardino National Forest

- Coordinate with San Bernardino County/Corps of Engineers to control tamarisk at Seven Oaks Dam and Spanish broom along the mountain highways.
- Work with Mojave WMA on cooperative inventories and tamarisk eradication efforts along the Mojave River/Deep Creek.
- Coordinate with Riverside County to control tamarisk in Bautista Canyon.
- Continue cooperation with the Resource Conservation District to control arundo in Cajon Wash.
- Coordinate and cooperate with the Santa Ana River WMA.
- Work with BLM and other partners on tamarisk removal in Palm Canyon and other areas in the Santa Rosa and San Jacinto Mountains National Monument.
- Coordinate with the Bear Valley Municipal Water District to control tamarisk in the Baldwin Lake and Big Bear Lake vicinity.
- Coordinate with Southern California Edison to control Spanish broom in the Mill Creek drainage, with Silverwood State Park to control Spanish broom along Hwy 138, and with Habitat Works volunteers to control Spanish broom in Deep Creek.
- Coordinate with Big Bear Green Thumbs to eradicate sweet pea and Dalmatian toadflax near Juniper Point, and with Big Bear Mountain Resorts to control the spread of *Melilotus*.

2. Prevention And Education

Prevention can help slow or prevent the introduction and establishment of noxious weeds on the southern California national forests. Education is an integral part of prevention. Having an informed workforce, as well as cooperators and the public is an important part of managing invasive species.

Currently, Forest Service staff, permittees, and the public have a limited understanding of the potential impacts that noxious weeds have on forest ecology. Even fewer understand what can be done to reduce the risk. Prevention is one of the most cost effective methods to control the spread of noxious weeds.

Objectives:

- Forest Service employees are well informed on noxious weed issues.

- Prevention measures such as weed-free forage and seed, straw, and fill requirements are in use on all National Forest System lands and those under special-use authorization.
- Weed prevention practices and mitigation measures are incorporated into all Forest Service activities.
- Noxious weed prevention clauses are incorporated into Forest Service contracts, and permits
- Educational materials to increase public awareness of noxious weed issues are used in conjunction with other agencies and other resource areas within the Forest Service.
- Homeowners and permittees within and adjacent to National Forest System lands understand the relationship between invasive species used in landscaping and the monetary and ecological consequences of these species escaping and increasing within the Wildland/Urban Interface community defense zones (fuelbreaks) adjacent to their property or permitted areas.

Action Plan:

- Use regionally approved standard clauses in contracts for equipment cleaning for timber, fire, engineering, recreation, watershed improvement and other contracts.
- Educate personnel on need for standard clauses; require their use where needed.
- Implement Regional Special Order requiring the use of weed-free forage and straw as it becomes available in southern California.
- Use weed-free materials in facilities maintenance and construction: gravel, fill, straw, and seed mixes.
- Encourage the adoption of noxious weed prevention practices by other agencies.
- Develop national forest training courses for noxious weed prevention. Target employees who have field going and public contact responsibilities, as well as line officers, and key staff.
- Develop a public education program including interpretive signs in campgrounds and trailheads, brochures with maps and permits, school visits, and similar methods.
- Develop a communication strategy for the southern California national forests for invasive weeds that coordinates activities with other agencies, organizations, and volunteers.
- Develop relationships with local nurseries to inform them of the effects of sales of Spanish broom and other highly invasive plants.
- Work with the San Bernardino National Forest Association Children’s Forest to produce a weed identifier pamphlet for the public showing native plant alternatives for landscaping.
- Annually post a weed prevention poster/presentation at the Big Bear Discovery Center during Earth Day activities and weed awareness week.
- Continue invasive species interpretive talks at local colleges and universities (Victor Valley and University of Redlands).

3. Control/Project Planning

Some Ranger Districts have instituted successful noxious weed control projects, while other units have not yet done so. Given the number of acres infested and projections for new infestations, it is clear that present funding levels are insufficient to deal with noxious weed problems. This funding level has limited the capability of the national forests of southern California to build an effective noxious weed control program.

Four of the national forests have Noxious Weed Management Coordinators and a Forest Pesticide-Use Coordinator. These duties are collateral along with other responsibilities. Currently, the southern California national forests annually treat about 59 miles of stream and 300 acres of uplands to control noxious weeds. The primary target species in these efforts are tamarisk, arundo, tree of heaven, spotted knapweed, Dalmatian toadflax, artichoke thistle, Italian thistle, Spanish broom, French broom, pampas grass, Cape ivy, yellow star-thistle, and purple star-thistle. This work is accomplished through the use of contractors, fire crews, volunteers, and Forest Service resources staff. On some units, the use of noxious weed risk assessments is increasing the amount of land being surveyed. Project planners and decision makers increasingly have information on the risk of spreading weeds and opportunities to incorporate weed control plans into project designs and decisions.

Objectives:

- Identify and eradicate new infestations and new species on National Forest System lands.
- Complete site-specific environmental analyses for the treatment of noxious weed infestations.
- Use an Integrated Weed Management approach to noxious weed control. Integrated weed management is an interdisciplinary pest management approach for selecting methods for preventing, containing, and controlling noxious weeds in coordination with other resource management activities to achieve optimum management goals and objectives. Methods include education; preventive measures; herbicide, cultural, physical or mechanical control methods; biological control agents; and general land management practices (such as manipulation of livestock or wildlife grazing strategies) that accomplish vegetation management objectives (FSM 2080.5).
- Have at least one individual trained on each national forest in wildland weed ecology and pesticide application.
- Noxious weed risk assessments become an integral part of project planning.

Action Plan:

- Encourage personnel to obtain and maintain state pesticide use certification, whether or not restricted-use chemicals will be used.
- Prepare noxious weed risk assessments for all ground disturbing projects.
- Provide outline and examples for project-level risk assessments for use by district personnel.
- Obtain training on noxious weed ecology and management.

- Annually treat 59 miles of riparian habitat (Cuyama River watershed – 5 miles; Piru Creek – 10 miles; Santa Ynez River watershed – 5 miles; Sespe Creek - 5 miles; and Sisquoc River – 12 miles; CNF – 5 miles; ANF – 15 miles; SBNF- 2 miles-Palm Canyon, Bautista Canyon, Cajon Wash, Arrastre Creek, and Mill Creek) for noxious weeds such as tamarisk and arundo.
- Annually treat 300 acres of uplands for noxious weeds, such as pampas grass, yellow star-thistle, spotted knapweed (Julian, Palomar Mountain, and San Dimas Experimental Station), artichoke thistle, Italian thistle, Cape ivy, English ivy (Arroyo Seco and San Dimas Canyon), *Euphorbia dendroides* (Chantry Flat), tree of heaven, Spanish broom (numerous locations on the national forests of southern California), and French broom.
- Use native plant materials as needed to restore disturbed sites to prevent the introduction or reintroduction of noxious weeds.

4. Administration And Planning

To attain an effective Noxious Weed Management Program, there needs to be consistent direction across all the national forests of southern California. Revised forest plan direction and this appendix provide this integration, as well as a priority list of objectives.

Consideration of noxious weed issues is limited or lacking in many project plans and analyses. The omission comes from a combination of factors. One factor is the limited funds available for noxious weed management in the region. Limited funds, resources, and staffing have resulted in low visibility and priority for the Noxious Weed Management Program.

The national funding criteria favor regions that treat large infestations of noxious weeds. Many national forests within the region are relatively free of noxious weeds, but have large infestations adjacent to their boundaries. As a result, the region does not compete well for limited funds. The national forests of southern California must examine ways to become more competitive for national, regional, and local funds, and find ways to manage our existing funds more efficiently.

Objectives:

- Implement three to five year Noxious Weed Action Plans.
- Increase efforts to compete for appropriated noxious weed funding.
- Improve visibility in the management of noxious weeds; become more competitive for 'cost share' funds; and increase interaction and participation with local partners to help with funding opportunities.
- Market the program to receive additional funds based on the factors that make national forests of southern California unique.

Proposed Actions:

- Annually review potential for new invasive species and the potential for existing invaders to move into new areas; plan prevention measures accordingly.
- Annually update Noxious Weed Action Plan.
- Pursue grants and other funding sources to implement weed control measures.

5. Inventory, Mapping And Monitoring

Early detection and containment of noxious weeds is the most efficient method for controlling their spread. Key to early detection is the development and maintenance of an effective inventory and mapping system. The southern California national forests' noxious weed inventory is recorded in part in GIS (Geographic Information Systems) and in part on hard copy maps. Portions of the National Forest System lands (especially stream corridors with known or suspected populations of threatened and endangered species) have been thoroughly inventoried. Other areas (such as upland communities in areas of wilderness) have been poorly inventoried for noxious weeds. A complete and interactive inventory with GIS capabilities is critical for the national forests of southern California to effectively compete for national and regional funding opportunities, report and track existing infestations, and treat known populations of noxious weeds. It is equally important to share information with our neighbors and partners.

Monitoring is essential to provide information necessary for long-term planning and decision-making. A monitoring program is needed to evaluate changes in invasive plant populations and whether management activities, noxious weed control projects, and prevention programs are achieving their desired goals.

There are no consistent monitoring protocols in use to assist planners and project managers in measuring short-term or long-term effects. As a result, integrated weed management projects may or may not meet the desired goals and objectives outlined in the project plan.

Objectives:

- Determine the distribution of noxious weed species through systematic inventories of the National Forest System lands.
- Re-inventory at set intervals to determine the rate of spread and detect new weed infestations.
- Use automated databases for the storage and retrieval of information on noxious weeds. Ensure that the national forests of southern California implement Forest Service inventory and monitoring protocols and that data is stored and maintained in the Terra module of NRIS.
- Ensure that monitoring standards across the national forests of southern California address short and long-term monitoring needs.

Proposed Actions:

- Test survey and monitoring protocols developed by the Forest Service Washington office and the Regional office.
- Conduct inventories of project areas for noxious weeds as part of the NEPA process.
- Continue to survey for noxious weeds as part of survey and monitoring protocols for threatened and endangered plants and animals.
- Identify streams, roads, and trails needing inventory, and provide notice for volunteers to complete needed inventories.
- Conduct weed inventories after wildland fires.

- Obtain training in the use of the NRIS-TERRA database system.
- Increase participation of the national forests of southern California in the CalWeed Database.

6. Research

Research efforts are continually needed to examine new integrated weed management strategies for the control of noxious weeds. The Region presently cooperates with California universities by providing research sites for studies.

The Region needs to continue to encourage research on the ecology of noxious weed species, with an emphasis on practical application to management.

Objectives:

- The national forests of southern California facilitate continued research opportunities on National Forest System lands.
- Engage the Pacific Southwest Research Station in noxious weed research projects.

Proposed Actions:

- Use the Region's website to access research results.
- Facilitate research on noxious weeds on the national forests of southern California, especially in regard to management of weeds in areas managed as fuelbreaks, Wildland/Urban Interface Defense Zones, and Wildland/Urban Interface Threat Zones.
- Support local efforts as needed to promote interagency research.
- Contact local universities regarding research needs on weeds.

LMP Amendment 2014 - Changes to Roadless Areas and Recommended Wildernesses

Seven Inventoried Roadless Areas (IRAs) within the Angeles National Forest were evaluated for their capability, availability and need as Recommended Wilderness (RW) land use zones. It is my decision to classify 35,816 fewer acres as Back County Non-Motorized (BCNM) land use zone (for a total of 30,577 acres) and an additional 42,333 acres of RW (for a total of 42,333 acres) in the selected Alternative 2a. This combination of Forest land use zones will maintain the undeveloped character of the areas while ensuring preservation of the unique values and unimpaired conditions associated with RW.

Fish Canyon (29,872 acres)

Summary of the Amendment – The selected Alternative 2a will change the land use zone classification from Back Country (BC), Back Country Motorized Use Restricted (BCMUR), BCNM and Developed Area Interface (DAI) to RW on 28,872 acres of the Fish Canyon IRA. There will be 27,760 fewer acres of BCNM in Alternative 2a. An additional 989 acres of Forest adjacent to the Fish Canyon IRA and an additional 1,608 acres of Forest adjacent to the Fish Canyon IRA and the Salt Creek IRA are also recommended as RW in this Amendment.

Rationale – The Fish Canyon IRA has a high degree of scenic attractiveness, is primarily natural in appearance with little human influence and a healthy ecosystem, is relatively free from disturbance, and has feelings of solitude with primitive recreation opportunities. It is potentially suitable habitat for several federally listed and Forest Service Region 5 sensitive wildlife species, including the California condor, along with four sensitive plant species. There is a waterfall here along with a segment of the Pacific Crest National Scenic Trail. This area's size, shape and uses can be effectively managed as wilderness. The road that once divided the Fish Canyon IRA from the Salt Creek IRA in the original RARE II inventory is no longer discernible on the landscape, creating an opportunity to combine these two roadless areas into a single, larger recommended wilderness. It is my decision that this RW and BCNM classification will provide the best mix of suitable uses for this area.

Red Mountain (8,030 acres)

Summary of the Amendment – The selected Alternative 2a will change the land use zone classification from BC and DAI to BCNM on 194 acres of the Red Mountain IRA. The RW land use zone classification within the Red Mountain IRA will remain unchanged at -0- acres.

Rationale – The Red Mountain IRA is somewhat natural and free from disturbance. It offers limited opportunities for solitude and challenge due to its relatively small size and close proximity to surrounding development. There could be administrative challenges associated with managing the area boundary due to adjacent roads and transmission lines as well as Los Angeles County Fire Camp 14. The ridges have been historically cleared as fire suppression lines, and maintenance of these strategic fuelbreaks is more consistent with BCNM. Red Mountain has low wilderness values and characteristics and is not needed as part of the wilderness preservation system. The area is northeast of the established Sespe Wilderness; other designated wilderness is located south and west. It is my decision that this BCNM classification will provide the best mix of suitable uses for this area.

Salt Creek (11,004 acres)

Summary of the Amendment – The selected Alternative 2a will change the land use zone classification from BC, BCMUR, BCNM, Critical Biological (CB) and DAI to the RW on 10,680 acres of the Salt Creek IRA. There will be 9,365 fewer acres of BCNM in Alternative 2a. An additional 141 acres of Forest adjacent to the Salt Creek IRA and an additional 1,608 acres of Forest adjacent to the Salt Creek IRA and Fish Canyon IRA are also recommended as RW in this Amendment.

Rationale – The Salt Creek IRA has a high degree of scenic attractiveness, is primarily natural in appearance with little human influence and a healthy ecosystem, is relatively free from disturbance, and has feelings of solitude with primitive recreation opportunities. It is potentially suitable habitat for several federally listed and Forest Service Region 5 sensitive wildlife species, including the California condor, along with four sensitive plant species. One of the few native stands of grey pine occurs here. This area's size, shape and uses can be effectively managed as wilderness. The road that once divided the Salt Creek IRA from the Fish Canyon IRA in the original RARE II inventory is no longer discernible on the landscape, creating an opportunity to combine these two roadless areas into a single, larger recommended wilderness. This greatly enhances the ecological value of RW for both IRAs in terms of protecting the largest single area of relatively undisturbed habitat on the Angeles National Forest. It is my decision that this RW and BCNM classification will provide the best mix of suitable uses for this area.

Sespe-Frazier (4,245 acres)

Summary of the Amendment – The selected Alternative 2a will change the land use zone classification from DAI to BCNM on 192 acres (for a total of 3,693 acres) and 33 acres of RW in the Sespe-Frazier IRA. An additional 3,531 acres of BCNM land use zone in the Forest adjacent to the Sespe-Frazier IRA remain unchanged.

Rationale – The Sespe-Frazier IRA is somewhat natural and free from disturbance. It offers limited opportunities for solitude and challenge. There could be administrative challenges associated with managing the area boundary due to adjacent private lands. Availability is limited by mineral potential, with a history of oil and gas leasing and as many as 15 mining claims in the northern portion of the area. The largest individual parcel is contiguous to the established Sespe Wilderness along less than a quarter mile of boundary, separated from it by the Whitaker Peak Road. Other large areas of designated wilderness are located south and west, and meet the needs for wilderness for recreational purposes. The small size, unconnected parcels, and surrounding development limit the ecological value of recommending wilderness. It is my decision that this BCNM classification will provide the best mix of suitable uses for this area.

Tule (9,855 acres)

Summary of the Amendment – The selected Alternative 2a will change the land use zone classification from BC and DAI to BCNM on 409 acres (for a total of 9,108 acres) in the Tule IRA. The RW land use zone classification will remain unchanged at -0- acres.

Rationale – The Tule IRA is somewhat natural and free from disturbance. It offers limited opportunities for solitude and challenge. There could be administrative challenges associated with managing the area boundary due to adjacent roads, highways, power lines and the rural

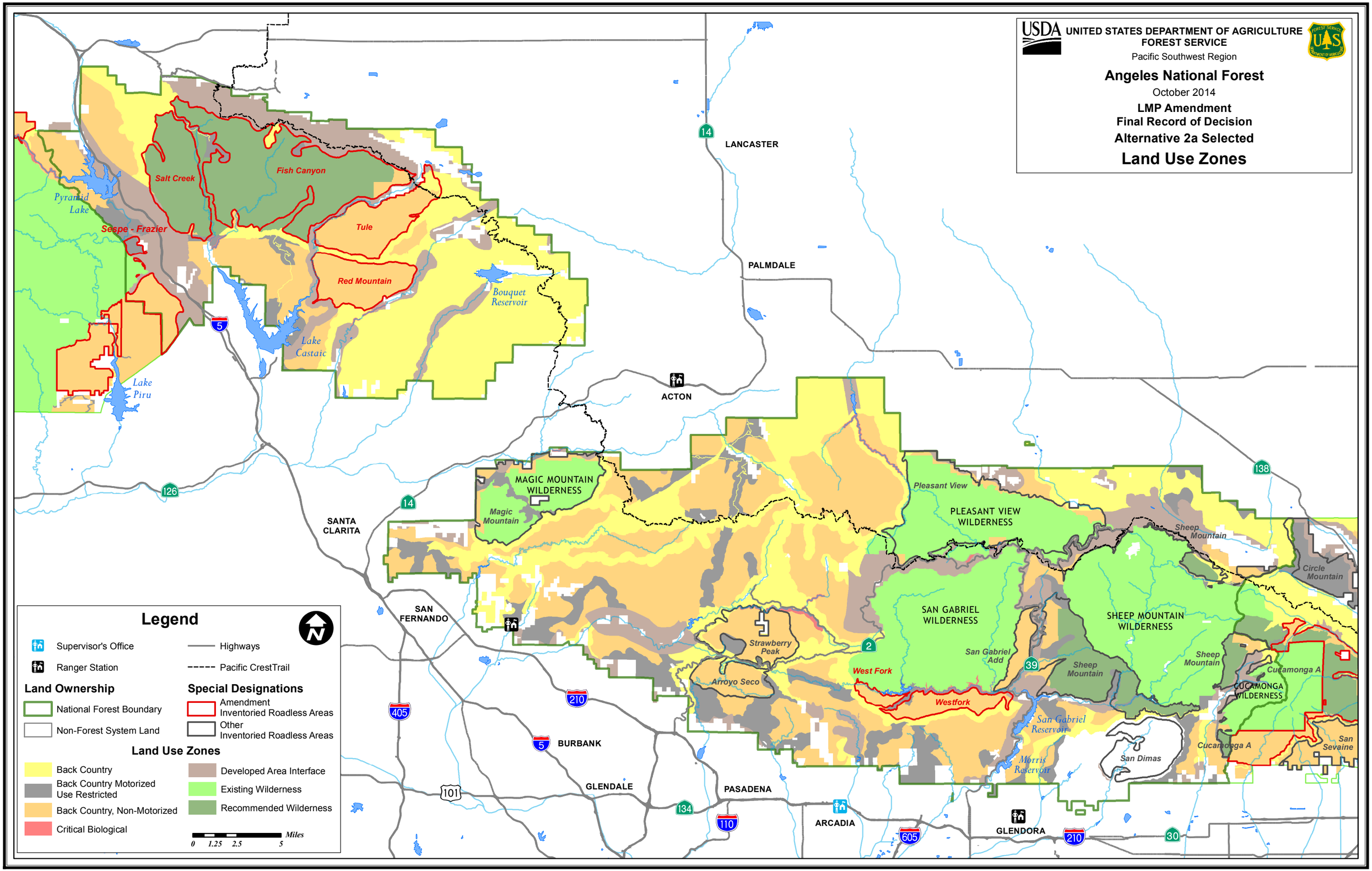
community of Lake Hughes. Tule has low wilderness values and characteristics and is not needed as part of the wilderness preservation system for recreational purposes. The size and surrounding development limit the ecological value of recommending wilderness. The area is east of the established Sespe Wilderness; other designated wilderness is located south and west. It is my decision that this BCNM classification will provide the best mix of suitable uses for this area.

West Fork (1,156 acres) and **Westfork** (4,385 acres)

Summary of the Amendment – The selected Alternative 2a will change the land use zone classification from BC and BCMUR to BCNM on 346 acres (for a total of 1,087 acres) in the West Fork IRA. The RW land use zone classification will remain unchanged at -0- acres. An additional 17 acres of BCNM in the Forest adjacent to the West Fork IRA remain unchanged.

The selected Alternative 2a will change the land use zone classification from BC and BCMUR to BCNM on 1,157 acres of the Westfork IRA. The zoning for the permit area for the sediment disposal site was adjusted to BCMUR. The RW land use zone classification will remain unchanged at -0- acres.

Rationale – The West Fork and Westfork IRAs are somewhat natural and free from disturbance. They offer low opportunities for solitude and challenge. There could be administrative challenges associated with managing the area boundary due to many adjacent developments, including roads, major electrical transmission corridors, the sediment disposal area for the Cogswell Reservoir and Cogswell Reservoir itself, and a communications site tower. They have low wilderness values and characteristics and are not needed as part of the wilderness preservation system. The areas are south of the established San Gabriel Wilderness; other designated wilderness is located northeast and is adequate to meet recreational needs. They are the two smallest IRAs entirely on the Angeles National Forest, increasing the influence of surrounding development on wilderness character within the IRAs. Only the West Fork IRA, the smaller of the two, is contiguous to the existing San Gabriel Wilderness. Small size and surrounding development limit these IRA's ecological value as RW. It is my decision that this BCNM classification will provide the best mix of suitable uses for this area.


UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
Pacific Southwest Region
Angeles National Forest
October 2014
LMP Amendment
Final Record of Decision
Alternative 2a Selected
Land Use Zones
Legend
Supervisor's Office
Ranger Station
Highways
Pacific CrestTrail
Land Ownership
National Forest Boundary
Non-Forest System Land
Special Designations
Amendment Inventoried Roadless Areas
Other Inventoried Roadless Areas
Land Use Zones
Back Country
Back Country Motorized Use Restricted
Back Country, Non-Motorized
Critical Biological
Developed Area Interface
Existing Wilderness
Recommended Wilderness
Miles
0 1.25 2.5 5
LANCASTER
PALMDALE
ACTON
SANTA CLARITA
SAN FERNANDO
BURBANK
GLENDALE
PASADENA
ARCADIA
GLENDORA
Salt Creek
Fish Canyon
Tule
Red Mountain
Sespe - Frazier
Pyramid Lake
Lake Piru
Lake Castaic
Bouquet Reservoir
MAGIC MOUNTAIN WILDERNESS
Magic Mountain
Pleasant View
PLEASANT VIEW WILDERNESS
Sheep Mountain
Circle Mountain
SAN GABRIEL WILDERNESS
SHEEP MOUNTAIN WILDERNESS
Strawberry Peak
Arroyo Seco
West Fork
Westfork
San Gabriel Add
Sheep Mountain
Cucamonga A
CUCAMONGA WILDERNESS
San Gabriel Reservoir
Morris Reservoir
San Dimas
San Sevaine
126
14
5
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210
405
101
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110
605
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LMP Amendment 2016:
Appendix C – Monitoring Requirements

2016 Transition to New Planning Rule

The four Southern California National Forests propose the following administrative changes to the Land Management Plan (LMP) monitoring requirements in 2016. These changes are proposed in order to comply with the requirements of the 2012 Planning Rule (36 CFR 219.12), and are noted in this document in **Bold Text**. All other monitoring requirements, including changes made in the 2014 LMP Amendment, remain unchanged. The following revisions are proposed:

- Update Part 1 monitoring questions to:
    - Add a question for fire activity.
    - Adjust the question for tree mortality.
    - Add a question for non-native annual grasses.
    - Add a question for fire regime departure.
    - Add a question for coast live oak mortality for the Cleveland National Forest (CNF) and Los Padres National Forest (LPNF).
    - Add a question for special uses.
    - Add a question for streamflows.
    - Adjust the indicator for Goal 6.2.
    - Adjust the report period for all questions from 5 years to 2 years.

The planning rule contains seven specific requirements applicable to the Southern California National Forests. They are listed below as they appear in the planning rule, and the questions and indicators that satisfy each of these criteria are noted in Table 1.

(i) The status of select watershed conditions.

(ii) The status of select ecological conditions including key characteristics of terrestrial and aquatic ecosystems.

(iii) The status of focal species to assess the ecological conditions required under §219.9.

(iv) The status of a select set of the ecological conditions required under §219.9 to contribute to the recovery of federally listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern.

(v) The status of visitor use, visitor satisfaction, and progress toward meeting recreation objectives.

(vi) Measurable changes on the plan area related to climate change and other stressors that may be affecting the plan area.

(vii) Progress toward meeting the desired conditions and objectives in the plan, including for providing multiple use opportunities.

(viii) The effects of each management system to determine that they do not substantially and permanently impair the productivity of the land (16 U.S.C. 1604(g)(3)(C)).

Criterion (viii) applies only to National Forests with timber production programs, which the four Southern California National Forests do not have. Therefore, no monitoring is needed for this criterion, and it has not been included in the new monitoring framework.

2016 Other Administrative Changes to Clerical Errors

Several other minor administrative changes have been included in this document to correct clerical errors from the 2014 LMP Amendment, and simplify Appendix C. Those changes include:

- Deletion of the Introduction section added in the 2014 Amendment – this was background used to explain the monitoring program in 2014. It did not contain any specific monitoring requirements and was considered unnecessary for the 2016 Administrative Change.

- The word "energy" was inserted back into the title of Goal 4.1b in Table 1. It had been inadvertently left out in the 2014 LMP Amendment and is critical to the context of Goal 4.1b. This is noted in bold text in Table 1.

- The description of Part 2 Monitoring was revised to indicate that only the San Bernardino National Forest has additional monitoring questions in Part 2 of the LMP. The 2014 LMP Amendment mistakenly referred to additional monitoring questions in Part 2 for all four Southern California National Forests. This is noted in bold in Part 2 Monitoring.

2014 LMP Amendment

In October 2014, the Southern California National Forests each completed a Record of Decision for the LMP Amendment Supplemental Environmental Impact Statement. This process modified the monitoring requirements based on a Settlement Agreement. The amended monitoring and evaluation requirements included the following revisions:

- Update Part 1 monitoring questions to:
    - Add a question for mortality risk.
    - Add a question for riparian condition.
    - Drop the question for general forest activities.
    - Add an indicator for unauthorized roads and trails.

    - Clarify and update several indicators to reflect current inventory methodology.
- Add a section that describes the implementation of Part 1 monitoring in greater detail.
- Expand the description of Part 3 monitoring to provide more detail on how to select projects for monitoring.

Part 1 Monitoring

Monitoring and evaluation provide knowledge and information to keep the forest plan viable. Appropriate selection of indicators, and monitoring and evaluation of key results helps the Forest Service determine if the desired conditions identified in the forest plan are being met. Monitoring and evaluation also help the Forest Service determine if there should be changes to goals and objectives, or monitoring methods.

Evaluation is more than reporting facts and figures. Forest plan evaluation tells how decisions have been implemented, how effective the implementation has proved to be in accomplishing desired conditions, what was learned along the way, and how valid management assumptions are that led to forest plan decisions. Monitoring and adaptive management should lead to improved implementation and resource conditions.

Adaptive management is the foundation for planning and management. The planning regulations require that forest plans be revised every 15 years after forest plan approval (36 CFR 219.7(a)). Forest plans need to be dynamic to account for changed resource conditions, such as: large-scale wildland fire or listing of additional species under the Endangered Species Act; new information and science such as taking a systems approach; new or modified regulations; and new or modified policies such as the Roads Analysis Policy.

Monitoring and evaluation are critical to adaptive management. Other component parts include inventory, assessment, planning, and implementation. No single component can be isolated from the whole of adaptive management.

Monitoring and evaluation processes begin by identifying key questions Forest Service managers need to answer about forest plan implementation. Understanding the questions helps to identify information needs, data collection designs, and tools needed to turn data into information and knowledge. Managers must also have a clear understanding of baseline conditions (current resource condition at the time of signing the Record of Decision) versus desired conditions and the evaluation strategies that will help determine if movement towards desired conditions is occurring. Appropriate selection of indicators helps assess resource status and trends and progress towards meeting the desired conditions identified in the forest plan.

The aggregated outcome of project level work reflects progress towards achieving the desired conditions of the forest plan and the contribution to agencies' priorities. This emphasizes the importance of using the National Strategic Plan desired conditions, goals and objectives that apply to the planning area in the forest plan and to use common criteria and indicators as appropriate in the forest plan. This approach will enable monitoring and evaluation efficiencies and provide critical information on the national forests' contribution to the agency's mission, goals, and objectives. Table 1 provides the Key Questions by resource area, the indicator for that question, what monitoring action(s) will occur and the appropriate data to use, the reliability of the data, and cost.

In accordance with the Planning Rule, reporting for Part 1 monitoring shall occur biennially (every two years), with the first report to be available no later than two years from the date that these changes are adopted.

Table 1. Part 1 Monitoring Summary

Goals	Monitoring Question	Indicators	2012 Rule Component Addressed[1]
1.1	Has the forest made progress in reducing the number of acres that are adjacent to development within Wildland Urban Interface (WUI) defense zones that are classified as high risk?	Acres of High Hazard and High Risk in WUI Defense Zone	
1.1 1.2 3.2 6.2	**Are wildfires becoming larger, more frequent, or more severe, and is there a seasonal shift in fire activity?**	**Total and Mean Fire Size, Ignition Density, Fire Severity, and Monthly Area Burned**	ii, iv, (vi)
1.2 **6.2**	**Is tree mortality increasing across the landscape, and is it distributed evenly across elevations?**	Mortality Risk Assessment **and Forest Health Protection Mortality Surveys**	ii, iv, (vi)
1.2 6.2	**Are chaparral and coastal sage scrub vegetation communities type converting to non-native annual grasslands?**	**Extent of Non-native Annual Grasses**	ii, (iii), iv, vi
1.2 3.2 6.2	**Are fire frequencies becoming more departed from the natural range of variation?**	**Proportion of Landscape in Departed Fire Frequency**	iv, (vi)
1.2.1	Is the forest making progress toward increasing the percentage of montane conifer forests in Condition Class 1?	Departure from desired fire regime, acres by Fire Regime I	ii, iv
1.2.1 6.2	**Is coast live oak mortality increasing across the landscape? (CNF/LPNF only)**	**Forest Health Protection Mortality Surveys**	ii, iv (iii)
1.2.2	Is the forest making progress toward maintaining or increasing the percentage of vegetation types that naturally occur in Fire Regime IV in Condition Class 1?	Departure from desired fire regime, acres by Fire Regime IV	ii, iv
1.2.3	Has the forest been successful at maintaining long fire-free intervals in habitats where fire is naturally uncommon?	Departure from desired fire regime, acres by Fire Regime V	ii, iv
2.1	Are the national forests' reported occurrences of invasive plants/animals showing a stable or decreasing trend?	Acres of treatments in reported occurrences	ii, iv
3.1	Are trends in indicators and visitor satisfaction surveys indicating that the forest has provided quality, sustainable recreation opportunities that result in increased visitor satisfaction?	Visitor Satisfaction (National Visitor Use Monitoring)	v
3.2	Are trends in indicators and visitor satisfaction surveys depicting the forest has provided solitude and challenge in an environment where human influences do not impede the free play of natural forces?	Wilderness Condition	v
4.1a	Has the forest been successful at protecting ecosystem health while providing mineral and energy resources for development?	Number of Mineral and Energy Development Projects Proposed and Approved	
		Minerals and Energy Success at protecting Ecosystem Health	

Goals	Monitoring Question	Indicators	2012 Rule Component Addressed[1]
4.1a 4.1b 7.1	**How many of each type of special use authorization, mining permit, and forest product permit are active on the forest?**	**Number of special use authorizations and permits by type**	(vii)
4.1b	Has the forest been successful at protecting ecosystem health while providing renewable **energy** resources for development?	Number of Renewable Resource Projects Proposed and Approved	
		Renewable Resources Success at protecting Ecosystem Health	
5.1	Is the forest making progress toward sustaining Class 1 watershed conditions while reducing the number of Condition Class 2 and 3 watersheds?	Number of Watersheds in each Condition Class	i, ii, iv
5.1 5.2 6.2	**How do streamflows compare with historical records?**	**Monthly Streamflows, Timing and Magnitude of Peak Flows, Degree of Variation**	i, ii, iv, (vi)
5.2	Is the forest increasing the proper functioning condition of riparian areas?	Change in Indicator Score for Aquatic Habitat, Aquatic Biota and Riparian Vegetation	i, ii, iv
6.1	Is forest rangeland management maintaining or improving progress towards sustainable rangelands and ecosystem health?	Percent of key areas in active allotments meeting or moving towards desired conditions	
6.2	Are trends in resource conditions indicating that habitat conditions for fish, wildlife, and rare plants are in a stable or upward trend?	**Habitat Condition of At-Risk Species**	ii, (iv)
7.1	Is the forest balancing the need for new infrastructure with restoration opportunities or land ownership adjustment to meet the desired conditions?	Land Ownership Complexity	
		Authorized and Administrative Infrastructure	
		Miles of Unauthorized Motorized Routes	

[1] The 2012 Planning Rule components in parentheses () indicate the monitoring questions and/or indicators that were created or modified to specifically address components. Those components not in parentheses indicate existing monitoring questions that address 2012 planning rule components, and new questions that address additional components.

Part 2 Monitoring

Monitoring identified in LMP Part 2 is focused on program implementation including inventory activities. The Angeles, Cleveland, Los Padres, and San Bernardino National Forests currently use performance indicators for tracking program accomplishments. The current system tracks performance measures linked to the National Strategic Plan and reports accomplishments through a national reporting system. Although the system will evolve over time as technology changes, Table 2 represents the type of measures that are reported on an annual basis.

The LMP further defines how inventory and reporting will be accomplished in Part 2 Appendix B - Program Strategies and Tactics:

- **AM 1 - Land Management Plan Monitoring and Evaluation**

  Report the results of land and resource management plan monitoring and evaluation questions in the annual monitoring and evaluation report, including the actions taken to respond to new information learned through the adaptive management cycle.

- **AM 2 - Forest-wide Inventory**

  Develop and maintain the capacity (processes and systems) to provide, store, and analyze the scientific and technical information needed to address agency priorities.

Table 2. Part 2 Monitoring Summary

Indicators	Data Reliability	Measuring Frequency (Years)	Report Period (Years)
Acres of Terrestrial Habitat Enhanced	High	1	1
Miles of Aquatic Habitat Enhanced	High	1	1
Acres of Noxious Weeds Treated	High	1	1
Acres of Vegetation Improved (also see Hazardous Fuels Reduction)	High	1	1
Acres of Watershed Improved	High	1	1
Acres of Land Ownership Adjusted	High	1	1
Number of Heritage Resources Managed to Standard	Moderate	1	1
Products Provided to Standard (Interpretation and Education)	Moderate	1	1
Recreation Special Use Authorizations Administered to Standard	Moderate	1	1
PAOT Days Managed to Standard (Developed Sites)	Moderate	1	1
Recreation Days Managed to Standard (General Forest Areas)	Moderate	1	1
Land Use Authorizations Administered to Standard	Moderate	1	1
Number of Mineral Operations Administered	High	1	1
Number of Allotments Administered to Standard	High	1	1
Acres of Hazardous Fuel Reduction	High	1	1
Miles of Passenger Car Roads Maintained to Objective Maintenance Level	High	1	1
Miles of High Clearance & Back Country Roads Maintained to Objective Maintenance Level	High	1	1
Miles of Road Decommissioned	High	1	1
Miles of Trail Operated and Maintained to Standard	Mod	1	1

Additional monitoring questions specific to the **San Bernardino National Forest** are included in Part 2 of **the San Bernardino National Forest LMP**.

These data are reported in the annual monitoring and evaluation report as part of the National Forest's implementation monitoring efforts. Annual monitoring and evaluation reports will document when there is a need to change the Southern California Land Management Plans in response to declining trends in resource conditions.

Part 3 Monitoring

Implementation and effectiveness monitoring for Part 3 of the LMPs are conducted at the project level. Part 3 of the LMPs requires annual implementation monitoring of new projects and ongoing activities and sites. Project selection for monitoring will use the following protocol and will be reviewed and updated annually as needed.

As detailed in the LMPs, the Program Emphasis and Objectives describe the activities and programs on the Forests. Activities were organized into six functional areas, which include all areas of business for which the national forests are responsible. The functional areas collectively include 35 programs. National forest management uses the results to clearly communicate program capability both internally and externally.

The six functional areas are:

- Management & Administration: National forest leadership, management and administrative support activities, communications, external affairs, community outreach, planning, human resources, information technology, and financial management.
- Resource Management: Activities related to managing, preserving, and protecting the national forest's cultural and natural resources.
- Public Use & Enjoyment: Activities which provide visitors with safe, enjoyable and educational experiences while on the national forest and accommodate changing trends in visitor use and community participation and outreach.
- Facility Operations & Maintenance: Activities required to manage and operate the national forest's infrastructure (i.e., roads, facilities, trails, and structures).
- Commodity & Commercial Uses: Grazing management, forest special product development, and activities related to managing non-recreation special-uses such as national forest access, telecommunications sites, and utility corridors.
- Fire & Aviation Management: Wildland fire prevention through education, hazardous fuels reduction, and proactive preparation. This program also includes on-forest wildland fire suppression, and national or international wildland fire and emergency incident response.

The Program Emphasis and Objectives will be used to stratify the new projects and ongoing activities and sties by functional areas.

New Projects

All new projects implemented during the monitoring period, including projects that are implemented over multiple years, will be stratified into the appropriate functional areas. A new project should be randomly selected from each of the five functional areas that had new projects implemented during the monitoring period. The Management & Administration functional area is excluded since it does not generate new projects. If there are a large number of new projects

implemented within a functional area over the monitoring period, then a larger number of new projects should be selected from that functional area.

Ongoing Activities and Sites

All ongoing activities and sites will be stratified into the appropriate functional areas. Ongoing activities and/or sites should be selected from Public Use & Enjoyment, Facility Operations & Maintenance, and Commodity & Commercial Uses functional areas. As timing and funding permit, ongoing activities and/or sites should be randomly selected from each applicable sub-category in the three functional areas.

A review team will visit the selected projects and ongoing activities and sites to review the effectiveness of applying LMP design criteria. If problems in implementation are detected, or if the design criteria are determined to be ineffective, then the team will recommend corrective actions. Corrective actions may include amendments to the LMPs if necessary to improve the effectiveness of the design criteria. Results of this monitoring will be reported annually in the LMP monitoring and evaluation report (Table 3). In addition, design criteria, including new laws or regulations referenced in Appendix A of the LMPs will be updated. Appendix A is comprised of all current and relevant statutes, regulations, executive orders and memorandums, and other management direction. Together, they provide overarching management direction for the LMPs. While the list may be periodically updated to better reflect the current status, new additions or deletions are automatically in effect as overarching direction.

Table 3: Part 3 Monitoring Summary

Indicators	Data Reliability	Measuring Frequency (Years)	Report Period (Years)
Design Criteria	Moderate	1	1

Monitoring will be conducted through an interdisciplinary team examining documentation (NEPA or otherwise) for required mitigation measures including applicable Best Management Practices (BMPs), consultation requirements from US Fish & Wildlife Service and the State Historic Preservation Office (SHPO), and applicable guidance from the Southern California Land Management Plans. The team will validate whether the projects were implemented consistent with LMP direction, how well objectives were met and how closely standards and project mitigation measures improved environmental conditions. This monitoring will be completed in conjunction with other types of monitoring when efficient.

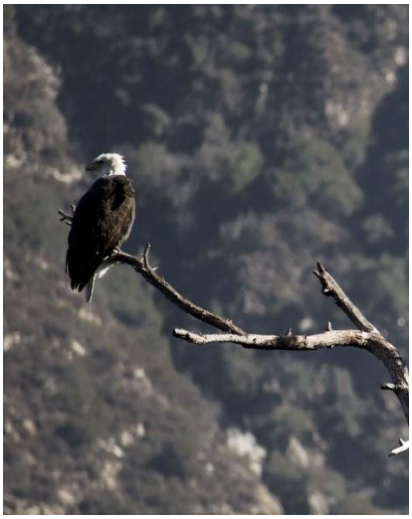
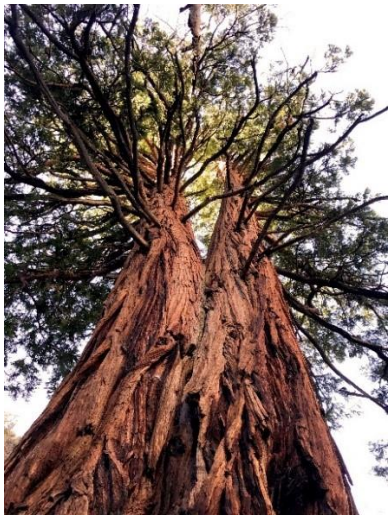
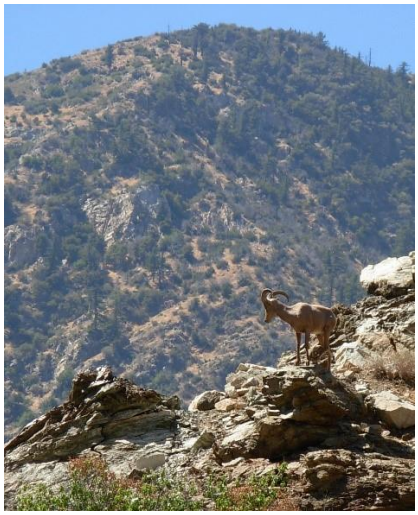
A comparison of expected results and actual results is needed to determine whether programs and projects are meeting LMP direction as part of the Adaptive Management Cycle.

It is anticipated that there will be a minimum of 8 new projects and ongoing activities and sites that will be validated each year.

If problems in implementation are detected, or if the design criteria are determined to be ineffective, then the team will recommend corrective actions. Corrective actions may include amendments to the LMPs if necessary to improve the effectiveness of the design criteria. Results of this monitoring will be reported annually in the LMP monitoring and evaluation report. As described above, design criteria, including new laws or regulations referenced in Appendix A of the LMP will be updated.

United States Department of Agriculture

San Gabriel Mountains National Monument Management Plan

Forest Service Angeles National Forest R5-MB-318 2019

Cover images include a bald eagle at San Gabriel Reservoir (upper left), an incense cedar at Little Rock Creek (upper middle), a young male Nelson's bighorn sheep in the Sheep Mountain Wilderness (upper right), and the view from the Pacific Crest National Scenic Trail by Little Jimmy Trail Campground (bottom).

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San Gabriel Mountains
National Monument Management Plan

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This is the Final Monument Plan. It has incorporated pre-decisional instructions from the Objection Period.

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Chapter 1 – Introduction

Purpose of Monument Plan

On October 10, 2014, President Barack Obama signed the Proclamation (appendix A) designating 346,177 acres of existing Federal lands as the San Gabriel Mountains National Monument (Monument). The Monument is the eighth National Monument under Forest Service management. The Proclamation described the historical, natural, and cultural significance of the features within the proclaimed area that warranted the special designation of a national monument. The Proclamation also directed that certain uses continue, including Tribal rights to utilize the lands in traditional manners. The Proclamation also acknowledges the continuation of valid existing rights and uses, such as utilities and water infrastructure.

The Proclamation directed that the administration of these activities continue, but in a manner consistent with the intent of the Proclamation. The Federal lands and interests in lands within the boundaries of the Monument were withdrawn from location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing, with the exception of valid existing mining rights. The Proclamation mandated the preparation of a monument management plan within three years and a transportation plan, and further mandated the management framework is to be developed in a collaborative manner. The San Gabriel Mountain National Monument Management Plan (Monument Plan) was developed according the Forest Service planning regulations adopted in 2012, referred to in this document as the 2012 Forest Service Planning Rule.

The purpose of this Monument Plan is to provide strategic direction and guidance for future management of the Monument. It provides a basis for informed decision making, while guiding resource management, practices, uses, and framework for project development. The Monument Plan does not include specific projects and activity decisions. The Monument Plan is adaptive in that it can be amended to update management direction based on new knowledge and information.

This Monument Plan is strategic in nature and does not attempt to prescribe detailed management direction to cover every possible situation.

This Monument Plan has been prepared pursuant to the requirements of the National Forest Management Act of 1976, and the 2012 Forest Service planning regulations (36 CFR 219), as amended. This first chapter provides the introductory information, chapter 2 provides the management direction, and chapter 3 describes the transportation plan. This management plan is also accompanied by an environmental assessment (EA) as required by the regulations used in its development (36 CFR 219.13).

Planning Area

The Monument Plan planning area includes all National Forest System lands within the boundaries of the Monument in the northern and southeastern portions of the San Gabriel Mountain Range, approximately 30 miles northeast of downtown Los Angeles in southern California. The Monument encompasses 342,175 acres of the Angeles National Forest (ANF) and 4,030 acres of the land previously administered and managed by the San Bernardino National Forest. The Regional Forester has assigned administrative and planning authority for the entire Monument area to the ANF. The amended ANF Land Management Plan (ANF LMP) will apply to National Forest System lands within the ANF administrative boundary, which now includes the entire Monument. The changes associated with the Monument Plan as the Forest Plan amendment will apply only to the Monument area.

Management Planning Overview

The USDA Forest Service (Forest Service) land management planning is an adaptive process that includes forest plan development, monitoring, and adjustment based on desired social, economic, and ecological conditions and the evaluation of impacts to those conditions. The overall purpose of planning is to ensure land management based on current information that guides land stewardship to best meet the needs of the public.

Relationship of this Land Management Plan to Other Planning Documents

The Monument Plan will amend the current Angeles National Forest Land Management Plan (ANF LMP). Specifically, the Angeles National Forest Land Management Plan direction listed below will be superseded by the new plan components in the Monument Plan:

1. "There is a low level of increase in roaded acres over time, as defined by road density analysis"

   (from ANF LMP Part 1, Managed Recreation in a Natural Setting, Goal 3.1 – Provide for Public Use and Natural Resource Protection, page 34.)

2. "Habitat conditions are stable or improving over time as indicated by the status of management indicator species"

   (from ANF LMP Part 1, Managed Recreation in a Natural Setting, Goal 3.1 – Provide for Public Use and Natural Resource Protection, page 36.)

3. Table 2.1.3 Suitable uses commodity and commercial uses, Angeles National Forest:

   Table 1. Suitable uses commodity and commercial uses by Land Use Zones, Angeles National Forest

Activity or Use	Developed Areas Interface	Back Country	Back Country Motorized Use Restricted	Back Country Non-Motorized	Critical Biological	Wilderness	Experimental Forest
Oil and Gas Exploration and Development Areas	Suitable	Suitable	By Exception	By Exception	Not Suitable	Not Suitable	Not Suitable
Minerals Resources Exploration and Development	Suitable	Suitable	By Exception	By Exception	By exception	Not Suitable	Not Suitable

   **By Exception = Conditions which are not generally compatible with the land use zone but may be appropriate under certain circumstances.*

   (from ANF LMP Part 2, Suitable Land Use Zones, Land Use Zones, Table 2.1.3, page 6.)

4. "Maintain and improve habitat for fish, wildlife, and plants, including those with the following designations: game species, harvest species, management indicator species, and watch list species.

   - Monitor management indicator species (MIS)."

   (from ANF LMP Part 2, Appendix B – Program Strategies and Tactics, WL 2 - Management of Species of Concern, page 97.)

5. "Monitor and manage withdrawal status to document the condition of lands that could affect other actions (e.g., watershed protection, mining):

- Review existing withdrawals to determine if continuation is consistent with the statutory objectives of the programs for which the lands were dedicated.
- Recommend for withdrawal from mineral entry [Threatened, Endangered, and Protected] TEP key habitats in areas of mineral potential where habitat is not protected by any other means and would benefit by withdrawal. Protective measures will be maintained for the period of time needed to provide the necessary protection for TEP species and key habitats. Implement in occupied habitats for the arroyo toad, California red-legged frog, mountain yellow-legged frog, southwestern willow flycatcher, and least Bell's vireo."

(from ANF LMP Part 2, Appendix B – Program Strategies and Tactics, Lands 4 – Mineral Withdrawals, page 120.)

- Limit withdrawals from mineral entry to maintain opportunities to access mineral and energy resources where environmentally sustainable and threatened, endangered, proposed, candidate, and sensitive species [TEPCS] are not impacted.
- Assure long-term access and availability for leasing of oil and gas resources from environmentally suitable lands for regional, statewide and national energy needs.

(from ANF LMP Part 2, Appendix B – Program Strategies and Tactics, ME 1 – Minerals Management, page 121.)

6. "S57: Free use rock, invertebrate fossil, and mineral collecting and mining for non-commercial personal uses must be approved by the authorized officer."
   (from ANF LMP Part 3, Plan Standards Required by (36 CFR 219), page 13)

The management direction contained in the rest of the ANF LMP will apply to the Monument, unless specifically noted in the Monument Plan.

Scope and Applicability of this Management Plan

The Monument Plan applies to all National Forest System lands and activities within the boundaries of the Monument. Future projects will be proposed, likely in partnership with organizational stakeholders, to fulfill the vision and make progress toward the management approaches, desired conditions, goals, and objectives of the ANF LMP and this Monument Plan. Whenever a specific project or activity is proposed, additional public involvement will occur, site-specific effects will be analyzed, and separate decisions will be made within the framework of the Monument plan.

The Monument Plan does not reiterate other existing laws, regulations, and policy that already provide protection of those Monument resources identified within the Proclamation, such as policies regarding heritage resources, balancing effects of projects with rare species and habitats, or closure of the San Dimas Experimental Forest to general use, except under permit for research or limited educational purposes.

Management Plan Organization, Content, and Terminology

The existing Angeles National Forest Land Management Plan will continue to apply within the Monument. The new Monument Plan components will amend the Angeles National Forest Land Management Plan.

Under the 2012 Planning Rule, management plans can be added as a land management plan amendment or a full-scale revision. Because the combination of laws, rules, regulations, policy, and the existing ANF

LMP provide many protections and an adaptive management framework using the best available science and balancing public needs with ecosystem conservation, a full-scale revision was not warranted.

For a land management plan amendment, the responsible official, with consideration of stakeholder input, determines which plan components are to be included. The Monument Plan includes six plan components that guide future project and activity decision making: desired conditions, goals, objectives, standards, guidelines, and management approaches. All projects and activities within the Monument need to be consistent with these plan components:

A **desired condition** is a description of specific social, economic, and/or ecological characteristics of the plan area, or a portion of the plan area, toward which management of the land and resources should be directed. A desired condition description is specific enough to allow progress toward achievement to be determined but does not include a completion date.

A **goal** is a broad statement of intent, other than desired conditions, usually related to process or interaction with the public. Goals are expressed in broad, general terms, but do not include completion dates.

An **objective** is a concise, measurable, and time-specific statement of a desired rate of progress toward a desired condition or conditions. Objectives are based on reasonably foreseeable budgets.

A **standard** is a mandatory constraint on project and activity decision-making, established to help achieve or maintain the desired condition or conditions, to avoid or mitigate undesirable effects, or to meet applicable legal requirements.

A **guideline** is a constraint on project and activity decision-making that allows for departure from its terms, so long as the purpose of the guideline is met. Guidelines are established to help achieve or maintain the desired condition or conditions, to avoid or mitigate undesirable effects, or to meet applicable legal requirements.

Management approaches are considered to be other plan content. Management approaches describe the principal strategies and program priorities the ANF intends to use to carry out projects and activities under the Monument Plan. Management approaches may discuss potential processes such as analysis, assessment, inventory, project planning, or monitoring. The **suitability of lands** is determined for specific lands within the plan area. The lands are identified as suitable or not suitable for various uses or activities based on desired conditions applicable to those lands. The suitability of lands is not identified for every use or activity. If certain lands are identified as not suitable for a use, then that use or activity may not be authorized.

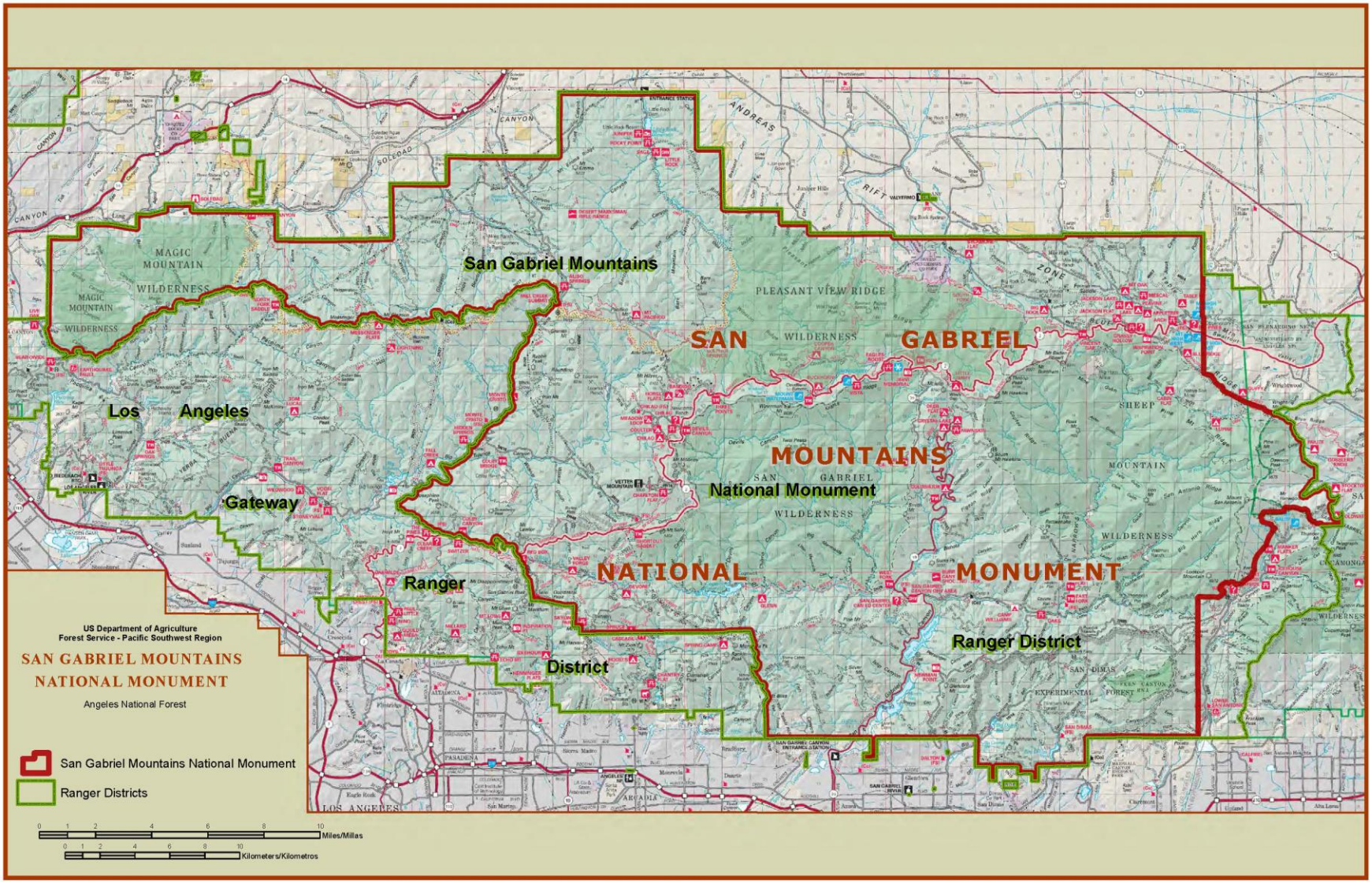

Figure 1. The San Gabriel Mountains National Monument is one Ranger District of two in the Angeles National Forest

Chapter 2 – San Gabriel Mountains National Monument Management Plan

Introduction

The Proclamation requires a management plan be written for the Monument and directs that the Monument Plan:

> …provide for protection and interpretation of the scientific and historic objects identified above and for continued public access to those objects, consistent with their protection.

The scientific and historic objects identified in the Proclamation include cultural resources, recreational and scenic features, scientific features, diverse wildlife and aquatic species, vegetative communities, and infrastructure (Appendix B).

The direction contained in the ANF LMP will continue to apply within the Monument, unless specifically changed in this monument plan. Additional plan components are also listed below and will supersede the plan components listed in the ANF LMP.

Vision

The San Gabriel Mountains National Monument reflects a unique recreational and educational gateway to America's most urban national forest in the nation's most populous county. The Monument offers exceptional interpretation and educational opportunities that can elevate understanding of the region's natural and cultural heritage, while fostering new generations of environmental stewards. In addition to the natural and cultural wonders, the Monument includes critical infrastructure that sustains the surrounding metropolis, including flood control and water storage, delivery and diversion; energy development; utilities; and telecommunication facilities. This mix of natural wonders and infrastructure sets this Monument apart from others and highlights the vital need for biodiversity and access to open space existing in harmony with essential services that sustain quality of life for surrounding communities.

Diversity and inclusivity are reflected in the visiting public, agency employees, volunteers, and partners, who are integrated into the fabric of the Monument. This Monument is our Monument. A variety of sustainable recreation opportunities and well-maintained facilities are available to the public. A transportation plan promoting safe, manageable access opportunities accommodates visitor needs in balance with resource protection and user capacity considerations. Monument operations are conducted in close cooperation with surrounding communities. Management actions balance resource protection, recreation, water management, and infrastructure needs. Collaboration and partnerships enliven connections to local and regional organizations and communities to support protection of objects of interest, enhance recreation opportunities, and achieve ecological restoration goals. A resilient, healthy, and sustainable forest landscape accessible and welcoming to all who call Southern California home, for present and future generations, showcases this monument's importance and potential to the nation.

Management Direction

Management direction for the Monument includes plan components and management approaches. Plan components are intended to provide for social, economic, and ecological sustainability and multiple uses in an integrated manner. Plan components were developed to reduce or eliminate adverse impacts, as well as promote beneficial impacts from plan implementation.

General

Goal

1. Expand ANF network of partnerships to accomplish management aspirations, including improved interpretive materials and educational opportunities.

Transportation

Desired Conditions

1. The Monument is accessible through alternative transportation and public transportation options in coordination with other agencies and gateway communities to provide greater access for those who do not use personal vehicles, and for the benefit of reducing vehicle congestion, addressing parking capacity issues, and improving public safety.
2. Road density within the Monument remains stable or is decreasing. The number of automobiles in high-use areas decreases over time as a result of alternative modes of transportation.
3. Roads and trails are maintained to standard.
4. Sufficient access points and parking areas are provided to serve visitors to the Monument during peak seasons in a manner that minimizes adverse impacts to resources and the gateway communities and neighborhoods that surround the Monument.
5. Transportation connectivity to and within the Monument is improved through coordination with state, county, local, and regional government entities; municipalities; Tribal governments; other agencies; and the public.
6. The road and trail system is sufficient to provide a good balance of recreation opportunities for all users, including hikers, hunters, bicyclists, equestrians, off-highway vehicle (OHV) enthusiasts, and motorists, consistent with sustainable recreation practices.
7. The road and trail system includes easy-to-interpret signage that includes standard symbols recognized internationally. Up-to-date maps are available and in different media formats that clearly identify roads and trails, recreation opportunities, parking, and alternative transportation options that are understood by visitors who may not speak English.
8. The number of unauthorized roads and trails is decreased.

Goal

1. Evaluate alternative transportation and public transportation opportunities, including identifying programs that facilitate access from underserved communities, ways to link to public transportation options in gateway communities, and sites appropriate for bus access at key recreation areas.

Standard

1. Outside of the San Gabriel and Little Rock OHV areas, all vehicles are limited to designated roads and trails.

Guideline

1. Parking capacity should be considered during the planning of any new trail heads, including how parking may affect gateway communities when trails are located in their vicinity.

Management Approaches

1. Where appropriate, upgrade Road Management Objectives to maximize opportunities to improve roads and protect resources.
2. Analyze roads shown as "Likely Not Needed" in the roads analysis and travel analysis processes and determine if appropriate to decommission. Alternatively, roads not currently needed may be permitted with provisions to allow users authority to perform road maintenance to meet their operational needs.
3. Coordinate projects with California State Parks and the Off-Highway Motor Vehicle Recreation Program, including projects that maintain routes open to OHV use and restore areas of unauthorized off-highway vehicle uses.
4. Collaborate with gateway communities and local partners to manage potential impacts and maximize potential benefits associated with Monument designation by addressing issues such as identification of appropriate access points, parking capacity at access points, and alternative public transportation access options.
5. Coordinate with local, county, and state governments on transportation planning.
6. Coordinate with the Federal Highway Administration - Central Federal Lands Highway Division, and other regional transportation and planning agencies to improve access to the Monument.
7. Coordinate with Caltrans to improve transportation and wildlife connectivity within the Monument, while minimizing adverse resource effects.
8. Coordinate with transportation agencies to explore opportunities to connect with communities throughout Los Angeles County, working closely with Metro and Metrolink Stations and other regional, municipal, and local public or private transit systems.
9. Coordinate with the Federal Lands Collaborative Long-Range Transportation Planning effort to ensure it is responsive to the transit/transportation needs of the Monument.
10. Driving for pleasure is and will continue to be an important use within the Monument. For some members of the public with mobility limitations, driving may be the only means of experiencing the Monument.
11. Update the ANF's motor vehicle use map as necessary to identify currently designated roads, trails and areas for public motor vehicle use.
12. Manage high visitor use and traffic congestion using the following strategies:
    - Consider using temporary one-way traffic flows and closures during peak volume periods, while utilizing adequate signage, guidance, and traffic controls consistent with established standards;
    - Evaluate the use of parking capacity limits;
    - Enforce parking capacity limits and locations established by the appropriate governing authority;
    - Prevent or limit parking in riparian areas to reduce resource damage; and
    - Explore opportunities to increase or better distribute parking capacity in key areas, including providing access by shuttles or other forms of public transportation. Parking locations should be clearly identified and delineated.

Sustainable Recreation

Desired Conditions

1. Recreation opportunities, including products, services, and the built environment, support the needs and expectations of the diverse population.
2. The Forest Service provides quality recreational settings and opportunities, allowing the growing and increasingly diverse visitor population to gain their desired recreation experiences throughout the Monument.
3. The Forest Service provides a comprehensive, well-maintained and sustainable trail system. Standard international symbols are used at trailheads and wayfinding points.
4. Public information and education is multilingual where possible to ensure communication meets information needs and conveys a message of public access.

Goals

1. Actively manage recreation in concentrated use areas to improve recreational quality. Avoid or reduce impact on special status species and aquatic species through improved management of dispersed recreation, designated river access points, transit stops, designated parking, and high-quality support infrastructure and visitor services.
2. Strategies aimed at provision of outreach, communication, and recreation service delivery for diverse groups will remain a priority of the Forest Service.

Management Approaches

1. Prioritize work with external partners to conduct sustainable recreation studies, develop recreation design plans, new products, or recreation design features to improve recreation management within the Monument and ensure relevance to the Monument's diverse visitor use base.
2. Evaluate the sustainable recreation carrying capacity in high use areas such as San Gabriel Canyon, following the Interagency Visitor Use Management Framework.

Visitor Experience, Information, and Environmental Education

Desired Conditions

1. The Forest Service provides visitors with culturally relevant and easily accessible information to guide and enrich their experience.

Goals

1. Maintain or increase the number of conservation education programs or events per year within the Monument.

Objective

1. Develop and implement the Master Visitor Reception, Interpretation, and Education Plan with an emphasis on outreaching to diverse youth within three years. The plan will focus on engagement of youth in outdoor recreation and conservation opportunities, educate them about Monument resources, help foster the next generation of public land stewards, and work toward achieving the Desired Conditions.

Management Approaches

1. Interpretation materials capture the rich cultural and natural history that shaped the area. Cultural history of groups including Native Americans, Spanish missionaries and colonialists, Mexican rancheros, Euro-Americans, and Asian settlers and prospectors. Interpretation of geological, botanical, wildlife, and aquatic features to be presented.
2. Public outreach and education uses contemporary social media, new technology, and culturally relevant media outlets. Engage schools, communities, universities, museums, and other educational institutions invested in elevating public awareness of the environment, conservation, and outdoor recreation. Engagement presents exceptional opportunities to re-imagine Angelenos' connections to their surrounding forests and open spaces.
3. Expand the use of multilingual information in outreach.

Heritage Resources

Desired Conditions

1. Cultural resources and historic properties are protected and preserved for cultural and scientific value and public benefit.
2. Priority Heritage Assets receive enhanced monitoring and protection, and enhance the Monument's distinct characteristics.
3. Cultural resources and historic properties are documented and protected, and heritage values and connections are promoted as an integral feature of the Monument.

Goal

1. The cultural resources identified in Management Approach 7 are to be enhanced through interpretative measures such as exhibits, displays, formal evaluation and National Register nominations and listing, protection and stabilization treatments, public education, and outreach efforts.

Standards

1. Cultural resources and historic properties within the Monument will be managed in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR 800.
2. Pursuant to the Programmatic Agreement between the USDA Forest Service, Pacific Southwest Region (Region 5); California State Historic Preservation Officer; Nevada State Historic Preservation Officer; and the Advisory Council, all cultural resources within the Monument are treated as historic properties and assumed eligible for the National Register of Historic Places until formally evaluated and determined, through consensus, not eligible.

Guidelines

1. Projects within the Monument should be designed to avoid, or minimize, adverse effects or impacts to cultural resources and historic properties.
2. Cultural resources and historic properties should be protected during fire suppression and rehabilitation activities, where feasible.

Management Approaches

1. Review all recorded and documented cultural resources and historic properties located within the Monument. Identify at-risk cultural resources and historic properties for enhanced monitoring and protection as Priority Heritage Assets.
2. Assess and review documented and unevaluated cultural resources and historic properties to identify those resources that enhance the Monument's distinct characteristics and cultural themes, as identified in the Proclamation. Regularly monitor those identified as at-risk every 5 years, at a minimum. Depending on the monitoring findings, at-risk cultural resources monitoring may occur at more frequent intervals. Manage these identified resources as Priority Heritage Assets. As new resources are identified within the Monument and determined to meet the criteria to be managed as Priority Heritage Assets, they will also be monitored on a 5-year cycle, or more frequently if necessary.
3. Use partnerships to develop and implement stewardship plans for identified Priority Heritage Assets, emphasizing those cultural resource and historic property sites specifically named in the Proclamation.
4. In consultation with Tribes, work to improve the interpretative potential of Native American resources within the Monument, focusing on traditional uses, Tribal history, and the current relationship of local Tribes to the San Gabriel Mountains.
5. Develop partnerships with local universities for student and faculty involvement, including research opportunities, field schools, internships, and other education programs that may assist the Monument with protection and management of cultural resources and historic properties.
6. Continue the Forest's relationship with the Society for California Archaeology, and work cooperatively with the California Archaeological Site Stewardship Program to assist with site monitoring when feasible.
7. Evaluate the following cultural resources and historic properties for eligibility under the National Register of Historic Places: Aliso-Arrastre Special Interest Area; Eldoradoville, located along the East Fork of the San Gabriel River; Mt. Wilson Observatory; and San Dimas Experimental Forest. Prioritize the remaining cultural resources and historic properties for evaluation to determine their eligibility for listing. Nominate sites eligible for listing following evaluation.
8. Work with Biological Resources staff to map and identify Tribally significant plant species within the Monument in an effort to manage, protect, and promote plant gathering and harvesting by Tribal members.
9. Prioritize survey efforts and the identification of data gaps within the Monument to better manage cultural resources.

Biological Resources

Desired Conditions

1. Habitat conditions within the Monument are stable or improving over time as follows:
    a. Within chaparral and coastal sage scrub communities, the total acreage that contains greater than 50 percent vegetative cover of nonnative annual grasses, is stable or reducing over time, when compared to the baseline (2011).
    b. For each vegetation type, the number of acres with characteristics in Fire Regime Condition Class (FRCC) of 1 or -1 is increasing compared to 2016 acres.

c. Tree mortality is evenly distributed across elevations.

d. The number of properly functioning watersheds is stable or increasing compared to the 2016 Watershed Condition Class scores.

2. Threatened and endangered species populations are moving towards recovery or down listing, and Forest Service Sensitive species populations are experiencing a stable or improving trend, when compared to baseline data (i.e., 2005 LMP species accounts or any more recent data up to 2018).

Goal

1. When Land Management Plan monitoring indicates that habitat conditions are degrading or destabilizing, corrective actions will be taken. Corrective actions may include, but are not limited to, restoration, modification of management actions, or other options suitable for the species or watershed affected.

Mineral Resources

Suitability of Lands

1. Free-use rock, invertebrate fossil, and mineral collecting and mining for non-commercial personal uses is not suitable within the Monument.

Management Approaches

1. Outreach to other law enforcement branches of local, state, and Federal agencies to coordinate enforcement efforts, including enforcement of unauthorized mining activities.
2. Develop partnerships with organizations to document resource damage in detail.
3. Develop an education program on the resource damage of illegal mining.

Designated Areas and Areas Recommended for Designation

Desired Conditions

1. Designated Wilderness and Recommended Wilderness within the Monument are maintained as a naturally evolving and natural-appearing landscape that provides for primitive and unconfined recreation use. The sense of remoteness and solitude is maintained.
2. The nature and purpose of the Pacific Crest National Scenic Trail (PCT) are to provide for outstanding journeys on foot or on horseback in the spectacularly wild landscapes of high Pacific mountain ridges. Tranquility and closeness with nature can be found consistently along the trail, evoking a feeling of extended retreat from civilization, even if only venturing out for a day.

Guidelines

1. New recreation events, such as foot races or horseback endurance events and fundraising events should be limited to designated crossings only on the Pacific Crest National Scenic Trail (PCT) within the Monument. Existing recreation events may be allowed to continue at current levels.
2. Within the Monument, new trails that are proposed to cross the PCT or to be built within the foreground of the PCT, should be designed to minimize conflicting uses and to minimize the scenic, aural, and resource impacts to the PCT.

Suitability of Lands

1. Within the Monument, the PCT foreground is not suitable for special-use authorizations for new communication sites and wind generation sites.
2. New roads are not suitable within the foreground of the PCT unless required by law to provide access to private lands or documented as the only prudent and feasible alternative.

Land Use Zones

Suitability of Lands

1. Mineral and energy resources exploration and development are not suitable within the Monument, except where valid rights already exist at the time of the Proclamation (table 2). Activities within permitted sediment placement sites are not considered mineral and energy resources exploration and development projects.

Table 2. Suitable uses commodity and commercial uses by Land Use Zone, San Gabriel Mountains National Monument

Activity or Use	Developed Areas Interface	Back Country	Back Country Motorized Use Restricted	Back Country Non-Motorized	Critical Biological	Wilderness	Experimental Forest
Oil and Gas Exploration and Development Areas[1]	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable
Minerals and Mining Exploration and Development[1]	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable

[1] With the exception of valid existing rights.

Critical Biological Land Use Zone

This zone includes areas on the ANF that are considered important for the protection of at-risk species. There are no changes to the definitions of Critical Biological Land Use Zones (CBLUZ) from the ANF LMP direction that apply to this zone (ANF LMP Part 2, p. 9). With the 2005 LMP, there are already six designated CBLUZs within the Monument boundary: South Fork Big Rock Creek, South Fork Little Rock Creek, Lower Little Rock Creek, Upper Big Tujunga, West Fork San Gabriel River, and Soledad Canyon. Three new CBLUZs and one expansion of the existing CBLUZ are proposed in the Monument Plan. See Table 2 and Figures 2 through 5.

Table 3. San Gabriel Mountains National Monument Critical Biological Land Use Zones (CBLUZ) Primary At-risk Species and Primary Uses.

CBLUZ	Primary Species Protected	Place	Primary Uses**
East Fork San Gabriel River	Santa Ana sucker	San Gabriel Canyon	CBLUZ location is from just above the Oaks day use site upstream to the private land parcel near the Bridge to Nowhere, including the Cattle Canyon tributary upstream to the upper extent of the Santa Ana designated critical habitat. This area is currently managed as a wild trout stream and this designation is retained. Existing transportation and other uses, such as hiking, fishing, and dispersed recreation will continue. Overnight camping is not allowed. Utility infrastructure operation and maintenance activities will continue.
North Fork San Gabriel River	Santa Ana sucker	San Gabriel Canyon	CBLUZ location is from the West Fork/North Fork confluence upstream to the northern extent of the Santa Ana sucker Designated Critical Habitat, including the Bichota Canyon tributary of the North Fork San Gabriel River. Existing uses such as hiking, fishing and dispersed recreation will continue. Overnight camping is not allowed. Utility infrastructure operation and maintenance activities will continue.
Aliso Canyon Creek	California red-legged frog	Soledad Front Country	The current West Wide Energy Corridor and the SCE transmission line corridors (Pardee-Vincent and Vincent-Mesa) are excluded from the CBLUZ and will be managed for utility infrastructure, including new and upgraded transmission lines. Expansion of these corridors would not be allowed without a Plan amendment. Maintenance of the existing electrical distribution lines within the CBLUZ will continue and is not in conflict with the CBLUZ. Existing road networks would be condensed where appropriate, reducing redundancy, while allowing ongoing maintenance of infrastructure. Access to utility corridors will be maintained while minimizing road infrastructure within the CBLUZ. Existing Transportation and other uses such as hiking, fishing and dispersed recreation will continue. Overnight camping is not allowed.
West Fork San Gabriel Canyon	Santa Ana Sucker	San Gabriel Canyon/Angeles Uplands East	CBLUZ location is Cogswell Dam downstream to the confluence of the North Fork and includes the lower segments of Big and Little Mermaids Canyon and Bear creek. This area is currently managed as a wild trout stream and this designation is retained. Management of the Cogswell Dam for flood control and water conservation including water release is not in conflict with the CBLUZ designation and is retained. Maintenance of the existing electrical distribution lines within the CBLUZ is not in conflict with the CBLUZ and is retained. Installation of toilets can be considered neutral or beneficial use. Administrative use and use of NFS Road 2N25 as a hiking and bicycle path will be retained. Maintenance and use of the disabled access fishing platforms along the West Fork will continue. Overnight camping is not allowed except at designated campgrounds (i.e. Glen Campground)."

**This is a partial list of activities associated with these CBLUZs. See Suitable Uses Tables in Part 2 of the ANF LMP (pp. 4-7) for a full description of all suitable uses within CBLUZs.

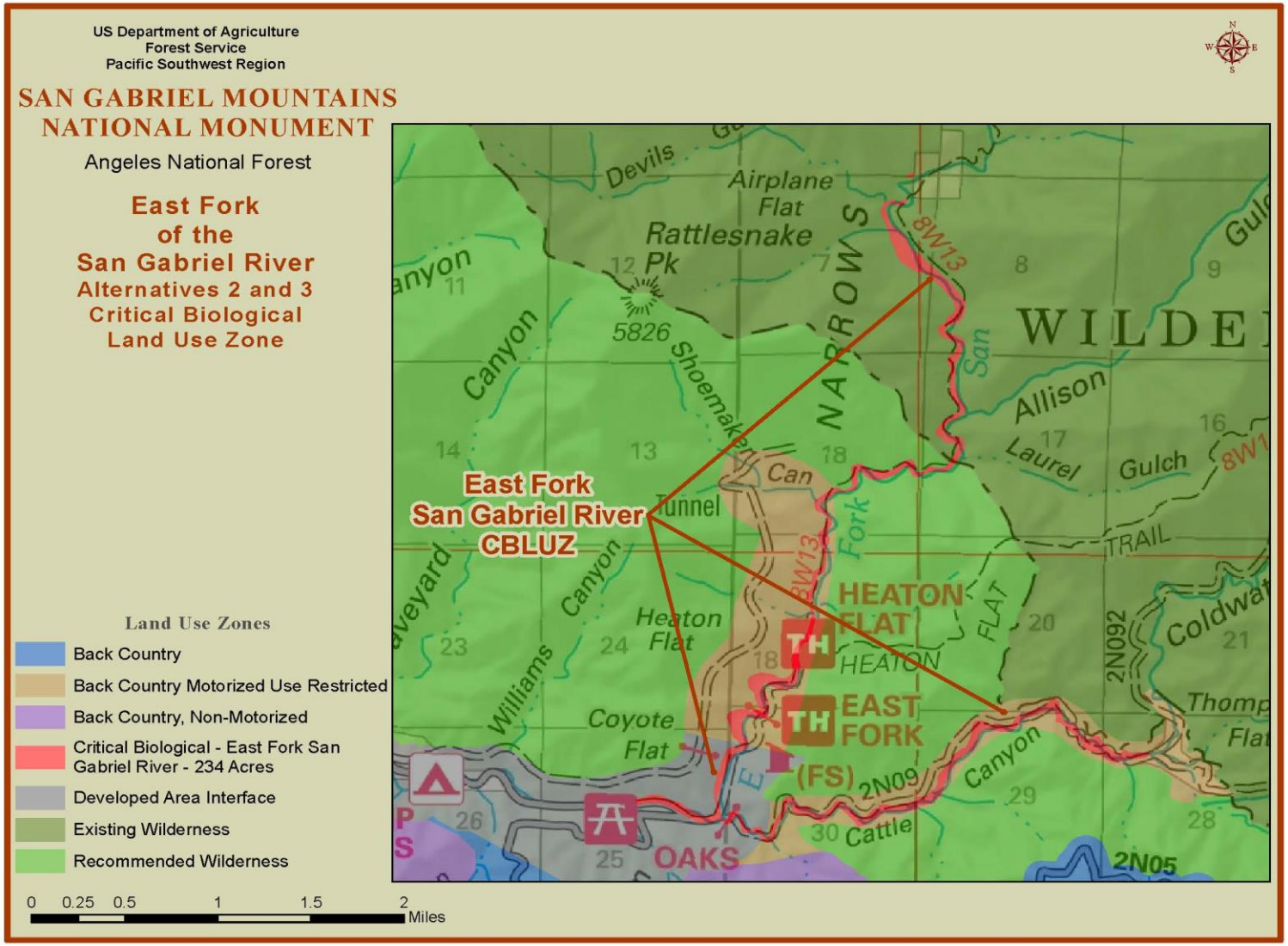

Figure 2. Critical Biological Land Use Zone on the East Fork San Gabriel River

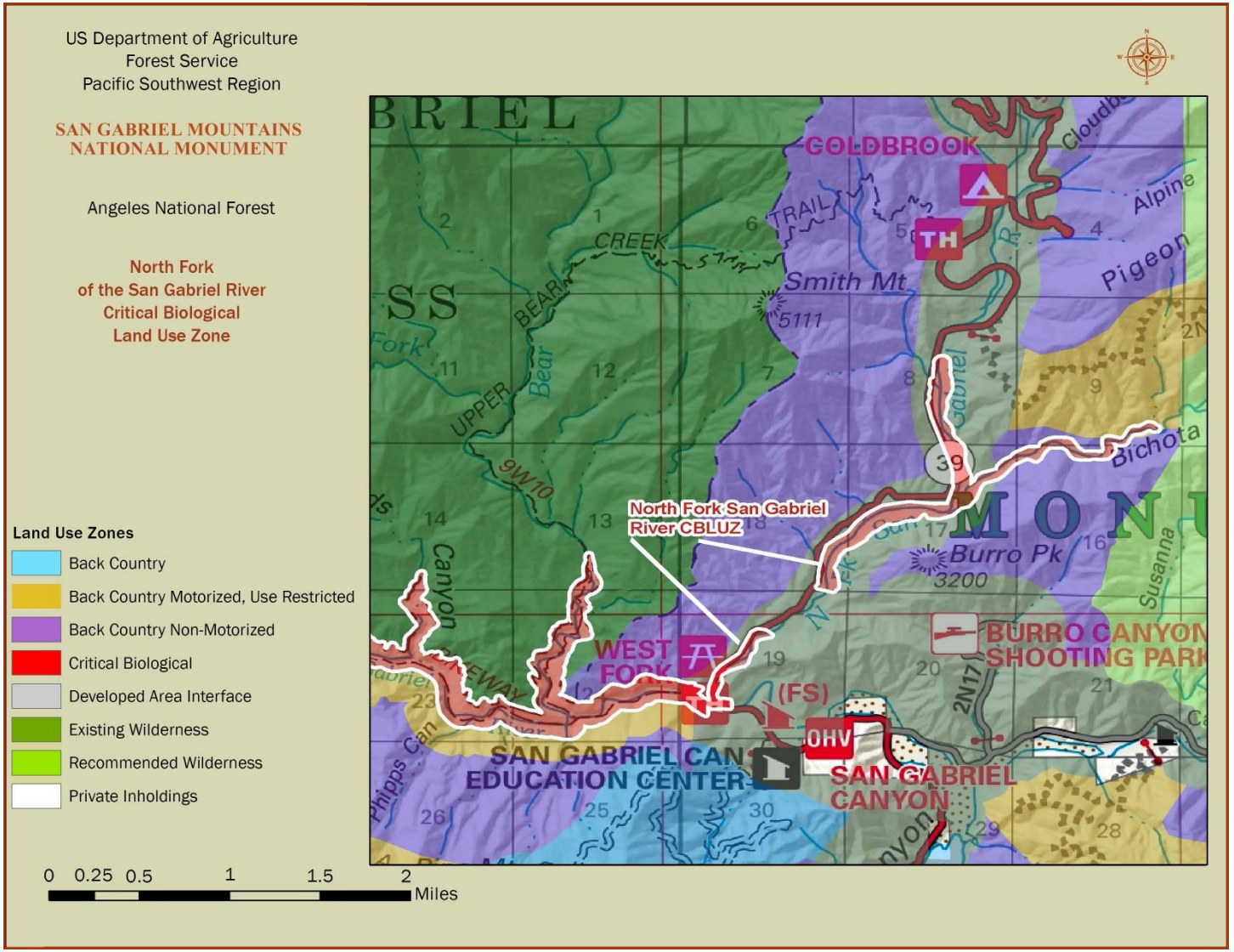

Figure 3. Critical Biological Land Use Zone in the North Fork San Gabriel River

Figure 4. Aliso Canyon CBLUZ does not include private lands or energy corridors

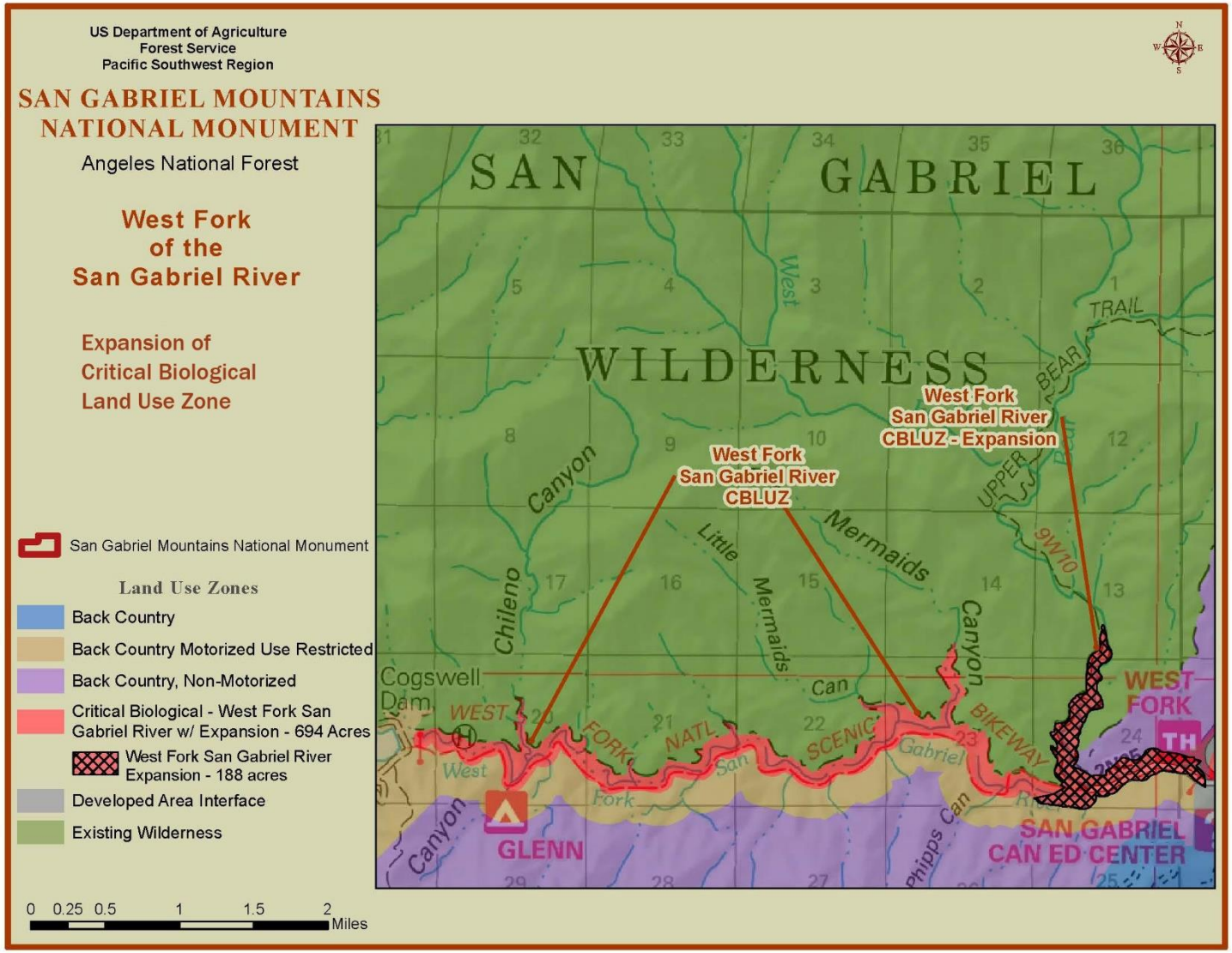

Figure 5. The expanded West Fork San Gabriel River Critical Biological Land Use Zone

Existing Wilderness Zone

This zone includes congressionally designated wildernesses. There are no changes to the ANF LMP direction that applies to this zone. However, two wilderness areas were designated since 2005 that occur within the Monument: Magic Mountain Wilderness and Pleasant View Ridge Wilderness. The portions of these two wilderness areas within the Monument will be zoned Existing Wilderness. The Pleasant View Wilderness will be part of the Angeles High Country Place and the Magic Mountain Wilderness will be part of the Soledad Front Country Place. The ANF LMP uses "places" to describe the theme, setting, desired conditions and program emphasis of an area. For a description of these two wilderness areas. See Table 4 and Figure 6.

Table 4. Descriptions for wilderness areas designated by Congress in 2009

Title	Place	Acres
Magic Mountain Wilderness	Soledad Front Country	11,938
The United States Congress designated the Magic Mountain Wilderness in 2009. The Magic Mountain Wilderness is generally bounded by: Santa Clara Divide Road (3N17.7) on the south; Backcountry Discovery Trail 1 (3N37) on the east; and forest boundaries on the north and west. A closed road traverses the mountain from the community of Lange to Magic Mountain. This corridor separates the Magic Mountain Wilderness into two portions. The Magic Mountain Wilderness's chaparral-covered hillsides and oak-studded canyons provide a scenic vista and suitable habitat for the California condor. The area also offers primitive recreational opportunities for the rapidly urbanizing Santa Clarita Valley. There are no officially designated trails within this wilderness. However, several social trails exist, which were created by visitor use.		
Pleasant View Ridge Wilderness	Angeles High Country, Mojave Front Country	27,040
The United States Congress designated the Pleasant View Ridge Wilderness in 2009. This wilderness area is located roughly 30 miles northeast of La Cañada, north of the Angeles Crest Highway where the San Gabriel Mountains slope north to meet the Mojave Desert. The area features 8,200-foot Mt. Williamson and other dramatic peaks, formidable cliffs, the headwaters of Little Rock and South Fork Big Rock Creeks (which provide Designated Critical Habitat for the endangered mountain yellow-legged frog), remote backcountry, and some of the most magnificent canyon country in the San Gabriel Mountains. The Pleasant View Ridge Wilderness is generally bounded by: California Highway 2 (Angeles Crest Scenic Byway) on the south; Little Rock Canyon on the west; and the forest boundary on the north; and High Desert National Recreation Trail (10W02 Burckhardt) on the northeast. The area can be accessed from California State Highway 2 at Vincent's Gap, Islip Trailhead, Buckhorn Campground, and Three Points Trailhead and from the Pacific Crest National Scenic Trail and High Desert National Recreation Trail. Trails going through this wilderness include: High Desert National Recreation Trail (10W02 Burckhardt), Islip Saddle (9W02), and Pacific Crest National Scenic Trail.		

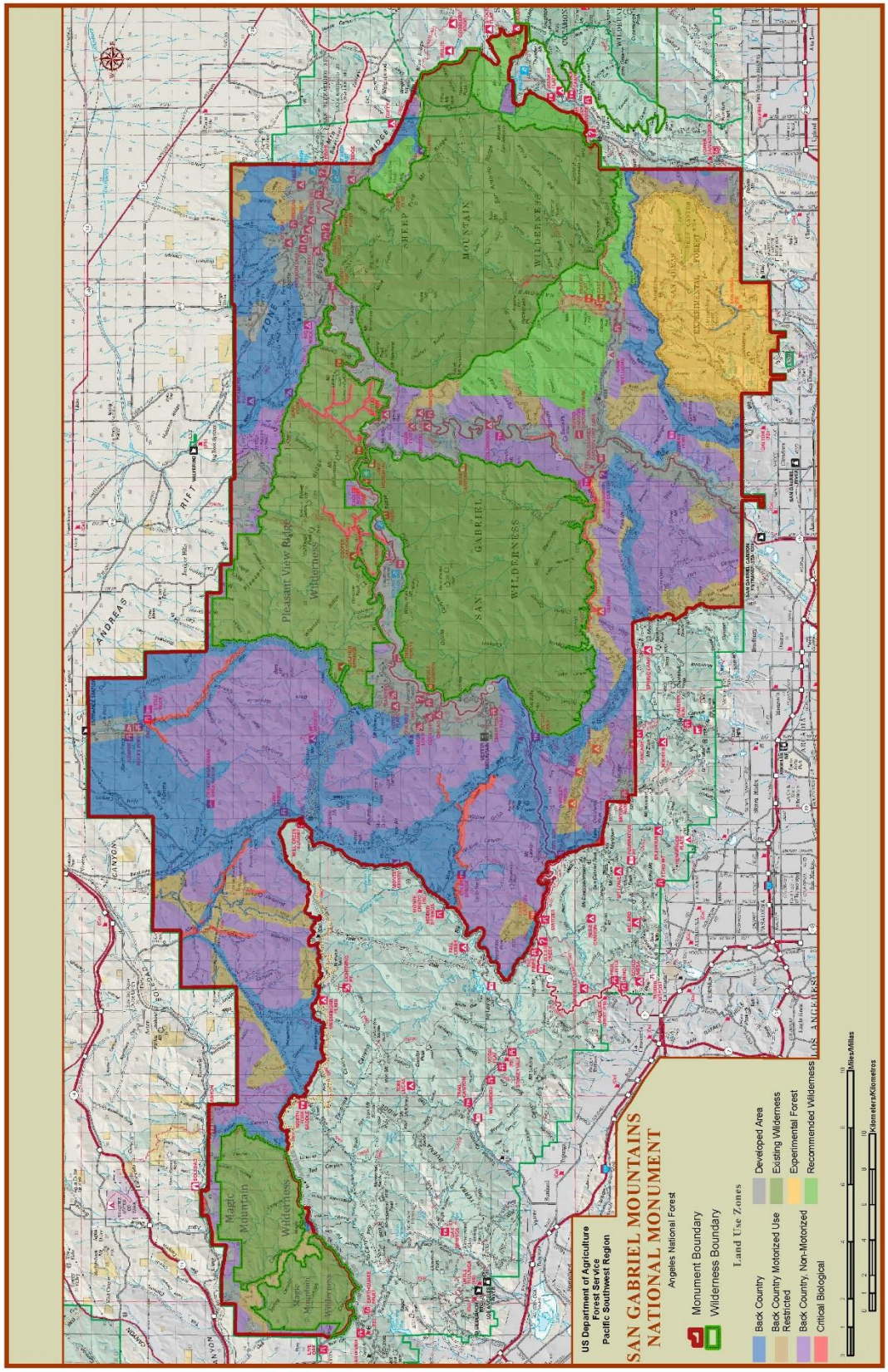

Figure 6. Land use zones updated for wilderness designations made by Congress in 2009

Climate Change

Management Approaches

1. Consider Forest Service climate change assessment and databases to inform management decisions (i.e., regional climate change trend reports; vulnerability assessments of key resources; adaptation strategies, management recommendations, and template for assessing climate change impacts and management options).
2. Continue reporting measures related to climate change adaptation and sustainable operations.
3. Educate the public about ecosystems and potential impacts of climate change and other stressors. Interpretation and conservation education materials and activities convey up-to-date and clear messages about impacts of climate change on biodiversity.

Chapter 3 – San Gabriel Mountains National Monument Transportation Plan

The Presidential Proclamation (2014) states:

> The Secretary shall prepare a transportation plan that specifies and implements such actions necessary to protect the objects identified in this proclamation, including road closures and travel restrictions. For the purpose of protecting the objects identified above, except for emergency or authorized administrative purposes, the Secretary shall limit all motor vehicle use to designated roads, trails, and, in the Secretary's discretion, those authorized off-highway vehicular use areas existing as of the date of this proclamation.

The requirement to prepare a transportation plan is met through this chapter along with the plan components and management approaches listed above in the "Transportation" section.

The Monument Plan is a programmatic-level decision and does not directly authorize any project-level or site-specific actions. This transportation plan does not make any site-specific changes to the transportation system. Instead, it provides a framework by which to manage the transportation system and inform future decisions to support the management intent of the Monument Plan. Changes to the existing transportation system will only be made after appropriate site-specific environmental analysis.

This approach was taken because transportation planning for the entire forest occurs through a separate process required by the 2005 Travel Management Rule. This chapter summarizes the current transportation system within the Monument that was developed under this separate process. It also explains how the current system, along with new plan components and management approaches in the Monument Plan, provide protections for the categories of objects listed in the Proclamation.

The 2005 ANF LMP's current management direction is consistent with the Proclamation direction to limit motorized vehicles to designated roads, designated trails, and designated open areas. This forest-wide direction continues to apply to the Monument area. Transportation Standard 1 was added to the Monument Plan (p. 8) to clarify that the only areas where off-highway vehicle (OHV) use is not limited to roads and trails are the San Gabriel and Little Rock OHV areas, which already existed at the time of the 2014 Proclamation.

Current Transportation System

Within the Monument there are over 519 total miles of existing roads under various jurisdictions. Of these, over 276 miles are open to motor vehicle use. While there are a number of public transportation options available in municipalities surrounding the Monument, there are currently no options for taking public transportation to and within the Monument.

Driving for pleasure is a popular activity on scenic routes through the Monument. For some older Americans and people with disabilities, driving may be the only means to experience the Forest. Highway 39 and Highway 2, Angeles Crest Scenic Highway. are major State routes providing access into and through the Monument. Angeles Forest Highway, Big Pines Highway, Big Tujunga Road, Upper Big Tujunga Road, Chantry Road, Little Tujunga Road, Sand Canyon Road, Mt. Baldy Highway, Glendora Mountain, Glendora Ridge Road and Santa Clara Divide Road are among USFS, county, or city roads which also provide scenic access into and through the Monument.

There are two designated open OHV areas within the Monument: the San Gabriel Canyon OHV area and the Little Rock OHV area. The San Gabriel Canyon OHV area includes 150 acres of rocky, sandy, reservoir land

and the Little Rock OHV area includes the Little Rock OHV trail. Outside of the two open OHV areas, all vehicles are limited to designated roads and trails.

The National Forest System roads within the Monument that are currently designated for motorized use, including OHV use, are shown on the Motor Vehicle Use Map (MVUM) for the ANF. This map is published as required by the Forest Service Travel Management Rule. See Figure 7 for the current MVUM for the Monument area only.

The non-motorized trail system within the Monument currently consists of approximately 243 miles of system trails that provide hiking, hunting, horseback riding, and mountain biking opportunities. The Monument has 87 miles of national trails, including the Pacific Crest National Scenic Trail and the Silver Moccasin, Gabrielino, and High Desert National Recreation Trails. All trails, except the Pacific Crest Trail and trails within wilderness areas, are open to mountain bikes. The West Fork National Scenic Bikeway parallels more than 8 miles of the West Fork San Gabriel River. This gated, paved road provides a relatively flat, paved route for bicyclists of all abilities.

Challenges and Needs

The combination of steep terrain, geological features, and erodible soils in the Monument result in erosion hazard ratings of high or very high. As a result, proper maintenance and care of existing roads are critical to minimize effects due to erosion. Roads with inadequate design and maintenance of drainage features and with steep, cut banks can be a primary human-caused source of soil and water disturbances in montane environments. Generally, higher densities of roads within a watershed result in quicker run-off to the stream network and increase the risk of channel erosion and downstream sedimentation. Proper decommissioning of roads is necessary to achieve positive long-term effects through removal of chronic sources of erosion, sedimentation, and hydrologic modification. Any new roads or road relocation must be constructed with strict standards and guidelines, especially those that could influence Riparian Conservation Areas or watershed values, are located in landslide-prone areas, or could cause soil erosion.

Similarly, most trails are located on soils with either high or very high erosion hazard ratings. Trail maintenance and care are necessary to keep the integrity of the trails at a level to be used by the public in an uninterrupted manner. The proliferation of unauthorized roads and trails is an ongoing problem and results in unacceptable effects to soils and other resources. Many have been created by recreation use from communities immediately adjacent to the Monument or off-road vehicle travel. These trails contribute to lost soil productivity and increased soil erosion and compaction, both long- and short-term. It is important to remove these trails, restore the land in an expeditious manner, and prevent them from recurring.

Roads within the Monument are either maintained by the Forest Service, or by local government agencies or the state under a special use permit or easement. Special-use roads, such as roads leading to communication sites can be maintained by the permittee under a special-use permit.

Maintenance Strategy

The following strategies will be used to prioritize needed maintenance and to improve the ability to complete needed maintenance for roads managed by the Forest Service:

1. Public safety, natural resource protection, and cultural resource protections are the highest priorities for road maintenance.
2. Maintenance level 3 through 5 roads are higher priority for maintenance than are maintenance levels 1 and 2 roads, due to the higher potential loss of investment, generally higher traffic volumes and speeds, and resulting safety risks and liabilities.

3. Submit appropriate projects for maintenance, reconstruction, or rehabilitation funding when opportunities are available (agency funding, state grants, partnerships, and other sources).
4. Seek additional sources of funding to reduce the maintenance backlog and keep the road system in acceptable condition. Potential sources include Federal Highway Trust Fund through the national transportation bill, Green Sticker funds for roads open to OHV and appropriated funding or special funds designated for the Monument.
5. Partner with user groups, permittees, and other entities to accomplish needed road maintenance.
6. Consider closing roads not currently needed ('Likely Not Needed' designation in Subpart A Report) to reduce maintenance costs and resource conflicts. Some road prisms may be retained for future access needs (trail, fire access, etc.). Alternatively, roads not currently needed may be permitted with provisions to allow users the authority to perform road maintenance to meet operational needs.
7. Consider restricting vehicle access for certain roads to emergency use only. These roads would remain open to pedestrian, bicycle, and equestrian use, but would be maintained at a minimum level (ML 1) of service to reduce maintenance costs.
8. Consider opportunities to reduce the size of the road system by decommissioning individual roads or converting them to non-motorized trails.
9. Follow the National Environmental Policy Act (NEPA) planning process, including public involvement as appropriate, in decisions to close or decommission roads or trails.

Travel Analysis

During the planning process for the 2005 ANF LMP, a Roads Analysis Report was produced that, included evaluation criteria based on specific topics described in agency direction at the time. These topics continue to be relevant and included: ecosystem functions and processes; aquatic, riparian zones, and water quality; terrestrial wildlife; economics; minerals and range management, water production, and special forest products; special use permits; general public transportation; administrative uses; protection; road-related and unroaded recreation; passive use values; social issues; community protection for fire; and civil rights and environmental justice.

The risks and benefits of each road were compared, resulting in two categories of roads flagged for further study. The first group of roads identified contains those that may require mitigation. "High Priority for Mitigation" roads are those roads (or segments) that were found to have both higher risk scores and a high level of public or administrative importance. The second group of roads requiring further study is those with "High Risk and Low Importance." Roads that fall into this group pose significant risk to either species or watersheds and are of low importance to the public, ANF personnel, and special use permittees. The Roads Analysis Report was used to develop plan components in the 2005 LMP to protect resources. Table 394 of the Roads Analyses Report summarizes how the effects of the transportation system were addressed with the 2005 LMP (Roads Analyses Report, pp. 66-84).

In the 2005 ANF LMP Record of Decision, based on comments from the public, a key addition to the land use zones was added: Back Country Motorized Use Restricted. This zone was developed to allow for administrative and maintenance use, while prohibiting motorized public access. This zone addressed road impacts that came up through the roads analysis process by reducing sedimentation in Riparian Conservation Areas and erosion from high levels of motorized travel (2005 LMP Part 2, Table 2.1.2).

With the Monument Proclamation in 2014, the evaluation of roads and trails systems for the entire Forest were initiated. In April 2018, a Draft Travel Analysis Report was released along with the San Gabriel Mountains National Monument Management Plan. This report is a requirement of the 2005 Travel Management Rule, Subpart A—Administration of the Forest Transportation System.

The objective of travel analysis is to provide decision-makers with critical information to develop and manage transportation systems that are safe and responsive to public needs and desires, are affordable and efficiently managed, have minimal negative ecological effects on the land, and are in balance with available funding for needed management actions. The travel analysis process takes a forest-wide look at the road system, including the Monument area, considering various perspectives and factors. The process does not result in a decision, but rather a report that will inform future decision-making. The report provides a list of opportunities for potential changes to the road system, including changes to road operation strategies, road decommissioning, conversion to other uses, relocation, or additions to the road system. It articulates the reality of a declining road maintenance budget and potential short-comings for the upkeep (or lack thereof) of the road system.

As a part of the analysis, all ANF National Forest System roads were evaluated by an interdisciplinary team to determine roads that were "likely not needed." Because the ANF completed a similar roads analysis process in 2005, as described above, that work was used to inform the travel analysis process. The roads identified by the interdisciplinary team as "likely not needed" were compared to the "high risk and low importance" roads identified in the 2005 Roads Analysis Report (RAP) and any changes were documented. "High risk and low importance" roads are those that are no longer needed to meet the needs of ANF mission-critical programs, or roads that pose significant risk to either species or watersheds and are of low importance to the public, forest administration, or special use permittees. Relevant criteria used for the 2005 roads analysis process were brought forward into the travel analysis process. The factors that led to the identification of roads as "likely not needed" can been found in the Draft Travel Analysis Report. Both the Draft Travel Analysis Report and 2005 Roads Analysis Report can be found in the project file at the Supervisor's Office of the Angeles National Forest and on the ANF website.

Changes proposed to roads within the Monument will be informed by the Travel Analysis Report and possibly, additional travel analysis, along with site-specific project analysis. While the travel analysis process was not specific to the Monument, it evaluated the effects of the road system on various resources (e.g., plant and animal species, heritage resources, watersheds), which comprise the categories of objects of interest listed in the Proclamation. As such, the report identifies where potential changes to the roads system within the Monument may be needed to reduce risks to resources, which would also provide access and benefit to the Monument objects of interest. The Forest will engage with stakeholders and the public when proposing to make any actual changes to the road system.

Protection of Monument Objects

This section describes how the transportation plan for the Monument provides protections for the categories of objects of interest, along with existing direction in the 2005 LMP. An overarching protective feature within the Monument is that the transportation network be limited to current or decreasing road density (Transportation Desired Condition 2).

Cultural Resources

In the 2005 LMP, the importance of maintaining roads for access to cultural and historic sites, Tribal access to important Native American sites, and the identification and protection of historic roads were analyzed in the 2005 LMP EIS. The process resulted in standards, including S62, "protect the access to and the use of sensitive traditional tribal use areas". In the LMP Part 2, strategies that can be emphasized during certain projects are delineated.

The Forest Heritage staff maintains spatial records of over 700 documented sites. By buffering each of these sites, a consolidated area can be delineated representing historic and prehistoric properties. In the Monument Plan, future transportation projects that intersect or could affect heritage or tribal resources will follow the 2018 Regional Programmatic Agreement, which manages all heritage resources as eligible historic properties (Heritage Standards 1 and 2; Heritage Guidelines 1 and 2). Before road maintenance occurs, the Heritage staff

reviews the proposed activities to ensure that impacts to historic properties are avoided or minimized. Prior to new construction, Heritage staff reviews the project area for any resource conflicts and, in accordance with the Programmatic Agreement, prescribes standard resource protection measures prior to and during project implementation. Examples of actions that are routinely taken include: temporary avoidance measures during implementation, temporary or long-term closures, use restrictions of vehicle weight class and type or number, maximum vehicular load and tire pressure on ground surfaces, exclusion by installation of barriers and gates, use of vegetation for screening or natural fencing, and capping or covering the site. Site-specific adaptive management strategies can prescribe site monitoring by Heritage staff during construction or maintenance, to ensure protective prescriptions are implemented. After incidents, such as fire or floods, heritage resources that are exposed and near roads and motorized trails are assessed and documented. If at risk, protective measures are put into place such as barriers, gate closures, fencing, and concealing wood straw. If project-related effects to cultural resources cannot be avoided, the regulations at 36 CFR 800 are followed, including consultation with the State Office of Historic Preservation (SHPO) to develop an effective treatment to resolve the effects. Examples include further documentation efforts, limited testing, or formal data recovery.

Recreational and Scenic Features

In the Roads Analyses Report accompanying the 2005 LMP, the transportation network benefits to recreational users and impacts on scenic features were evaluated. Scoring included whether the road or trail was important for users and whether mitigation for resource effects were needed.

The primary purpose for recreational uses and the transportation network within the Monument is to ‘provide a good balance of recreation opportunities’ (Transportation Desired Condition 6), while benefiting or minimizing adverse impacts to resources (Transportation Desired Conditions 4, 6, and 8, Standard 1, and Management Approaches 1, 2, 7, and 12 bullet 4). Maintaining roads and trails to standard has the effect of minimizing resource impacts (Sustainable Recreation Desired Condition 3 and Goal 1). Within the Monument, managing high visitor use and traffic congestion are approached with a variety of strategies (Transportation Management Approaches 7-9 and 12; Sustainable Recreation Goal 1). The Monument Plan emphasizes increased access through alternative means other than personal vehicles (Transportation Desired Conditions 1, 2, 4, 5, and 6 and Goal 1; Sustainable Recreation Goal 1).

Special land use designations within the Monument provide additional protections of recreational and scenic features with respect to the transportation system. This includes Congressionally-designated Wildernesses are summarized in the Monument Plan (Land Use Zones, Tables 2 & 3) as well as the Pacific Crest National Scenic Trail (Designated Areas Desired Condition 1, Guidelines 1 and 2).

Scientific Features

Retaining access to scientific features was considered in the 2005 Roads Analyses Report. Fire suppression, prevention, and prescribed fires are used to protect scientific features (e.g., species’ habitat), and protect sensitive ecosystems (e.g., riparian). Long-term maintenance of the transportation network is important to gain access to special uses for scientific purposes and for ecological restoration activities, e.g., USGS gauging stations, air quality stations. The transportation network is important for collecting seed and cones from naturally rust-resistant conifers, and accessing plant propagation material for endemic plants (e.g., limber pines, bigcone Douglas fir, rare plant sources).

Scientific objects of interest include Mt. Wilson Observatory and the San Dimas Experimental Forest. The Forest staff determined that there are multiple existing routes that are open to access Mt. Wilson. San Dimas Experimental Forest is currently closed for the general public. Not all roads within the San Dimas Experimental Forest are needed because there are sufficient alternative routes available. If projects for decommissioning roads are proposed, stakeholder input and environmental analyses will need to occur prior to any final project decision. As described above in the Maintenance Strategies, partnerships and funding

opportunities will be sought where declining budgets preclude maintenance which could negatively impact scientific objects (Maintenance Strategies of 3, 4, 5, and 6).

Infrastructure

The Proclamation lists critical infrastructure within the Monument that provides numerous benefits to people living in the nearby population centers, including flood control, water storage, delivery and diversion, telecommunications, and other utilities. It also acknowledges the contribution of these valid and existing rights and uses. Access to this infrastructure continues under the Monument's transportation plan.

Watershed Values

With respect to the transportation network, protection of watershed values includes protecting water quality, preserving hydrological processes, and maintaining aquatic and riparian habitat. This is achieved through proper siting away from streams and off unstable slopes, designing roads and trails with adequate drainage, maintaining drainage features on roads and trails, installing large enough pass-through flows at stream crossings, and installing protective erosion controls during projects or post-incidents. The ANF LMP already provides for these features. The Monument Plan provides additional direction that enhances these protections, specifically Transportation Desired Conditions 2-4, 6, and 8; Standard 1, Guideline 1, and Management Approaches 1, 3, 4, 7, and 12; Sustainable Recreation Desired Condition 3, Goal 1, and Management Approaches 1 and 2; Biological Resources Desired Condition 2.

Geologic Features

The Proclamation withdrew all of the Monument lands from mining and mineral extraction, except for valid existing rights. This precludes roads or trails from being built or used for new mining claims.

Diverse Wildlife and Aquatic Species

The 2005 LMP includes mitigation for species when new roads or trails are built, including S21 which directs a 2:1 mitigation ratio for California spotted owl territories; S22 directing linear structures to be designed for passage of fish and wildlife; and S25, which directs road and trail maintenance within the season of least impact in occupied habitats of threatened, endangered, proposed, candidate, and sensitive species.

The transportation section of the Monument Plan includes desired conditions to reduce the number of vehicles, maintain or reduce road density, maintain roads and trails to standard, provide adequate access points and parking areas, provide a sustainable transportation system, and reduce the number of unauthorized roads and trails (Desired Conditions 1-4, 6, 8). These plan components, along with the Monument Plan and existing 2005 LMP, help protect species and their habitat by mitigating impacts from the transportation system and reducing the number of vehicles. The transportation section also has several management approaches to protect wildlife and aquatic species (Management Approaches 1-4, 7-8, 11-12). Many of these include coordinating with partners to reduce negative impacts to resources and improving wildlife connectivity, as well as using the travel management process to continue to refine the transportation system as needed to protect resources. Risks to species was considered as part of the travel analysis process described above (and previous 2005 Roads Analysis Report), and helped inform the recommendations for potential changes to the transportation system in the future.

Vegetation Communities

Vegetation communities are affected by the transportation network when existing roads and trails accelerate erosion and landslides; when invasive weeds or fauna are brought in via the transportation system; when vehicles inadvertently start fires along roads. The existing 2005 LMP, project design features, and agency policies provide several protective measures. The Monument Plan provides additional direction that can indirectly protect vegetation communities by maintaining roads and trails to standard, decommissioning

unauthorized OHV routes, maintaining adequate parking so that vehicles are not parked within vegetation, and managing high-visitor use (Transportation Desired Conditions 2-4, 6, and 8; Standard 1; Guideline 1; Management Approaches 1, 3, 4, and 12).

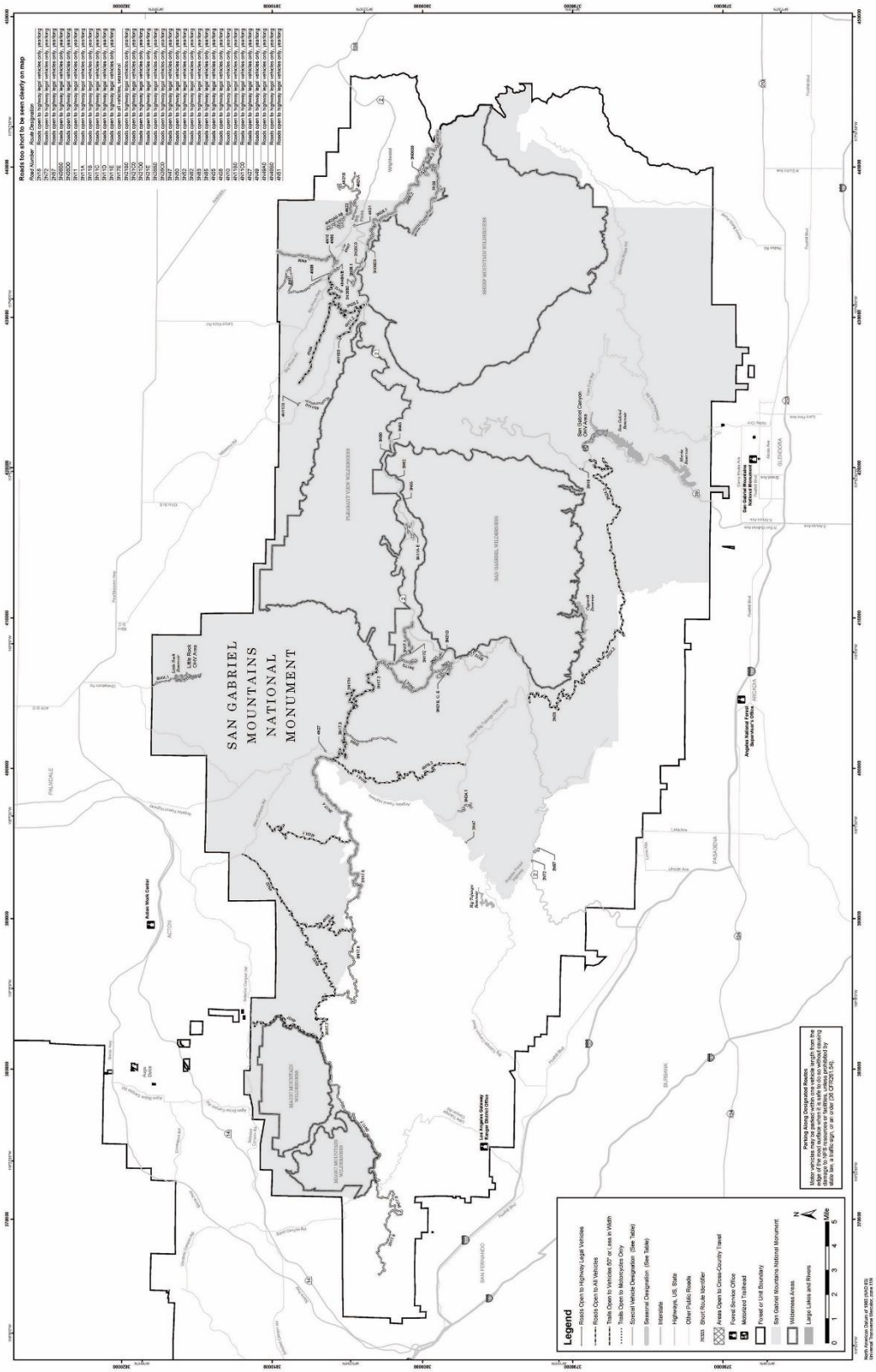

Figure 7. The transportation network in the Monument

Appendices

Appendix A. Presidential Proclamation

Presidential Proclamation -- San Gabriel Mountains National Monument

ESTABLISHMENT OF THE SAN GABRIEL MOUNTAINS NATIONAL MONUMENT

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BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

A PROCLAMATION

Known as the crown to the Valley of Angels, the peaks of the San Gabriel Mountains frame the Los Angeles skyline. Over 15 million people live within 90 minutes of this island of green, which provides 70 percent of the open space for Angelenos and 30 percent of their drinking water. Millions recreate and rejuvenate in the San Gabriels each year, seeking out their cool streams and canyons during the hot summer months, their snowcapped mountains in the winter, and their trail system and historic sites throughout the year.

The San Gabriels are some of the steepest and most rugged mountains in the United States. Situated adjacent to the mighty San Andreas Fault, the mountains are geologically active, migrating northwest at an average of 2 inches each year. Deep canyons, many with precious perennial streams, score the mountain peaks -- north toward the arid Mojave Desert and south to the temperate San Gabriel Valley.

The rich cultural history of these mountains echoes their striking geologic features and ecological diversity. Cultural resources represent successive layers of history, including that of Native Americans, Spanish missionaries and colonialists, Mexican rancheros, and Euro-American settlers and prospectors. Native American history runs deep, at least 8,000 years, exemplified by the Aliso-Arrastre Special Interest Area known for its heritage resource values, including several rock art and cupules features, the concentration of which is unique to southern California. Due to urban development and natural processes, this area also contains the best preserved example of a Gabrielino pictograph that characterizes the California Tradition of rock painting. Early European explorers' use of the area consisted mainly of early explorers traveling through the area. Over time, land grants, Spanish missions, and townsites surrounded the mountains, relying heavily on them for water, building supplies, and game.

By the 1840s, gold prospectors poured into the mountains. Large placer and lode mining operations were established in the San Gabriels, with mixed success. The historic mining town of Eldoradoville, located along the East Fork of the San Gabriel River, had at its peak in 1861 a population of over 500 miners, with general stores, saloons, and dance halls along with numerous mining camps of tents, wooden shacks, and stone cabins along the river.

In the early 20th century, responding to the burgeoning interest of urban dwellers in backcountry hiking and weekend rambling, a number of trails, lodges, and camps -- many of which were accessible only by horseback or on foot -- were constructed throughout the mountains. Remnants of these historic resorts, which attracted local residents and Hollywood stars alike, can still be seen and are important aspects of the region's social and cultural history.

Enthusiasm for recreating in the mountains continues today. The San Gabriels offer hundreds of miles of hiking, motorized, and equestrian trails, including several National Recreational Trails and 87 miles of the Pacific Crest National Scenic Trail. In the footprint of the resorts of the Great Hiking Era, many visitors

partake of Forest Service campgrounds built on the foundations of early 20th-century lodges and resorts. In a region with limited open space, the mountains are the backyard for many highly urbanized and culturally diverse populations within Los Angeles, underscoring the need for strong partnerships between this urban forest and neighboring communities.

The mountains have hosted world-class scientists, studying the terra firma at their feet as well as the distant galactic stars. Astronomer Edwin Hubble performed critical calculations from his work at the Mt. Wilson Observatory, including his discovery that some nebulae were actually galaxies outside our own Milky Way. Assisted by Milton Humason, he also discovered the presence of the astronomical phenomenon of redshift that proved the universe is expanding. Also on Mt. Wilson, Albert Michelson, America's first Nobel Prize winner in a science field, conducted an experiment that provided the first modern and truly accurate measurement of the speed of light. Closer to earth, the San Dimas Experimental Forest, established in 1933 as a hydrologic laboratory, continues the study of some of our earliest and most comprehensively monitored research watersheds, providing crucial scientific insights.

Although proximate to one of America's most urban areas, the region has untrammeled wilderness lands of the highest quality, including four designated wilderness areas: San Gabriel, Sheep Mountain, Pleasant View Ridge, and Magic Mountain. These lands provide invaluable backcountry opportunities for the rapidly expanding nearby communities and also provide habitat for iconic species including the endangered California condor and least Bells' vireo, and the Forest Service Sensitive Nelson's bighorn sheep, bald eagle, and California spotted owl. Inventoried roadless areas and lands recommended for designation as Wilderness also provide important habitat, including a connectivity corridor important for wide ranging species, such as the mountain lion.

The importance of the San Gabriels' watershed values was recognized early. As early as the late 1800s, local communities petitioned to protect the mountains for their watershed values. As a result, President Benjamin Harrison established the San Gabriel Timberland Reserve in 1892, the precursor to the Angeles National Forest. Reflecting the needs of the nearby population centers, the San Gabriels host an array of flood control and water storage, delivery, and diversion infrastructure, including six large retention dams as well as numerous telecommunications and utility towers.

The San Gabriels' rivers not only provide drinking water but are also areas of high ecological significance supporting rare populations of native fish, including the threatened Santa Ana sucker. The San Gabriel River supports rare arroyo chub and Santa Ana speckled dace, a species found only in the Los Angeles Basin. Little Rock Creek tumbles down from the northern escarpment to the Mojave Desert below and supports important populations of the endangered mountain yellow-legged frog and arroyo toad, as well as the threatened California red-legged frog. On the slopes of Mt. San Antonio, San Antonio Creek rushes through an alpine canyon studded with stalwart bigcone Douglas fir, and the magnificent 75-foot San Antonio Falls draw thousands of visitors every year.

In addition to rivers, the San Gabriels contain two scenic lakes, both formed by the area's remarkable geologic forces. The alpine Crystal Lake, found high in the mountains, was formed from one of the largest landslides on record in southern California. Jackson Lake is a natural sag pond, a type of pond formed between the strands of an active fault line -- in this case, the San Andreas.

Climatic contrasts in the San Gabriels range from the northern slope desert region, home to Joshua trees and pinyon pines, to high-elevation white fir and a notable stand of 1,000-year-old limber pines.

Vegetation communities, including chaparral and oak woodland, represent a portion of the rare Mediterranean ecosystem found in only 3 percent of the world. Mediterranean climate zones have high numbers of species for their area. The San Gabriels also provide suitable habitat for 52 Forest Service Sensitive Plants and as many as 300 California-endemic species, including Pierson's lupine and San Gabriel bedstraw, that occur only in the San Gabriel range.

The mountains harbor several of California's signature natural vegetation communities, including the drought-tolerant and fire-adapted chaparral shrubland, which is the dominant community and includes scrub oaks, chamise, manzanita, wild lilac, and western mountain-mahogany. Mixed conifer forest is an associated vegetation community comprising Jeffrey pine, sugar pine, white fir, and riparian woodlands including white alder, sycamore, and willow. These communities provide habitat for numerous native wildlife and insect species, including agriculturally important pollinators, the San Gabriel Mountains slender salamander, San Bernardino Mountain kingsnake, song sparrow, Peregrine falcon, mule deer, and Pallid bat.

WHEREAS section 2 of the Act of June 8, 1906 (34 Stat. 225, 16 U.S.C. 431) (the "Antiquities Act"), authorizes the President, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest situated upon the lands owned or controlled by the Government of the United States to be national monuments, and to reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected; and

WHEREAS it is in the public interest to preserve and protect the objects of scientific and historic interest at the San Gabriel Mountains;

NOW, THEREFORE, I, BARACK OBAMA, President of the United States of America, by the authority vested in me by section 2 of the Antiquities Act, hereby proclaim the objects identified above that are situated upon lands and interests in lands owned or controlled by the Government of the United States to be the San Gabriel Mountains National Monument (monument) and, for the purpose of preserving those objects, reserve as a part thereof all lands and interests in lands owned or controlled by the Government of the United States within the boundaries described on the accompanying map entitled, "San Gabriel Mountains National Monument" and the accompanying legal description, which are attached to and form a part of this proclamation.

These reserved Federal lands and interests in lands encompass approximately 346,177 acres, which is the smallest area compatible with the proper care and management of the objects to be protected.

All Federal lands and interests in lands within the boundaries of the monument are hereby appropriated and withdrawn from all forms of entry, location, selection, sale, leasing, or other disposition under the public land or other Federal laws, including location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing, other than by exchange that furthers the protective purposes of the monument, or disposition of materials under the Materials Act of 1947 in a manner that is consistent with the proper care and management of the objects protected by this proclamation.

The establishment of this monument is subject to valid existing rights. Lands and interests in lands within the monument's boundaries not owned or controlled by the United States shall be reserved as part of the monument upon acquisition of ownership or control by the United States. To the extent allowed by applicable law, the Secretaries of Agriculture and the Interior shall manage valid Federal mineral rights existing within the monument as of the date of this proclamation in a manner consistent with the proper care and management of the objects protected by this proclamation. Nothing in this proclamation shall be construed to alter the valid existing water rights of any party, including the United States.

Nothing in this proclamation shall be construed to interfere with the operation or maintenance, nor with the replacement or modification within the existing authorization boundary, of existing water resource, flood control, utility, pipeline, or telecommunications facilities that are located within the monument, subject to the Secretary of Agriculture's special uses authorities and other applicable laws. Existing water resource, flood control, utility, pipeline, or telecommunications facilities located within the monument may be expanded, and new facilities may be constructed within the monument, to the extent consistent with the proper care and management of the objects protected by this proclamation, subject to the Secretary of Agriculture's special uses authorities and other applicable law.

The Secretary of Agriculture (Secretary) shall manage the monument through the Forest Service, pursuant to applicable legal authorities, consistent with the purposes and provisions of this proclamation.

The Secretary shall prepare, within 3 years of the date of this proclamation and in consultation with the Secretary of the Interior, a management plan for the monument and shall promulgate such regulations for its management as deemed appropriate. The Secretary shall provide for maximum public involvement in the development of that plan, including, but not limited to, consultation with tribal, State, and local government, as well as community environmental conservation, health, and justice organizations. The plan shall provide for protection and interpretation of the scientific and historic objects identified above and for continued public access to those objects, consistent with their protection. To the maximum extent permitted by other applicable law and consistent with the purposes of the monument, the plan shall protect and preserve Indian sacred sites, as defined in section 1(b) of Executive Order 13007 of May 24, 1996, and access by Indian tribal members for traditional cultural, spiritual, and tree and forest product-, food-, and medicine-gathering purposes. Nothing in this proclamation shall be construed to enlarge or diminish the rights of any Indian tribe as defined in section 1(b) of Executive Order 13007.

The Secretary shall prepare a transportation plan that specifies and implements such actions necessary to protect the objects identified in this proclamation, including road closures and travel restrictions. For the purpose of protecting the objects identified above, except for emergency or authorized administrative purposes, the Secretary shall limit all motor vehicle use to designated roads, trails, and, in the Secretary's discretion, those authorized off-highway vehicular use areas existing as of the date of this proclamation.

The Secretary shall, in developing any management plans and any management rules and regulations governing the monument, consult with the Secretary of the Interior. The final decision to issue any management plans and any management rules and regulations rests with the Secretary of Agriculture. Management plans or rules and regulations developed by the Secretary of the Interior governing uses

Angeles National Forest within national parks or other national monuments administered by the Secretary of the Interior shall not apply within the monument.

Nothing in this proclamation shall be construed to enlarge or diminish the jurisdiction of the State of California with respect to fish and wildlife management.

Laws, regulations, and policies followed by the United States Forest Service in issuing and administering grazing permits or leases on all lands under its jurisdiction shall continue to apply with regard to the lands in the monument in a manner consistent with the proper care and management of the objects protected by this proclamation.

Nothing in this proclamation shall be construed to alter the authority or responsibility of any party with respect to emergency response activities within the monument, including wildland fire response. The Secretary may carry out vegetative management treatments within the monument, except that timber harvest and prescribed fire may only be used when the Secretary determines it appropriate to address the risk of wildfire, insect infestation, or disease that would endanger the objects identified above or imperil public safety.

Recognizing the proximity of the monument to Class B airspace and that a military training route is over the monument, nothing in this proclamation shall be deemed to restrict general aviation, commercial, or military aircraft operations, nor the designation of new units of special use airspace or the establishment of military flight training routes, over the monument.

Nothing in this proclamation shall be deemed to revoke any existing withdrawal, reservation, or appropriation; however, the monument shall be the dominant reservation.

Warning is hereby given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of the monument and not to locate or settle upon any of the lands thereof.

IN WITNESS WHEREOF, I have hereunto set my hand this tenth day of October, in the year of our Lord two thousand fourteen, and of the Independence of the United States of America the two hundred and thirty-ninth.

BARACK OBAMA

Appendix B. Protections for Categories of National Monument Objects of Interest

Table 5. Summary of protections for objects of interest under the 2005 ANF Land Management Plan and 2019 Monument Plan.

Categories of Objects of Interest (with examples from Proclamation)	**2005 Angeles Land Management Plan Protections**	**2018 Monument Management Plan Added Protection**	**How Plans Provide Protections**
Cultural Resources – The San Gabriel Mountains contain a rich cultural history, including a unique concentration of several rock art and cupules features within the Aliso-Arrastre Special Interest Area, the remnants of the historic mining town of Eldoradoville on the East Fork of the San Gabriel River, and the remnants of historic resorts of the early 20th century, on which foundations the current Forest Service campgrounds are constructed.	**General:** LMP, Part 1, Vision (p. 6) LMP, Part 1, Forest Niche (p. 7) LMP, Part 1, Forest Goals and Desired Conditions, Managed Recreation in a Natural Setting, Goal 3.1 • Desired condition related to increased knowledge of heritage resources (p. 35) • Heritage Site Protection Desired Conditions (p. 35) • Tribal and Native American Use Desired Conditions (p.35) LMP, Part 1, Forest Goals and Desired Conditions, Natural Areas in an Urban Context, Goal 7.1 • Desired condition related to cultural features (p. 48) LMP, Part 2, Program Emphasis and Objectives, Resource Management • Heritage Program emphasis (p. 25) • Table 2.1.5 Resource Management Performance Indicators, ANF (p. 25) – Number of Heritage Resources Managed to Standard LMP, Part 2, Place-Based Program Emphasis (p. 35), emphasis on cultural resources described for various Places under Program Emphasis section, e.g., Angeles High Country (pp. 41-42) LMP, Part 2, Appendix B – Program Strategies and Tactics • Tribal 1 (p. 90) • Her 1-3 (p. 108)	Heritage Resources Desired Conditions 1-3, Goal 1, Standards 1-2, Guidelines 1-2, Management Approaches 1-9 (pp. 11-12)	Current direction and strategies in the existing LMP protect cultural resources within the Monument by: • Emphasizing inventorying, evaluating, and protecting heritage resources. • Aiming to identify and mitigate activities that may adversely affect or do not complement significant cultural properties. • Protecting known sites to the highest standard until evaluated. • Working with tribes to support traditional and contemporary uses and access. • Providing opportunities to work with the public in the stewardship of sites. • Protecting Special Interest Areas that were designated for cultural resources. The new direction added through the Monument Management Plan augments some of the protections already in place under the existing LMP. The Heritage Program continues to maintain sites to standard.

	• Fac 1 (p. 115) • Lands 2 (p. 119) LMP, Part 3, Cultural and Historic Standards (p.13) • S60-62 **Aliso-Arrastre Special Interest Area:** LMP, Part 2, Suitable Land Uses, Special Designation Overlays, Special Interest Areas (p. 14) LMP, Part 2, Place-Based Program Emphasis, Soledad Front Country, Desired Condition (p. 70) LMP, Part 2, Appendix A – Special Designation Overlays, Special Interest Areas, Aliso-Arrastre (p.85) LMP, Part 2, Appendix B – Program Strategies and Tactics, SD 4 (p. 107) Management for Special Interest Areas further described in the FEIS, Vol. 2, Appendix G (p. 266)		
Recreational and Scenic Features – The Monument offers campgrounds and an extensive trail system, which contains 87 miles of the Pacific Crest National Scenic Trail and several national recreation trails. Four designated wilderness areas are within the Monument (San Gabriel, Sheep Mountain, Pleasant View Ridge, and Magic Mountain), providing backcountry experiences. The Monument offers	**General:** LMP, Part 1, Vision (p. 6) LMP, Part 1, Forest Niche (pp. 7-8) LMP, Part 1, Managed Recreation in a Natural Setting, Goal 3.1 Recreation Desired Conditions (p. 34) LMP, Part 2, Suitable Land Uses Table 2.1.2 Suitable Uses Public Use and Enjoyment (p. 4) Descriptions of management related to recreation and visitor use for each Land Use Zone (pp. 7-12) LMP, Part 2, Scenery Management System (p. 17) LMP, Part 2, Program Emphasis and Objectives, Public Use and Enjoyment (pp. 26-28) LMP, Part 2, Place-Based Program Emphasis (p. 35), emphasis and desired conditions for recreation and scenery described for various Places, e.g., Angeles High Country (pp. 41-42) LMP, Part 2, Appendix B – Program Strategies and Tactics	Goal 1 and Management all Transportation, all Sustainable Recreation, and Visitor Experience, Information, and Environmental Education	Current direction and strategies in the existing LMP provide for diverse recreation opportunities while protecting resources within the Monument by: Managing for high quality recreation opportunities and facilities that benefit diverse user groups and urban communities. Managing for a well-maintained and environmentally sustainable trail system that features scenic routes with a special emphasis on managing the Pacific Crest National Scenic Trail and national recreation trails. Designating Land Use Zones, which allow for differing types of recreation within each zone. Managing recreation impacts by designating sites for target shooting, OHV use, developed campground sites. Restricting and providing mitigation measures for recreation activities to protect fish, wildlife, and plant species; soil, watersheds, riparian areas; and heritage resources.

recreation opportunities for urban and culturally diverse populations. It attracts visitors to scenic areas, such as San Antonio Falls, Crystal Lake, and Jackson Lake.	REC 1-5 (pp. 110-114) LM 1-3 (p. 115) Fac 1 (p. 117) LMP, Part 3, Plan Standards, Aesthetic Management Standards S9-S10 (p. 6) LMP, Part 3, Plan Standards, Fish and Wildlife Standards When Implementing Recreation Activities, S34-S36 (pp. 8-9) When Implementing Land and Special-Uses Activities, S40-41 (p. 9) LMP, Part 3, Plan Standards, Soil, Water, Riparian and Heritage Standards When Implementing Recreation Activities, S50, (p. 11) LMP, Part 3, Plan Standards, Appendix D – Adaptive Mitigation for Recreation Uses (p. 63) Trail System, Including National Scenic and Recreation Trails: LMP, Part 1, Vision (p. 7) LMP, Part 1, Managed Recreation in a Natural Setting, Goal 3.1 Road and Trail System Desired Conditions (p. 35) LMP, Part 2, Suitable Land Uses Table 2.1.2 Suitable Uses Public Use and Enjoyment (p. 4) Descriptions of management related to trails for each Land Use Zone (pp. 7-12) LMP, Part 2, Program Emphasis and Objectives, Facility Operations and Maintenance (pp. 29-30) Roads and Trails Program emphasis (pp. 29-30) Table 2.1.7 Facilities Operations and Maintenance Performance Indicators, ANF (p. 30) – Miles of Trail Operated and Maintained to Standard LMP, Part 2, Place-Based Program Emphasis (p. 35), emphasis and desired conditions for trails described for various Places, e.g., Front Country (pp. 38), Angeles High Country (p. 42) LMP, Part 2, Forest-specific Design Criteria, Place-specific Standards		Requiring new facilities to avoid impacts to streams and other resources. Including Place-specific standards to ensure recreation quality while protecting habitat and wildlife from impacts. Emphasizing interpretation and education, community outreach, and partnerships. Preventing or reducing the spread of weeds through trail use or recreational activities. Managing for backcountry experiences. Restricting uses and activities within wilderness areas to maintain wilderness values. Requiring activities to meet Scenic Integrity Objectives. Because the 2005 LMP direction is comprehensive in providing sustainable recreation opportunities and protecting scenery resources, the new direction added through the Monument Management Plan focuses on: Providing opportunities that are responsive to shifting demographics and local communities with access considerations; Further emphasizing partnerships to meet goals; Management of dispersed recreation activities.

	ANF S1 – Pacific Crest Trail (p. 76) LMP, Part 2, Appendix B – Program Strategies and Tactics Trans 1 (p. 116) Trans 3 (p. 117) LMP, Part 3, Plan Standards, Fish and Wildlife Standards When Implementing All Activities, S25 (p. 8) LMP, Part 3, Appendix I – Land Adjustment Prioritization Guide, Priority 2 Acquisitions (p. 77) LMP, Part 3, Appendix M – National Forests of Southern California Weed Management Strategy (pp. 121-130) Wilderness and Backcountry Experience: LMP, Part 1, Forest Niche (p. 7) LMP, Part 1, Managed Recreation in a Natural Setting, Goal 3.2 Wilderness Desired Conditions (p. 37) LMP, Part 2, Suitable Land Uses Tables 2.1.1-2.1.4 (pp. 4-6) Descriptions of management related to existing and recommended wilderness and Inventoried Roadless Areas (pp. 11-13) LMP, Part 2, Forest-specific Design Criteria, Wilderness Standards ANF S2-3 (p. 76) LMP, Part 2, Appendix B – Program Strategies and Tactics SD 1 (p. 106) LMP, Part 3, Appendix B – Minimum Impact Suppression Tactics LMP, Part 3, Appendix E – Five-Step Project Screening Process for Riparian Conservation Areas Limitations on treatment methods to non-motorized and non-mechanized		

	LMP, Part 3, Appendix J – Livestock Capability and Suitability Guidance Exclusion of grazing from wilderness areas that meet certain criteria		
Scientific Features – The Monument includes Mt. Wilson Observatory and the San Dimas Experimental Forest, both of which were established in the early 20th century and have contributed to important scientific discoveries.	**General**: LMP, Part 1, Forest Niche (p. 9) Mt. Wilson Observatory: LMP, Part 2, Place-Based Program Emphasis, The Front Country, Program Emphasis (p. 38) San Dimas Experimental Forest: LMP, Part 2, Suitable Land Uses Tables 2.1.1-2.1.4 (pp. 4-6) Experimental Forest management (p. 13) LMP, Part 2, Appendix A – Special Designation Overlays, Experimental Forest (pp. 87-88)	No change	There are many scientifically important features within the Monument. The current 2005 LMP provides protections through special designations such as a Special Interest Area, Research Natural Area, or Experimental Forest (See Figure 1). Mt Wilson Observatory is an active research institution, managed under special use permit. The San Dimas Experimental Forest is closed to the general public for ongoing research on fire ecology and chaparral processes. Under the Monument Plan, there is no change in management.
Infrastructure – Flood control and water storage, delivery and diversion infrastructure exist within the Monument, including six large retention dams. Numerous telecommunications and utility towers are also present, reflecting the needs of the nearby urban areas.	The purpose of the LMP is to provide a framework within which projects can be evaluated on bridging the gap between existing with desired conditions, or to manage for public demand: Part 1, Managers will work from within this strategic framework as they make decisions and propose site-specific projects that are designed to incrementally move the national forests toward the desired conditions. Project decisions must be consistent with the strategic direction, or must amend the plan. Site-specific projects may be the result of public demand (i.e., utilities including hydro-electric, transportation corridors, airports or more specific requests, such as groundwater extraction), or they can result from resource program needs (i.e., vegetative management, habitat projects, roads or trails construction). Projects will, in general, be proposed for implementation in order to bridge the gap between existing and desired conditions. Detailed analysis of resource trade-offs rightfully occurs at the project level where the extent of project requirements is known and can be assessed at the appropriate scale (p. 4).	No change	Current valid rights are not affected. Continued operations and maintenance, replacement and modification of utility structures continues within the existing authorizations. Expansion and new construction can occur subject to special use authorizations, ANF LMP, and this Monument Plan.

Watershed Values – The Monument provides drinking water for nearby population centers. The rivers, streams, lakes, and other water bodies within the Monument also provide important habitat, as well as recreation opportunities.	LMP, Part 1, Wilderness, Goal 3.2 (p. 36) LMP, Part 1, Watershed Function, Goal 5.1, (pp. 39-40) LMP, Part 1, Riparian Condition, Goal 5.2, (pp. 41-42) LMP, Part 2, Appendix B, Strategies and Tactics FH 1- Vegetation restoration (p. 101) FH 2- Prevention of Fire Induced Type Conversion (p. 101) LMP, Part 3, Soil, Water, Riparian and Heritage Standards When Implementing All Activities, S45-46, (p. 10) Applicable within Riparian Conservation Areas, S47-49, (p. 11) LMP, Part 3, Appendix A, Forest Service Directives (Manual and Handbook) along with other Laws, Regulations, Executive Orders and Memoranda, Agreements, Management Direction and State Authorities.	Watershed condition is affected by natural and anthropomorphic events. Conditions will be improved, albeit indirectly, by these elements of the Monument Plan: Transportation Desired Conditions 1-4, 8, S1, Guideline 1, and direct improvement will occur with Management Approach 1, 3. Sustainable Recreation Desired Condition 3, Goal 1, and Management Approach 1 are designed for improving watershed conditions when implemented. Mineral Resources Suitability of Lands 1 will preserve Monument features, and Management Approach 1 is intended to reduce resource impacts from unauthorized activities. And Land Use Zones restricting new	The LMP Part 1 Goal 5.1 – improve watershed conditions through cooperative management and 5.2 Improve riparian condition both articulate the general relationship between management actions and watershed health. Watershed is defined as the area contained within a drainage above a specific point of a stream. The watershed condition class is defined as good (Class 1), moderate (Class 2), or poor (Class 3). The LMP monitoring question specifically evaluates outcomes on sustaining Class 1 watersheds while reducing Condition Class 2 and Class 3 watersheds. Strategies and tactics for management activities that sustain Class 1 and maintain forest health and resilience are included in part 2 under WAT-1 watershed function and WAT-2 water management. Management of watershed are in the context of establishing riparian conservation areas (buffer zones), conserving aquatic species habitat, preventing erosion, promoting post-fire revegetation, reforesting in needed areas for erosion control, improving groundwater - recharge, minimizing diversion, maintaining connectivity, protecting high quality water sources, encouraging water conservation at facilities, eliminating impact to riparian area and water dependent species, etc. Part 3 of LMP has “soil, water, riparian and heritage” standards with specific design features when implementing projects. Water features on the landscape including both surface and ground water are assessed with a long-term goal of “reasonable use” and sustainability in mind. Effects to watersheds should be minimized when proposing new activities. Appendix E in part 3 describes a 5 step project screening process for riparian conservation areas. Further protections are afforded in the Monument Plan by designing and planning to reduce roads on the basis

		mining and minerals' claims and the designation of new CBLUZ will result in neutral or beneficial watershed conditions. The Transportation Plan can result in reducing or redesigning the number of roads or trails impacting resources.	of resource impacts; redesigning parking and vehicle access to minimize resources, and by designing projects to be neutral or beneficial to resources in the CBLUZ. Providing the tools and foundation to manage recreation will provide benefits to soils and stream functionality.

Geologic Features –
 	
The San Gabriel Mountains are geologically active. They include striking geologic features, including deep canyons with important perennial streams.
	LMP, Part 1,
	• Watershed Function, Goal 1, Improve Watershed Health, includes geological and paleontological resources, (p. 40)
	
	LMP, Part 2,
	• SIA -Devil's Punchbowl, Mt San Antonio, (p. 54), Aliso-Arrastre for paleontological environment (p. 55)
	• Faults are described in Places
	  o San Andreas Fault, Angeles High Country and Mojave Front Country, (p. 72).
	  o San Gabriel Fault, San Gabriel Canyon, p 51
	• Appendix B, Cucamonga Wilderness, p 55
	• Appendix B, WAT-1, protect paleontological resources, (p. 102)
		Monument Plan, Mineral Resources, Suitability of lands 1.	The geologic uniqueness of the San Gabriel Mountains have long been acknowledged. The extreme uplift results in a steep, elevation gain inducing higher levels of precipitation and with the fractured metamorphic rock, results in a large, surface-water supply and groundwater basins. Thus, the San Gabriel Mountains have perennial, cool-water streams, rare in Southern California. The 2005 LMP has designated an SIA, Devil's Punchbowl, for its geologic features.
			
			The Monument Proclamation withdrew all Monument lands from mining and surface mineral extraction. Because of this withdrawal, S57 is no longer applicable within the Monument such that no personal use collection of rock, fossils, and minerals is allowed.

Diverse Wildlife and Aquatic Species Several notable wildlife and aquatic species are located in the Monument, including: California condor, least Bells' vireo,	**General:** LMP Record of Decision, Key Factors of Decision Conservation of Plant and Animal Species (pp. 5 & 6, 9 & 10) LMP, Part 1, Biological Resource Condition, Goal 6.2, (p. 45) (MIS replaced in 2016) LMP, Part 1, Natural Areas in an Urban Context, Goal 7.1, (p. 46 &47) LMP, Part 2, Appendix B – Program Strategies and Tactics	Transportation, Desired Condition 4, 8, Standard 1, Management Approach 1, 7, 12 regarding parking in riparian areas, Sustainable Recreation, Goal 1,	The current 2005 LMP provides guidance in the form of strategies, tactics, and standards for resource protection at the project implementation level, and tries to balance protection of resources with human uses and activities managed by the FS. Part 3 of the LMP provides standards for the protection of various resources including wildlife and habitat. In addition it also provides guidance in appendix B, C, D, E, F, G, H and M, All fish and Wildlife Standards for

Nelson's bighorn sheep, bald eagle, California spotted owl, Santa Ana sucker, Arroyo chub, Santa Ana speckled dace, mountain yellow-legged frog, Arroyo toad, pollinators, San Gabriel Mountains slender salamander, San Bernardino Mountain kingsnake, song sparrow, peregrine falcon, mule deer, and pallid bat. Many of these have a special status for protection. Wilderness, recommended wilderness, and inventoried roadless areas within the Monument play an important role in providing habitat and connectivity corridors for wide ranging species, such as the mountain lion.	• AM-1- Land Management Plan Monitoring and Evaluation (p. 93) • AM 2- Forest-wide Inventory (p. 93 & 94) • WL-1-Threatened, Endangered, Proposed, Candidate, and Sensitive Species management • WL-2 Management of Species of Concern (p. 99) • IS 1- Invasive Species Prevention and Control (p. 100) • Lands 2 (p 119 & 120) LMP, Part 3, Fish and Wildlife Standards • When Implementing All activities, S11-33 (pp. 6-8) • When Implementing Recreation Activities, S34-35, (pp 8-9) • When implementing Fire Management Activities, S37-39, (p. 9) • When Implementing Lands and Special-Uses Activities, S40-44, (pp 9 & 10) LMP, Part 3, Soil, Water, Riparian and Heritage Standards • When Implementing All Activities, S 45-46, (P. 10) • Applicable within Riparian Conservation Areas, S47-49, (p. 11) • When Implementing Recreation Activities, S50, (p.11) and Appendix D-Adaptive Mitigation for Recreation Uses, (pp. 63 & 64) • When Implementing Livestock Grazing Activities, S51-56, Table 3-2, (pp 11&12) LMP Part 3, Other Design Criteria • Appendix B-Minimum Impact Suppression Tactics, (pp 55 & 56) • Appendix C-Monitoring Requirements (replaced in 2016) • Appendix E-Five-Step Project Screening Process for Riparian Conservation Areas includes Riparian Conservation Area Guidance, (pp 65 &66) • Appendix F-Guidelines for Aerial Application of Retardants and Foams in Aquatic Environments, (pp 67 & 68)	management Approach 2 Visitor Experience, Information, and Environmental Education Goal 1, Objective 1 Biological Resources, Desired Conditions 1 & 2 with Goal 1; Mineral Resources, Suitability of Lands 1, Management Approaches 1-3 Land Use Zones, Suitability of Lands 1, Critical biological Land Use Zone, Existing Wilderness Zone Climate Change 3, (p 22) Current Transportation System, Road Maintenance, (p 23), Maintenance Strategy 1, 3, 6 (p. 24)	conservation of habitat features, specifically Standards 11-50, and 57-58 provide protection for wildlife species and their habitat. Together, the Standards and Appendices provide more guidelines and restrictions designed to protect species and maintain key features of their habitats. Since the 2005 LMP, there have been more nationwide policies, rules, and regulations which govern the considerations and minimize the effects of management actions on species and habitats. For example, continued direction on prevention and treatment of invasive weeds continues with EO 13112, FSM 2900 (Invasive Species Management), and National Strategic Framework for Invasive Species Management. In the Monument Plan, the protection provided by the new CBLUZ designation will provide additional protection for species mentioned in the proclamation while still allowing for existing uses and new projects. This land use zone will restrict future development within these areas and require that projects are neutral or beneficial to the species protected. The restriction of eliminating overnight camping is an additional resource protection and potential tool for enforcement. Rare species protections are enhanced by the LMP, but the foundational protections is via law, policy, rule, and regulation. There are currently 57 plants, 4 birds, 6 mammals, 3 amphibians, 6 reptiles, 2 fish and 3 invertebrate species (see Appendix 3 or B1-3 in the Project Record) that are designated by the Regional Forester as Forest Service sensitive species (FSS). In addition, there are 6 plants, 5 birds, 2 fish, 3 amphibians, and 1 retile (See A3-11, A3-12) that are designated by the US Fish and Wildlife Service (USFWS) as federally threatened or endangered on the ANF. We consider all of these species to be special status for a total of 98 species that have these designations. The Proclamation listed approximately

	• Appendix G-Guidelines for Protection and Conservation of Bird Species at Mountain Top Communication Sites, USDA Forest Service		35 individual species, many of which are included in the 98 special status species. Each of the 98 special status species is evaluated at the project level for potential impacts on these species. Current Forest Service manual direction (FSM 2670) requires that the ANF "review all Forest Service planned, funded, executed, or permitted programs and activities for possible effects on endangered, threatened, proposed, or sensitive species". For each project FSM 2670 also requires the development of "recommendations for removing, avoiding, or compensating for any adverse effects", this is typically done by developing design criteria that are incorporated at the project level and are implemented on the ground during project implementation. These recommendations are typically included in decision documents and are then required to be implemented. All of the ecosystems on the ANF are used by at least one of the federally listed or FSS species. Therefore, we are conducting these biological evaluations for all actions across all habitat types across the entire Forest for these species. This analysis occurs during the NEPA/permitting phase and we analyze the indirect impact on the habitat for those species, as well as direct impacts on the species themselves as well as cumulative impacts from other past, present and future projects and develop project specific minimization measures to protect those species that are used during project implementation to minimize and avoid impacts. In addition to this process, anytime the ANF takes an action that may affect any species that is on the Endangered Species Act list we are required to complete consultation with the US Fish and Wildlife Service, pursuant to Section 7 of the ESA. The USFWS may require us to implement additional protective measures, monitoring or reporting in order to minimize impacts and track the baseline of these species.

			As a result of a remedy order the ANF has consulted with the USFWS on several ongoing routine operational and maintenance activities that we implement on a routine basis. The program areas that were analyzed were road and trail maintenance, administrative site operations and maintenance and developed and dispersed recreation. During the analysis for this consultation we developed avoidance and minimization measures that are implemented during these routine activities to minimize impacts on special status species. As a result of this consultation we were issued a biological opinion that had some additional monitoring and reporting requirements to the USFWS. See additional information below this table for a list of Threatened, Endangered, Proposed, Candidate, and Forest Service Sensitive Plants and Animals that may occur within the Angeles National Forest, Los Angeles and San Bernardino Counties, California (as of 2014). In subsequent LMP amendments, the monitoring plan put forward in 2005 was changed twice. Once, in response to a Remedy Order from the Courts, and then again, in keeping with the 2012 Planning Rule. In the most recent monitoring strategy, the concept of Management Indicator Species was no longer used, and instead there was an assignment of Focal species. There were many other features of the Monitoring Plan that updated the monitoring questions and outcome metrics in order to accommodate new scientific information and changed conditions (2014 LMP Amendment and administrative change to Appendix C-Monitoring Plan in 2016). The Monument Management plan acknowledged that the monitoring plan questions and metrics had been changed in 2016. In addition, the Goal is to take corrective actions when monitoring indicates that the habitat appears to be degrading or vegetation type-conversion is occurring.

Vegetation Communities – The Monument includes several natural vegetation communities, including Mojave desert, chaparral shrubland, oak woodland, mixed conifer forest, and riparian woodlands. These communities include Bigcone Douglas fir, Joshua trees, pinyon pines, high-elevation white fir, ancient limber pines, Jeffrey pine, sugar pine, white alder, sycamore, willow, 52 Forest Service Sensitive plant species, and 300 plants endemic to California.	LMP, Part 1 • Community Protection, Goal 1.1, (p. 19) • Restoration of Forest Health, Goal 1.2 (pp. 20-29) • Invasive Species, Goal 2.1, (p. 31 & 32) LMP, Part 2, Appendix B, Strategies and Tactics • IS 1 - Invasive Species Prevention and Control • FH 1 - Vegetation Restoration • FH 2 - Prevention of Fire Induced Type Conversion • FH 3 - Restoration of Forest Health • FH 4 - Insect and Disease Management LMP, Part 3, Vegetation management Standards • S1, S2, S5, S6 (p. 3, 5) • Table 3.1, p 3. More comprehensive strategies were in "Appendix M - National Forests of Southern California Weed Management Strategy" The vegetation communities and risks to those communities were summarized in 'Habitat Status Reports' with some discussion on factors that influence these communities and management considerations. This document can be found at https://www.fs.usda.gov/nfs/11558/www/nepa/101660_FSPLT3_4524611.pdf. **Alpine and subalpine** –This vegetation community has lodgepole pine, limber pine, and white fir with understory shrubs of chaparral plants. These 'islands in the sky' are geographically isolated, so that there is scientific value of endemic plants along with a high likelihood of responsiveness to climate change. Habitat status report notes that active restoration efforts will be needed if the habitats are degraded. **Bigcone Douglas Fir –** Stands of this species are found within many other vegetation communities, including lower montane forest, chaparral, and montane conifer forest. The major threat to these communities are fire return intervals, fire intensities due to higher fuel loads, and invasive plants which affect the fire regimes within the spatial areas. Evaluation occurs after each fire greater than 300 acres of the woodland stands and potential survivorship. Reforestation is planned for natural conifer	Main protections are included in the existing LMP. Monument plan biological resources section desirable condition and goals.	The LMP specifically analyzed for vegetation communities (total of 15), not singling out each species (FEIS volume 1 pp 83-108). The vegetation in the ANF are influenced heavily by human, interaction with fire and past management activities. Alteration of vegetation community is described in general ways: fire regime/ fire condition class, and invasive species. Also see additional information below this table. **Fire regime/fire condition class** In the current 2005 LMP, the fire regime and condition class were described (part 1). Specific monitoring questions are included in the LMP monitoring reporting requirement. Several outcome evaluation questions are included for goal 1.2: restoration of forest health. Questions such as: has the national forest been successful at maintaining long fire-free intervals in habitats where fire is naturally uncommon? For a complete list of question, see the 2016 version of appendix c of the LMP. **Invasive species** Invasive non-native species are animal and plant species with extraordinary capacity for multiplication and spread at the expense of native species. The invasive species are in many cases difficult to eradicate. The protection of native species would be more efficient when preventative measures are implemented to mitigate the spread of invasive species. The current LMP has a goal to reverse the trend of increasing loss of natural resources values due to invasive species. Several strategy and tactics are used invasive species prevention and control. The Forest keeps a running list of invasive animal and plant species B1-1, B1-2., and targets actions for eradication of the high priority weed and invasive faunal species. **Protection of habitats** The current LMP built in protection to the habitat of the biological resources (terrestrial wildlife, aquatic

	woodland and plantations which will not regenerate on their own. In some cases, no reforestation is planned if natural survivorship and regeneration will occur. **Oak woodland, savanna, and grassland –** Along with oaks, there is a description of black walnut stands mixed with other woodlands in this section of the habitat status reports. The value of these woodlands are noted for biological richness of species, i.e., keystone species. Conservation concern is in the regeneration of oak woodlands. Management concerns for these woodlands are noted as nonnative annual grasses which compete with oak seedlings for moisture needs for growth, along with increased predation upon acorns by high populations of native predators. Another relevant factor is the increasing concern of foothill, private development adjacent to the National Forests. Monitoring of factors affecting oak-dominated ecosystems include tree mortality aerial surveys, processing of remote sensing of annual grasses of 50%+, and examining the departure from the natural range of variation for fire return intervals. Fuels reduction projects, reforestation, and restoration projects are then proposed within the limitations of budget and capacity. **Riparian Habitats with white alder, sycamores, and willows.** As noted in the above table protections plus Appendices 1 & 2. **Sensitive species, and rare species.** As noted in Appendices 1 & 2.		wildlife and botanical species). The vegetation and aquatic features are the foundation of habitat health for the diverse populations of plants and animals that live on the Forest. Activities to protect biological resources by habitat improvement comes in various forms, such as fuels reduction, invasive species removal, habitat restoration, and watershed improvement. Fuels reduction strategy, tactics and standards are articulated in part 2 and part 3 of the LMP. Fuels reduction in forested stands includes thinning, mastication, and prescribe burning for the purpose of preventing large wildland fire and preservation of habitat of native species. Fuels reduction in chaparral vegetation community or maintenance of fuelbreaks are providing better access for wildland fire suppression activities. When wildland fire are suppressed quickly, habitat for native species are protected from an uncontrolled burn and vegetation type conversion is avoided. Invasive species removal strategy, tactics and standards are included throughout the LMP. Invasive species removal directly benefit the protection of the native species. Appendix M in Part 3 of the LMP articulates the need to collaborate with partners on weed eradication management activities. Habitat restoration activities includes but not limited to vegetation restoration, reforestation, afforestation, post-fire rehabilitation, and forest health improvement by removing sources of invasive species. Strategy, tactics and standards are included in part 2 and part 3 of the LMP.

Protection of Vegetation Types

This section further explains existing protections for vegetation types from the 2005 LMP.

Plant species protections: In the Reading Room of the 2005 LMP, 1999 pp summarized the plant species described the conservation ranking, range, known distribution within the four Southern California Forests, and management considerations. In addition, the ANF-specific rare plants and vegetation types were catalogued. There are over 70 species that are given evaluation and protection during project analyses because they are on the Regional Forester's Sensitive Species list, revised in 2014. For each project, design criteria are incorporated in order to minimize the risk that the project effects will lead to Federal listing as threatened or endangered.

Vegetation/Ecosystem Evaluation and protections: For the 2005 LMP, the following vegetation types were evaluated: alpine and subalpine habitats, chaparral, coastal sage scrub, desert montane, desert scrub, lower montane forest, montane conifer forest, montane meadows, oak woodland, oak-savanna, oak-grassland, and riparian habitats. For each of these veg types, management considerations were listed in the FEIS.

S6 and Appendix M of Part 3 are written to minimize invasive weed introduction into ANF lands. In addition, there are other directives given which also directed protections from invasive weed introductions, e.g. Invasive Species EO 13112, FSM 2900 (Invasive Species Management), and National Strategic Framework for Invasive Species Management.

Maintaining riparian habitat and vegetation is a priority within the 2005 LMP with many standards, strategies, and desired conditions within the Places on the ANF. Effects to groundwater and surface water must be considered with tunnels, wells, and spring developments (S45 -S49 in LMP, Pt 3, pp 10-11).

Although most US FWS species are wildlife, the ANF has Federally listed plant species also which have protections specified by S29, S30, S31, S32, and S34 (LMP Pt 3, p8). In addition, Special Interest Areas designated for habitat or vegetation, cultural uses are also managed for those protections. Managing dispersed recreation is a method to protect sensitive plant resources. S35 discourages camping in meadows, and importantly, S35 also notes that motorized vehicle use must stay on designated routes. Coastal sage scrub habitat is protected by S39 (LMP Pt 3, p. 8).

Special Status Species

Table 6. U.S. Fish and Wildlife Service threatened, endangered, and candidate species on the ANF

Common Name	Scientific Name	Status (Fed, CNPS)	Critical Habitat on ANF
Plants:			
Braunton's Milkvetch	*Astragalus brauntonii*	FE, 1B.1	No
Slender-horned Spineflower	*Dodecahema leptoceras*	FE, 1B.1	No
Nevin's Barberry	*Berberis nevinii*	FE, 1B.1	No
Thread-leaved Brodiaea	*Brodiaea filifolia*	FT, 1B.1	Yes (2-08-2011) (SDEF, 13 Ac)
San Fernando Valley Spineflower	*Chorizanthe parryi var. Fernandina*	FC/FSS/1B.1	No
Birds:			
California Condor	*Gymnogyps californianus*	FE	No
Least Bell's Vireo	*Vireo bellii pusillus*	FE	No
Southwestern Willow Flycatcher	*Empidonax traillii extimus*	FE	Yes (1-03-2013)
Coastal California Gnatcatcher	*Polioptila californica californica*	FT	Yes (12-19-2007)
Western Yellow-billed Cuckoo	*Coccyzus americanus occidentalis*	FT	No
Fish:			
Unarmored Threespine Stickleback	*Gasterosteus aculeatus williamsoni*	FE	No

Common Name	Scientific Name	Status (Fed, CNPS)	Critical Habitat on ANF
Santa Ana Sucker	*Catostomus santaanae*	FT	Yes (12-14-2010)
Amphibians:			
Arroyo Toad	*Anaxyrus (= Bufo) californicus*	FE	Yes (2-09-2011)
California Red-Legged Frog	*Rana draytonii*	FT	Yes (3-17-2010)
Mountain Yellow-Legged Frog	*Rana muscosa*	FE	Yes (9-14-2006)
Reptiles:			
Desert Tortoise	*Gopherus agassizii*	FT	No

Table 7. Regional Foresters Sensitive Species list (plants) for the ANF

Common Name	Scientific Name	CNPS Status[1]
Abrams' flowery puncturebract	*Acanthoscyphus parishii* var. *abramsii*	1B.2
San Gabriel manzanita	*Arctostaphylos glandulosa* ssp. *gabrielensis*	1B.2
Interior manzanita	*Arctostaphylos parryana* ssp. *tumescens*	4.3
Crested Milk-vetch	*Astragalus bicristatus*	4.3
San Antonio Milk-vetch	*Astragalus lentiginosus* var. *antonius*	1B.3
Scalloped Moonwort	*Botrychium crenulatum*	2B.2
Club-haired mariposa Lily	*Calochortus clavatus* var. *clavatus*	4.3
Slender mariposa Lily	*Calochortus clavatus* var. *gracilis*	1B.2
Late-flowered mariposa Lily	*Calochortus fimbriatus*	1B.3
Palmer's Mariposa Lily	*Calochortus palmeri* var. *palmeri*	1B.2
Alkali Mariposa Lily	*Calochortus striatus*	1B.2
Pygmy Poppy	*Canbya candida*	4.2
Mt. Gleason's paintbrush	*Castilleja gleasonii*	1B.2
Mojave paintbrush	*Castilleja plagiotoma*	4.3
Parry's spineflower	*Chorizanthe parryi* var. *parryi*	1B.1
California saw-grass	*Cladium californica*	2B.2
Peirson's Spring Beauty	*Claytonia lanceolata* var. *peirsonii*	3.1
Mojave tarplant	*Deinandra mohavensis*	1B.3
Ewan's cinquefoil	*Drymocallis cuneifolia* var. *ewanii*	1B.3
San Gabriel River Dudleya	*Dudleya cymosa* ssp. *crebrifolia*	1B.2
San Gabriel Mountains Dudleya	*Dudleya densiflora*	1B.1
Many-stemmed Dudleya	*Dudleya multicaulis*	1B.2
Forest Camp Sandwort	*Eremogone macradenia* var. *arcuifolia*	No ranking
Southern Alpine Buckwheat	*Eriogonum kennedyi* var. *alpigenum*	1B.3
Johnston's Buckwheat	*Eriogonum microthecum* var. *johnstonii*	1B.3
San Gabriel Bedstraw	*Galium grande*	1B.2
Abram's alumroot	*Heuchera abramsii*	4.3
Urn-flowered alumroot	*Heuchera caespitosa*	4.3
Mesa horkelia	*Horkelia cuneata* var. *puberula*	1B.1
San Gabriel Mountains sunflower	*Hulsea vestita* ssp. *gabrielensis*	4.3
Pygmy hulsea	*Hulsea vestita* ssp. *pygmaea*	1B.3
California satintail	*Imperata brevifolia*	2.B1
Fragrant pitcher sage	*Lepechinia fragrans*	4.2
Ross' pitcher sage	*Lepechinia rossii*	1B.2
Short-sepaled lewisia	*Lewisia brachycalyx*	2B.2
Lemon Lily	*Lilium parryi*	1B.2
San Gabriel Linanthus	*Linanthus concinnus*	1B.2
Peirson's lupine	*Lupinus peirsonii*	1B.3
Jokerst's Monardella	*Monardella australis jokerstii*	1B.1

[1] CNPS Status verified 8-08-2013, http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi

Common Name	Scientific Name	CNPS Status[1]
Hall's Monardella	*Monardella macrantha* ssp. *hallii*	1B.3
Rock Monardella	*Monardella saxicola*	4.2
Baja Navarretia	*Navarretia peninsularis*	1B.2
Robbins' nemacladus	*Nemacladus secundifloris robbinsii*	1B.2
Short-joint Beavertail	*Opuntia basilaris* var. *brachyclada*	1B.2
Woolly mountain-parsley	*Oreonana vestita*	1B.3
Rock Creek Broomrape	*Orobanche valida ssp. valida*	1B.2
Rock-loving oxytrope	*Oxytropis oreophila oreophila*	2B.3
San Bernardino grass-of-Parnassus	*Parnassia cirrata* var. *cirrata*	1B.3
Southern skullcap	*Scutellaria bolanderi* ssp. *austromontana*	1B.2
Parish's checkerbloom	*Sidalcea hickmanii* ssp. *parishii*	1B.2
Salt Spring checkerbloom	*Sidalcea neomexicana*	2B.2
Chickweed starry puncturebract	*Sidotheca caryophylloides*	4.3
Southern jewelflower	*Streptanthus campestris*	1B.3
Mason's neststraw	*Stylocline masonii*	1B.1
San Bernardino aster	*Symphyotrichum defoliatum*	1B.2
Sonoran maiden fern	*Thelypteris puberula* var. *sonorensis*	2B.2
Rigid fringepod	*Thysanocarpus rigidus*	1B.2

Table 8. Regional Forester's Sensitive Species list (wildlife) for the ANF

Common Name	Scientific Name
Birds:	
Northern Goshawk	*Accipiter gentilis*
Bald Eagle	*Haliaeetus leucocephalus*
California Spotted Owl	*Strix occidentalis occidentalis*
Gray Vireo	*Vireo vicinior*
Mammals:	
Pallid Bat	*Antrozous pallidus*
Townsend's Big-Eared Bat	*Corynorhinus townsendii*
Fringed Myotis	*Myotis thysanodes*
Nelson's (San Gabriel Mountains) Bighorn Sheep	*Ovis canadensis nelsoni*
Tehachapi Pocket Mouse	*Perognathus alticolus inexpectatus*
Amphibians:	
San Gabriel Mountains Slender Salamander	*Batrachoseps gabrieli*
Yellow-Blotched Salamander	*Ensatina eschscholtzii croceater*
Reptiles:	
Western Pond Turtle	*Actinemys marmorata*
California Legless Lizard	*Anniella pulchra*
San Bernardino Ringneck Snake	*Diadophis punctatus modestus*
San Bernardino Mountain Kingsnake	*Lampropeltis zonata parvirubra*
Coastal Rosy Boa	*Lichanura orcutti*
Two-Striped Garter Snake	*Thamnophis hammondii*
Fish:	
Arroyo Chub	*Gila orcutti*
Santa Ana speckled dace	*Rhinichthys osculus ssp. 8*
Terrestrial Invertebrates:	
San Gabriel Mountains Elfin **	*Callophrys mossii hidakupa*
San Gabriel Mountains Blue Butterfly	*Plebejus saepiolus aureolus*
San Emigdio Blue Butterfly	*Plebulina emigdionis*

Appendix C. Map of Protections within the Monument

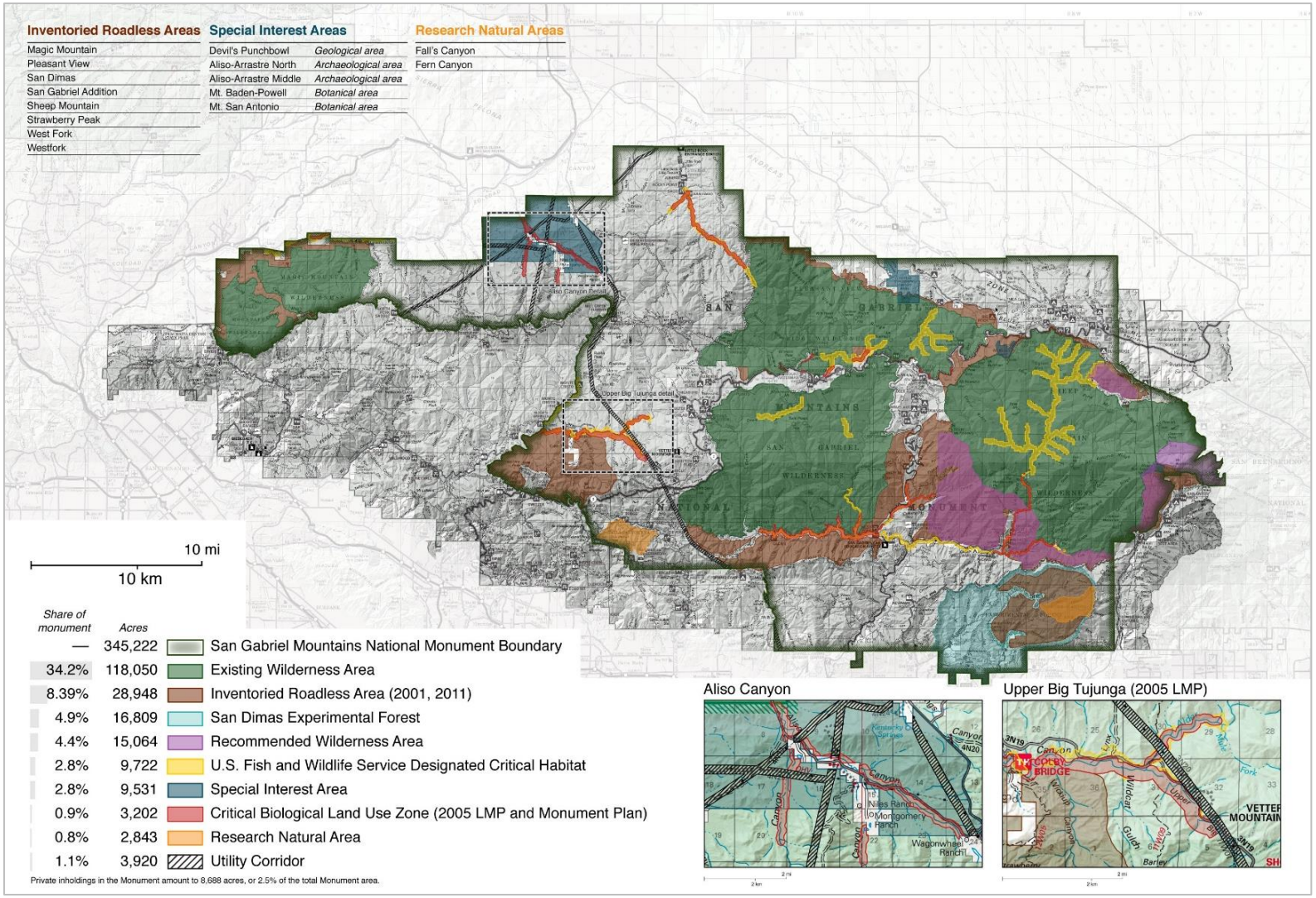

Figure 8. San Gabriel Mountains National Monument Protected Areas

United States Department of Agriculture

San Gabriel Mountains National Monument Management Plan

Forest Service Angeles National Forest R5-MB-318 2019

Cover images include a bald eagle at San Gabriel Reservoir (upper left), an incense cedar at Little Rock Creek (upper middle), a young male Nelson's bighorn sheep in the Sheep Mountain Wilderness (upper right), and the view from the Pacific Crest National Scenic Trail by Little Jimmy Trail Campground (bottom).

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San Gabriel Mountains
National Monument Management Plan

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This is the Final Monument Plan. It has incorporated pre-decisional instructions from the Objection Period.

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Chapter 1 – Introduction

Purpose of Monument Plan

On October 10, 2014, President Barack Obama signed the Proclamation (appendix A) designating 346,177 acres of existing Federal lands as the San Gabriel Mountains National Monument (Monument). The Monument is the eighth National Monument under Forest Service management. The Proclamation described the historical, natural, and cultural significance of the features within the proclaimed area that warranted the special designation of a national monument. The Proclamation also directed that certain uses continue, including Tribal rights to utilize the lands in traditional manners. The Proclamation also acknowledges the continuation of valid existing rights and uses, such as utilities and water infrastructure.

The Proclamation directed that the administration of these activities continue, but in a manner consistent with the intent of the Proclamation. The Federal lands and interests in lands within the boundaries of the Monument were withdrawn from location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing, with the exception of valid existing mining rights.

To the extent allowed by applicable law, the Secretaries of Agriculture and the Interior shall manage valid Federal mineral rights existing within the monument as of the date of the proclamation in a manner consistent with the proper care and management of the objects protected by the proclamation. The USDA Forest Service will respect the valid existing rights associated with mineral and energy resources within the San Gabriel Mountains National Monument. Any proposed expansion of existing operations within the Monument would be subject to a mineral classification and Validity Examination.

The Proclamation mandated the preparation of a monument management plan within three years and a transportation plan, and further mandated the management framework is to be developed in a collaborative manner. The San Gabriel Mountain National Monument Management Plan (Monument Plan) was developed according the Forest Service planning regulations adopted in 2012, referred to in this document as the 2012 Forest Service Planning Rule.

The purpose of this Monument Plan is to provide strategic direction and guidance for future management of the Monument. It provides a basis for informed decision making, while guiding resource management, practices, uses, and framework for project development. The Monument Plan does not include specific projects and activity decisions. The Monument Plan is adaptive in that it can be amended to update management direction based on new knowledge and information.

This Monument Plan is strategic in nature and does not attempt to prescribe detailed management direction to cover every possible situation.

This Monument Plan has been prepared pursuant to the requirements of the National Forest Management Act of 1976, and the 2012 Forest Service planning regulations (36 CFR 219), as amended. This first chapter provides the introductory information, chapter 2 provides the management direction, and chapter 3 describes the transportation plan. This management plan is also accompanied by an environmental assessment (EA) as required by the regulations used in its development (36 CFR 219.13).

Planning Area

The Monument Plan planning area includes all National Forest System lands within the boundaries of the Monument in the northern and southeastern portions of the San Gabriel Mountain Range, approximately 30 miles northeast of downtown Los Angeles in southern California. The Monument encompasses 342,175 acres of the Angeles National Forest (ANF) and 4,030 acres of the land previously administered

and managed by the San Bernardino National Forest. The Regional Forester has assigned administrative and planning authority for the entire Monument area to the ANF. The amended ANF Land Management Plan (ANF LMP) will apply to National Forest System lands within the ANF administrative boundary, which now includes the entire Monument. The changes associated with the Monument Plan as the Forest Plan amendment will apply only to the Monument area.

Management Planning Overview

The USDA Forest Service (Forest Service) land management planning is an adaptive process that includes forest plan development, monitoring, and adjustment based on desired social, economic, and ecological conditions and the evaluation of impacts to those conditions. The overall purpose of planning is to ensure land management based on current information that guides land stewardship to best meet the needs of the public.

Relationship of this Land Management Plan to Other Planning Documents

The Monument Plan will amend the current Angeles National Forest Land Management Plan (ANF LMP). Specifically, the Angeles National Forest Land Management Plan direction listed below will be superseded by the new plan components in the Monument Plan:

1. "There is a low level of increase in roaded acres over time, as defined by road density analysis" *(from ANF LMP Part 1, Managed Recreation in a Natural Setting, Goal 3.1 – Provide for Public Use and Natural Resource Protection, page 34.)*

2. "Habitat conditions are stable or improving over time as indicated by the status of management indicator species"
   (from ANF LMP Part 1, Managed Recreation in a Natural Setting, Goal 3.1 – Provide for Public Use and Natural Resource Protection, page 36.)

3. Table 2.1.3 Suitable uses commodity and commercial uses, Angeles National Forest:

   Table 1. Suitable uses commodity and commercial uses by Land Use Zones, Angeles National Forest

Activity or Use	Developed Areas Interface	Back Country	Back Country Motorized Use Restricted	Back Country Non-Motorized	Critical Biological	Wilderness	Experimental Forest
Oil and Gas Exploration and Development Areas	Suitable	Suitable	By Exception	By Exception	Not Suitable	Not Suitable	Not Suitable
Minerals Resources Exploration and Development	Suitable	Suitable	By Exception	By Exception	By exception	Not Suitable	Not Suitable

   **By Exception = Conditions which are not generally compatible with the land use zone but may be appropriate under certain circumstances.*

   (from ANF LMP Part 2, Suitable Land Use Zones, Land Use Zones, Table 2.1.3, page 6.)

4. "Maintain and improve habitat for fish, wildlife, and plants, including those with the following designations: game species, harvest species, management indicator species, and watch list species.

- Monitor management indicator species (MIS)."

(from ANF LMP Part 2, Appendix B – Program Strategies and Tactics, WL 2 - Management of Species of Concern, page 97.)

5. "Monitor and manage withdrawal status to document the condition of lands that could affect other actions (e.g., watershed protection, mining):

   - Review existing withdrawals to determine if continuation is consistent with the statutory objectives of the programs for which the lands were dedicated.
   - Recommend for withdrawal from mineral entry [Threatened, Endangered, and Protected] TEP key habitats in areas of mineral potential where habitat is not protected by any other means and would benefit by withdrawal. Protective measures will be maintained for the period of time needed to provide the necessary protection for TEP species and key habitats. Implement in occupied habitats for the arroyo toad, California red-legged frog, mountain yellow-legged frog, southwestern willow flycatcher, and least Bell's vireo."

   (from ANF LMP Part 2, Appendix B – Program Strategies and Tactics, Lands 4 – Mineral Withdrawals, page 120.)

   - Limit withdrawals from mineral entry to maintain opportunities to access mineral and energy resources where environmentally sustainable and threatened, endangered, proposed, candidate, and sensitive species [TEPCS] are not impacted.
   - Assure long-term access and availability for leasing of oil and gas resources from environmentally suitable lands for regional, statewide and national energy needs.

   (from ANF LMP Part 2, Appendix B – Program Strategies and Tactics, ME 1 – Minerals Management, page 121.)

6. "S57: Free use rock, invertebrate fossil, and mineral collecting and mining for non-commercial personal uses must be approved by the authorized officer."
   (from ANF LMP Part 3, Plan Standards Required by (36 CFR 219), page 13.)

The management direction contained in the rest of the ANF LMP will apply to the Monument, unless specifically noted in the Monument Plan.

Scope and Applicability of this Management Plan

The Monument Plan applies to all National Forest System lands and activities within the boundaries of the Monument. Future projects will be proposed, likely in partnership with organizational stakeholders, to fulfill the vision and make progress toward the management approaches, desired conditions, goals, and objectives of the ANF LMP and this Monument Plan. Whenever a specific project or activity is proposed, additional public involvement will occur, site-specific effects will be analyzed, and separate decisions will be made within the framework of the Monument plan.

The Monument Plan does not reiterate other existing laws, regulations, and policy that already provide protection of those Monument resources identified within the Proclamation, such as policies regarding heritage resources, balancing effects of projects with rare species and habitats, or closure of the San Dimas Experimental Forest to general use, except under permit for research or limited educational purposes.

Management Plan Organization, Content, and Terminology

The Monument Plan includes six plan components that guide future project and activity decision making: desired conditions, goals, objectives, standards, guidelines, and suitability of lands. All projects and activities within the Monument need to be consistent with these plan components.

A **desired condition** is a description of specific social, economic, and/or ecological characteristics of the plan area, or a portion of the plan area, toward which management of the land and resources should be directed. A desired condition description is specific enough to allow progress toward achievement to be determined but does not include a completion date.

A **goal** is a broad statement of intent, other than desired conditions, usually related to process or interaction with the public. Goals are expressed in broad, general terms, but do not include completion dates.

An **objective** is a concise, measurable, and time-specific statement of a desired rate of progress toward a desired condition or conditions. Objectives are based on reasonably foreseeable budgets.

A **standard** is a mandatory constraint on project and activity decision-making, established to help achieve or maintain the desired condition or conditions, to avoid or mitigate undesirable effects, or to meet applicable legal requirements.

A **guideline** is a constraint on project and activity decision-making that allows for departure from its terms, so long as the purpose of the guideline is met. Guidelines are established to help achieve or maintain the desired condition or conditions, to avoid or mitigate undesirable effects, or to meet applicable legal requirements.

Suitability of lands is determined for specific lands within the plan area. The lands are identified as suitable or not suitable for various uses or activities based on desired conditions applicable to those lands. Suitability of lands is not identified for every use or activity. If certain lands are identified as not suitable for a use, then that use or activity may not be authorized.

The Monument Plan also includes management approaches. Management approaches are considered to be other plan content. Management approaches describe the principal strategies and program priorities the ANF intends to use to carry out projects and activities under the Monument Plan. Management approaches may discuss potential processes such as analysis, assessment, inventory, project planning, or monitoring.

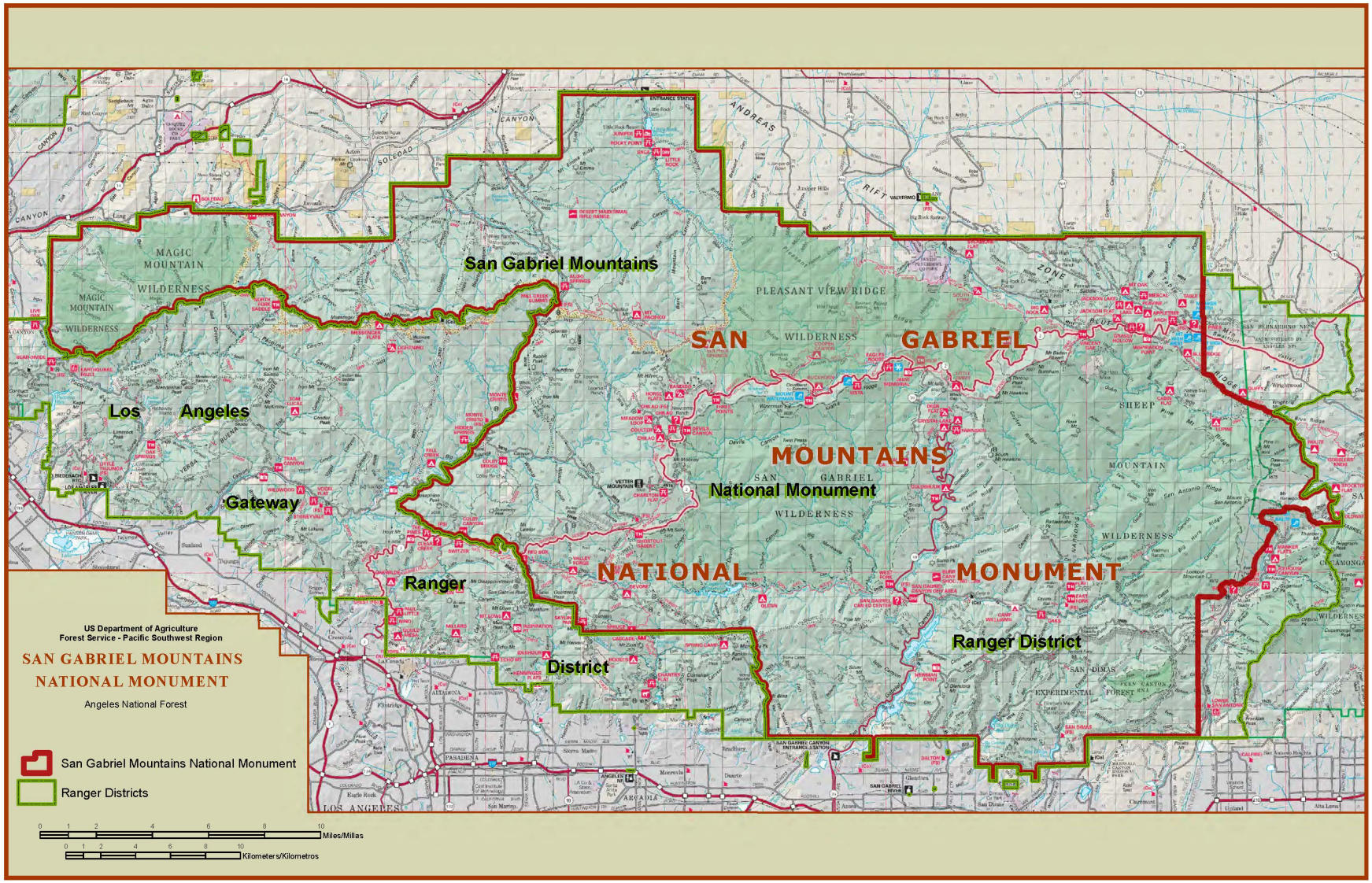


Figure 1. The San Gabriel Mountains National Monument is one Ranger District of two in the Angeles National Forest

Chapter 2 – San Gabriel Mountains National Monument Management Plan

Introduction

The Proclamation requires a management plan be written for the Monument and directs that the Monument Plan:

> …provide for protection and interpretation of the scientific and historic objects identified above and for continued public access to those objects, consistent with their protection.

The scientific and historic objects identified in the Proclamation include cultural resources, recreational and scenic features, scientific features, diverse wildlife and aquatic species, vegetative communities, and infrastructure (Appendix B).

The direction contained in the ANF LMP will continue to apply within the Monument, unless specifically changed in this monument plan. Additional plan components are also listed below and will supersede the plan components listed in the ANF LMP.

Vision

The San Gabriel Mountains National Monument reflects a unique recreational and educational gateway to America's most urban national forest in the nation's most populous county. The Monument offers exceptional interpretation and educational opportunities that can elevate understanding of the region's natural and cultural heritage, while fostering new generations of environmental stewards. In addition to the natural and cultural wonders, the Monument includes critical infrastructure that sustains the surrounding metropolis, including flood control and water storage, delivery and diversion; energy development; utilities; and telecommunication facilities. This mix of natural wonders and infrastructure sets this Monument apart from others and highlights the vital need for biodiversity and access to open space existing in harmony with essential services that sustain quality of life for surrounding communities.

Diversity and inclusivity are reflected in the visiting public, agency employees, volunteers, and partners, who are integrated into the fabric of the Monument. This Monument is our Monument. A variety of sustainable recreation opportunities and well-maintained facilities are available to the public. A transportation plan promoting safe, manageable access opportunities accommodates visitor needs in balance with resource protection and user capacity considerations. Monument operations are conducted in close cooperation with surrounding communities. Management actions balance resource protection, recreation, water management, and infrastructure needs. Collaboration and partnerships enliven connections to local and regional organizations and communities to support protection of objects of interest, enhance recreation opportunities, and achieve ecological restoration goals. A resilient, healthy, and sustainable forest landscape accessible and welcoming to all who call Southern California home, for present and future generations, showcases this monument's importance and potential to the nation.

Management Direction

Management direction for the Monument includes plan components and management approaches. Plan components are intended to provide for social, economic, and ecological sustainability and multiple uses in an integrated manner. Plan components were developed to reduce or eliminate adverse impacts, as well as promote beneficial impacts from plan implementation.

General

Goal

1. Expand ANF network of partnerships to accomplish management aspirations, including improved interpretive materials and educational opportunities.

Transportation

Desired Conditions

1. The Monument is accessible through alternative transportation and public transportation options in coordination with other agencies and gateway communities to provide greater access for those who do not use personal vehicles, and for the benefit of reducing vehicle congestion, addressing parking capacity issues, and improving public safety.
2. Road density within the Monument remains stable or is decreasing. The number of automobiles in high-use areas decreases over time as a result of alternative modes of transportation.
3. Roads and trails are maintained to standard.
4. Sufficient access points and parking areas are provided to serve visitors to the Monument during peak seasons in a manner that minimizes adverse impacts to resources and the gateway communities and neighborhoods that surround the Monument.
5. Transportation connectivity to and within the Monument is improved through coordination with state, county, local, and regional government entities; municipalities; Tribal governments; other agencies; and the public.
6. The road and trail system is sufficient to provide a good balance of recreation opportunities for all users, including hikers, hunters, bicyclists, equestrians, off-highway vehicle (OHV) enthusiasts, and motorists, consistent with sustainable recreation practices.
7. The road and trail system includes easy-to-interpret signage that includes standard symbols recognized internationally. Up-to-date maps are available and in different media formats that clearly identify roads and trails, recreation opportunities, parking, and alternative transportation options that are understood by visitors who may not speak English.
8. The number of unauthorized roads and trails is decreased.

Goal

1. Evaluate alternative transportation and public transportation opportunities, including identifying programs that facilitate access from underserved communities, ways to link to public transportation options in gateway communities, and sites appropriate for bus access at key recreation areas.

Standard

1. Outside of the San Gabriel and Little Rock OHV areas, all vehicles are limited to designated roads and trails.

Guideline

1. Parking capacity should be considered during the planning of any new trail heads, including how parking may affect gateway communities when trails are located in their vicinity.

Management Approaches

1. Where appropriate, upgrade Road Management Objectives to maximize opportunities to improve roads and protect resources.
2. Analyze roads shown as "Likely Not Needed" in the roads analysis and travel analysis processes and determine if appropriate to decommission. Alternatively, roads not currently needed may be permitted with provisions to allow users authority to perform road maintenance to meet their operational needs.
3. Coordinate projects with California State Parks and the Off-Highway Motor Vehicle Recreation Program, including projects that maintain routes open to OHV use and restore areas of unauthorized off-highway vehicle uses.
4. Collaborate with gateway communities and local partners to manage potential impacts and maximize potential benefits associated with Monument designation by addressing issues such as identification of appropriate access points, parking capacity at access points, and alternative public transportation access options.
5. Coordinate with local, county, and state governments on transportation planning.
6. Coordinate with the Federal Highway Administration - Central Federal Lands Highway Division, and other regional transportation and planning agencies to improve access to the Monument.
7. Coordinate with Caltrans to improve transportation and wildlife connectivity within the Monument, while minimizing adverse resource effects.
8. Coordinate with transportation agencies to explore opportunities to connect with communities throughout Los Angeles County, working closely with Metro and Metrolink Stations and other regional, municipal, and local public or private transit systems.
9. Coordinate with the Federal Lands Collaborative Long-Range Transportation Planning effort to ensure it is responsive to the transit/transportation needs of the Monument.
10. Driving for pleasure is and will continue to be an important use within the Monument. For some members of the public with mobility limitations, driving may be the only means of experiencing the Monument.
11. Update the ANF's motor vehicle use map as necessary to identify currently designated roads, trails and areas for public motor vehicle use.
12. Manage high visitor use and traffic congestion using the following strategies:
    - Consider using temporary one-way traffic flows and closures during peak volume periods, while utilizing adequate signage, guidance, and traffic controls consistent with established standards;
    - Evaluate the use of parking capacity limits;
    - Enforce parking capacity limits and locations established by the appropriate governing authority;
    - Prevent or limit parking in riparian areas to reduce resource damage; and
    - Explore opportunities to increase or better distribute parking capacity in key areas, including providing access by shuttles or other forms of public transportation. Parking locations should be clearly identified and delineated.

Sustainable Recreation

Desired Conditions

1. Recreation opportunities, including products, services, and the built environment, support the needs and expectations of the diverse population.
2. The Forest Service provides quality recreational settings and opportunities, allowing the growing and increasingly diverse visitor population to gain their desired recreation experiences throughout the Monument.
3. The Forest Service provides a comprehensive, well-maintained and sustainable trail system. Standard international symbols are used at trailheads and wayfinding points.
4. Public information and education is multilingual where possible to ensure communication meets information needs and conveys a message of public access.

Goals

1. Actively manage recreation in concentrated use areas to improve recreational quality. Avoid or reduce impact on special status species and aquatic species through improved management of dispersed recreation, designated river access points, transit stops, designated parking, and high-quality support infrastructure and visitor services.
2. Strategies aimed at provision of outreach, communication, and recreation service delivery for diverse groups will remain a priority of the Forest Service.

Management Approaches

1. Prioritize work with external partners to conduct sustainable recreation studies, develop recreation design plans, new products, or recreation design features to improve recreation management within the Monument and ensure relevance to the Monument's diverse visitor use base.
2. Evaluate the sustainable recreation carrying capacity in high use areas such as San Gabriel Canyon, following the Interagency Visitor Use Management Framework.

Visitor Experience, Information, and Environmental Education

Desired Conditions

1. The Forest Service provides visitors with culturally relevant and easily accessible information to guide and enrich their experience.

Goals

1. Maintain or increase the number of conservation education programs or events per year within the Monument.

Objective

1. Develop and implement the Master Visitor Reception, Interpretation, and Education Plan with an emphasis on outreaching to diverse youth within three years. The plan will focus on engagement of youth in outdoor recreation and conservation opportunities, educate them about Monument resources, help foster the next generation of public land stewards, and work toward achieving the Desired Conditions.

Management Approaches

1. Interpretation materials capture the rich cultural and natural history that shaped the area. Cultural history of groups including Native Americans, Spanish missionaries and colonialists, Mexican rancheros, Euro-Americans, and Asian settlers and prospectors. Interpretation of geological, botanical, wildlife, and aquatic features to be presented.
2. Public outreach and education uses contemporary social media, new technology, and culturally relevant media outlets. Engage schools, communities, universities, museums, and other educational institutions invested in elevating public awareness of the environment, conservation, and outdoor recreation. Engagement presents exceptional opportunities to re-imagine Angelenos' connections to their surrounding forests and open spaces.
3. Expand the use of multilingual information in outreach.

Heritage Resources

Desired Conditions

1. Cultural resources and historic properties are protected and preserved for cultural and scientific value and public benefit.
2. Priority Heritage Assets receive enhanced monitoring and protection, and enhance the Monument's distinct characteristics.
3. Cultural resources and historic properties are documented and protected, and heritage values and connections are promoted as an integral feature of the Monument.

Goal

1. The cultural resources identified in Management Approach 7 are to be enhanced through interpretative measures such as exhibits, displays, formal evaluation and National Register nominations and listing, protection and stabilization treatments, public education, and outreach efforts.

Standards

1. Cultural resources and historic properties within the Monument will be managed in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR 800.
2. Pursuant to the Programmatic Agreement between the USDA Forest Service, Pacific Southwest Region (Region 5); California State Historic Preservation Officer; Nevada State Historic Preservation Officer; and the Advisory Council, all cultural resources within the Monument are treated as historic properties and assumed eligible for the National Register of Historic Places until formally evaluated and determined, through consensus, not eligible.

Guidelines

1. Projects within the Monument should be designed to avoid, or minimize, adverse effects or impacts to cultural resources and historic properties.
2. Cultural resources and historic properties should be protected during fire suppression and rehabilitation activities, where feasible.

Management Approaches

1. Review all recorded and documented cultural resources and historic properties located within the Monument. Identify at-risk cultural resources and historic properties for enhanced monitoring and protection as Priority Heritage Assets.
2. Assess and review documented and unevaluated cultural resources and historic properties to identify those resources that enhance the Monument's distinct characteristics and cultural themes, as identified in the Proclamation. Regularly monitor those identified as at-risk every 5 years, at a minimum. Depending on the monitoring findings, at-risk cultural resources monitoring may occur at more frequent intervals. Manage these identified resources as Priority Heritage Assets. As new resources are identified within the Monument and determined to meet the criteria to be managed as Priority Heritage Assets, they will also be monitored on a 5-year cycle, or more frequently if necessary.
3. Use partnerships to develop and implement stewardship plans for identified Priority Heritage Assets, emphasizing those cultural resource and historic property sites specifically named in the Proclamation.
4. In consultation with Tribes, work to improve the interpretative potential of Native American resources within the Monument, focusing on traditional uses, Tribal history, and the current relationship of local Tribes to the San Gabriel Mountains.
5. Develop partnerships with local universities for student and faculty involvement, including research opportunities, field schools, internships, and other education programs that may assist the Monument with protection and management of cultural resources and historic properties.
6. Continue the Forest's relationship with the Society for California Archaeology, and work cooperatively with the California Archaeological Site Stewardship Program to assist with site monitoring when feasible.
7. Evaluate the following cultural resources and historic properties for eligibility under the National Register of Historic Places: Aliso-Arrastre Special Interest Area; Eldoradoville, located along the East Fork of the San Gabriel River; Mt. Wilson Observatory; and San Dimas Experimental Forest. Prioritize the remaining cultural resources and historic properties for evaluation to determine their eligibility for listing. Nominate sites eligible for listing following evaluation.
8. Work with Biological Resources staff to map and identify Tribally significant plant species within the Monument in an effort to manage, protect, and promote plant gathering and harvesting by Tribal members.
9. Prioritize survey efforts and the identification of data gaps within the Monument to better manage cultural resources.

Biological Resources

Desired Conditions

1. Habitat conditions within the Monument are stable or improving over time as follows:
    a. Within chaparral and coastal sage scrub communities, the total acreage that contains greater than 50 percent vegetative cover of nonnative annual grasses, is stable or reducing over time, when compared to the baseline (2011).
    b. For each vegetation type, the number of acres with characteristics in Fire Regime Condition Class (FRCC) of 1 or -1 is increasing compared to 2016 acres.

   c. Tree mortality is evenly distributed across elevations.
   d. The number of properly functioning watersheds is stable or increasing compared to the 2016 Watershed Condition Class scores.

2. Threatened and endangered species populations are moving towards recovery or down listing, and Forest Service Sensitive species populations are experiencing a stable or improving trend, when compared to baseline data (i.e., 2005 LMP species accounts or any more recent data up to 2018).

Goal

1. When Land Management Plan monitoring indicates that habitat conditions are degrading or destabilizing, corrective actions will be taken. Corrective actions may include, but are not limited to, restoration, modification of management actions, or other options suitable for the species or watershed affected.

Mineral Resources

Suitability of Lands

1. Free-use rock, invertebrate fossil, and mineral collecting and mining for non-commercial personal uses is not suitable within the Monument.

Management Approaches

1. Outreach to other law enforcement branches of local, state, and Federal agencies to coordinate enforcement efforts, including enforcement of unauthorized mining activities.
2. Develop partnerships with organizations to document resource damage in detail.
3. Develop an education program on the resource damage of illegal mining.

Designated Areas and Areas Recommended for Designation

Desired Conditions

1. Designated Wilderness and Recommended Wilderness within the Monument are maintained as a naturally evolving and natural-appearing landscape that provides for primitive and unconfined recreation use. The sense of remoteness and solitude is maintained.
2. The nature and purpose of the Pacific Crest National Scenic Trail (PCT) are to provide for outstanding journeys on foot or on horseback in the spectacularly wild landscapes of high Pacific mountain ridges. Tranquility and closeness with nature can be found consistently along the trail, evoking a feeling of extended retreat from civilization, even if only venturing out for a day.

Guidelines

1. New recreation events, such as foot races or horseback endurance events and fundraising events should be limited to designated crossings only on the Pacific Crest National Scenic Trail (PCT) within the Monument. Existing recreation events may be allowed to continue at current levels.
2. Within the Monument, new trails that are proposed to cross the PCT or to be built within the foreground of the PCT, should be designed to minimize conflicting uses and to minimize the scenic, aural, and resource impacts to the PCT.

Suitability of Lands

1. Within the Monument, the PCT foreground is not suitable for special-use authorizations for new communication sites and wind generation sites.
2. New roads are not suitable within the foreground of the PCT unless required by law to provide access to private lands or documented as the only prudent and feasible alternative.

Land Use Zones

Suitability of Lands

1. Mineral and energy resources exploration and development are not suitable within the Monument, except where valid rights already exist at the time of the Proclamation (table 2). Activities within permitted sediment placement sites are not considered mineral and energy resources exploration and development projects.

Table 2. Suitable uses commodity and commercial uses by Land Use Zone, San Gabriel Mountains National Monument

Activity or Use	Developed Areas Interface	Back Country	Back Country Motorized Use Restricted	Back Country Non-Motorized	Critical Biological	Wilderness	Experimental Forest
Oil and Gas Exploration and Development Areas[1]	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable
Minerals and Mining Exploration and Development[1]	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable

[1] With the exception of valid existing rights.

Critical Biological Land Use Zone

This zone includes areas on the ANF that are considered important for the protection of at-risk species. There are no changes to the definitions of Critical Biological Land Use Zones (CBLUZ) from the ANF LMP direction that apply to this zone (ANF LMP Part 2, p. 9). With the 2005 LMP, there are already six designated CBLUZs within the Monument boundary: South Fork Big Rock Creek, South Fork Little Rock Creek, Lower Little Rock Creek, Upper Big Tujunga, West Fork San Gabriel River, and Soledad Canyon. Three new CBLUZs and one expansion of the existing CBLUZ are proposed in the Monument Plan. See Table 2 and Figures 2 through 5.

Table 3. San Gabriel Mountains National Monument Critical Biological Land Use Zones (CBLUZ) Primary At-risk Species and Primary Uses.

CBLUZ	Primary Species Protected	Place	Primary Uses**
East Fork San Gabriel River	Santa Ana sucker	San Gabriel Canyon	CBLUZ location is from just above the Oaks day use site upstream to the private land parcel near the Bridge to Nowhere, including the Cattle Canyon tributary upstream to the upper extent of the Santa Ana designated critical habitat. This area is currently managed as a wild trout stream and this designation is retained. Existing transportation and other uses, such as hiking, fishing, and dispersed recreation will continue. Overnight camping is not allowed. Utility infrastructure operation and maintenance activities will continue.
North Fork San Gabriel River	Santa Ana sucker	San Gabriel Canyon	CBLUZ location is from the West Fork/North Fork confluence upstream to the northern extent of the Santa Ana sucker Designated Critical Habitat, including the Bichota Canyon tributary of the North Fork San Gabriel River. Existing uses such as hiking, fishing and dispersed recreation will continue. Overnight camping is not allowed. Utility infrastructure operation and maintenance activities will continue.
Aliso Canyon Creek	California red-legged frog	Soledad Front Country	The current West Wide Energy Corridor and the SCE transmission line corridors (Pardee-Vincent and Vincent-Mesa) are excluded from the CBLUZ and will be managed for utility infrastructure, including new and upgraded transmission lines. Expansion of these corridors would not be allowed without a Plan amendment. Maintenance of the existing electrical distribution lines within the CBLUZ will continue and is not in conflict with the CBLUZ. Existing road networks would be condensed where appropriate, reducing redundancy, while allowing ongoing maintenance of infrastructure. Access to utility corridors will be maintained while minimizing road infrastructure within the CBLUZ. Existing Transportation and other uses such as hiking, fishing and dispersed recreation will continue. Overnight camping is not allowed.
West Fork San Gabriel Canyon	Santa Ana Sucker	San Gabriel Canyon/Angeles Uplands East	CBLUZ location is Cogswell Dam downstream to the confluence of the North Fork and includes the lower segments of Big and Little Mermaids Canyon and Bear creek. This area is currently managed as a wild trout stream and this designation is retained. Management of the Cogswell Dam for flood control and water conservation including water release is not in conflict with the CBLUZ designation and is retained. Maintenance of the existing electrical distribution lines within the CBLUZ is not in conflict with the CBLUZ and is retained. Installation of toilets can be considered neutral or beneficial use. Administrative use and use of NFS Road 2N25 as a hiking and bicycle path will be retained. Maintenance and use of the disabled access fishing platforms along the West Fork will continue. Overnight camping is not allowed except at designated campgrounds (i.e. Glen Campground)."

**This is a partial list of activities associated with these CBLUZs. See Suitable Uses Tables in Part 2 of the ANF LMP (pp. 4-7) for a full description of all suitable uses within CBLUZs.

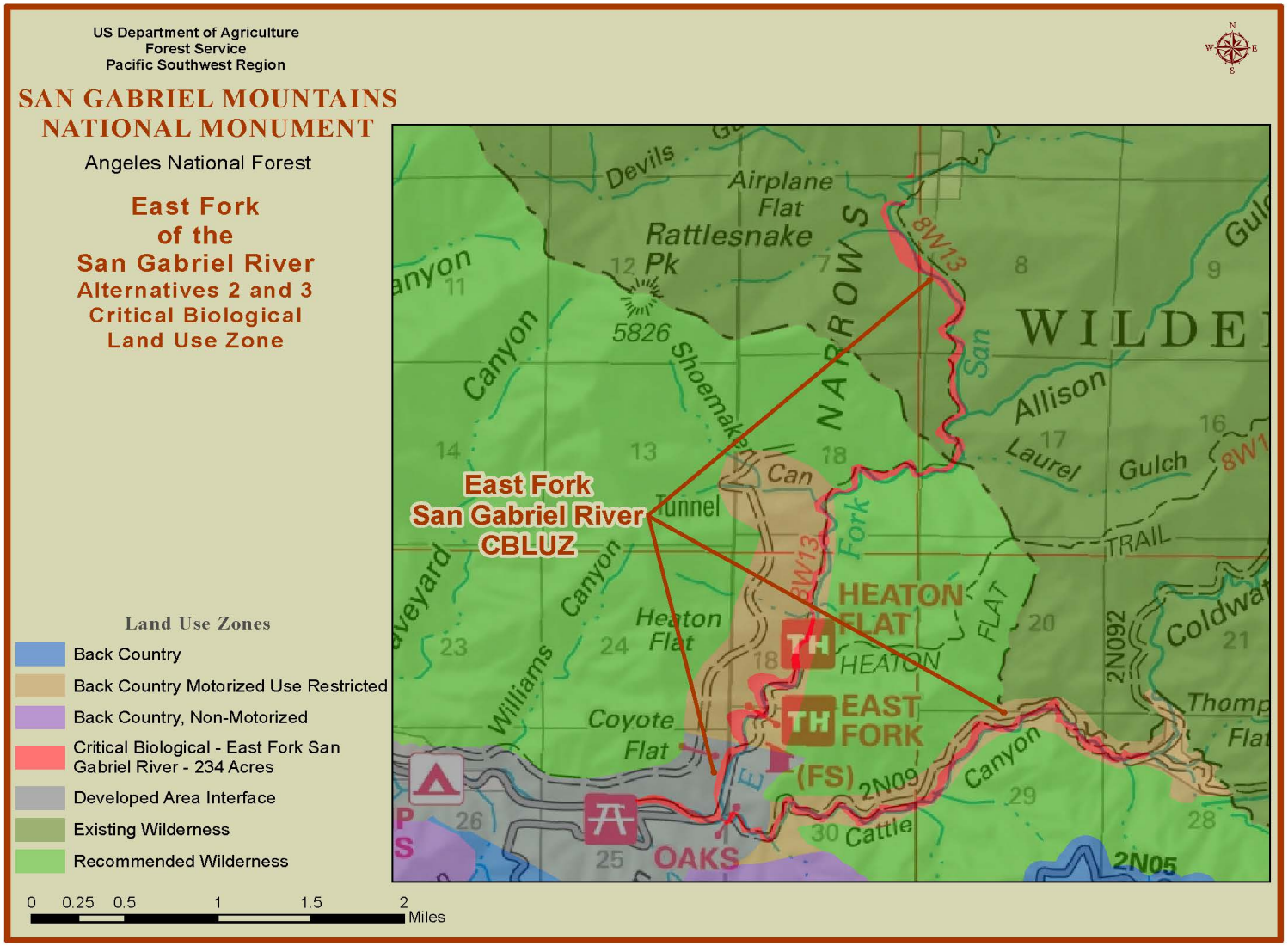


Figure 2. Critical Biological Land Use Zone on the East Fork San Gabriel River

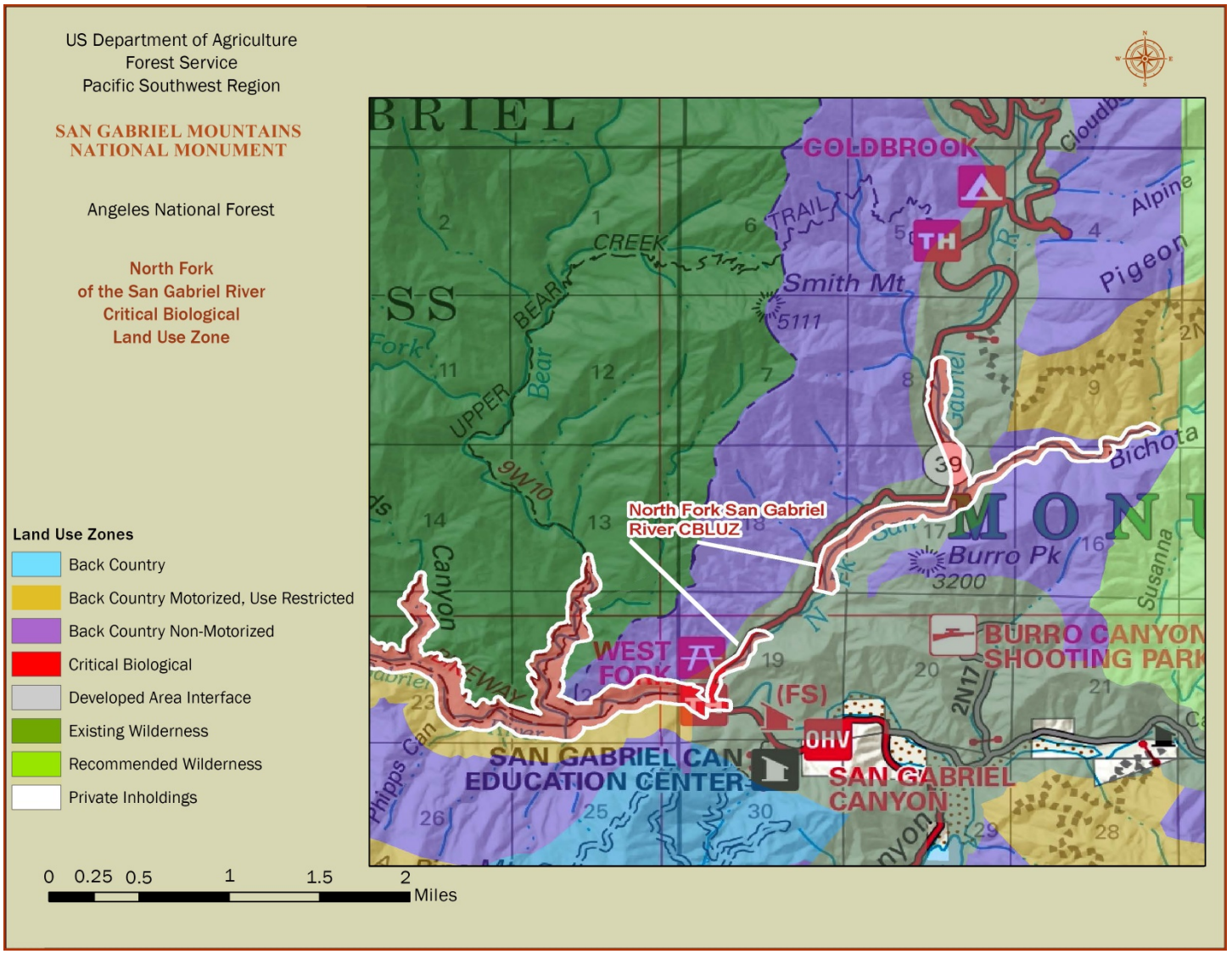


Figure 3. Critical Biological Land Use Zone in the North Fork San Gabriel River

Figure 4. Aliso Canyon CBLUZ does not include private lands or energy corridors

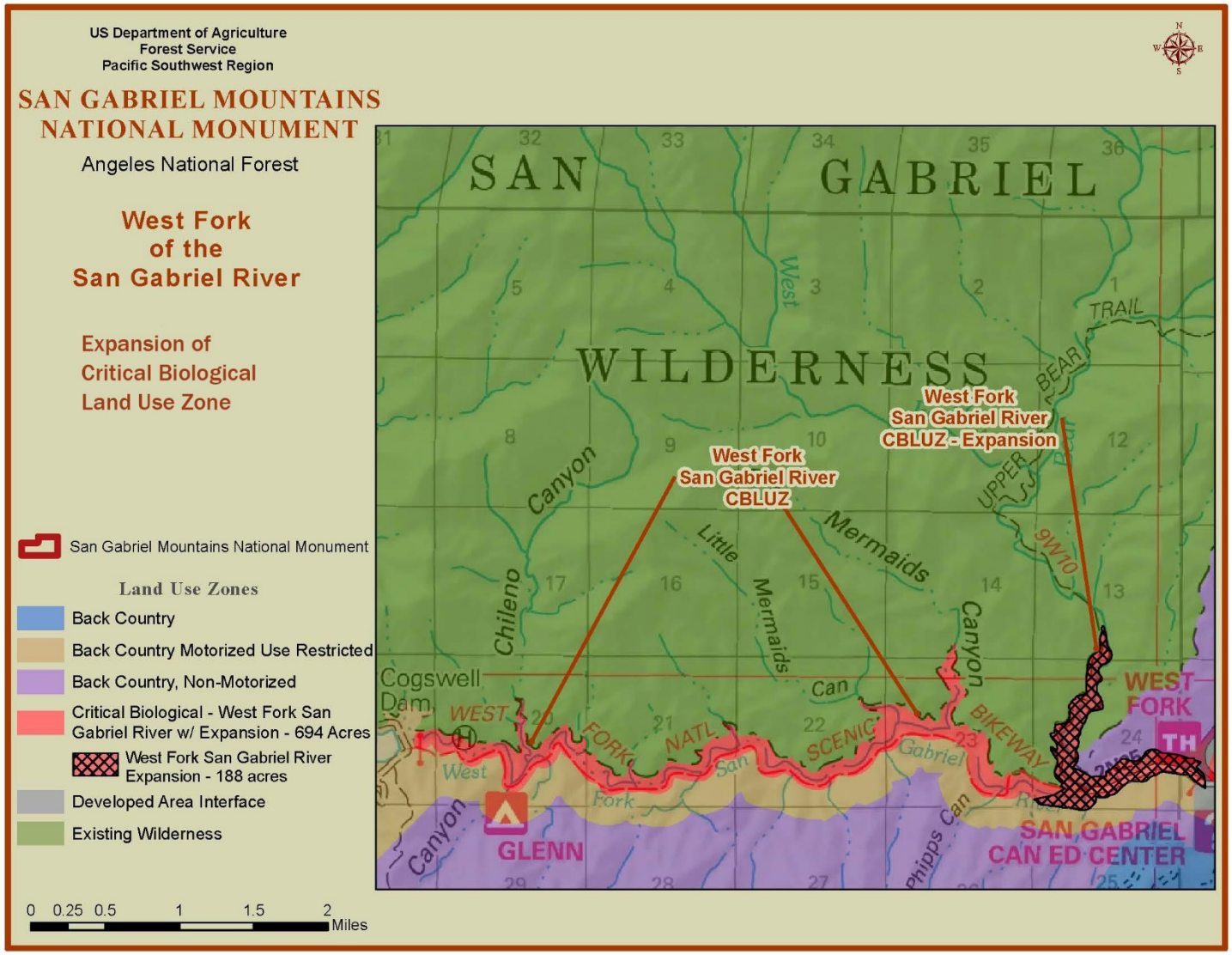


Figure 5. The expanded West Fork San Gabriel River Critical Biological Land Use Zone

Existing Wilderness Zone

This zone includes congressionally designated wildernesses. There are no changes to the ANF LMP direction that applies to this zone. However, two wilderness areas were designated since 2005 that occur within the Monument: Magic Mountain Wilderness and Pleasant View Ridge Wilderness. The portions of these two wilderness areas within the Monument will be zoned Existing Wilderness. The Pleasant View Wilderness will be part of the Angeles High Country Place and the Magic Mountain Wilderness will be part of the Soledad Front Country Place. The ANF LMP uses "places" to describe the theme, setting, desired conditions and program emphasis of an area. For a description of these two wilderness areas. See Table 4 and Figure 6.

Table 4. Descriptions for wilderness areas designated by Congress in 2009

Title	Place	Acres
Magic Mountain Wilderness	Soledad Front Country	11,938
The United States Congress designated the Magic Mountain Wilderness in 2009. The Magic Mountain Wilderness is generally bounded by: Santa Clara Divide Road (3N17.7) on the south; Backcountry Discovery Trail 1 (3N37) on the east; and forest boundaries on the north and west. A closed road traverses the mountain from the community of Lange to Magic Mountain. This corridor separates the Magic Mountain Wilderness into two portions. The Magic Mountain Wilderness's chaparral-covered hillsides and oak-studded canyons provide a scenic vista and suitable habitat for the California condor. The area also offers primitive recreational opportunities for the rapidly urbanizing Santa Clarita Valley. There are no officially designated trails within this wilderness. However, several social trails exist, which were created by visitor use.		
Pleasant View Ridge Wilderness	Angeles High Country, Mojave Front Country	27,040
The United States Congress designated the Pleasant View Ridge Wilderness in 2009. This wilderness area is located roughly 30 miles northeast of La Cañada, north of the Angeles Crest Highway where the San Gabriel Mountains slope north to meet the Mojave Desert. The area features 8,200-foot Mt. Williamson and other dramatic peaks, formidable cliffs, the headwaters of Little Rock and South Fork Big Rock Creeks (which provide Designated Critical Habitat for the endangered mountain yellow-legged frog), remote backcountry, and some of the most magnificent canyon country in the San Gabriel Mountains. The Pleasant View Ridge Wilderness is generally bounded by: California Highway 2 (Angeles Crest Scenic Byway) on the south; Little Rock Canyon on the west; and the forest boundary on the north; and High Desert National Recreation Trail (10W02 Burckhardt) on the northeast. The area can be accessed from California State Highway 2 at Vincent's Gap, Islip Trailhead, Buckhorn Campground, and Three Points Trailhead and from the Pacific Crest National Scenic Trail and High Desert National Recreation Trail. Trails going through this wilderness include: High Desert National Recreation Trail (10W02 Burckhardt), Islip Saddle (9W02), and Pacific Crest National Scenic Trail.		

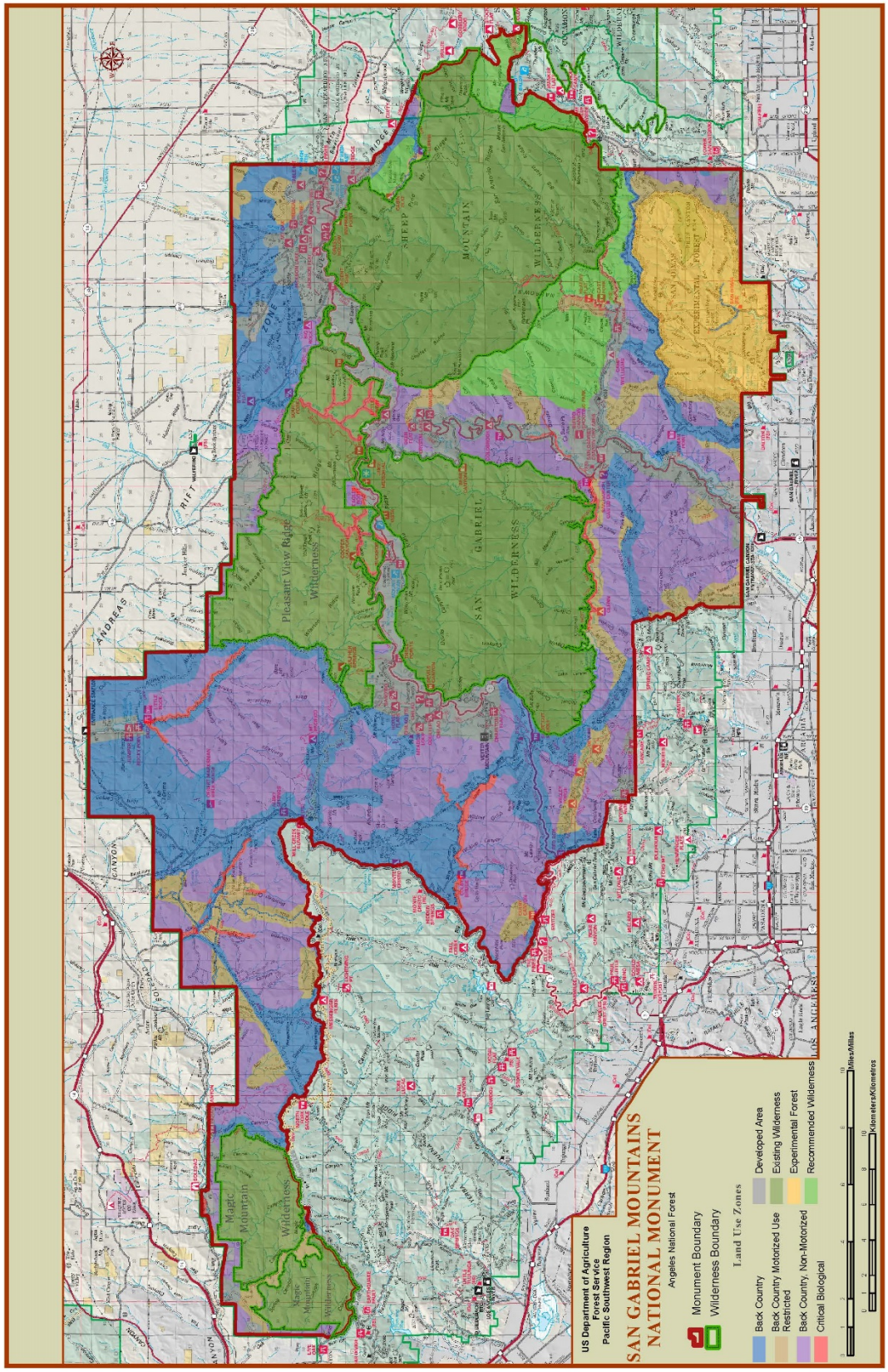


Figure 6. Land use zones updated for wilderness designations made by Congress in 2009

Climate Change

Management Approaches

1. Consider Forest Service climate change assessment and databases to inform management decisions (i.e., regional climate change trend reports; vulnerability assessments of key resources; adaptation strategies, management recommendations, and template for assessing climate change impacts and management options).
2. Continue reporting measures related to climate change adaptation and sustainable operations.
3. Educate the public about ecosystems and potential impacts of climate change and other stressors. Interpretation and conservation education materials and activities convey up-to-date and clear messages about impacts of climate change on biodiversity.

Chapter 3 – San Gabriel Mountains National Monument Transportation Plan

The Presidential Proclamation (2014) states:

> The Secretary shall prepare a transportation plan that specifies and implements such actions necessary to protect the objects identified in this proclamation, including road closures and travel restrictions. For the purpose of protecting the objects identified above, except for emergency or authorized administrative purposes, the Secretary shall limit all motor vehicle use to designated roads, trails, and, in the Secretary's discretion, those authorized off-highway vehicular use areas existing as of the date of this proclamation.

The requirement to prepare a transportation plan is met through this chapter along with the plan components and management approaches listed above in the "Transportation" section.

The Monument Plan is a programmatic-level decision and does not directly authorize any project-level or site-specific actions. This transportation plan does not make any site-specific changes to the transportation system. Instead, it provides a framework by which to manage the transportation system and inform future decisions to support the management intent of the Monument Plan. Changes to the existing transportation system will only be made after appropriate site-specific environmental analysis.

This approach was taken because transportation planning for the entire forest occurs through a separate process required by the 2005 Travel Management Rule. This chapter summarizes the current transportation system within the Monument that was developed under this separate process. It also explains how the current system, along with new plan components and management approaches in the Monument Plan, provide protections for the categories of objects listed in the Proclamation.

The 2005 ANF LMP's current management direction is consistent with the Proclamation direction to limit motorized vehicles to designated roads, designated trails, and designated open areas. This forest-wide direction continues to apply to the Monument area. Transportation Standard 1 was added to the Monument Plan (p. 8) to clarify that the only areas where off-highway vehicle (OHV) use is not limited to roads and trails are the San Gabriel and Little Rock OHV areas, which already existed at the time of the 2014 Proclamation.

Current Transportation System

Within the Monument there are over 519 total miles of existing roads under various jurisdictions. Of these, over 276 miles are open to motor vehicle use. While there are a number of public transportation options available in municipalities surrounding the Monument, there are currently no options for taking public transportation to and within the Monument.

Driving for pleasure is a popular activity on scenic routes through the Monument. For some older Americans and people with disabilities, driving may be the only means to experience the Forest. Highway 39 and Highway 2, Angeles Crest Scenic Highway. are major State routes providing access into and through the Monument. Angeles Forest Highway, Big Pines Highway, Big Tujunga Road, Upper Big Tujunga Road, Chantry Road, Little Tujunga Road, Sand Canyon Road, Mt. Baldy Highway, Glendora Mountain, Glendora Ridge Road and Santa Clara Divide Road are among USFS, county, or city roads which also provide scenic access into and through the Monument.

There are two designated open OHV areas within the Monument: the San Gabriel Canyon OHV area and the Little Rock OHV area. The San Gabriel Canyon OHV area includes 150 acres of rocky, sandy, reservoir land

and the Little Rock OHV area includes the Little Rock OHV trail. Outside of the two open OHV areas, all vehicles are limited to designated roads and trails.

The National Forest System roads within the Monument that are currently designated for motorized use, including OHV use, are shown on the Motor Vehicle Use Map (MVUM) for the ANF. This map is published as required by the Forest Service Travel Management Rule. See Figure 7 for the current MVUM for the Monument area only.

The non-motorized trail system within the Monument currently consists of approximately 243 miles of system trails that provide hiking, hunting, horseback riding, and mountain biking opportunities. The Monument has 87 miles of national trails, including the Pacific Crest National Scenic Trail and the Silver Moccasin, Gabrielino, and High Desert National Recreation Trails. All trails, except the Pacific Crest Trail and trails within wilderness areas, are open to mountain bikes. The West Fork National Scenic Bikeway parallels more than 8 miles of the West Fork San Gabriel River. This gated, paved road provides a relatively flat, paved route for bicyclists of all abilities.

Challenges and Needs

The combination of steep terrain, geological features, and erodible soils in the Monument result in erosion hazard ratings of high or very high. As a result, proper maintenance and care of existing roads are critical to minimize effects due to erosion. Roads with inadequate design and maintenance of drainage features and with steep, cut banks can be a primary human-caused source of soil and water disturbances in montane environments. Generally, higher densities of roads within a watershed result in quicker run-off to the stream network and increase the risk of channel erosion and downstream sedimentation. Proper decommissioning of roads is necessary to achieve positive long-term effects through removal of chronic sources of erosion, sedimentation, and hydrologic modification. Any new roads or road relocation must be constructed with strict standards and guidelines, especially those that could influence Riparian Conservation Areas or watershed values, are located in landslide-prone areas, or could cause soil erosion.

Similarly, most trails are located on soils with either high or very high erosion hazard ratings. Trail maintenance and care are necessary to keep the integrity of the trails at a level to be used by the public in an uninterrupted manner. The proliferation of unauthorized roads and trails is an ongoing problem and results in unacceptable effects to soils and other resources. Many have been created by recreation use from communities immediately adjacent to the Monument or off-road vehicle travel. These trails contribute to lost soil productivity and increased soil erosion and compaction, both long- and short-term. It is important to remove these trails, restore the land in an expeditious manner, and prevent them from recurring.

Roads within the Monument are either maintained by the Forest Service, or by local government agencies or the state under a special use permit or easement. Special-use roads, such as roads leading to communication sites can be maintained by the permittee under a special-use permit.

Maintenance Strategy

The following strategies will be used to prioritize needed maintenance and to improve the ability to complete needed maintenance for roads managed by the Forest Service:

1. Public safety, natural resource protection, and cultural resource protections are the highest priorities for road maintenance.
2. Maintenance level 3 through 5 roads are higher priority for maintenance than are maintenance levels 1 and 2 roads, due to the higher potential loss of investment, generally higher traffic volumes and speeds, and resulting safety risks and liabilities.

3. Submit appropriate projects for maintenance, reconstruction, or rehabilitation funding when opportunities are available (agency funding, state grants, partnerships, and other sources).
4. Seek additional sources of funding to reduce the maintenance backlog and keep the road system in acceptable condition. Potential sources include Federal Highway Trust Fund through the national transportation bill, Green Sticker funds for roads open to OHV and appropriated funding or special funds designated for the Monument.
5. Partner with user groups, permittees, and other entities to accomplish needed road maintenance.
6. Consider closing roads not currently needed ('Likely Not Needed' designation in Subpart A Report) to reduce maintenance costs and resource conflicts. Some road prisms may be retained for future access needs (trail, fire access, etc.). Alternatively, roads not currently needed may be permitted with provisions to allow users the authority to perform road maintenance to meet operational needs.
7. Consider restricting vehicle access for certain roads to emergency use only. These roads would remain open to pedestrian, bicycle, and equestrian use, but would be maintained at a minimum level (ML 1) of service to reduce maintenance costs.
8. Consider opportunities to reduce the size of the road system by decommissioning individual roads or converting them to non-motorized trails.
9. Follow the National Environmental Policy Act (NEPA) planning process, including public involvement as appropriate, in decisions to close or decommission roads or trails.

Travel Analysis

During the planning process for the 2005 ANF LMP, a Roads Analysis Report was produced that, included evaluation criteria based on specific topics described in agency direction at the time. These topics continue to be relevant and included: ecosystem functions and processes; aquatic, riparian zones, and water quality; terrestrial wildlife; economics; minerals and range management, water production, and special forest products; special use permits; general public transportation; administrative uses; protection; road-related and unroaded recreation; passive use values; social issues; community protection for fire; and civil rights and environmental justice.

The risks and benefits of each road were compared, resulting in two categories of roads flagged for further study. The first group of roads identified contains those that may require mitigation. "High Priority for Mitigation" roads are those roads (or segments) that were found to have both higher risk scores and a high level of public or administrative importance. The second group of roads requiring further study is those with "High Risk and Low Importance." Roads that fall into this group pose significant risk to either species or watersheds and are of low importance to the public, ANF personnel, and special use permittees. The Roads Analysis Report was used to develop plan components in the 2005 LMP to protect resources. Table 394 of the Roads Analyses Report summarizes how the effects of the transportation system were addressed with the 2005 LMP (Roads Analyses Report, pp. 66-84).

In the 2005 ANF LMP Record of Decision, based on comments from the public, a key addition to the land use zones was added: Back Country Motorized Use Restricted. This zone was developed to allow for administrative and maintenance use, while prohibiting motorized public access. This zone addressed road impacts that came up through the roads analysis process by reducing sedimentation in Riparian Conservation Areas and erosion from high levels of motorized travel (2005 LMP Part 2, Table 2.1.2).

With the Monument Proclamation in 2014, the evaluation of roads and trails systems for the entire Forest were initiated. In April 2018, a Draft Travel Analysis Report was released along with the San Gabriel Mountains National Monument Management Plan. This report is a requirement of the 2005 Travel Management Rule, Subpart A—Administration of the Forest Transportation System.

The objective of travel analysis is to provide decision-makers with critical information to develop and manage transportation systems that are safe and responsive to public needs and desires, are affordable and efficiently managed, have minimal negative ecological effects on the land, and are in balance with available funding for needed management actions. The travel analysis process takes a forest-wide look at the road system, including the Monument area, considering various perspectives and factors. The process does not result in a decision, but rather a report that will inform future decision-making. The report provides a list of opportunities for potential changes to the road system, including changes to road operation strategies, road decommissioning, conversion to other uses, relocation, or additions to the road system. It articulates the reality of a declining road maintenance budget and potential short-comings for the upkeep (or lack thereof) of the road system.

As a part of the analysis, all ANF National Forest System roads were evaluated by an interdisciplinary team to determine roads that were "likely not needed." Because the ANF completed a similar roads analysis process in 2005, as described above, that work was used to inform the travel analysis process. The roads identified by the interdisciplinary team as "likely not needed" were compared to the "high risk and low importance" roads identified in the 2005 Roads Analysis Report (RAP) and any changes were documented. "High risk and low importance" roads are those that are no longer needed to meet the needs of ANF mission-critical programs, or roads that pose significant risk to either species or watersheds and are of low importance to the public, forest administration, or special use permittees. Relevant criteria used for the 2005 roads analysis process were brought forward into the travel analysis process. The factors that led to the identification of roads as "likely not needed" can been found in the Draft Travel Analysis Report. Both the Draft Travel Analysis Report and 2005 Roads Analysis Report can be found in the project file at the Supervisor's Office of the Angeles National Forest and on the ANF website.

Changes proposed to roads within the Monument will be informed by the Travel Analysis Report and possibly, additional travel analysis, along with site-specific project analysis. While the travel analysis process was not specific to the Monument, it evaluated the effects of the road system on various resources (e.g., plant and animal species, heritage resources, watersheds), which comprise the categories of objects of interest listed in the Proclamation. As such, the report identifies where potential changes to the roads system within the Monument may be needed to reduce risks to resources, which would also provide access and benefit to the Monument objects of interest. The Forest will engage with stakeholders and the public when proposing to make any actual changes to the road system.

Protection of Monument Objects

This section describes how the transportation plan for the Monument provides protections for the categories of objects of interest, along with existing direction in the 2005 LMP. An overarching protective feature within the Monument is that the transportation network be limited to current or decreasing road density (Transportation Desired Condition 2).

Cultural Resources

In the 2005 LMP, the importance of maintaining roads for access to cultural and historic sites, Tribal access to important Native American sites, and the identification and protection of historic roads were analyzed in the 2005 LMP EIS. The process resulted in standards, including S62, "protect the access to and the use of sensitive traditional tribal use areas". In the LMP Part 2, strategies that can be emphasized during certain projects are delineated.

The Forest Heritage staff maintains spatial records of over 700 documented sites. By buffering each of these sites, a consolidated area can be delineated representing historic and prehistoric properties. In the Monument Plan, future transportation projects that intersect or could affect heritage or tribal resources will follow the 2018 Regional Programmatic Agreement, which manages all heritage resources as eligible historic properties (Heritage Standards 1 and 2; Heritage Guidelines 1 and 2). Before road maintenance occurs, the Heritage staff

reviews the proposed activities to ensure that impacts to historic properties are avoided or minimized. Prior to new construction, Heritage staff reviews the project area for any resource conflicts and, in accordance with the Programmatic Agreement, prescribes standard resource protection measures prior to and during project implementation. Examples of actions that are routinely taken include: temporary avoidance measures during implementation, temporary or long-term closures, use restrictions of vehicle weight class and type or number, maximum vehicular load and tire pressure on ground surfaces, exclusion by installation of barriers and gates, use of vegetation for screening or natural fencing, and capping or covering the site. Site-specific adaptive management strategies can prescribe site monitoring by Heritage staff during construction or maintenance, to ensure protective prescriptions are implemented. After incidents, such as fire or floods, heritage resources that are exposed and near roads and motorized trails are assessed and documented. If at risk, protective measures are put into place such as barriers, gate closures, fencing, and concealing wood straw. If project-related effects to cultural resources cannot be avoided, the regulations at 36 CFR 800 are followed, including consultation with the State Office of Historic Preservation (SHPO) to develop an effective treatment to resolve the effects. Examples include further documentation efforts, limited testing, or formal data recovery.

Recreational and Scenic Features

In the Roads Analyses Report accompanying the 2005 LMP, the transportation network benefits to recreational users and impacts on scenic features were evaluated. Scoring included whether the road or trail was important for users and whether mitigation for resource effects were needed.

The primary purpose for recreational uses and the transportation network within the Monument is to ‘provide a good balance of recreation opportunities’ (Transportation Desired Condition 6), while benefiting or minimizing adverse impacts to resources (Transportation Desired Conditions 4, 6, and 8, Standard 1, and Management Approaches 1, 2, 7, and 12 bullet 4). Maintaining roads and trails to standard has the effect of minimizing resource impacts (Sustainable Recreation Desired Condition 3 and Goal 1). Within the Monument, managing high visitor use and traffic congestion are approached with a variety of strategies (Transportation Management Approaches 7-9 and 12; Sustainable Recreation Goal 1). The Monument Plan emphasizes increased access through alternative means other than personal vehicles (Transportation Desired Conditions 1, 2, 4, 5, and 6 and Goal 1; Sustainable Recreation Goal 1).

Special land use designations within the Monument provide additional protections of recreational and scenic features with respect to the transportation system. This includes Congressionally-designated Wildernesses are summarized in the Monument Plan (Land Use Zones, Tables 2 & 3) as well as the Pacific Crest National Scenic Trail (Designated Areas Desired Condition 1, Guidelines 1 and 2).

Scientific Features

Retaining access to scientific features was considered in the 2005 Roads Analyses Report. Fire suppression, prevention, and prescribed fires are used to protect scientific features (e.g., species’ habitat), and protect sensitive ecosystems (e.g., riparian). Long-term maintenance of the transportation network is important to gain access to special uses for scientific purposes and for ecological restoration activities, e.g., USGS gauging stations, air quality stations. The transportation network is important for collecting seed and cones from naturally rust-resistant conifers, and accessing plant propagation material for endemic plants (e.g., limber pines, bigcone Douglas fir, rare plant sources).

Scientific objects of interest include Mt. Wilson Observatory and the San Dimas Experimental Forest. The Forest staff determined that there are multiple existing routes that are open to access Mt. Wilson. San Dimas Experimental Forest is currently closed for the general public. Not all roads within the San Dimas Experimental Forest are needed because there are sufficient alternative routes available. If projects for decommissioning roads are proposed, stakeholder input and environmental analyses will need to occur prior to any final project decision. As described above in the Maintenance Strategies, partnerships and funding

opportunities will be sought where declining budgets preclude maintenance which could negatively impact scientific objects (Maintenance Strategies of 3, 4, 5, and 6).

Infrastructure

The Proclamation lists critical infrastructure within the Monument that provides numerous benefits to people living in the nearby population centers, including flood control, water storage, delivery and diversion, telecommunications, and other utilities. It also acknowledges the contribution of these valid and existing rights and uses. Access to this infrastructure continues under the Monument's transportation plan.

Watershed Values

With respect to the transportation network, protection of watershed values includes protecting water quality, preserving hydrological processes, and maintaining aquatic and riparian habitat. This is achieved through proper siting away from streams and off unstable slopes, designing roads and trails with adequate drainage, maintaining drainage features on roads and trails, installing large enough pass-through flows at stream crossings, and installing protective erosion controls during projects or post-incidents. The ANF LMP already provides for these features. The Monument Plan provides additional direction that enhances these protections, specifically Transportation Desired Conditions 2-4, 6, and 8; Standard 1, Guideline 1, and Management Approaches 1, 3, 4, 7, and 12; Sustainable Recreation Desired Condition 3, Goal 1, and Management Approaches 1 and 2; Biological Resources Desired Condition 2.

Geologic Features

The Proclamation withdrew all of the Monument lands from mining and mineral extraction, except for valid existing rights. This precludes roads or trails from being built or used for new mining claims.

Diverse Wildlife and Aquatic Species

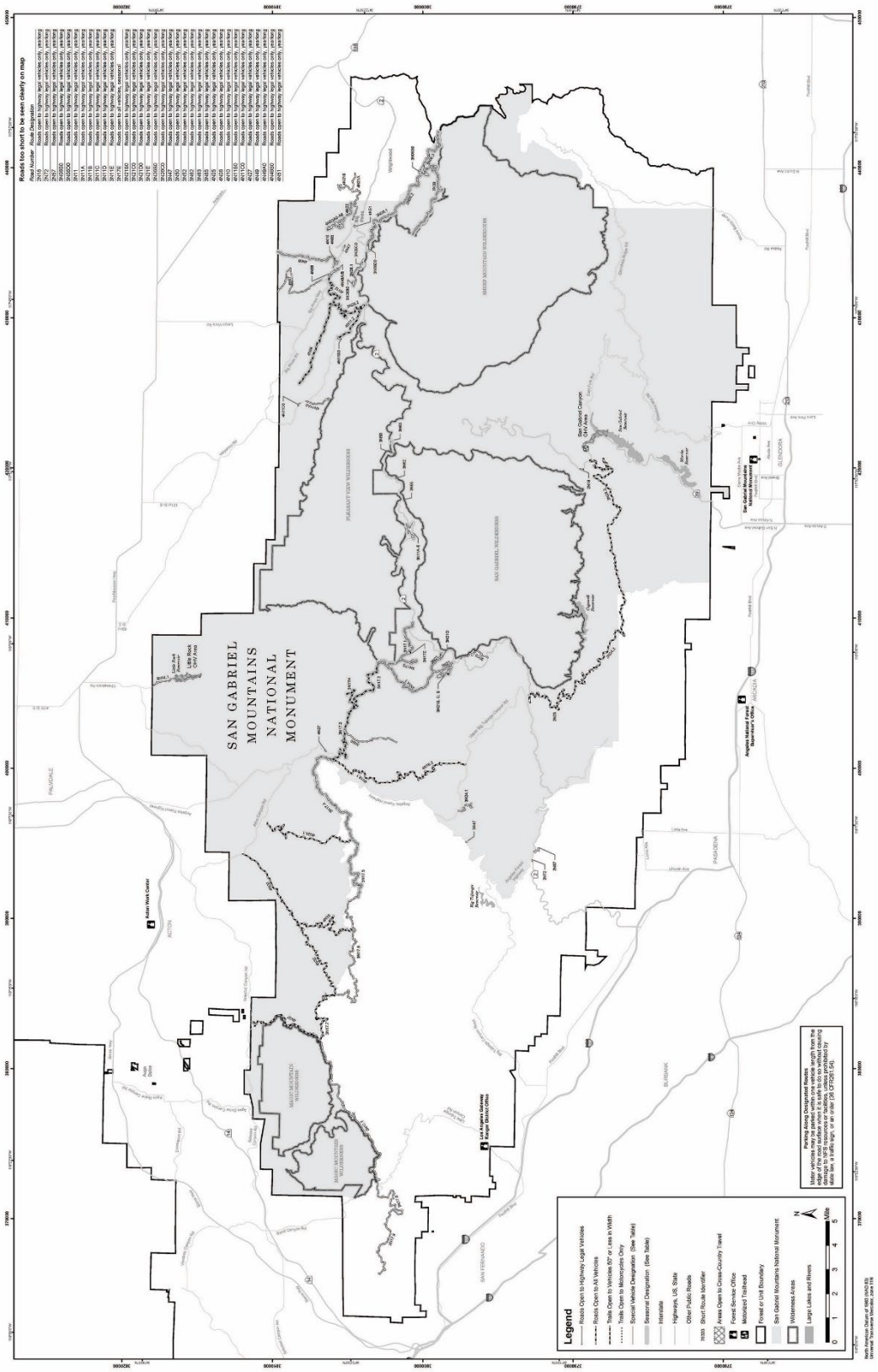
The 2005 LMP includes mitigation for species when new roads or trails are built, including S21 which directs a 2:1 mitigation ratio for California spotted owl territories; S22 directing linear structures to be designed for passage of fish and wildlife; and S25, which directs road and trail maintenance within the season of least impact in occupied habitats of threatened, endangered, proposed, candidate, and sensitive species.

The transportation section of the Monument Plan includes desired conditions to reduce the number of vehicles, maintain or reduce road density, maintain roads and trails to standard, provide adequate access points and parking areas, provide a sustainable transportation system, and reduce the number of unauthorized roads and trails (Desired Conditions 1-4, 6, 8). These plan components, along with the Monument Plan and existing 2005 LMP, help protect species and their habitat by mitigating impacts from the transportation system and reducing the number of vehicles. The transportation section also has several management approaches to protect wildlife and aquatic species (Management Approaches 1-4, 7-8, 11-12). Many of these include coordinating with partners to reduce negative impacts to resources and improving wildlife connectivity, as well as using the travel management process to continue to refine the transportation system as needed to protect resources. Risks to species was considered as part of the travel analysis process described above (and previous 2005 Roads Analysis Report), and helped inform the recommendations for potential changes to the transportation system in the future.

Vegetation Communities

Vegetation communities are affected by the transportation network when existing roads and trails accelerate erosion and landslides; when invasive weeds or fauna are brought in via the transportation system; when vehicles inadvertently start fires along roads. The existing 2005 LMP, project design features, and agency policies provide several protective measures. The Monument Plan provides additional direction that can indirectly protect vegetation communities by maintaining roads and trails to standard, decommissioning

unauthorized OHV routes, maintaining adequate parking so that vehicles are not parked within vegetation, and managing high-visitor use (Transportation Desired Conditions 2-4, 6, and 8; Standard 1; Guideline 1; Management Approaches 1, 3, 4, and 12).


SAN GABRIEL
MOUNTAINS
NATIONAL
MONUMENT
Legend
Roads Open to Highway Legal Vehicles
Roads Open to All Vehicles
Trails Open to Vehicles 50" or Less in Width
Trails Open to Motorcycles Only
Special Vehicle Designation (See Table)
Seasonal Designation (See Table)
Interstate
Highways, US, State
Other Public Roads
3S23 Short Route Identifier
Areas Open to Cross-Country Travel
Forest Service Office
Motorized Trailhead
Forest or Unit Boundary
San Gabriel Mountains National Monument
Wilderness Areas
Large Lakes and Rivers
0 1 2 3 4 5 Miles
N
Parking Along Designated Routes
Motor vehicles may park along the length from the edge of the road surface when it is safe to do so without causing damage to the road or adjacent property, as allowed by state law, a traffic sign, or an order (36 CFR261.54).
Road Number Route Designation
Roads too short to be seen clearly on map
Angeles National Forest Supervisor's Office
Arroyo Work Center
Los Angeles Ranger District Office
San Gabriel Mountains Visitor Center
Lake Sue Campground
Big Tujunga Work Center OHV Area
San Dimas Canyon OHV Area
Sunset Campground
Bear Canyon Campground
Mount Baldy Campground
Mount Baldy Ski Area
Mount Baldy Visitor Center
Mount Baldy Lodge

Appendices

Appendix A. Presidential Proclamation

Presidential Proclamation -- San Gabriel Mountains National Monument

ESTABLISHMENT OF THE SAN GABRIEL MOUNTAINS NATIONAL MONUMENT

- - - - - - -

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

A PROCLAMATION

Known as the crown to the Valley of Angels, the peaks of the San Gabriel Mountains frame the Los Angeles skyline. Over 15 million people live within 90 minutes of this island of green, which provides 70 percent of the open space for Angelenos and 30 percent of their drinking water. Millions recreate and rejuvenate in the San Gabriels each year, seeking out their cool streams and canyons during the hot summer months, their snowcapped mountains in the winter, and their trail system and historic sites throughout the year.

The San Gabriels are some of the steepest and most rugged mountains in the United States. Situated adjacent to the mighty San Andreas Fault, the mountains are geologically active, migrating northwest at an average of 2 inches each year. Deep canyons, many with precious perennial streams, score the mountain peaks -- north toward the arid Mojave Desert and south to the temperate San Gabriel Valley.

The rich cultural history of these mountains echoes their striking geologic features and ecological diversity. Cultural resources represent successive layers of history, including that of Native Americans, Spanish missionaries and colonialists, Mexican rancheros, and Euro-American settlers and prospectors. Native American history runs deep, at least 8,000 years, exemplified by the Aliso-Arrastre Special Interest Area known for its heritage resource values, including several rock art and cupules features, the concentration of which is unique to southern California. Due to urban development and natural processes, this area also contains the best preserved example of a Gabrielino pictograph that characterizes the California Tradition of rock painting. Early European explorers' use of the area consisted mainly of early explorers traveling through the area. Over time, land grants, Spanish missions, and townsites surrounded the mountains, relying heavily on them for water, building supplies, and game.

By the 1840s, gold prospectors poured into the mountains. Large placer and lode mining operations were established in the San Gabriels, with mixed success. The historic mining town of Eldoradoville, located along the East Fork of the San Gabriel River, had at its peak in 1861 a population of over 500 miners, with general stores, saloons, and dance halls along with numerous mining camps of tents, wooden shacks, and stone cabins along the river.

In the early 20th century, responding to the burgeoning interest of urban dwellers in backcountry hiking and weekend rambling, a number of trails, lodges, and camps -- many of which were accessible only by horseback or on foot -- were constructed throughout the mountains. Remnants of these historic resorts, which attracted local residents and Hollywood stars alike, can still be seen and are important aspects of the region's social and cultural history.

Enthusiasm for recreating in the mountains continues today. The San Gabriels offer hundreds of miles of hiking, motorized, and equestrian trails, including several National Recreational Trails and 87 miles of the Pacific Crest National Scenic Trail. In the footprint of the resorts of the Great Hiking Era, many visitors

partake of Forest Service campgrounds built on the foundations of early 20th-century lodges and resorts. In a region with limited open space, the mountains are the backyard for many highly urbanized and culturally diverse populations within Los Angeles, underscoring the need for strong partnerships between this urban forest and neighboring communities.

The mountains have hosted world-class scientists, studying the terra firma at their feet as well as the distant galactic stars. Astronomer Edwin Hubble performed critical calculations from his work at the Mt. Wilson Observatory, including his discovery that some nebulae were actually galaxies outside our own Milky Way. Assisted by Milton Humason, he also discovered the presence of the astronomical phenomenon of redshift that proved the universe is expanding. Also on Mt. Wilson, Albert Michelson, America's first Nobel Prize winner in a science field, conducted an experiment that provided the first modern and truly accurate measurement of the speed of light. Closer to earth, the San Dimas Experimental Forest, established in 1933 as a hydrologic laboratory, continues the study of some of our earliest and most comprehensively monitored research watersheds, providing crucial scientific insights.

Although proximate to one of America's most urban areas, the region has untrammeled wilderness lands of the highest quality, including four designated wilderness areas: San Gabriel, Sheep Mountain, Pleasant View Ridge, and Magic Mountain. These lands provide invaluable backcountry opportunities for the rapidly expanding nearby communities and also provide habitat for iconic species including the endangered California condor and least Bells' vireo, and the Forest Service Sensitive Nelson's bighorn sheep, bald eagle, and California spotted owl. Inventoried roadless areas and lands recommended for designation as Wilderness also provide important habitat, including a connectivity corridor important for wide ranging species, such as the mountain lion.

The importance of the San Gabriels' watershed values was recognized early. As early as the late 1800s, local communities petitioned to protect the mountains for their watershed values. As a result, President Benjamin Harrison established the San Gabriel Timberland Reserve in 1892, the precursor to the Angeles National Forest. Reflecting the needs of the nearby population centers, the San Gabriels host an array of flood control and water storage, delivery, and diversion infrastructure, including six large retention dams as well as numerous telecommunications and utility towers.

The San Gabriels' rivers not only provide drinking water but are also areas of high ecological significance supporting rare populations of native fish, including the threatened Santa Ana sucker. The San Gabriel River supports rare arroyo chub and Santa Ana speckled dace, a species found only in the Los Angeles Basin. Little Rock Creek tumbles down from the northern escarpment to the Mojave Desert below and supports important populations of the endangered mountain yellow-legged frog and arroyo toad, as well as the threatened California red-legged frog. On the slopes of Mt. San Antonio, San Antonio Creek rushes through an alpine canyon studded with stalwart bigcone Douglas fir, and the magnificent 75-foot San Antonio Falls draw thousands of visitors every year.

In addition to rivers, the San Gabriels contain two scenic lakes, both formed by the area's remarkable geologic forces. The alpine Crystal Lake, found high in the mountains, was formed from one of the largest landslides on record in southern California. Jackson Lake is a natural sag pond, a type of pond formed between the strands of an active fault line -- in this case, the San Andreas.

Climatic contrasts in the San Gabriels range from the northern slope desert region, home to Joshua trees and pinyon pines, to high-elevation white fir and a notable stand of 1,000-year-old limber pines.

Vegetation communities, including chaparral and oak woodland, represent a portion of the rare Mediterranean ecosystem found in only 3 percent of the world. Mediterranean climate zones have high numbers of species for their area. The San Gabriels also provide suitable habitat for 52 Forest Service Sensitive Plants and as many as 300 California-endemic species, including Pierson's lupine and San Gabriel bedstraw, that occur only in the San Gabriel range.

The mountains harbor several of California's signature natural vegetation communities, including the drought-tolerant and fire-adapted chaparral shrubland, which is the dominant community and includes scrub oaks, chamise, manzanita, wild lilac, and western mountain-mahogany. Mixed conifer forest is an associated vegetation community comprising Jeffrey pine, sugar pine, white fir, and riparian woodlands including white alder, sycamore, and willow. These communities provide habitat for numerous native wildlife and insect species, including agriculturally important pollinators, the San Gabriel Mountains slender salamander, San Bernardino Mountain kingsnake, song sparrow, Peregrine falcon, mule deer, and Pallid bat.

WHEREAS section 2 of the Act of June 8, 1906 (34 Stat. 225, 16 U.S.C. 431) (the "Antiquities Act"), authorizes the President, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest situated upon the lands owned or controlled by the Government of the United States to be national monuments, and to reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected; and

WHEREAS it is in the public interest to preserve and protect the objects of scientific and historic interest at the San Gabriel Mountains;

NOW, THEREFORE, I, BARACK OBAMA, President of the United States of America, by the authority vested in me by section 2 of the Antiquities Act, hereby proclaim the objects identified above that are situated upon lands and interests in lands owned or controlled by the Government of the United States to be the San Gabriel Mountains National Monument (monument) and, for the purpose of preserving those objects, reserve as a part thereof all lands and interests in lands owned or controlled by the Government of the United States within the boundaries described on the accompanying map entitled, "San Gabriel Mountains National Monument" and the accompanying legal description, which are attached to and form a part of this proclamation.

These reserved Federal lands and interests in lands encompass approximately 346,177 acres, which is the smallest area compatible with the proper care and management of the objects to be protected.

All Federal lands and interests in lands within the boundaries of the monument are hereby appropriated and withdrawn from all forms of entry, location, selection, sale, leasing, or other disposition under the public land or other Federal laws, including location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing, other than by exchange that furthers the protective purposes of the monument, or disposition of materials under the Materials Act of 1947 in a manner that is consistent with the proper care and management of the objects protected by this proclamation.

The establishment of this monument is subject to valid existing rights. Lands and interests in lands within the monument's boundaries not owned or controlled by the United States shall be reserved as part of the monument upon acquisition of ownership or control by the United States. To the extent allowed by applicable law, the Secretaries of Agriculture and the Interior shall manage valid Federal mineral rights existing within the monument as of the date of this proclamation in a manner consistent with the proper care and management of the objects protected by this proclamation. Nothing in this proclamation shall be construed to alter the valid existing water rights of any party, including the United States.

Nothing in this proclamation shall be construed to interfere with the operation or maintenance, nor with the replacement or modification within the existing authorization boundary, of existing water resource, flood control, utility, pipeline, or telecommunications facilities that are located within the monument, subject to the Secretary of Agriculture's special uses authorities and other applicable laws. Existing water resource, flood control, utility, pipeline, or telecommunications facilities located within the monument may be expanded, and new facilities may be constructed within the monument, to the extent consistent with the proper care and management of the objects protected by this proclamation, subject to the Secretary of Agriculture's special uses authorities and other applicable law.

The Secretary of Agriculture (Secretary) shall manage the monument through the Forest Service, pursuant to applicable legal authorities, consistent with the purposes and provisions of this proclamation.

The Secretary shall prepare, within 3 years of the date of this proclamation and in consultation with the Secretary of the Interior, a management plan for the monument and shall promulgate such regulations for its management as deemed appropriate. The Secretary shall provide for maximum public involvement in the development of that plan, including, but not limited to, consultation with tribal, State, and local government, as well as community environmental conservation, health, and justice organizations. The plan shall provide for protection and interpretation of the scientific and historic objects identified above and for continued public access to those objects, consistent with their protection. To the maximum extent permitted by other applicable law and consistent with the purposes of the monument, the plan shall protect and preserve Indian sacred sites, as defined in section 1(b) of Executive Order 13007 of May 24, 1996, and access by Indian tribal members for traditional cultural, spiritual, and tree and forest product-, food-, and medicine-gathering purposes. Nothing in this proclamation shall be construed to enlarge or diminish the rights of any Indian tribe as defined in section 1(b) of Executive Order 13007.

The Secretary shall prepare a transportation plan that specifies and implements such actions necessary to protect the objects identified in this proclamation, including road closures and travel restrictions. For the purpose of protecting the objects identified above, except for emergency or authorized administrative purposes, the Secretary shall limit all motor vehicle use to designated roads, trails, and, in the Secretary's discretion, those authorized off-highway vehicular use areas existing as of the date of this proclamation.

The Secretary shall, in developing any management plans and any management rules and regulations governing the monument, consult with the Secretary of the Interior. The final decision to issue any management plans and any management rules and regulations rests with the Secretary of Agriculture. Management plans or rules and regulations developed by the Secretary of the Interior governing uses

Angeles National Forest within national parks or other national monuments administered by the Secretary of the Interior shall not apply within the monument.

Nothing in this proclamation shall be construed to enlarge or diminish the jurisdiction of the State of California with respect to fish and wildlife management.

Laws, regulations, and policies followed by the United States Forest Service in issuing and administering grazing permits or leases on all lands under its jurisdiction shall continue to apply with regard to the lands in the monument in a manner consistent with the proper care and management of the objects protected by this proclamation.

Nothing in this proclamation shall be construed to alter the authority or responsibility of any party with respect to emergency response activities within the monument, including wildland fire response. The Secretary may carry out vegetative management treatments within the monument, except that timber harvest and prescribed fire may only be used when the Secretary determines it appropriate to address the risk of wildfire, insect infestation, or disease that would endanger the objects identified above or imperil public safety.

Recognizing the proximity of the monument to Class B airspace and that a military training route is over the monument, nothing in this proclamation shall be deemed to restrict general aviation, commercial, or military aircraft operations, nor the designation of new units of special use airspace or the establishment of military flight training routes, over the monument.

Nothing in this proclamation shall be deemed to revoke any existing withdrawal, reservation, or appropriation; however, the monument shall be the dominant reservation.

Warning is hereby given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of the monument and not to locate or settle upon any of the lands thereof.

IN WITNESS WHEREOF, I have hereunto set my hand this tenth day of October, in the year of our Lord two thousand fourteen, and of the Independence of the United States of America the two hundred and thirty-ninth.

BARACK OBAMA

Appendix B. Protections for Categories of National Monument Objects of Interest

Table 5. Summary of protections for objects of interest under the 2005 ANF Land Management Plan and 2019 Monument Plan.

Categories of Objects of Interest (with examples from Proclamation)	**2005 Angeles Land Management Plan Protections**	**2018 Monument Management Plan Added Protection**	**How Plans Provide Protections**
Cultural Resources – The San Gabriel Mountains contain a rich cultural history, including a unique concentration of several rock art and cupules features within the Aliso-Arrastre Special Interest Area, the remnants of the historic mining town of Eldoradoville on the East Fork of the San Gabriel River, and the remnants of historic resorts of the early 20th century, on which foundations the current Forest Service campgrounds are constructed.	**General:** LMP, Part 1, Vision (p. 6) LMP, Part 1, Forest Niche (p. 7) LMP, Part 1, Forest Goals and Desired Conditions, Managed Recreation in a Natural Setting, Goal 3.1 • Desired condition related to increased knowledge of heritage resources (p. 35) • Heritage Site Protection Desired Conditions (p. 35) • Tribal and Native American Use Desired Conditions (p.35) LMP, Part 1, Forest Goals and Desired Conditions, Natural Areas in an Urban Context, Goal 7.1 • Desired condition related to cultural features (p. 48) LMP, Part 2, Program Emphasis and Objectives, Resource Management • Heritage Program emphasis (p. 25) • Table 2.1.5 Resource Management Performance Indicators, ANF (p. 25) – Number of Heritage Resources Managed to Standard LMP, Part 2, Place-Based Program Emphasis (p. 35), emphasis on cultural resources described for various Places under Program Emphasis section, e.g., Angeles High Country (pp. 41-42) LMP, Part 2, Appendix B – Program Strategies and Tactics • Tribal 1 (p. 90) • Her 1-3 (p. 108)	Heritage Resources Desired Conditions 1-3, Goal 1, Standards 1-2, Guidelines 1-2, Management Approaches 1-9 (pp. 11-12)	Current direction and strategies in the existing LMP protect cultural resources within the Monument by: • Emphasizing inventorying, evaluating, and protecting heritage resources. • Aiming to identify and mitigate activities that may adversely affect or do not complement significant cultural properties. • Protecting known sites to the highest standard until evaluated. • Working with tribes to support traditional and contemporary uses and access. • Providing opportunities to work with the public in the stewardship of sites. • Protecting Special Interest Areas that were designated for cultural resources. The new direction added through the Monument Management Plan augments some of the protections already in place under the existing LMP. The Heritage Program continues to maintain sites to standard.

	• Fac 1 (p. 115) • Lands 2 (p. 119) LMP, Part 3, Cultural and Historic Standards (p.13) • S60-62 **Aliso-Arrastre Special Interest Area:** LMP, Part 2, Suitable Land Uses, Special Designation Overlays, Special Interest Areas (p. 14) LMP, Part 2, Place-Based Program Emphasis, Soledad Front Country, Desired Condition (p. 70) LMP, Part 2, Appendix A – Special Designation Overlays, Special Interest Areas, Aliso-Arrastre (p.85) LMP, Part 2, Appendix B – Program Strategies and Tactics, SD 4 (p. 107) Management for Special Interest Areas further described in the FEIS, Vol. 2, Appendix G (p. 266)		
Recreational and Scenic Features – The Monument offers campgrounds and an extensive trail system, which contains 87 miles of the Pacific Crest National Scenic Trail and several national recreation trails. Four designated wilderness areas are within the Monument (San Gabriel, Sheep Mountain, Pleasant View Ridge, and Magic Mountain), providing backcountry experiences. The Monument offers	**General:** LMP, Part 1, Vision (p. 6) LMP, Part 1, Forest Niche (pp. 7-8) LMP, Part 1, Managed Recreation in a Natural Setting, Goal 3.1 Recreation Desired Conditions (p. 34) LMP, Part 2, Suitable Land Uses Table 2.1.2 Suitable Uses Public Use and Enjoyment (p. 4) Descriptions of management related to recreation and visitor use for each Land Use Zone (pp. 7-12) LMP, Part 2, Scenery Management System (p. 17) LMP, Part 2, Program Emphasis and Objectives, Public Use and Enjoyment (pp. 26-28) LMP, Part 2, Place-Based Program Emphasis (p. 35), emphasis and desired conditions for recreation and scenery described for various Places, e.g., Angeles High Country (pp. 41-42) LMP, Part 2, Appendix B – Program Strategies and Tactics	Goal 1 and Management all Transportation, all Sustainable Recreation, and Visitor Experience, Information, and Environmental Education	Current direction and strategies in the existing LMP provide for diverse recreation opportunities while protecting resources within the Monument by: Managing for high quality recreation opportunities and facilities that benefit diverse user groups and urban communities. Managing for a well-maintained and environmentally sustainable trail system that features scenic routes with a special emphasis on managing the Pacific Crest National Scenic Trail and national recreation trails. Designating Land Use Zones, which allow for differing types of recreation within each zone. Managing recreation impacts by designating sites for target shooting, OHV use, developed campground sites. Restricting and providing mitigation measures for recreation activities to protect fish, wildlife, and plant species; soil, watersheds, riparian areas; and heritage resources.

recreation opportunities for urban and culturally diverse populations. It attracts visitors to scenic areas, such as San Antonio Falls, Crystal Lake, and Jackson Lake.	REC 1-5 (pp. 110-114) LM 1-3 (p. 115) Fac 1 (p. 117) LMP, Part 3, Plan Standards, Aesthetic Management Standards S9-S10 (p. 6) LMP, Part 3, Plan Standards, Fish and Wildlife Standards When Implementing Recreation Activities, S34-S36 (pp. 8-9) When Implementing Land and Special-Uses Activities, S40-41 (p. 9) LMP, Part 3, Plan Standards, Soil, Water, Riparian and Heritage Standards When Implementing Recreation Activities, S50, (p. 11) LMP, Part 3, Plan Standards, Appendix D – Adaptive Mitigation for Recreation Uses (p. 63) Trail System, Including National Scenic and Recreation Trails: LMP, Part 1, Vision (p. 7) LMP, Part 1, Managed Recreation in a Natural Setting, Goal 3.1 Road and Trail System Desired Conditions (p. 35) LMP, Part 2, Suitable Land Uses Table 2.1.2 Suitable Uses Public Use and Enjoyment (p. 4) Descriptions of management related to trails for each Land Use Zone (pp. 7-12) LMP, Part 2, Program Emphasis and Objectives, Facility Operations and Maintenance (pp. 29-30) Roads and Trails Program emphasis (pp. 29-30) Table 2.1.7 Facilities Operations and Maintenance Performance Indicators, ANF (p. 30) – Miles of Trail Operated and Maintained to Standard LMP, Part 2, Place-Based Program Emphasis (p. 35), emphasis and desired conditions for trails described for various Places, e.g., Front Country (pp. 38), Angeles High Country (p. 42) LMP, Part 2, Forest-specific Design Criteria, Place-specific Standards		Requiring new facilities to avoid impacts to streams and other resources. Including Place-specific standards to ensure recreation quality while protecting habitat and wildlife from impacts. Emphasizing interpretation and education, community outreach, and partnerships. Preventing or reducing the spread of weeds through trail use or recreational activities. Managing for backcountry experiences. Restricting uses and activities within wilderness areas to maintain wilderness values. Requiring activities to meet Scenic Integrity Objectives. Because the 2005 LMP direction is comprehensive in providing sustainable recreation opportunities and protecting scenery resources, the new direction added through the Monument Management Plan focuses on: Providing opportunities that are responsive to shifting demographics and local communities with access considerations; Further emphasizing partnerships to meet goals; Management of dispersed recreation activities.

	ANF S1 – Pacific Crest Trail (p. 76) LMP, Part 2, Appendix B – Program Strategies and Tactics Trans 1 (p. 116) Trans 3 (p. 117) LMP, Part 3, Plan Standards, Fish and Wildlife Standards When Implementing All Activities, S25 (p. 8) LMP, Part 3, Appendix I – Land Adjustment Prioritization Guide, Priority 2 Acquisitions (p. 77) LMP, Part 3, Appendix M – National Forests of Southern California Weed Management Strategy (pp. 121-130) Wilderness and Backcountry Experience: LMP, Part 1, Forest Niche (p. 7) LMP, Part 1, Managed Recreation in a Natural Setting, Goal 3.2 Wilderness Desired Conditions (p. 37) LMP, Part 2, Suitable Land Uses Tables 2.1.1-2.1.4 (pp. 4-6) Descriptions of management related to existing and recommended wilderness and Inventoried Roadless Areas (pp. 11-13) LMP, Part 2, Forest-specific Design Criteria, Wilderness Standards ANF S2-3 (p. 76) LMP, Part 2, Appendix B – Program Strategies and Tactics SD 1 (p. 106) LMP, Part 3, Appendix B – Minimum Impact Suppression Tactics LMP, Part 3, Appendix E – Five-Step Project Screening Process for Riparian Conservation Areas Limitations on treatment methods to non-motorized and non-mechanized		

	LMP, Part 3, Appendix J – Livestock Capability and Suitability Guidance Exclusion of grazing from wilderness areas that meet certain criteria		
Scientific Features – The Monument includes Mt. Wilson Observatory and the San Dimas Experimental Forest, both of which were established in the early 20th century and have contributed to important scientific discoveries.	**General**: LMP, Part 1, Forest Niche (p. 9) Mt. Wilson Observatory: LMP, Part 2, Place-Based Program Emphasis, The Front Country, Program Emphasis (p. 38) San Dimas Experimental Forest: LMP, Part 2, Suitable Land Uses Tables 2.1.1-2.1.4 (pp. 4-6) Experimental Forest management (p. 13) LMP, Part 2, Appendix A – Special Designation Overlays, Experimental Forest (pp. 87-88)	No change	There are many scientifically important features within the Monument. The current 2005 LMP provides protections through special designations such as a Special Interest Area, Research Natural Area, or Experimental Forest (See Figure 1). Mt Wilson Observatory is an active research institution, managed under special use permit. The San Dimas Experimental Forest is closed to the general public for ongoing research on fire ecology and chaparral processes. Under the Monument Plan, there is no change in management.
Infrastructure – Flood control and water storage, delivery and diversion infrastructure exist within the Monument, including six large retention dams. Numerous telecommunications and utility towers are also present, reflecting the needs of the nearby urban areas.	The purpose of the LMP is to provide a framework within which projects can be evaluated on bridging the gap between existing with desired conditions, or to manage for public demand: Part 1, Managers will work from within this strategic framework as they make decisions and propose site-specific projects that are designed to incrementally move the national forests toward the desired conditions. Project decisions must be consistent with the strategic direction, or must amend the plan. Site-specific projects may be the result of public demand (i.e., utilities including hydro-electric, transportation corridors, airports or more specific requests, such as groundwater extraction), or they can result from resource program needs (i.e., vegetative management, habitat projects, roads or trails construction). Projects will, in general, be proposed for implementation in order to bridge the gap between existing and desired conditions. Detailed analysis of resource trade-offs rightfully occurs at the project level where the extent of project requirements is known and can be assessed at the appropriate scale (p. 4).	No change	Current valid rights are not affected. Continued operations and maintenance, replacement and modification of utility structures continues within the existing authorizations. Expansion and new construction can occur subject to special use authorizations, ANF LMP, and this Monument Plan.

Watershed Values – The Monument provides drinking water for nearby population centers. The rivers, streams, lakes, and other water bodies within the Monument also provide important habitat, as well as recreation opportunities.	LMP, Part 1, Wilderness, Goal 3.2 (p. 36) LMP, Part 1, Watershed Function, Goal 5.1, (pp. 39-40) LMP, Part 1, Riparian Condition, Goal 5.2, (pp. 41-42) LMP, Part 2, Appendix B, Strategies and Tactics FH 1- Vegetation restoration (p. 101) FH 2- Prevention of Fire Induced Type Conversion (p. 101) LMP, Part 3, Soil, Water, Riparian and Heritage Standards When Implementing All Activities, S45-46, (p. 10) Applicable within Riparian Conservation Areas, S47-49, (p. 11) LMP, Part 3, Appendix A, Forest Service Directives (Manual and Handbook) along with other Laws, Regulations, Executive Orders and Memoranda, Agreements, Management Direction and State Authorities.	Watershed condition is affected by natural and anthropomorphic events. Conditions will be improved, albeit indirectly, by these elements of the Monument Plan: Transportation Desired Conditions 1-4, 8, S1, Guideline 1, and direct improvement will occur with Management Approach 1, 3. Sustainable Recreation Desired Condition 3, Goal 1, and Management Approach 1 are designed for improving watershed conditions when implemented. Mineral Resources Suitability of Lands 1 will preserve Monument features, and Management Approach 1 is intended to reduce resource impacts from unauthorized activities. And Land Use Zones restricting new	The LMP Part 1 Goal 5.1 – improve watershed conditions through cooperative management and 5.2 Improve riparian condition both articulate the general relationship between management actions and watershed health. Watershed is defined as the area contained within a drainage above a specific point of a stream. The watershed condition class is defined as good (Class 1), moderate (Class 2), or poor (Class 3). The LMP monitoring question specifically evaluates outcomes on sustaining Class 1 watersheds while reducing Condition Class 2 and Class 3 watersheds. Strategies and tactics for management activities that sustain Class 1 and maintain forest health and resilience are included in part 2 under WAT-1 watershed function and WAT-2 water management. Management of watershed are in the context of establishing riparian conservation areas (buffer zones), conserving aquatic species habitat, preventing erosion, promoting post-fire revegetation, reforesting in needed areas for erosion control, improving groundwater - recharge, minimizing diversion, maintaining connectivity, protecting high quality water sources, encouraging water conservation at facilities, eliminating impact to riparian area and water dependent species, etc. Part 3 of LMP has “soil, water, riparian and heritage” standards with specific design features when implementing projects. Water features on the landscape including both surface and ground water are assessed with a long-term goal of “reasonable use” and sustainability in mind. Effects to watersheds should be minimized when proposing new activities. Appendix E in part 3 describes a 5 step project screening process for riparian conservation areas. Further protections are afforded in the Monument Plan by designing and planning to reduce roads on the basis

		mining and minerals' claims and the designation of new CBLUZ will result in neutral or beneficial watershed conditions. The Transportation Plan can result in reducing or redesigning the number of roads or trails impacting resources.	of resource impacts; redesigning parking and vehicle access to minimize resources, and by designing projects to be neutral or beneficial to resources in the CBLUZ. Providing the tools and foundation to manage recreation will provide benefits to soils and stream functionality.

Geologic Features –
 	
The San Gabriel Mountains are geologically active. They include striking geologic features, including deep canyons with important perennial streams.
	LMP, Part 1,
	• Watershed Function, Goal 1, Improve Watershed Health, includes geological and paleontological resources, (p. 40)
	
	LMP, Part 2,
	• SIA -Devil's Punchbowl, Mt San Antonio, (p. 54), Aliso-Arrastre for paleontological environment (p. 55)
	• Faults are described in Places
	  o San Andreas Fault, Angeles High Country and Mojave Front Country, (p. 72).
	  o San Gabriel Fault, San Gabriel Canyon, p 51
	• Appendix B, Cucamonga Wilderness, p 55
	• Appendix B, WAT-1, protect paleontological resources, (p. 102)
		Monument Plan, Mineral Resources, Suitability of lands 1.	The geologic uniqueness of the San Gabriel Mountains have long been acknowledged. The extreme uplift results in a steep, elevation gain inducing higher levels of precipitation and with the fractured metamorphic rock, results in a large, surface-water supply and groundwater basins. Thus, the San Gabriel Mountains have perennial, cool-water streams, rare in Southern California. The 2005 LMP has designated an SIA, Devil's Punchbowl, for its geologic features.
			
			The Monument Proclamation withdrew all Monument lands from mining and surface mineral extraction. Because of this withdrawal, S57 is no longer applicable within the Monument such that no personal use collection of rock, fossils, and minerals is allowed.

Diverse Wildlife and Aquatic Species Several notable wildlife and aquatic species are located in the Monument, including: California condor, least Bells' vireo,	**General:** LMP Record of Decision, Key Factors of Decision Conservation of Plant and Animal Species (pp. 5 & 6, 9 & 10) LMP, Part 1, Biological Resource Condition, Goal 6.2, (p. 45) (MIS replaced in 2016) LMP, Part 1, Natural Areas in an Urban Context, Goal 7.1, (p. 46 &47) LMP, Part 2, Appendix B – Program Strategies and Tactics	Transportation, Desired Condition 4, 8, Standard 1, Management Approach 1, 7, 12 regarding parking in riparian areas, Sustainable Recreation, Goal 1,	The current 2005 LMP provides guidance in the form of strategies, tactics, and standards for resource protection at the project implementation level, and tries to balance protection of resources with human uses and activities managed by the FS. Part 3 of the LMP provides standards for the protection of various resources including wildlife and habitat. In addition it also provides guidance in appendix B, C, D, E, F, G, H and M, All fish and Wildlife Standards for

Nelson's bighorn sheep, bald eagle, California spotted owl, Santa Ana sucker, Arroyo chub, Santa Ana speckled dace, mountain yellow-legged frog, Arroyo toad, pollinators, San Gabriel Mountains slender salamander, San Bernardino Mountain kingsnake, song sparrow, peregrine falcon, mule deer, and pallid bat. Many of these have a special status for protection. Wilderness, recommended wilderness, and inventoried roadless areas within the Monument play an important role in providing habitat and connectivity corridors for wide ranging species, such as the mountain lion.	• AM-1- Land Management Plan Monitoring and Evaluation (p. 93) • AM 2- Forest-wide Inventory (p. 93 & 94) • WL-1-Threatened, Endangered, Proposed, Candidate, and Sensitive Species management • WL-2 Management of Species of Concern (p. 99) • IS 1- Invasive Species Prevention and Control (p. 100) • Lands 2 (p 119 & 120) LMP, Part 3, Fish and Wildlife Standards • When Implementing All activities, S11-33 (pp. 6-8) • When Implementing Recreation Activities, S34-35, (pp 8-9) • When implementing Fire Management Activities, S37-39, (p. 9) • When Implementing Lands and Special-Uses Activities, S40-44, (pp 9 & 10) LMP, Part 3, Soil, Water, Riparian and Heritage Standards • When Implementing All Activities, S 45-46, (P. 10) • Applicable within Riparian Conservation Areas, S47-49, (p. 11) • When Implementing Recreation Activities, S50, (p.11) and Appendix D-Adaptive Mitigation for Recreation Uses, (pp. 63 & 64) • When Implementing Livestock Grazing Activities, S51-56, Table 3-2, (pp 11&12) LMP Part 3, Other Design Criteria • Appendix B-Minimum Impact Suppression Tactics, (pp 55 & 56) • Appendix C-Monitoring Requirements (replaced in 2016) • Appendix E-Five-Step Project Screening Process for Riparian Conservation Areas includes Riparian Conservation Area Guidance, (pp 65 &66) • Appendix F-Guidelines for Aerial Application of Retardants and Foams in Aquatic Environments, (pp 67 & 68)	management Approach 2 Visitor Experience, Information, and Environmental Education Goal 1, Objective 1 Biological Resources, Desired Conditions 1 & 2 with Goal 1; Mineral Resources, Suitability of Lands 1, Management Approaches 1-3 Land Use Zones, Suitability of Lands 1, Critical biological Land Use Zone, Existing Wilderness Zone Climate Change 3, (p 22) Current Transportation System, Road Maintenance, (p 23), Maintenance Strategy 1, 3, 6 (p. 24)	conservation of habitat features, specifically Standards 11-50, and 57-58 provide protection for wildlife species and their habitat. Together, the Standards and Appendices provide more guidelines and restrictions designed to protect species and maintain key features of their habitats. Since the 2005 LMP, there have been more nationwide policies, rules, and regulations which govern the considerations and minimize the effects of management actions on species and habitats. For example, continued direction on prevention and treatment of invasive weeds continues with EO 13112, FSM 2900 (Invasive Species Management), and National Strategic Framework for Invasive Species Management. In the Monument Plan, the protection provided by the new CBLUZ designation will provide additional protection for species mentioned in the proclamation while still allowing for existing uses and new projects. This land use zone will restrict future development within these areas and require that projects are neutral or beneficial to the species protected. The restriction of eliminating overnight camping is an additional resource protection and potential tool for enforcement. Rare species protections are enhanced by the LMP, but the foundational protections is via law, policy, rule, and regulation. There are currently 57 plants, 4 birds, 6 mammals, 3 amphibians, 6 reptiles, 2 fish and 3 invertebrate species (see Appendix 3 or B1-3 in the Project Record) that are designated by the Regional Forester as Forest Service sensitive species (FSS). In addition, there are 6 plants, 5 birds, 2 fish, 3 amphibians, and 1 retile (See A3-11, A3-12) that are designated by the US Fish and Wildlife Service (USFWS) as federally threatened or endangered on the ANF. We consider all of these species to be special status for a total of 98 species that have these designations. The Proclamation listed approximately

	• Appendix G-Guidelines for Protection and Conservation of Bird Species at Mountain Top Communication Sites, USDA Forest Service		35 individual species, many of which are included in the 98 special status species. Each of the 98 special status species is evaluated at the project level for potential impacts on these species. Current Forest Service manual direction (FSM 2670) requires that the ANF "review all Forest Service planned, funded, executed, or permitted programs and activities for possible effects on endangered, threatened, proposed, or sensitive species". For each project FSM 2670 also requires the development of "recommendations for removing, avoiding, or compensating for any adverse effects", this is typically done by developing design criteria that are incorporated at the project level and are implemented on the ground during project implementation. These recommendations are typically included in decision documents and are then required to be implemented. All of the ecosystems on the ANF are used by at least one of the federally listed or FSS species. Therefore, we are conducting these biological evaluations for all actions across all habitat types across the entire Forest for these species. This analysis occurs during the NEPA/permitting phase and we analyze the indirect impact on the habitat for those species, as well as direct impacts on the species themselves as well as cumulative impacts from other past, present and future projects and develop project specific minimization measures to protect those species that are used during project implementation to minimize and avoid impacts. In addition to this process, anytime the ANF takes an action that may affect any species that is on the Endangered Species Act list we are required to complete consultation with the US Fish and Wildlife Service, pursuant to Section 7 of the ESA. The USFWS may require us to implement additional protective measures, monitoring or reporting in order to minimize impacts and track the baseline of these species.

			As a result of a remedy order the ANF has consulted with the USFWS on several ongoing routine operational and maintenance activities that we implement on a routine basis. The program areas that were analyzed were road and trail maintenance, administrative site operations and maintenance and developed and dispersed recreation. During the analysis for this consultation we developed avoidance and minimization measures that are implemented during these routine activities to minimize impacts on special status species. As a result of this consultation we were issued a biological opinion that had some additional monitoring and reporting requirements to the USFWS. See additional information below this table for a list of Threatened, Endangered, Proposed, Candidate, and Forest Service Sensitive Plants and Animals that may occur within the Angeles National Forest, Los Angeles and San Bernardino Counties, California (as of 2014). In subsequent LMP amendments, the monitoring plan put forward in 2005 was changed twice. Once, in response to a Remedy Order from the Courts, and then again, in keeping with the 2012 Planning Rule. In the most recent monitoring strategy, the concept of Management Indicator Species was no longer used, and instead there was an assignment of Focal species. There were many other features of the Monitoring Plan that updated the monitoring questions and outcome metrics in order to accommodate new scientific information and changed conditions (2014 LMP Amendment and administrative change to Appendix C-Monitoring Plan in 2016). The Monument Management plan acknowledged that the monitoring plan questions and metrics had been changed in 2016. In addition, the Goal is to take corrective actions when monitoring indicates that the habitat appears to be degrading or vegetation type-conversion is occurring.

Vegetation Communities – The Monument includes several natural vegetation communities, including Mojave desert, chaparral shrubland, oak woodland, mixed conifer forest, and riparian woodlands. These communities include Bigcone Douglas fir, Joshua trees, pinyon pines, high-elevation white fir, ancient limber pines, Jeffrey pine, sugar pine, white alder, sycamore, willow, 52 Forest Service Sensitive plant species, and 300 plants endemic to California.	LMP, Part 1 • Community Protection, Goal 1.1, (p. 19) • Restoration of Forest Health, Goal 1.2 (pp. 20-29) • Invasive Species, Goal 2.1, (p. 31 & 32) LMP, Part 2, Appendix B, Strategies and Tactics • IS 1 - Invasive Species Prevention and Control • FH 1 - Vegetation Restoration • FH 2 - Prevention of Fire Induced Type Conversion • FH 3 - Restoration of Forest Health • FH 4 - Insect and Disease Management LMP, Part 3, Vegetation management Standards • S1, S2, S5, S6 (p. 3, 5) • Table 3.1, p 3. More comprehensive strategies were in "Appendix M - National Forests of Southern California Weed Management Strategy" The vegetation communities and risks to those communities were summarized in 'Habitat Status Reports' with some discussion on factors that influence these communities and management considerations. This document can be found at https://www.fs.usda.gov/nfs/11558/www/nepa/101660_FSPLT3_4524611.pdf. **Alpine and subalpine** –This vegetation community has lodgepole pine, limber pine, and white fir with understory shrubs of chaparral plants. These 'islands in the sky' are geographically isolated, so that there is scientific value of endemic plants along with a high likelihood of responsiveness to climate change. Habitat status report notes that active restoration efforts will be needed if the habitats are degraded. **Bigcone Douglas Fir –** Stands of this species are found within many other vegetation communities, including lower montane forest, chaparral, and montane conifer forest. The major threat to these communities are fire return intervals, fire intensities due to higher fuel loads, and invasive plants which affect the fire regimes within the spatial areas. Evaluation occurs after each fire greater than 300 acres of the woodland stands and potential survivorship. Reforestation is planned for natural conifer	Main protections are included in the existing LMP. Monument plan biological resources section desirable condition and goals.	The LMP specifically analyzed for vegetation communities (total of 15), not singling out each species (FEIS volume 1 pp 83-108). The vegetation in the ANF are influenced heavily by human, interaction with fire and past management activities. Alteration of vegetation community is described in general ways: fire regime/ fire condition class, and invasive species. Also see additional information below this table. **Fire regime/fire condition class** In the current 2005 LMP, the fire regime and condition class were described (part 1). Specific monitoring questions are included in the LMP monitoring reporting requirement. Several outcome evaluation questions are included for goal 1.2: restoration of forest health. Questions such as: has the national forest been successful at maintaining long fire-free intervals in habitats where fire is naturally uncommon? For a complete list of question, see the 2016 version of appendix c of the LMP. **Invasive species** Invasive non-native species are animal and plant species with extraordinary capacity for multiplication and spread at the expense of native species. The invasive species are in many cases difficult to eradicate. The protection of native species would be more efficient when preventative measures are implemented to mitigate the spread of invasive species. The current LMP has a goal to reverse the trend of increasing loss of natural resources values due to invasive species. Several strategy and tactics are used invasive species prevention and control. The Forest keeps a running list of invasive animal and plant species B1-1, B1-2., and targets actions for eradication of the high priority weed and invasive faunal species. **Protection of habitats** The current LMP built in protection to the habitat of the biological resources (terrestrial wildlife, aquatic

	woodland and plantations which will not regenerate on their own. In some cases, no reforestation is planned if natural survivorship and regeneration will occur. **Oak woodland, savanna, and grassland –** Along with oaks, there is a description of black walnut stands mixed with other woodlands in this section of the habitat status reports. The value of these woodlands are noted for biological richness of species, i.e., keystone species. Conservation concern is in the regeneration of oak woodlands. Management concerns for these woodlands are noted as nonnative annual grasses which compete with oak seedlings for moisture needs for growth, along with increased predation upon acorns by high populations of native predators. Another relevant factor is the increasing concern of foothill, private development adjacent to the National Forests. Monitoring of factors affecting oak-dominated ecosystems include tree mortality aerial surveys, processing of remote sensing of annual grasses of 50%+, and examining the departure from the natural range of variation for fire return intervals. Fuels reduction projects, reforestation, and restoration projects are then proposed within the limitations of budget and capacity. **Riparian Habitats with white alder, sycamores, and willows.** As noted in the above table protections plus Appendices 1 & 2. **Sensitive species, and rare species.** As noted in Appendices 1 & 2.		wildlife and botanical species). The vegetation and aquatic features are the foundation of habitat health for the diverse populations of plants and animals that live on the Forest. Activities to protect biological resources by habitat improvement comes in various forms, such as fuels reduction, invasive species removal, habitat restoration, and watershed improvement. Fuels reduction strategy, tactics and standards are articulated in part 2 and part 3 of the LMP. Fuels reduction in forested stands includes thinning, mastication, and prescribe burning for the purpose of preventing large wildland fire and preservation of habitat of native species. Fuels reduction in chaparral vegetation community or maintenance of fuelbreaks are providing better access for wildland fire suppression activities. When wildland fire are suppressed quickly, habitat for native species are protected from an uncontrolled burn and vegetation type conversion is avoided. Invasive species removal strategy, tactics and standards are included throughout the LMP. Invasive species removal directly benefit the protection of the native species. Appendix M in Part 3 of the LMP articulates the need to collaborate with partners on weed eradication management activities. Habitat restoration activities includes but not limited to vegetation restoration, reforestation, afforestation, post-fire rehabilitation, and forest health improvement by removing sources of invasive species. Strategy, tactics and standards are included in part 2 and part 3 of the LMP.

Protection of Vegetation Types

This section further explains existing protections for vegetation types from the 2005 LMP.

Plant species protections: In the Reading Room of the 2005 LMP, 1999 pp summarized the plant species described the conservation ranking, range, known distribution within the four Southern California Forests, and management considerations. In addition, the ANF-specific rare plants and vegetation types were catalogued. There are over 70 species that are given evaluation and protection during project analyses because they are on the Regional Forester's Sensitive Species list, revised in 2014. For each project, design criteria are incorporated in order to minimize the risk that the project effects will lead to Federal listing as threatened or endangered.

Vegetation/Ecosystem Evaluation and protections: For the 2005 LMP, the following vegetation types were evaluated: alpine and subalpine habitats, chaparral, coastal sage scrub, desert montane, desert scrub, lower montane forest, montane conifer forest, montane meadows, oak woodland, oak-savanna, oak-grassland, and riparian habitats. For each of these veg types, management considerations were listed in the FEIS.

S6 and Appendix M of Part 3 are written to minimize invasive weed introduction into ANF lands. In addition, there are other directives given which also directed protections from invasive weed introductions, e.g. Invasive Species EO 13112, FSM 2900 (Invasive Species Management), and National Strategic Framework for Invasive Species Management.

Maintaining riparian habitat and vegetation is a priority within the 2005 LMP with many standards, strategies, and desired conditions within the Places on the ANF. Effects to groundwater and surface water must be considered with tunnels, wells, and spring developments (S45 -S49 in LMP, Pt 3, pp 10-11).

Although most US FWS species are wildlife, the ANF has Federally listed plant species also which have protections specified by S29, S30, S31, S32, and S34 (LMP Pt 3, p8). In addition, Special Interest Areas designated for habitat or vegetation, cultural uses are also managed for those protections. Managing dispersed recreation is a method to protect sensitive plant resources. S35 discourages camping in meadows, and importantly, S35 also notes that motorized vehicle use must stay on designated routes. Coastal sage scrub habitat is protected by S39 (LMP Pt 3, p. 8).

Special Status Species

Table 6. U.S. Fish and Wildlife Service threatened, endangered, and candidate species on the ANF

Common Name	Scientific Name	Status (Fed, CNPS)	Critical Habitat on ANF
Plants:			
Braunton's Milkvetch	*Astragalus brauntonii*	FE, 1B.1	No
Slender-horned Spineflower	*Dodecahema leptoceras*	FE, 1B.1	No
Nevin's Barberry	*Berberis nevinii*	FE, 1B.1	No
Thread-leaved Brodiaea	*Brodiaea filifolia*	FT, 1B.1	Yes (2-08-2011) (SDEF, 13 Ac)
San Fernando Valley Spineflower	*Chorizanthe parryi var. Fernandina*	FC/FSS/1B.1	No
Birds:			
California Condor	*Gymnogyps californianus*	FE	No
Least Bell's Vireo	*Vireo bellii pusillus*	FE	No
Southwestern Willow Flycatcher	*Empidonax traillii extimus*	FE	Yes (1-03-2013)
Coastal California Gnatcatcher	*Polioptila californica californica*	FT	Yes (12-19-2007)
Western Yellow-billed Cuckoo	*Coccyzus americanus occidentalis*	FT	No
Fish:			
Unarmored Threespine Stickleback	*Gasterosteus aculeatus williamsoni*	FE	No

Common Name	Scientific Name	Status (Fed, CNPS)	Critical Habitat on ANF
Santa Ana Sucker	*Catostomus santaanae*	FT	Yes (12-14-2010)
Amphibians:			
Arroyo Toad	*Anaxyrus (= Bufo) californicus*	FE	Yes (2-09-2011)
California Red-Legged Frog	*Rana draytonii*	FT	Yes (3-17-2010)
Mountain Yellow-Legged Frog	*Rana muscosa*	FE	Yes (9-14-2006)
Reptiles:			
Desert Tortoise	*Gopherus agassizii*	FT	No

Table 7. Regional Foresters Sensitive Species list (plants) for the ANF

Common Name	Scientific Name	CNPS Status[1]
Abrams' flowery puncturebract	*Acanthoscyphus parishii* var. *abramsii*	1B.2
San Gabriel manzanita	*Arctostaphylos glandulosa* ssp. *gabrielensis*	1B.2
Interior manzanita	*Arctostaphylos parryana* ssp. *tumescens*	4.3
Crested Milk-vetch	*Astragalus bicristatus*	4.3
San Antonio Milk-vetch	*Astragalus lentiginosus* var. *antonius*	1B.3
Scalloped Moonwort	*Botrychium crenulatum*	2B.2
Club-haired mariposa Lily	*Calochortus clavatus* var. *clavatus*	4.3
Slender mariposa Lily	*Calochortus clavatus* var. *gracilis*	1B.2
Late-flowered mariposa Lily	*Calochortus fimbriatus*	1B.3
Palmer's Mariposa Lily	*Calochortus palmeri* var. *palmeri*	1B.2
Alkali Mariposa Lily	*Calochortus striatus*	1B.2
Pygmy Poppy	*Canbya candida*	4.2
Mt. Gleason's paintbrush	*Castilleja gleasonii*	1B.2
Mojave paintbrush	*Castilleja plagiotoma*	4.3
Parry's spineflower	*Chorizanthe parryi* var. *parryi*	1B.1
California saw-grass	*Cladium californica*	2B.2
Peirson's Spring Beauty	*Claytonia lanceolata* var. *peirsonii*	3.1
Mojave tarplant	*Deinandra mohavensis*	1B.3
Ewan's cinquefoil	*Drymocallis cuneifolia* var. *ewanii*	1B.3
San Gabriel River Dudleya	*Dudleya cymosa* ssp. *crebrifolia*	1B.2
San Gabriel Mountains Dudleya	*Dudleya densiflora*	1B.1
Many-stemmed Dudleya	*Dudleya multicaulis*	1B.2
Forest Camp Sandwort	*Eremogone macradenia* var. *arcuifolia*	No ranking
Southern Alpine Buckwheat	*Eriogonum kennedyi* var. *alpigenum*	1B.3
Johnston's Buckwheat	*Eriogonum microthecum* var. *johnstonii*	1B.3
San Gabriel Bedstraw	*Galium grande*	1B.2
Abram's alumroot	*Heuchera abramsii*	4.3
Urn-flowered alumroot	*Heuchera caespitosa*	4.3
Mesa horkelia	*Horkelia cuneata* var. *puberula*	1B.1
San Gabriel Mountains sunflower	*Hulsea vestita* ssp. *gabrielensis*	4.3
Pygmy hulsea	*Hulsea vestita* ssp. *pygmaea*	1B.3
California satintail	*Imperata brevifolia*	2.B1
Fragrant pitcher sage	*Lepechinia fragrans*	4.2
Ross' pitcher sage	*Lepechinia rossii*	1B.2
Short-sepaled lewisia	*Lewisia brachycalyx*	2B.2
Lemon Lily	*Lilium parryi*	1B.2
San Gabriel Linanthus	*Linanthus concinnus*	1B.2
Peirson's lupine	*Lupinus peirsonii*	1B.3
Jokerst's Monardella	*Monardella australis jokerstii*	1B.1

[1] CNPS Status verified 8-08-2013, http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi

Common Name	Scientific Name	CNPS Status[1]
Hall's Monardella	*Monardella macrantha* ssp. *hallii*	1B.3
Rock Monardella	*Monardella saxicola*	4.2
Baja Navarretia	*Navarretia peninsularis*	1B.2
Robbins' nemacladus	*Nemacladus secundifloris robbinsii*	1B.2
Short-joint Beavertail	*Opuntia basilaris* var. *brachyclada*	1B.2
Woolly mountain-parsley	*Oreonana vestita*	1B.3
Rock Creek Broomrape	*Orobanche valida ssp. valida*	1B.2
Rock-loving oxytrope	*Oxytropis oreophila oreophila*	2B.3
San Bernardino grass-of-Parnassus	*Parnassia cirrata* var. *cirrata*	1B.3
Southern skullcap	*Scutellaria bolanderi* ssp. *austromontana*	1B.2
Parish's checkerbloom	*Sidalcea hickmanii* ssp. *parishii*	1B.2
Salt Spring checkerbloom	*Sidalcea neomexicana*	2B.2
Chickweed starry puncturebract	*Sidotheca caryophylloides*	4.3
Southern jewelflower	*Streptanthus campestris*	1B.3
Mason's neststraw	*Stylocline masonii*	1B.1
San Bernardino aster	*Symphyotrichum defoliatum*	1B.2
Sonoran maiden fern	*Thelypteris puberula* var. *sonorensis*	2B.2
Rigid fringepod	*Thysanocarpus rigidus*	1B.2

Table 8. Regional Forester's Sensitive Species list (wildlife) for the ANF

Common Name	Scientific Name
Birds:	
Northern Goshawk	*Accipiter gentilis*
Bald Eagle	*Haliaeetus leucocephalus*
California Spotted Owl	*Strix occidentalis occidentalis*
Gray Vireo	*Vireo vicinior*
Mammals:	
Pallid Bat	*Antrozous pallidus*
Townsend's Big-Eared Bat	*Corynorhinus townsendii*
Fringed Myotis	*Myotis thysanodes*
Nelson's (San Gabriel Mountains) Bighorn Sheep	*Ovis canadensis nelsoni*
Tehachapi Pocket Mouse	*Perognathus alticolus inexpectatus*
Amphibians:	
San Gabriel Mountains Slender Salamander	*Batrachoseps gabrieli*
Yellow-Blotched Salamander	*Ensatina eschscholtzii croceater*
Reptiles:	
Western Pond Turtle	*Actinemys marmorata*
California Legless Lizard	*Anniella pulchra*
San Bernardino Ringneck Snake	*Diadophis punctatus modestus*
San Bernardino Mountain Kingsnake	*Lampropeltis zonata parvirubra*
Coastal Rosy Boa	*Lichanura orcutti*
Two-Striped Garter Snake	*Thamnophis hammondii*
Fish:	
Arroyo Chub	*Gila orcutti*
Santa Ana speckled dace	*Rhinichthys osculus ssp. 8*
Terrestrial Invertebrates:	
San Gabriel Mountains Elfin **	*Callophrys mossii hidakupa*
San Gabriel Mountains Blue Butterfly	*Plebejus saepiolus aureolus*
San Emigdio Blue Butterfly	*Plebulina emigdionis*

Appendix C. Map of Protections within the Monument

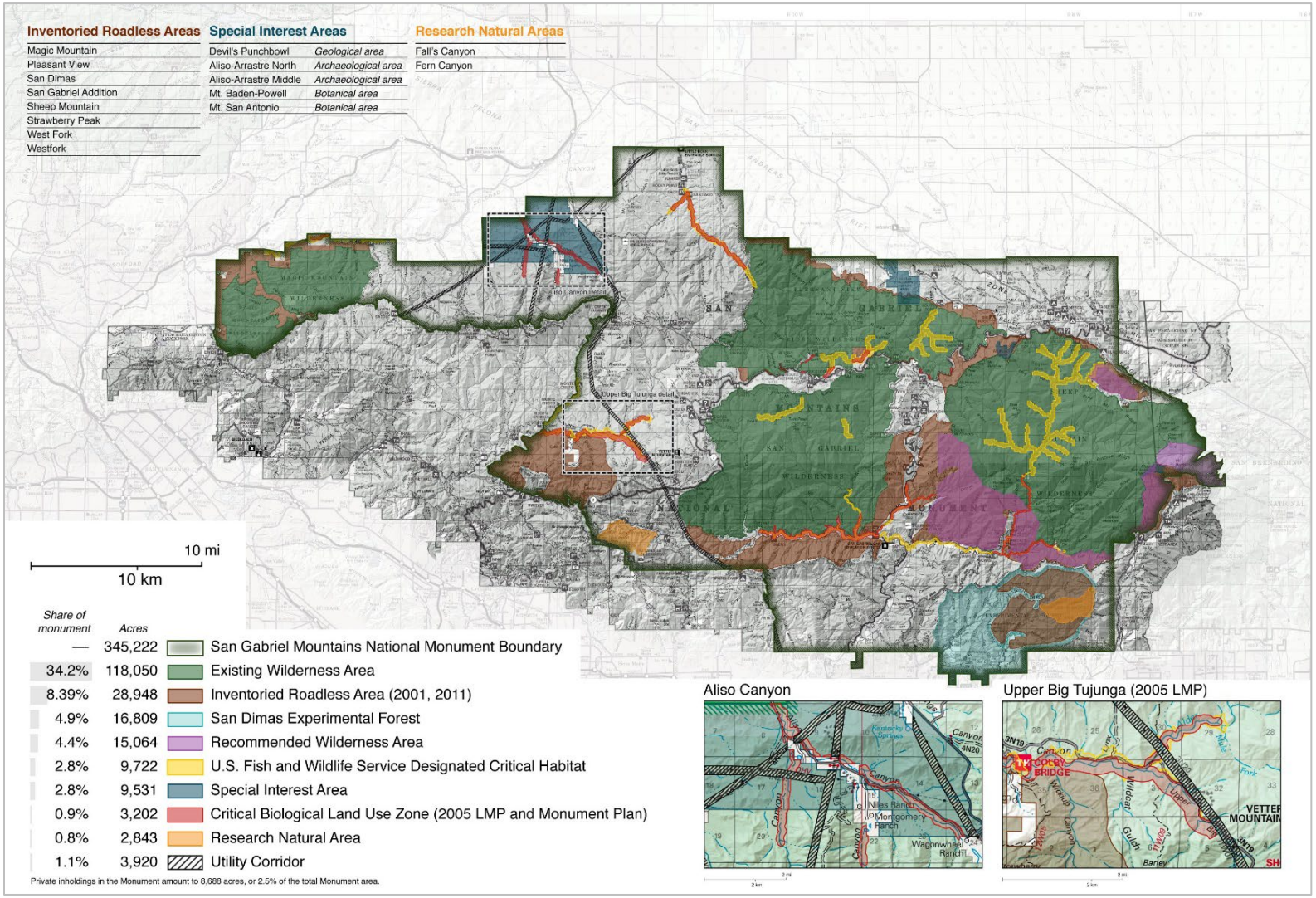


Figure 8. San Gabriel Mountains National Monument Protected Areas