



United States Department  
of Agriculture

**Forest Service**

Pacific Southwest Region

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September 2005



# Land Management Plan

## Part 1 Southern California National Forests Vision

**Angeles National Forest**

**Cleveland National Forest**

**Los Padres National Forest**

**San Bernardino National Forest**



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Cleveland National Forest  
Los Padres National Forest  
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.



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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.

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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/angel es/projects/lmp>

<http://www.fs.fed.us/r5/cl evel and/projects/lmp>

<http://www.fs.fed.us/r5/l ospadres/projects/lmp>

<http://www.fs.fed.us/r5/sanbernardi no/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.

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

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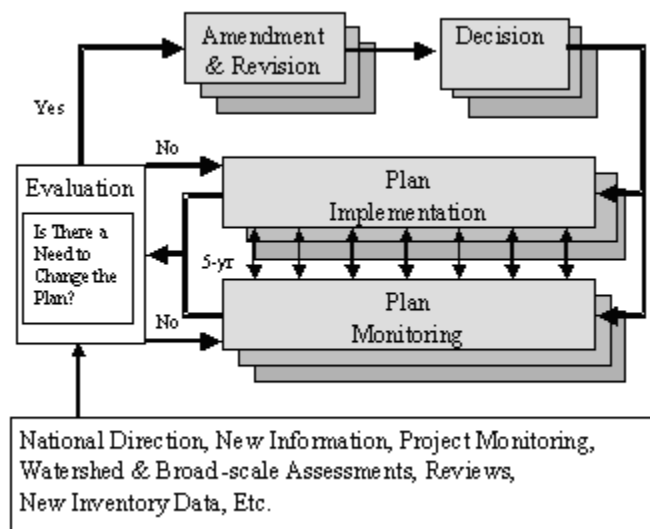


This concept would support the argument that forest plans by themselves are not action-forcing or ground disturbing with significant effects on the human environment and would not require an Environmental Impact Statement (EIS). That discussion is moot since these revisions are being done to comply with 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.



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A spectacular forest vista (San Bernardino NF photo).

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### 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.

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Conservation education for youngsters on the Los Padres NF.

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### 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.



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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.

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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).

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

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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.




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

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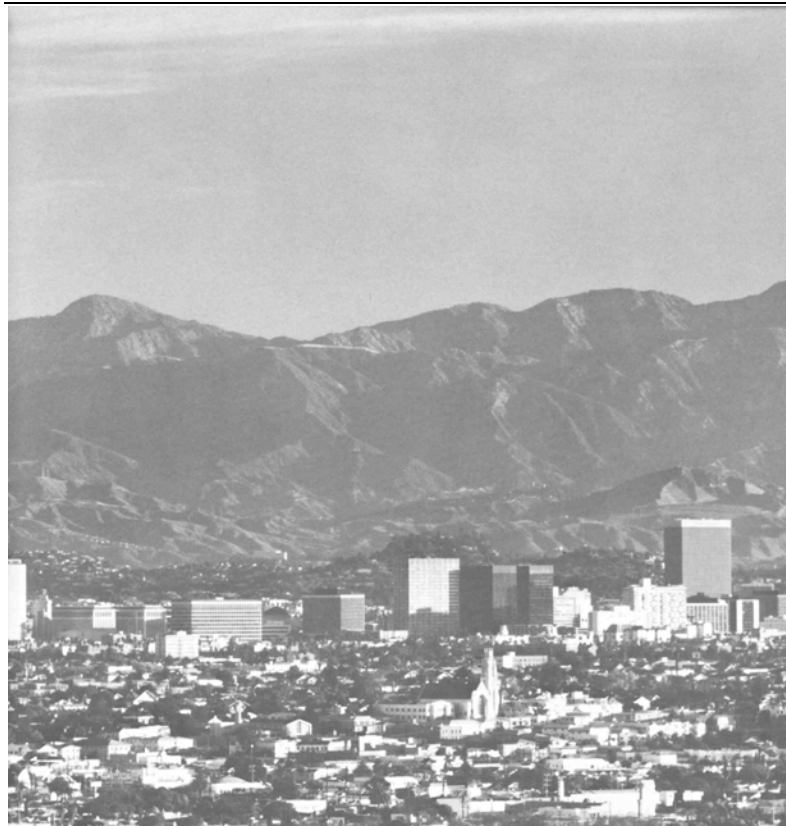
- infrastructure for community support. There are numerous facilities already located on the national forests including utility corridors, communication sites, dams, diversions, and highways. The role of the national forests and how they are used to safely accommodate additional facilities and to remove 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.

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Urban interface on the Angeles National Forest.

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- 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.

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

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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.

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

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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.



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

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Actions needed to address the Four Threats include:

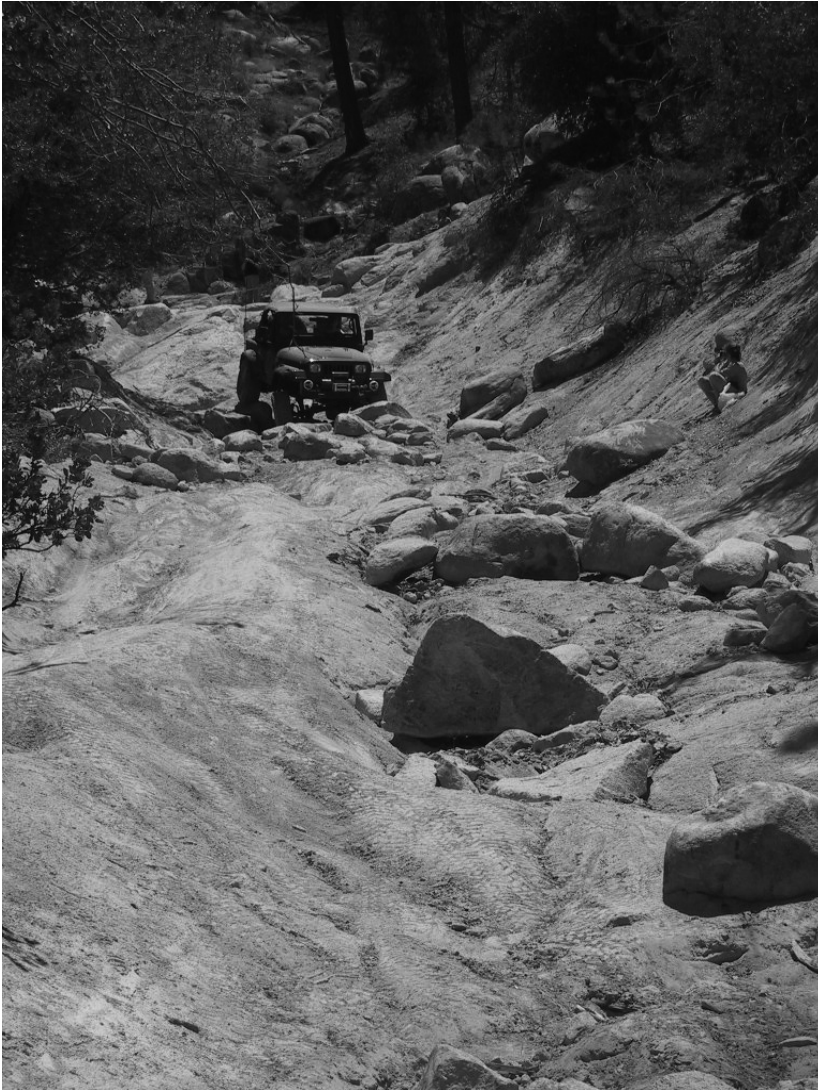
***Fire and fuels***—Restore healthy, disturbance-resilient ecosystems on lands that are at risk of catastrophic fire, improving the condition and function of critically important watersheds, and sustaining critical wildlife habitats nationwide.

***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.



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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.

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### 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.

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.)

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Pile burning near mountain community,  
San Bernardino NF.

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### 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




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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.

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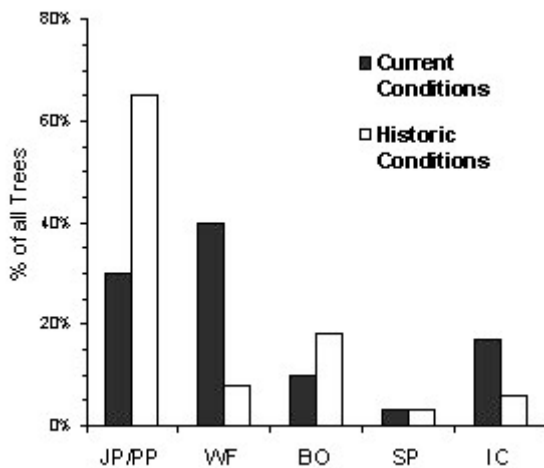
large-scale, stand replacing wildland fires. A prime example is the recent multi-year drought that triggered widespread bark beetle infestations, which have killed drought-weakened trees over thousands of acres of montane conifer forests, especially in the Palomar, San Bernardino, and San Jacinto Mountains.

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.

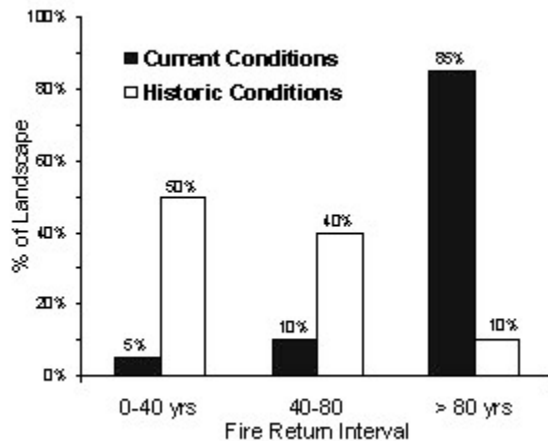


Note the high representation of shade-intolerant Jeffrey and ponderosa pines in the past vs. the present, and the high percentage of the shade-tolerant white fir in present-day forests compared to historic abundances. Species are: JP, Jeffrey pine; PP, ponderosa pine; WF, white fir; BO, black oak; SP,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

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

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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



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

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).

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.

**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.



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

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 affinis*) 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.



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Forest workers removing Spanish broom, San Bernardino NF.

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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.

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

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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.



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

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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.



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Burnt Rancheria  
Campground, Cleveland NF

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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 untrammelled. 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.

**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.)




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

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### 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.)



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Energy infrastructure. Oil wells on the Los Padres NF.

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**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

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

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renewable energy resource developments while continuing to sustain the land's productivity for other uses and its capability to support biodiversity goals.

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




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Sespe River watershed, Los Padres NF

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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.

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).

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#### Livestock grazing on the Los Padres NF.

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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 indicators of progress toward achieving desired conditions for biological resources.




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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.

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



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Urban interface near the San Bernardino NF.

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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.