



# Environmental Consequences

Photos (clockwise): 1. Puente-Chino Hills. NPS Photo. 2. Mount Baldy. Photo © Tim McCaig. 3. Fish Canyon in Azusa. Photo © S. Greg Panosian.





# Chapter 7: Environmental Consequences

## Introduction

Before taking an action, the National Environmental Policy Act (NEPA) requires federal agencies identify a range of alternatives for that action and to analyze the potential environmental impacts of that action, including any potential adverse environmental effects that cannot be avoided if the proposed action is implemented. This chapter describes the potential environmental impacts of implementing each of the alternatives (i.e., the no action alternative and the three action alternatives) on the socioeconomic environment, land use, visitor experience and recreational resources, water resources, biological resources, and cultural and historic resources.

The first part of the chapter discusses the methodology used to identify impacts and includes definitions of terms. The impact topics are then analyzed with reference to each of the three alternatives. The discussion of each impact topic includes a description of the positive (beneficial) and negative (adverse) effects of the alternatives, a discussion of cumulative effects, if any, and a conclusion. The conclusion includes a discussion of whether, and to what extent, the alternatives would impair study area resources and values.

## Methods and Assumptions

Consequences are determined by comparing likely future conditions under each alternative with the existing baseline conditions as described in the no action alternative. The analysis includes consideration of the context, intensity, and duration of direct and indirect effects of the alternatives. The NPS based this analysis and its conclusions on a review of existing literature, information provided by experts within the NPS, as well as outside organizations, analysis of case studies of existing programs in other locations, and the professional judgment of the study team members.

Ordinarily in a NEPA document, the environmental consequences for a given topic are presented in the context of its affected environment. The affected environment conveys the current condition of the resource and represents a baseline against which the effects of the proposed action are compared. Much of the affected environment for each impact topic is discussed in Chapter 2, *Resource Description*, and will merely be referenced here

to avoid duplication. The affected environment sections included in this chapter provide supplementary information relevant to the impact analysis.

In a typical environmental document, proposed actions are activities whose physical impacts can be estimated, modeled or projected. In this study, proposed actions are more in the nature of policy alterations and plans having no immediate physical impact on the land or its resources. Without specific information regarding the type and location of new facilities, or prescriptive measures to be applied, the NPS has no ability to project specific impacts of those activities either individually or cumulatively. Similarly, as alternatives call for the formation of partnerships and agreements whose terms are yet to be spelled out, it would be speculative to assess the environmental outcomes, except to describe the objectives and benefits the agencies wish to achieve in working with other entities. These are largely described in the alternatives themselves.

Given the broad nature of the study, the impact analysis must also be broad, by necessity, and avoid speculation as to site-specific types of impacts. The outcome of the study will be a recommendation to Congress. If Congress takes action, then new environmental analysis would be undertaken prior to specific implementation actions. This new analysis would propose specific actions, and alternatives to them, whose site or area specific impacts would be assessed prior to implementation of the plan.

## Analysis Assumptions

Given the level of analysis as described here, it is meaningful to discuss impacts in relative terms. That is, the general impacts of each alternative are found in the differences between the alternatives and the existing condition (no action). The key elements of this analysis address the following often related factors:

1. new and coordinated management
2. new land designations
3. the amount of newly designated lands
4. additional funding for management
5. the effects of new educational opportunities
6. the effect of ongoing partnerships between federal agencies and local stakeholders
7. new land use designation to recognize significant resources
8. the amount and type of recreation opportunities that are accessible to the public

9. the effects of visitors on local infrastructure, social services, resources and the quality of visitor experience

Factors 1 through 6 are generally assumed to be positive influences and approaches to meeting the legislative challenge to improve recreation access, protect resources, and enhance the quality of life regionally and locally. These features are included in the action alternatives to change the existing condition for the better. Factors 7 and 8 have both beneficial and adverse effects. Beneficial when the outcomes meet identified needs of the study area and adverse when they result in resource degradation as a function of factor 9.

The action alternatives seek primarily to enhance the quality of life for local residents through increased access to outdoor recreation and protection of their significant natural and cultural resources. The alternatives attempt to improve the amount of, and access to, healthful recreation activities. As recreation use grows, however, there is a concomitant amount of stress placed upon natural resources. There is also a tension between the availability and accessibility of recreation opportunities and the quality of the experience provided in a public land setting. As use increases, particularly in previously unused or lightly used areas, the impacts of crowding, sound, visual intrusions, and the like tend to erode the quality of the experience for some users. Similarly, as recreation is emphasized, use expands and increases the potential for impacts on natural resources. What may be expected as a benefit to recreationists is balanced by the potential for adverse impacts on natural resources and their qualities. The resultant impacts may be mitigated by educating recreation users, partnering with user groups, providing appropriate facilities, continually monitoring and assessing impacts, distributing use, and employing regulatory and interpretive staff, among other strategies.

The key assumptions that grow from this logic, and are applied to the analysis of alternatives, are these:

- The beneficial impacts associated with factors 1, 2, 3, 7 and 8, above, may be indexed to the amount of newly designated and protected lands in each alternative. That is, the relative benefit increases proportionally to the amount of newly protected lands.
- Additional funding is applied to new and appropriate recreation and visitor facilities, ongoing facility maintenance, sufficient management and administrative staff, and monitoring of resource conditions over time.

Increased amounts of funding are associated with relatively increased beneficial impacts.

- Partnerships between federal agencies with jurisdiction and state and local stakeholders result in appropriate actions on the ground to the benefit of both visitors and resources. Greater encouragement of such partnerships yields relatively greater benefits in the areas of recreation opportunity, resource quality, and employment.
- Visitors and local communities will become more knowledgeable, appreciative, and understanding of resource values through enhanced education and interpretation afforded in each alternative. Greater efforts in this regard are functions of funding, partnerships, and management agency staffing.
- New designations could increase non-local visitor use. While benefitting the local economy through the influx of new dollars, this could adversely impact local infrastructure and support services.
- Adverse impacts on recreation visitor experience and resource quality could result as a function of increased use and inappropriate user behaviors. Increased use, when concentrated, may overburden local resources and damage those that are sensitive, such as critical wildlife habitats, wetlands or perennial water courses. Such impacts may be mitigated by other factors in the analysis including restoration, education, and more staffing for on-site visitor management.

With the preceding in mind, NPS notes that potential environmental effects for this study are meaningful if placed in the context of public concerns articulated thus far in the process. Analysis methods are mostly subjective. Impacts are deduced from management actions and proposed policy changes as described in any given alternative. NPS policy also requires potential impacts to be compared to criteria that are more applicable to site-specific types of impact, rather than broad, non-specific statements of consequences. Nonetheless, these criteria are set out below and used to the extent possible.

Regarding the implementation of any alternative being considered, compliance with federal and state natural and cultural resource laws and regulations, as well as local zoning and permitting regulations and processes would be required. While the intent of each alternative is to improve or enhance resource quality, in accordance with the purpose and need for action, it is intended that any need for

mitigation for social or economic impacts be applied at implementation.

## Impact Criteria

The following definitions, standards, and guidelines will be used in describing consequences:

- **Context:** Impacts are considered at their local, regional, or national context as appropriate.
- **Intensity:** For the purposes of this analysis, intensity or severity of the impact is defined as:
  - **Negligible** - Impact to the resource or socioeconomic environment is at the lower level of detection; no discernible effect
  - **Minor** - Impact is slight, but detectable; impacts present, but localized, and not expected to have an overall effect.
  - **Moderate** - Impact is readily apparent; clearly detectable and could have appreciable effect on the resource or socioeconomic environment
  - **Major** - Impact is severely adverse or exceptionally beneficial; would have a substantial, highly noticeable influence on the resource or socioeconomic environment
- **Duration:**
  - **Temporary** – Impact is temporary or transitional, associated with a specific action or with a predictable endpoint.
  - **Near term** – Impact will begin within the next 1-10 years, and will continue in the long-term or have permanent effects
  - **Long-term** – Impact will not likely begin until after the next 1-10 years, but will likely have permanent effects on the resource or socioeconomic environment.
- **Incidence:** (Note: in a NEPA analysis it is not necessary to distinguish between direct and indirect impacts)
  - **Direct effects** - Impact is caused by the action and occurs at same time and in the same place as the action.
  - **Indirect effects**- Impact is caused by the action, occurs later in time and at some distance from the action, but must be reasonably foreseeable. Indirect effects may include changes in ecological processes that result in a change to the environment.
- **Timing:** It is impossible to predict when any specific actions within either of the alternatives

would be implemented. Hence the specific timing of impacts is not addressed in this environmental assessment. The timing of impacts would need to be addressed during future planning processes. For the purposes of this EA, the time frame in which impacts are analyzed is roughly the next three decades, except where different time frames are specified.

## Cumulative Impacts

The Council of Environmental Quality (CEQ) regulations require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7).

Cumulative impacts are determined by combining the impacts of the alternatives actions with other past, present, and reasonably foreseeable future actions. For each resource topic, an area of concern is identified. For example, cumulative impacts on wildlife may occur within an area identified as a crucial wildlife corridor, and all activities that might affect the viability of the corridor would be examined collectively along with the additional activities that are being proposed. Or, cumulative impacts on water quality would be examined by identifying a watershed and reviewing all the actions that might be expected to impact water quality along with aspects of the proposed action that could have the same effect. Generally, in accordance with CEQ guidelines for cumulative effects analysis, only natural resources (physical and biological) or ecological processes are subject to this kind of analysis.

In this case, no specific actions are being proposed in a way that their site-specific effects can be determined. This being the case, it is difficult to assess the overall impact by adding them to a body of other actions. It is more appropriate (and possible) to gauge cumulative impacts in future environmental analysis, looking at specific plans and actions to be taken.

Conceptually, it can be said that the purpose of this study is to evaluate the means whereby resource conditions can be enhanced to the benefit of the land and the communities they serve. If the overall current condition is considered as a baseline for cumulative effects, each of the action alternatives

seeks to maintain or improve the condition. Hence, the overall level of cumulative impact would either be arrested or it would decline as compared to the no action alternative.

## Potential Environmental Impact Topics

Potential impact topics are reviewed here as to their applicability in this analysis. The rationale for this review stems from the essential purpose of an environmental assessment, to determine whether there would be significant impacts requiring the preparation of an environmental impact statement to proceed with the action. The dismissal of topics, with rationale, demonstrates there is no concern at least in those areas.

**Table 12: Potential Environmental Impact Topics**

<b>Mandatory Topic</b>	<b>Discussion and Rationale</b>	<b>Disposition</b>
Possible conflicts between the proposal and land use plans, policies or controls (local, state or Indian tribe) for the area	Any potential conflict of this nature will be broadly noted and explored under the socioeconomic impact topic.	See Effects on Land Use
Energy requirements and conservation potential	The proposed action does not affect the production, conservation or demand for energy-related resources.	This topic is dismissed from analysis
Natural or depletable resource requirements and conservation potential	There are a variety of natural resources within the project area that require conservation pursuant to USFS or NPS law and policy. Of these, several were of specific concern to the public and other agencies during scoping. Water, wildlife and native plants are generally discussed.	See Effects on Biological and Water Resources
Intrinsic natural resource values that would be conserved for future generations in a national park	A multiplicity of outstanding natural resources exist within the study area, beyond water, wildlife and native plants. Among these are air quality, geology, lightscapes, soundscapes, non-sensitive wildlife species. Geology in the area is unique, contributing to the eligibility of the study area for special recognition. However, there is no potential for geology to be affected by this action. Regarding other potential resource topics, analysis of impacts would be speculative and premature until such time as specific proposed actions are made.	Resources other than the above are dismissed from analysis in this document. General impacts might be inferred from discussion of water, wildlife and plants.
Urban quality, historic and cultural resources, and design of the built environment	Quality of open spaces is a key adjunct to urban quality and quality of life issues. Urban qualities located within the study area are broadly evaluated in this chapter.	See Effects on Socioeconomics and Land Use
Socially or economically disadvantaged populations: environmental justice	The public and several stakeholder groups have raised concerns about inequities in access to parks and open space for socially and economically disadvantaged populations. This is primarily addressed in the socioeconomic impact topic.	See Effects on Socioeconomics and Land Use and Effects Recreation Use and Visitor Experience_

**Table 12: Potential Environmental Impact Topics**

<b>Mandatory Topic</b>	<b>Discussion and Rationale</b>	<b>Disposition</b>
Wetlands and Floodplains	The broader discussion of water resources is presented in this document. Wetland and floodplain protection and enhancement is an important component in preserving water quality and conserving water supply. Wetlands and floodplains also provide habitat to an abundance of wildlife including rare, threatened, and endangered species.	See Effects on Water Resources
Prime and unique agricultural lands	There are 16 small areas, constituting 548 acres, within the study area categorized as prime and unique farmlands. These areas are primarily in the Antelope Valley.	See Effects on Socioeconomics and Land Use
Endangered or threatened plants and animals and their habitats	The potential effects on these species are broadly discussed in this chapter.	See Effects on Biological Resources
Important scientific, archeological, and other cultural resources, including historic properties listed or eligible for the National Register of Historic Places	Potential impacts are broadly discussed in this chapter.	See Effects on Cultural Resources
Ecologically critical, specially designated areas, or unique resources	Potential impacts are discussed in this chapter. Any existing specially designated areas will remain unaffected by this proposed action.	See Effects on Biological Resources
Public health and safety	This topic is an underlying, fundamental need in action proposed for this study. However, it does not lend itself to separate analysis, at least at this level of study. Indirect effects on public health are described where appropriate under the impact topics, recreation use and visitor experience and water resources.	See Effects Recreation Use and Visitor Experience and Water Resources
Sacred sites	As noted, the level of analysis in this document is broad. Discussion of this topic is incorporated generally into cultural and historic resources, at the policy level.	See Effects on Cultural Resources
Indian Trust resources	There are no Indian Trust resources within or near the project area.	This topic is dismissed from further analysis



## Effects on Biological Resources

### Affected Environment

Consequences of the alternatives could potentially affect plant and animal species habitat, resulting in changes in their populations or overall well-being. Various features of the alternatives could also affect specific plant communities that are of rare and limited size and distribution. A complete listing and description of species and rare habitat is provided in Chapter 2, *Resource Description and Appendix B*. The section below describes current trends and threats related to biological resources.

#### SPECIES OF SPECIAL CONCERN

The Southern California region is recognized as one of the world's hotspots of biological diversity and is home to a total of 476 vertebrate animal species, approximately 38 percent of all the vertebrate species found in California. This region has also experienced tremendous population growth and related urban development that has significantly transformed the landscape since the 1940s. This intersection of biological resources and urbanization has made the South Coast the most threatened biologically diverse area in the continental U.S. (CDFG 2007).

Within the study area, there are threatened and endangered plant and animal species listed by state and federal agencies, 2 species listed as candidate for federally threatened or endangered listing status, and another 189 species considered rare or of special concern. A description of rare and listed species is included in Chapter 2, *Resource Description* and listed in Appendix B. Table 13 includes a summary of threats and trends affecting federally- or state-listed species within the study area.

#### RARE OR UNUSUAL HABITAT

Many of the study area native habitat types are endangered or severely reduced from their former range. This includes riparian areas, wetlands, floodplains, coastal sage scrub, and California Walnut Woodlands. Bigcone Douglas-fir, relict juniper communities, and subalpine habitat are rare habitats of limited extent. Many of the rare, threatened, and endangered species within the study area depend on these habitats for their survival. Impacts are primarily from the threats listed above.

### TRENDS

Despite the region's rapid growth and subsequent loss of habitat, Southern California retains some large and valuable natural areas, including the national forests, which form an interconnected system of wildlands and important wildlife corridors through metropolitan areas (CDFG 2007).

With the expansion of the urban wildland interface, remaining natural lands become more vulnerable to the incursion of invasive plants and animals, air and water pollution, and altered fire regimes. Developed areas, roads, and utility corridors fragment landscapes and sever connections between habitat areas. The effects of climate change will also cause additional stressors on rare species and habitat. The section below further describes the most common threats affecting species and habitat within the study area.

**Urban Development.** Urban development is cited as one of the primary threats to almost every threatened and endangered species listed in Table 13. Southern California's wetlands and floodplains have been particularly affected by urbanization. California has lost 91% of its historical wetlands over the past century. Wetlands have been filled, dammed, diverted, channelized, and polluted, primarily as result of urban development.

Within the study area, urbanization has altered or removed much of the palustrine (94%) and riverine (75%) wetlands that historically existed. However, remnants and opportunities for restoration exist in places such as Whittier Narrows and the San Gabriel Mountain foothills. In some instances there are also historic signatures (existing moist/wet areas that could be restored to functioning wetlands) throughout the floodplain (Stein et.al 2008).

Urbanization also affects other rare habitat such as coastal sage scrub and walnut woodlands. Much of this habitat is located at lower elevations, at sites that are easily developed. The Puente-Chino Hills in particular are threatened by future development that could further fragment habitat in this wildlife corridor, affecting species like the federally threatened Coastal California gnatcatcher.

**Invasive Species.** Invasive species problems in the study area and throughout Southern California are tied to regional land use and management issues. A number of highly aggressive nonnative plant species invade grasslands and scrub communities, including yellow star thistle, artichoke thistle, medusahead, Pampas grass, fennel, pepper weed, black mustard, and castor bean. These species lower habitat quality for sensitive wildlife species such as the Quino



checkerspot butterfly and the Coastal California gnatcatcher. Some of these species dry out earlier in the summer than native species and contribute to increased wildfire frequencies.

Access roads and rights-of-way for infrastructure and power line maintenance, as well as recreational use of natural areas, can facilitate the spread of nonnative species. For example, in the Puente-Chino Hills, nest parasitism by brown-headed cowbirds threatens sensitive bird species such as the least Bell's vireo, southwestern willow flycatcher, and California gnatcatcher. Cowbirds thrive in many human-altered habitats, including suburban areas and agricultural and grazing lands, where they are attracted to livestock droppings and feed. With the expansion of these land uses over the last century, cowbirds have thrived, greatly expanding both their range and population across California.

In aquatic systems, the most problematic nonnative plant species is arundo, or giant reed. Arundo is widespread along major coastal river basins. Tamarisk is less widespread but also invades regional riparian habitats. Tamarisk is distributed in coastal and desert drainages (Stephenson and Calcarone 1999). Both species choke waterways, increase flash flood risks, crowd out native plants, and provide inferior habitat for riparian species. Tamarisk also consumes prodigious amounts of water, reducing available surface water, and arundo provides limited shade, resulting in higher water temperatures and lower dissolved oxygen levels.

Among nonnative wildlife species, bullfrogs, African clawed frogs, nonnative crayfish, mosquito fish (which are sometimes introduced for mosquito control), and introduced sport and bait fish (including sunfish, bass, and bluegill) all pose predatory or competitive threats to native fish and amphibians. Many of these species are well adapted to the deep water conditions in ponded areas above dams, and dam releases can introduce them to downstream habitats. Most voracious and widespread are bullfrogs, which are documented predators of California red-legged frogs, arroyo toads, Western pond turtles, and two-striped garter snakes (Stephenson and Calcarone 1999). A broad diet and an extended breeding season give bullfrogs a competitive advantage over native amphibians. Bullfrogs are also favored by human-modified habitats. They can tolerate elevated water temperatures and, unlike native amphibians, make use of standing pools resulting from urban runoff to complete their two year life cycle (CDFG 2007).

**Altered Fire Regimes.** Wildfire is a natural and important ecological process in the Southern

California region, particularly in the native chaparral communities that dominate the study area. Widespread forest management practices, as well as increases in human-caused wildfires, have altered fire regimes, in some cases causing dramatic changes in regional habitats.

The expansion of residential development into rural and natural areas has increased the incidences of human caused fire, altering natural fire regimes. Natural fire regimes, or fire intervals, have been changed dramatically by human land management efforts and urbanization. More frequent fire regimes can result in the conversion of chaparral and other native habitat to nonnative grasslands. Efforts to establish fire regimes that approximate historical fire patterns and frequencies, while also minimizing loss of property and life, are important to maintain and restore wildlife habitat (Halsey 2008).

The causes and ecological consequences of wildfires differ among the region's ecological communities. In coastal sage scrub, chaparral, and grassland systems, lightning-induced fires are fairly infrequent. The natural fire regime for chaparral-type habitat, which would have primarily occurred from lightening strikes, would have been 30-100 years. With adequate rainfall, chaparral habitat can recover from fire within 15-20 years. Human-caused fires, however, have resulted in unnaturally high fire frequencies, especially along roads and near the urban-wildland interface, with some locations experiencing three fires within a period of 15 to 20 years (CDFG 2007).

Increased fire frequencies favor the Mediterranean grasses that were introduced to the region with the arrival of European settlers and livestock. Once established, the nonnative grasses grow in a dense thatch pattern that chokes out native vegetation and lowers habitat quality for wildlife. The dense grass also provides ample fuel for the cycle of frequent burning. Spread of nonnative species during fire recovery is one of the major threats to full recovery of habitat on the forest. Fire management issues in forest communities are different than those in scrub, chaparral, and grasslands. Lightning-induced wildfires are a more regular part of the ecology of the area's coniferous forests and oak woodlands and do not result in the same threat of conversion to nonnative grasslands (CDFG 2007).

Climate is also a primary determinant of fire patterns. Climate change will add a significant variable to efforts to understand historical fire regimes and to find management measures that can maintain the region's habitats. Additionally,

the expansion of residential communities into fire-dependent forest ecosystems creates a conflict between maintaining ecological integrity and protecting property (Halsey 2008 and CDFG 2007).

**Recreational Pressures.** With nearly 20 million people living within driving distance of Southern California's national forests and other public lands, recreational access can impact biological resources. Recreational off-road vehicle use can have adverse effects on natural communities and sensitive species. On public lands, off-road vehicle trails often open relatively undisturbed areas to increased use. The vehicles can disturb or run over wildlife, crush and uproot plants, spread seeds of invasive plants, and disturb soils, contributing to erosion and the sedimentation of aquatic habitats. Off-road vehicle use also increases the risk of human-caused fires (CDFG 2007).

Concentrated recreational use of streams and riparian areas also impacts biological resources. Not only off-road vehicles, but hikers, picnickers, and equestrians, in large numbers, can damage these systems, reducing vegetative cover and disturbing sensitive species. Some recreational users build rock dams on streams to create ponds for swimming. The San Gabriel River, for example, has been altered by extensive ponded areas, as well as other effects of heavy recreational use, such as the deposition of trash and human waste. Particularly vulnerable riparian species include the two-striped garter snake, mountain yellow-legged frog, and arroyo toad (CDFG 2007).

**Climate Change.** Based on some climate projection models, it is predicted that annual temperature increases will nearly double before 2100. By the end of the century, heat waves and extreme heat in Los Angeles may also increase in frequency. Throughout California, ecological diversity on the whole would change little. However, certain rare habitats, particularly in warm and dry areas, would be more affected. Coastal sage scrub could be reduced up to 20% and alpine/subalpine forests could be reduced by over 50% (Hayhoe, et.al. 2004).

## Impact Analysis – Wildlife Resources

### PUBLIC CONCERNS

During review of the preliminary alternatives, the public expressed concern about the potential for increased visitation and subsequent impacts on wildlife. Specifically, some felt that increased visitation would disrupt wildlife and affect the abundance of game species. This general concern would apply not only to wildlife in general, but from the U.S. Forest Service and NPS standpoints, it could apply to threatened or endangered species, sensitive species listed by both agencies, and other species that do not fall into the category of hunted populations.

It is the intent of all alternatives being considered to improve the relationship between recreation users and the habitats that are and can be affected. With more staff and funding available for visitor management and education, impacts to wildlife from visitation would be expected to decrease. It is expected that better visitor management through improved interpretative facilities, education, and administrative staffing would ameliorate impacts from the entire visitor population.

Management of biological resources, wildlife habitat and populations, is a joint concern. Both federal and state wildlife officials have this interest in mind, and it is part of each mission. In brief, NPS and the U.S. Forest Service manage habitat while state officials manage populations. This has always been accomplished in partnership and through joint agency planning. Nothing in any of the alternatives would contravene existing partnerships or plans, and if anything, the quality of partnerships, plan implementation, cooperation, and habitat management should be enhanced. Agency and academic research, and the means whereby it is accomplished, would be permitted as in the past. In all of the alternatives there would be more interagency collaboration and coordination to leverage funding for restoration.

Some commenters suggested that greater protection is needed for the region's threatened ecological communities, native habitats, wildlife corridors and habitat linkages. They suggest that the potential beneficial effects of proposed designations be analyzed.

Each of the action alternatives emphasizes increased natural resource protection, particularly in regards to preserving habitat and wildlife corridors. The amount of available funding would be dependent on congressional appropriations. In alternatives C and D, funding would also be

**Table 13: Threats to Federal and State Listed Threatened and Endangered Plant and Animal Species**

Species	Status	Threats
<b>Plants</b>		
<i>Astragalus brauntonii</i> Braunton's milk-vetch (endemic)	FE	Altered fire regimes, urban development, fragmentation of habitat, reduced capability for sustained ecologic processes, fragmented ownership populations, and extinction from natural occurring events due to small population sizes and low individual numbers.
<i>Orcuttia californica</i> California Orcutt grass	FE, CE	Urban development, grazing, disking, agriculture, off road, border patrol use, and roads.
<i>Berberis nevinii</i> Nevin's barberry (endemic)	FE, CE	Construction, urban development, off-road vehicles, horseback riding, invasive nonnative species, vandalism, and altered fire regimes.
<i>Dodecahema leptoceras</i> slender-horned spineflower (endemic)	FE, CE	Loss of habitat from urbanization and agriculture, nonnative annuals, sand and gravel mining, grazing, flood control, hydrological alteration, proposed reservoir construction, off road vehicles, and herbivory.
<i>Brodiaea filifolia</i> thread-leaved brodiaea (endemic)	FT, CE	Loss and degradation of habitat, invasive species which alter the vegetation composition and structure of its habitat, recreational use of the land, mowing, disking and sewage dumping.
<b>Animals</b>		
<i>Catostomus santaanae</i> Santa Ana sucker	FT	Dams, water diversion, pollution (including gold mining wastes), channelization, gravel extraction, urbanization of watershed, heavy recreational use of habitat, introduced species, accidental high flows from Cogswell Reservoir; increased gold mining (suction dredging), drought.
<i>Gasterosteus aculeatus williamsoni</i> Unarmored threespine stickleback	FE CE	Stream channelization, urbanization (cause of extirpation in Los Angeles Basin), agricultural development, groundwater pumping, introduction of predators and competitors, off-road vehicle use, and chemical spills.
<i>Oncorhynchus mykiss</i> Southern steelhead	FE	Water development, including impassable dams and dewatering, and urbanization, genetic introgression from past steelhead plants and from planting of rainbow trout, increased fire intensity and duration.
<i>Bufo californicus</i> Arroyo toad	FE	Habitat degradation from urbanization, dam construction and ill-timed water releases, agriculture, road construction, off-road vehicle use, overgrazing, and mining activities, drought and wildfires, recreational use of habitat, predation by introduced fishes and bullfrogs, and small population sizes.
<i>Rana aurora draytonii</i> California red-legged frog	FT	Wetland destruction and degradation/fragmentation, urbanization, residential development, reservoir construction, stream channelization, livestock grazing of riparian vegetation, off-road vehicle activity, drought, overharvesting, and nonnative fishes, conversion of habitat to more permanent ponds, global warming, UV-B radiation, airborne contaminants (pesticide drift), and disease.



Species	Status	Threats
<i>Rana muscosa</i> mountain yellow-legged frog	FT (proposed endangered)	Introduced trout, recreational suction dredging for gold, human activities at campgrounds and day-use areas, and usual problems associated with small population size and population isolation (e.g., fire, flood, or drought could extirpate small populations, with little chance of reestablishment due to poor connectivity of populations).
<i>Gopherus agassizii</i> Desert tortoise	FT, CT	Declines have been due to habitat loss and degradation, through livestock grazing, invasion of nonnative annuals, energy and mineral development, off-road vehicle use, road traffic collisions with tortoises, trail construction, disease, vandalism, and collecting.
<i>Buteo swainsoni</i> Swainson's hawk	CT	Threats include expansion of cropland unsuitable for foraging (see GHABCOM) and residential and commercial development in former agricultural and grassland areas.
<i>Coccyzus americanus occidentalis</i> Western yellow-billed cuckoo	FC, CE	The primary threat is the loss and degradation of habitat, particularly riparian forests
<i>Empidonax traillii extimus</i> Southwestern willow flycatcher	FE	Decline is due primarily to destruction and degradation of cottonwood-willow and structurally similar riparian habitats. The causes of habitat loss and change are water impoundment, water diversion and groundwater pumping, channelization and bank stabilization, riparian vegetation control, livestock grazing, off-road vehicle and other recreational uses, increased fires, urban and agricultural development, and hydrological changes resulting from these and other land uses.
<i>Falco peregrinus</i> American peregrine falcon	CE	Primarily environmental toxins, habitat loss, human disturbance, and illegal take.
<i>Gymnogyps californianus</i> California condor	FE, CE	A large proportion of reintroduced condors and condor nestling have died from anthropogenic causes (e.g., collisions with power lines, ingestion of toxins). As of 2008, mortality from lead poisoning continued to be a significant threat in California and Arizona.
<i>Haliaeetus leucocephalus</i> Bald eagle	FT, CE	Major threats include habitat loss, disturbance by humans, biocide contamination, decreasing food supply, and illegal shooting.
<i>Poliophtila californica californica</i> Coastal California gnatcatcher	FT, None	Urban development has destroyed much coastal sage scrub habitat. Intense housing development and construction or expansion of transportation corridors in Orange, Riverside, and San Diego counties, California, threaten remaining large tracts of habitat. Additional threats include parasitism by the brown-headed cowbirds and wildfires which periodically eliminate (temporarily) significant areas of gnatcatcher habitat.
<i>Vireo bellii pusillus</i> Least Bell's vireo	FE, CE	Loss of breeding habitat (especially thick low riparian growth) attributable to agricultural, urban, and commercial developments, flood control and river channelization projects, livestock grazing, and other activities; reduced reproductive success due to nest parasitism by cowbirds has been a major factor in the decline.
<i>Spermophilus mohavensis</i> Mohave ground squirrel	CT	Primarily conversion of habitat to urban, suburban, agricultural, military, and other human uses, including livestock grazing, off-highway vehicle use, energy production, and transportation infrastructure.
Source: NatureServe. 2010. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <a href="http://www.natureserve.org/explorer">http://www.natureserve.org/explorer</a> (Accessed: November 24, 2010).		

dependent on partnership efforts to leverage support.

### **NO ACTION ALTERNATIVE**

The Southern California region is recognized as one of the world's hotspots of biological diversity. This region has also experienced tremendous population growth and related urban development that has significantly transformed the landscape since the 1940s. This intersection of biological resources and urbanization has made the South Coast the most-threatened biologically diverse area in the continental U.S. (CDFG 2007). With the expansion of the urban wildland interface, remaining natural lands has become more vulnerable to the incursion of invasive plants and animals, air and water pollution, and altered fire regimes. Developed areas, roads, and utility corridors have fragmented landscapes and severed connections between habitat areas. The effects of climate change will also cause additional stressors on rare species and habitat.

Many of the study area native habitat types are endangered or severely reduced from their former range. This includes riparian areas, wetlands, floodplains, coastal sage scrub, and California walnut woodlands. Bigcone Douglas-fir, relict juniper communities, and subalpine habitat are rare habitats of limited extent. Many of the rare, threatened, and endangered species within the study area depend on these habitats for their survival.

Threats to wildlife resources such as habitat loss and fragmentation as a result of development, air pollution, water pollution, and altered fire regimes would continue having minor to moderate adverse effects on the viability of many species and communities, including those that are threatened or endangered. Current efforts by local, state, and federal agencies to manage wildlife, restore habitat, and protect wildlife corridors would continue to have beneficial effects, although regional coordination would be limited.

### **ALTERNATIVE A**

In alternative A, the new proposed designation would bring more resources to the U.S. Forest Service for resource protection measures such as habitat restoration, conservation, research, and planning for wildlife corridors. Designation would prevent proposed new or future uses on the national forest that could impact significant resources and watershed values. This would have an overall beneficial effect in protecting natural resources within the proposed NRA. This alternative

improves the ability of national forest staff to work across boundaries to establish and protect wildlife corridors.

### **ALTERNATIVE C**

This alternative alleviates current conditions, as expressed in the no action alternative, to a greater degree. In alternative C, the new proposed designation would bring more resources to both the U.S. Forest Service and the San Gabriel River corridor for resource protection. Additionally, partnering entities would work to leverage greater funding for conservation (open space protection) along the San Gabriel River. Designation would prevent proposed new or future uses on portions of the ANF included in the NRA that could impact significant resources and watershed values. However, this would be less beneficial in terms of resource protection than in alternatives A or D because the NRA would be smaller. The potential for increased water and land-based recreation opportunities, and increased use, could result in a minor adverse effect on wildlife and wildlife habitat. This effect would likely be mitigated as previously described through more public education, monitoring, enhanced visitor management, and with careful siting and design of future facilities.

### **ALTERNATIVE D**

This alternative alleviates current conditions, as expressed in the no action alternative, to a greater degree than either of the other action alternatives. Alternative D would contribute greater beneficial effects as the NRA would be larger, including more significant resources with more opportunities to work regionally to protect and connect wildlife corridors. This alternative provides the greatest potential for improving wildlife corridors.

Partnerships would work together to protect wildlife corridors that connect the San Gabriel Mountains and the Puente Hills. The NPS would provide regional technical assistance in terms of planning and leveraged funding to protect wildlife corridors. The potential for increased water and land-based recreation opportunities, where use to date has been light or nonexistent, could result in a minor adverse effect on wildlife and wildlife habitat. This effect would likely be mitigated as previously described through more public education, monitoring, enhanced visitor management, and with careful siting and design of future facilities.

## **CUMULATIVE IMPACTS**

Threats to wildlife such as spread of nonnative species, loss of habitat due to development, altered fire regimes, air and water pollution, and climate change will continue to adversely impact wildlife and wildlife habitat as described in the affected environment. The study area alternatives seek to ameliorate these conditions to a greater or lesser degree. Therefore, the cumulative effect of growth and land use trends plus the beneficial effects of the action alternatives would likely result in a net beneficial condition in regard to wildlife resources within the study area as a whole. The identification and protection of critical wildlife habitats and corridors would serve as a highly positive function in the analysis. However, a new emphasis on river-based recreation and trail use over a broad area, where use is expected to increase, has the potential to add to existing impacts within the study area.

## **Conclusions**

The emphasis on new recreational opportunities in each of the action alternatives holds the potential for additional impacts on wildlife and ecological communities. The area that is generally protected differs among the alternatives, but actual abatement of impacts from recreation would be heavily dependent upon monitoring, education, and applied management. With appropriate applied management, a new stress on education, and enhanced monitoring, adverse impacts on wildlife and wildlife habitat would be minor. An important consideration is that user/wildlife impacts would be mitigated by increased emphasis on recreation planning and partnerships with wildlife agencies to resolve such conflicts. Each of the three action alternatives emphasize restoration and increased partnerships to protect and enhance wildlife corridors and native habitat. Alternative D has the greatest potential for improving wildlife corridors and habitat given that the NRA partnership would be authorized to engage in regional conservation planning efforts.

## **Impact Analysis - Native Plants**

### **PUBLIC CONCERNS**

Public comments indicate a need for improved awareness, understanding and protection of native plants throughout the study area. This study recognizes that there are nationally significant native plant habitats in the San Gabriel Mountains and Puente Hills. If no action is taken as a result of this study, specific restoration and improvement projects with a native plant focus would continue to improve awareness. However, these efforts would be limited to individual projects, and there would be no comprehensive, coordinated effort to protect and improve native plants awareness. A corollary concern is that of nonnative species and the need to control or eradicate them from the study area. With an emphasis on protection of native habitat and interpretation/education, each of the action alternatives would likely have a positive influence on the control of nonnative species.

### **NO ACTION ALTERNATIVE**

The affected environment section on page 188 discusses current conditions relating to problems associated with invasive species. Invasive species problems in the study area and throughout Southern California are tied to regional land use and management issues. A number of highly aggressive nonnative plant species invade grasslands and scrub communities, including yellow star thistle, artichoke thistle, medusahead, Pampas grass, fennel, pepper weed, black mustard, and castor bean. These species lower habitat quality for sensitive wildlife species. Roads and infrastructure, along with recreational use, can facilitate the spread of nonnative species. Decreased wildlife habitat connectivity is a major threat to the spread of nonnative species. For example, the spread of nonnative species following the Station Fire is one of the greatest threats to the recovery of native ecosystems within the burn area.

In aquatic systems, several nonnative plant species (e.g. tamarisk and arundo) are widespread along major coastal river basins. These species choke waterways, increase flash flood risks, crowd out native plants, and provide inferior habitat for riparian species. Tamarisk also consumes prodigious amounts of water, reducing available surface water, and arundo provides limited shade, resulting in higher water temperatures and lower dissolved oxygen levels.

Existing threats to native plant habitat would continue to have minor to moderate adverse impacts on native plant communities.



## **ALTERNATIVE A**

Alternative A would seek greater recognition, interpretation, and funding to protect native habitat in the San Gabriel Mountains unit of the Angeles National Forest. Within the San Gabriel Mountains there would be beneficial effects on native plant protection and increased public awareness through enhanced interpretation and educational efforts due to the new designation. Along with a new emphasis and recognition of significant habitat quality in this alternative, there would be opportunities for more staff and funding dedicated to the control of nonnative species. The U.S. Forest Service would have additional authorities to work with other land management agencies to protect important wildlife connections to the forest. Studies have shown that larger native habitat corridors have more species diversity and are more resilient to threats. Connected habitats are also expected to be more resilient to the adverse effects of climate change. Working at the larger landscape scale will provide long-term beneficial effects on native plant communities.

## **ALTERNATIVE C**

Alternative C would provide beneficial effects on native plant protection and education along the San Gabriel River and in the highly visited upper watershed. This would occur through coordinated interpretive efforts, new resources for conservation, and new agency partnerships focused on conservation of native plant communities. Information centers located throughout the study area could also provide an opportunity for greater awareness with regard to native plant protection throughout the San Gabriel River watershed. As in alternative A, a component of native plant protection would be a focus on the control of nonnative species. Coordination of conservation efforts and increased public awareness of habitat issues would lead to long-term beneficial effects on native plant communities.

## **ALTERNATIVE D**

Alternative D would have the greatest benefit for native plant habitat as it recognizes and promotes protection of habitat in both the San Gabriel Mountains and the Puente Hills and allows the NPS to provide technical assistance on a voluntary basis to protection of habitat in surrounding communities. It is similar to alternative C, but with a larger NRA and greater technical assistance to surrounding communities, there would be an enhanced regional emphasis on protection and awareness of native plants and the control or eradication of nonnative species. The emphasis on

restoration and protection of habitat and wildlife corridors in alternative D would provide the greatest beneficial effect on native plant communities.

## **CUMULATIVE IMPACTS**

The purpose of this study is to evaluate the means whereby resource conditions can be enhanced to the benefit of the land and the communities it serves. Continuing development, a wide variety of human uses and decreased wildlife habitat connectivity have contributed over time to the current level of invasive species impacts on native plant communities. If the current condition is considered as a baseline for cumulative effects, however, each of the action alternatives seeks to maintain or improve the condition. Hence, the overall level of cumulative impact would either be arrested or would decline as compared to the no action alternative.

## **Conclusions**

Existing threats to native plant communities would continue to have cumulative adverse impacts. However, each of the action alternatives would provide improvements towards the protection of native plant communities, through increased restoration, interpretation and education, and increased inter-agency coordination for habitat protection efforts. The new emphasis on river-based recreation, and potentially on other recreation uses throughout the expanded NRA, may lead to additional infestations of invasive species in areas that are impacted by new visitation. This would likely be a negligible to minor adverse effect, locally. Expanded partnerships and technical assistance for the preservation of wildlife corridors in alternative D would provide the greatest beneficial effect on native plant communities.

## Effects on Cultural Resources

### Affected Environment

#### OVERVIEW

The study area contains many significant cultural resources including archeological sites, historic structures, and cultural landscape features. The percentage of the study area that has been surveyed for cultural resources is unknown. Within the Angeles National Forest (both north and south units), 4.8% has been surveyed for cultural resources, including historical, archeological, ethnographic, and tribal. Within the acreage surveyed, 962 sites have been identified (365 are prehistoric, 575 are historic, and 22 are multi-component). Eight sites are listed on the National Register of Historic Places, 154 are eligible for listing, 95 have been determined to be ineligible for listing, and 705 have not yet been determined to be eligible or ineligible for listing. Surveys have been conducted in other parts of the study area, but the methodology for inventorying resources varies. The historical background of the study area and the physical prehistoric and historic resources are discussed in Chapter 2, *Resource Description*.

Archeological sites and related artifacts consist of various forms of evidence of human activities that span at least the end of the Pleistocene through the early Holocene (13,000 to 8,500 B.P.). Archeological site types include large habitation Native American sites, domestic, trade, subsistence, sacred sites, circulation route sites, defense sites, and many others. Artifacts include pottery fragments, pictographs and petroglyphs, lithic scatters, and bedrock mortars. These sites may manifest themselves as a scatter of surface material or as subsurface or midden deposits. Sites often include surface and subsurface components. Archeological site distribution within the study area varies. For example, within the ANF, the Aliso-Arrastre Middle and North Special Interest Area includes many Native American archeological sites ranging from long-term occupation sites, seasonal encampments and special-use resource procurement, processing, and storage sites (USFS 2005). Other archeological sites within the study area have been disturbed throughout time by land use activities.

Historic buildings and structures within the study area include buildings, adobe ruins, and other historic landscape elements related to settlement, ranching, agriculture, mining, scientific study, recreation, and transportation. Within the ANF, historic resources include recreation camps, hotels, forest service administration facilities,

trails, the Mount Wilson Observatory, the San Dimas Experimental Forest, and the Mount Lowe Railway. The foothill communities, urban areas, and communities north of the forest include historic resources related to missions, ranchos, mining, agriculture, transportation, water supply and flood control, religion, and civic activities. Significant cultural resources are described in Chapter 3, *Resource Significance*.

#### NATIONAL SIGNIFICANT RESOURCES

The Upton Sinclair House in Monrovia is a national historic landmark. Portions of two national historic trails – the Juan Bautista de Anza National Historic Trail and the Old Spanish National Historic Trail – and a portion of the Route 66 Corridor traverse the study area. The San Dimas Experimental Forest contains Civilian Conservation Corps constructed facilities that are excellent examples of Forest Service architecture. A National Historic Landmark nomination for the Mount Wilson Observatory was prepared, but it has not gone through the full nomination process.

#### STATE AND LOCAL SIGNIFICANT RESOURCES

There are about 40 cultural resource sites listed on the National Register at the state or local level of significance. These sites include adobes, historic homes, civic and commercial properties, the Mount Lowe Railway district, and other cultural landscape features. The state, counties, and other local governments also maintain other systems for recording important cultural resources. A preliminary inventory of these sites and structures is listed in Chapter 2, *Resource Description*.

Ethnographic resources are defined by the National Park Service as any "...site, structure, object, landscape, or natural resource feature assigned traditional, legendary, religious, subsistence, or other significance of a group traditionally associated with it." The study area was and is the home of many Native Americans, including the Gabrielino-Tongva, and their communities continue to grow, change, and adapt. The region is one of the most racially and culturally diverse areas of the world. There is no ethnographic study for the entire study area.

**Native American Interests.** There are no federally recognized tribes associated with the Angeles National Forest. The Chumash, Tongva, Kitanemuk, Serrano, and Tataviam tribes had homelands associated with the Angeles National Forest area at the time of European contact. Non-federally recognized tribes within the forest's sphere of influence includes: the Fernandeño Tataviam,

Gabrielino-Tongva Tribal Council of San Gabriel, Gabrielino-Tongva Tribal Council of the Gabrielino Tongva Nation, Gabrielino Tongva Indians of California, Intertribal Council of Tongva, and the Tehachapi Indian Tribe.

## TRENDS

Within the study area, the level of protection of cultural resources varies. Because the Angeles National Forest portion of the study area has been protected over a century, many sites have been relatively undisturbed and may retain their integrity. Most research programs in the forest related to cultural resources have been funded under specific projects so that systematic and comprehensive investigations have not been carried out. Recent archeological work performed on the ANF consists of environmental and/or contract archeology.

Within the ANF, archeological and historical resources are threatened by erosion, fire, flood, vandalism, looting, and land use practices. Some cultural resources were destroyed or damaged during the 2009 Station Fire. Following the fire, additional areas within the forest were surveyed for cultural resources. Access to sites has remained closed for recovery of the lands and for safety purposes. The populated portion of the study area experienced a high degree of urban development in the last century. Cultural resources are threatened by continued development, including bulldozing, excavation, construction of buildings and other structures, as well as grading for roads and highways and expansion of transportation corridors and other infrastructure. Other threats throughout the study area include flooding, water erosion, off-road vehicle use, unauthorized collecting of artifacts, and industrial activities such as mining.

Many cultural resources have been listed on the National Register of Historic Places while other resources that have been documented as eligible for listing have not yet been listed. The ANF has numerous eligible historic and archeological sites that could be listed. Some flood control structures, such as the Morris Dam has been determined eligible for listing on the National Register of Historic Places. More than 50 archeological sites throughout the study area have been determined eligible for listing and 135 historical sites within the study area appear eligible for listing on the National Register, California Register, or other local listing as individual sites and contributors to a district.

Cultural landscapes within the study area continue to evolve. Many historic landscapes have been urbanized. The Soledad front country is rapidly converting from rural to urban due to the

development of housing tracts along the national forest boundary.

Native American organizations such as the Tongva continue to use lands within the study area for cultural, social, and ceremonial purposes. These organizations have also been protecting cultural and sacred sites and archeological resources. The Haramokngna (Place Where People Gather) American Indian Cultural Center, located at the Red Box Fire Station and Visitor Center, offers opportunities to learn about regional Native American history.

Cultural diversity has contributed important cultural and historical elements to the study area. Further studies would be needed to provide the appropriate context for the varied resources associated with the region.



## Impact Analysis – Cultural Resources

Better documentation, research, protection and interpretation of cultural resources were identified as core issues to address in this study. Therefore, each alternative suggests approaches to meet these needs.

### PUBLIC CONCERNS

Public comments indicate that there is a general concern regarding impacts on cultural, historic and ethnographic resources. A more specific concern was expressed in regard to the opportunities for Native Americans to engage in activities such as learning and practicing traditional plant gathering and use.

If no new federal land designations are enacted, cultural heritage programs provided by the ANF, including those involving traditional Native American activities would continue. The ANF would continue to lack resources to fully document cultural resources and develop protection plans. The integrity of cultural resources throughout the study area could be diminished as a result of uncoordinated and fragmented preservation efforts. There could be natural deterioration of some historic resources from lack of maintenance and preservation measures, and some sites could eventually be lost. There would continue to be a lack of coordinated research and interpretation programs for cultural resources within the study area. No dedicated federal funds would be available to document and interpret cultural resources in a comprehensive manner. Without action, public concerns about these resources would remain inadequately addressed.

### NO ACTION ALTERNATIVE

Within the study area, the level of protection of cultural resources varies. Because the ANF portion of the study area has been protected for over a century, many sites have been relatively undisturbed and may retain their integrity. As explained in the preceding sections, however, comprehensive investigations throughout the study area have not been carried out, resources continue to be threatened by natural processes, development, crime, and land use practices. Existing threats to cultural resources would continue to have minor to moderate adverse effects on cultural resources within the study area.

### ALTERNATIVE A

In alternative A, more resources would be available to the U.S. Forest Service for documentation and education and interpretation of cultural and historic

resources within the ANF. The national forest would have the authority and resources to form new partnerships for the protection of cultural resources. However, beyond the national forest portion of the study area, there would likely be a continued natural deterioration of some historic resources due to lack of maintenance and preservation measures and some sites could eventually be lost. As in the no action alternative, there would continue to be a lack coordinated research and interpretation programs for cultural resources outside of the ANF. No dedicated federal funds would be available to document and interpret cultural resources in a comprehensive manner.

Beyond the ANF, existing threats to cultural resources would continue to have minor to moderate adverse effects on cultural resources.

### ALTERNATIVE C

In alternative C, NPS financial and technical assistance for cultural resource protection would reinforce best management practices for protecting structures, landscapes, archeological resources, and ethnographic resources within the proposed NRA. Coordinated protection of cultural resources would be enhanced through NRA partnership agreements. Coordinated interpretation and education would have beneficial effects on the protection and understanding of cultural resources. An increase in coordinated land conservation efforts would likely enhance the protection of cultural and ethnographic resources on lands that are as yet undisturbed.

### ALTERNATIVE D

Alternative D would be fundamentally the same as alternative C, but it would expand the protective boundaries and cover more sites and cultural themes since the area includes the entire San Gabriel Mountains portion of the ANF and the Puente-Chino Hills. Alternative D would provide the most comprehensive and coordinated effort to protect cultural resources throughout the study area through:

- Comprehensive research and documentation of broader areas
- More comprehensive interpretation and education of broad cultural themes throughout the study area
- Expanded partnerships, coordination and consultation with stakeholder groups, including Native Americans

## CUMULATIVE IMPACTS

Loss of sites from development, lack of documentation, and coordinated resource protection would continue to have an adverse cumulative effect on cultural resources within the study area. The study area alternatives seek to ameliorate these conditions to a greater or lesser degree. Cumulative effects from increased visitation over time could result in some amount of deterioration of historic structures or disturbance to archeological sites. This could be mitigated by better surveying and siting of recreational facilities. Therefore, the cumulative effect of current impacts to cultural resources, plus the effects of the proposed alternatives, would likely result in a net beneficial condition in regard to cultural resource protection. However, this varies by alternative. Alternative D would provide the most comprehensive approach to management of cultural resources through the larger NRA designation and NPS technical assistance.

## Conclusions

Without action, the study area will continue to experience minor to moderate adverse impacts to cultural resources. Under alternative A, the ANF would be better positioned to document and protect its resources. Alternative C and D increase opportunities for documentation and protection through coordination of planning efforts, with varying degrees of geographical extent. With full implementation of the action alternatives, adverse impacts on cultural resources would likely be mitigated with some level of beneficial effect realized in each action alternative, from a modest amount in alternative A to a more pronounced benefit in alternative D.

## Effects on Recreation Use and Visitor Experience

### Affected Environment

A description of study area recreational resources is discussed in Chapter 2, *Resource Description*. Various features of the alternatives, depending on the degree to which they encourage expansion of access and development of recreational facilities, could affect the scale and range of outdoor recreational opportunities offered to the public in the study area.

Future growth and development may also affect the quality of the recreational experience. Likewise, changes may occur in environmental amenities such as scenic quality and natural quiet which contribute to the enjoyment of recreational experiences. Visitor experiences may also be affected by the extent to which opportunities are provided for educational or interpretive enrichment. The following section describes existing trends related to recreational use and visitor experience.

### TRENDS

The population of California is expected to grow from 30 million to 50 million people by 2020. Approximately 85% of the additional 20 million people are expected to live within two hours of the coast. Insufficient funding has led to difficulties in meeting new public access demands from growth pressures (NOAA 1999).

### National Forest Visitation Trends

With over three million annual visitors, the ANF has one of the highest levels of national forest visitation nationally. Approximately 75% of visitors to the ANF live within 25-50 miles of the forest boundary. Only 4% of visitors live over 500 miles from the ANF, indicating use is primarily local in nature. Recreational day use is the primary activity. The most commonly used facilities are trails, the scenic byway, the museum/visitor centers, and interpretive displays. Overnight use on the ANF is relatively low. Approximately 130,000 visitors stay at developed overnight areas. Another 95,000 attend special events and organized camps. Approximately 34,000 visitors came to visit the wilderness areas in 2009.

### Visitation Trends for Special Area Designations

During public scoping and review of the preliminary alternatives, public concerns were raised regarding the effects of increased visitation resulting from the new congressional designations proposed

in the study. Some commenters suggested that federal recognition would bring positive attention to the area and would help the local economy and tourism. Others worried that designation could bring about increased traffic, noise, waste, and congestion associated with increased tourism. This was particularly a concern in the Antelope Valley area, where residents worried that increased recreation would require commercial development which could negatively impact rural communities.

The impact of special designations on visitation at existing parks or recreation areas was studied to provide context for the impact analysis. Recent research conducted on eight changes in national park unit designation between 1979 and 2000 shows that conversions have “substantial and persistent” effects on annual visitation. These changes appear to be more important to national visitors than to local or regional users. This particular research is limited to conversions of units already in the national park system, and its results are applicable in times of economic well-being. For the units studied, an immediate annual visitation increase of about 6 percent was experienced and then maintained over time (Weiler 2005).

### Adequacy of Park and Recreation Areas in the Study Area

The process of prescribing a standard for the level of service for park and recreation facilities has long been problematic. The U.S. Department of Housing and Urban Development (HUD) recommends 2.5 acres of parkland for every 1,000 residents, although many consider this ratio to be low. The National Recreation and Parks Association (NRPA) gave acreage recommendations in *Recreation, Park and Open Space Standards and Guidelines* (1983) and *Park, Recreation, Open Space and Greenway Guidelines* (1996). The NRPA acknowledged that local condition and community desires should be considered in adopting local standards and stated a standard of 6-10 acres for every 1000 residents.

As described in Chapter 2, *Resource Description*, current studies on the adequacy of recreational areas in the Los Angeles Region show approximately 9.1 of recreation acres per 1,000 residents (Trust for Public Land 2004). However, county averages can mask dramatic disparities in access to green space within the county (The City Project 2007). In 2004, the Los Angeles County Department of Parks and Recreation completed the Strategic Asset Management Plan for 2020. Based on the projected population growth, the county estimated

**Table 14: Visitation to Major Recreation Destinations within the Study Area**

Facility	Total
Frank G. Bonelli Regional Park	463,743
Santa Fe Dam Recreation Area	753,993
Whittier Narrows Recreation Area	1,727,841
Whittier Narrows Natural Area	44,520
Devils Punchbowl County Park	99,421
Pio Pico State Historic Park	7,500 (FY 2007/2008)
Angeles National Forest	3.5M (2010)
Sources: (Los Angeles County, Rupert, pers. comm, 2010; USFS 2009; Friends of Pio Pico State Historic Park, Schoff, pers. comm. 2011)	
Note: Annual visitation data was not available for the Puente Hills Landfill Native Habitat Preserve.	



that it would not meet its standard of four acres of parkland per 1,000 residents by 2020 for four of its five supervisorial districts. Only the rural north county area, which includes the Antelope Valley portion of the study area, would meet this goal (Los Angeles County 2008).

Quantity and density, however, are not the only measures. If park, open space, and recreation amenities are not accessible to all residents, their benefits cannot be fully realized. Factors such as proximity to open space, safe and accessible transportation and walking routes, the presence of obstacles such as freeways, railroads and other physical barriers also affect access. Open space is also not often equitably distributed. Areas that fall well below meeting the standards for parks and recreation facilities are described as being “park-poor.”

In many park and recreation assessments, a ¼ mile to ½ mile radius is used to measure access to local parks. These distances are used because they represent areas that can be accessed by a 5 to 10 minute walk. Three separate analysis of the adequacy and distribution of recreational areas in the Los Angeles Region have concluded that while some communities have ample parks and recreational areas, many are severely lacking. Those communities with adequate accessibility to parks and recreational areas tend to be more affluent with a majority of non-Hispanic whites.

Visiting regional areas such as the ANF and the Santa Monica Mountains National Recreation Area pose transportation challenges for many residents (Los Angeles County 2008). Recent studies have found that statewide, Los Angeles County is one of the most disadvantaged counties in terms of access to parks and open space for children and people of color (The City Project 2007, Trust for Public Land 2004). A study by the Trust for Public Lands found that with its high concentration of open space in areas far from its most densely populated communities, the Los Angeles area offers its children the worst access to parks among the cities evaluated nationally (see Table 16). A study on access to parks and park facilities conducted as part of the Green Visions Plan found that one third or less of parks in the San Gabriel Valley area appear to have transit (Sister, C., Wilson, J.P., and Wolch, J. 2008).

The communities with the least amount of access to parks and open space tend to have higher rates of childhood diseases related to obesity such as diabetes. According to the Centers for Disease Control, Americans living closer to parks

are more likely to exercise regularly, leading to weight loss, increased energy, and better overall health (Centers for Disease Control and Prevention 2001). The California Center for Public Health Advocacy analyzed the 2004 California Physical Fitness Test of 5<sup>th</sup>, 7<sup>th</sup>, and 9<sup>th</sup> graders. The analysis shows that among students in Los Angeles County, 31.3% are overweight. Overweight children face a greater risk of developing many health problems during childhood, including Type 2 diabetes, high blood pressure, asthma, orthopedic problems and gallstones, as well as low self-esteem, poor body image, and depression. Overweight children are more likely to be obese as adults, putting them at a much higher risk for heart disease, cancer, stroke, and diabetes later in life (California Center for Public Health and Advocacy 2006).

People of color are less likely to have adequate access to parks in the Los Angeles area. Studies by the Green Visions Plan for a 21<sup>st</sup> Century Southern California and the City Project both found that Whites currently have disproportionately greater access to parks and open space, compared to Latinos and African-Americans. These ethnic groups are 12-15 times more likely to have less park acreage per capita when compared to Whites (Sister, C., Wilson, J.P., and Wolch, J. 2008, The City Project 2007).

Los Angeles County trends for access to parks, as described previously, correlate with trends within the study area. Access to parks and open space is readily available to communities in the Antelope Valley, Soledad Basin, and wealthier communities in the San Gabriel Mountains foothills. The map “Park Acres Per 1,000 Residents,” on the following page, includes park and recreation acreages for study area cities and communities. The map conveys that foothill communities and communities in the northern portions of the study area have the largest amounts of parks and recreation space per 1,000 residents. Many of the more urban communities in the San Gabriel Valley have smaller park acreages per 1,000 residents and fall well below the Los Angeles County standard of 4 acres per 1,000 residents. Given the limited availability

**Table 15: Standards for Parks and Open Space**

Standard	Acres/1,000 Population
HUD	2.5
National Recreation and Parks Association Park Acreage/Population Standard	6.25-10.5
Los Angeles County	4

of land in these urban areas, integrating open space into redevelopment projects and planning for more biking, hiking and equestrian trails are recommended to incrementally increase open space.

## Interpretation and Education

Throughout the study area, interpretation and educational programs are found at recreation areas, nature centers, historical parks, and local museums. Common themes at these sites include native plants, geology, natural history, wildlife, and California history. Many of these sites have high quality collections, interpretive displays, programs, and events. However, coordinated interpretation of the significant themes described in Chapter 3, *Resource Significance* is lacking for the study area as a whole. Working in partnership with local agencies, NPS provides interpretation on the Juan Bautista de Anza National Historic Trail which traverses the study area. Interpretation and programs related to the Old Spanish Trail are not known to exist within the study area.

**Table 16: Children's park access in seven major cities**

City	Percentage of children within one-quarter mile of a park	Number of children without access to a park
Boston	97%	2,900
New York	91%	178,500
San Francisco	85%	16,700
Seattle	79%	18,600
San Diego	65%	102,300
Dallas	42%	182,800
City of Los Angeles	33%	657,700
Los Angeles County	36%	1,694,400
Source: Trust for Public Land 2004		

## Impact Analysis – Recreation Use and Visitor Experience

Various features of the alternatives, depending on the degree to which they encourage expansion of access and development of recreational facilities, could affect the scale and range of outdoor recreational opportunities offered to the public in the study area.

Future growth and development may affect the quality of the recreational experience. Changes may occur in environmental amenities such as scenic quality and natural quiet which contribute to the enjoyment of recreational experiences. Recreational experience may also be affected by the extent to which opportunities are enriched through educational or interpretive activities. There is tension between the availability and accessibility of recreation opportunities and the quality of the experience in a national park unit setting. As use increases, particularly in hitherto unused or lightly used areas, the impacts of crowding, sound, visual intrusions tend to erode the quality of the experience for some users. Similarly, as recreation is emphasized and use fluctuates, the potential for impacts on natural resources increases. What may be expected as a benefit to people who recreate is balanced by the potential for adverse impacts on natural resources and the qualities associated with them.

There is considerable overlap between this issue (recreation) and that of visitation, as addressed under socioeconomic impacts. The reader is encouraged to view these as companion topics, wherein they are addressed by similar features of the alternatives being considered, resulting in similar impacts.

### PUBLIC CONCERNS

Throughout the study process local residents and stakeholder groups have expressed a need for better recreational access and improved opportunities for park-poor urban communities. Many commenters also expressed concern about the lack of resources available to U.S. Forest Service for recreational resources and visitor management.

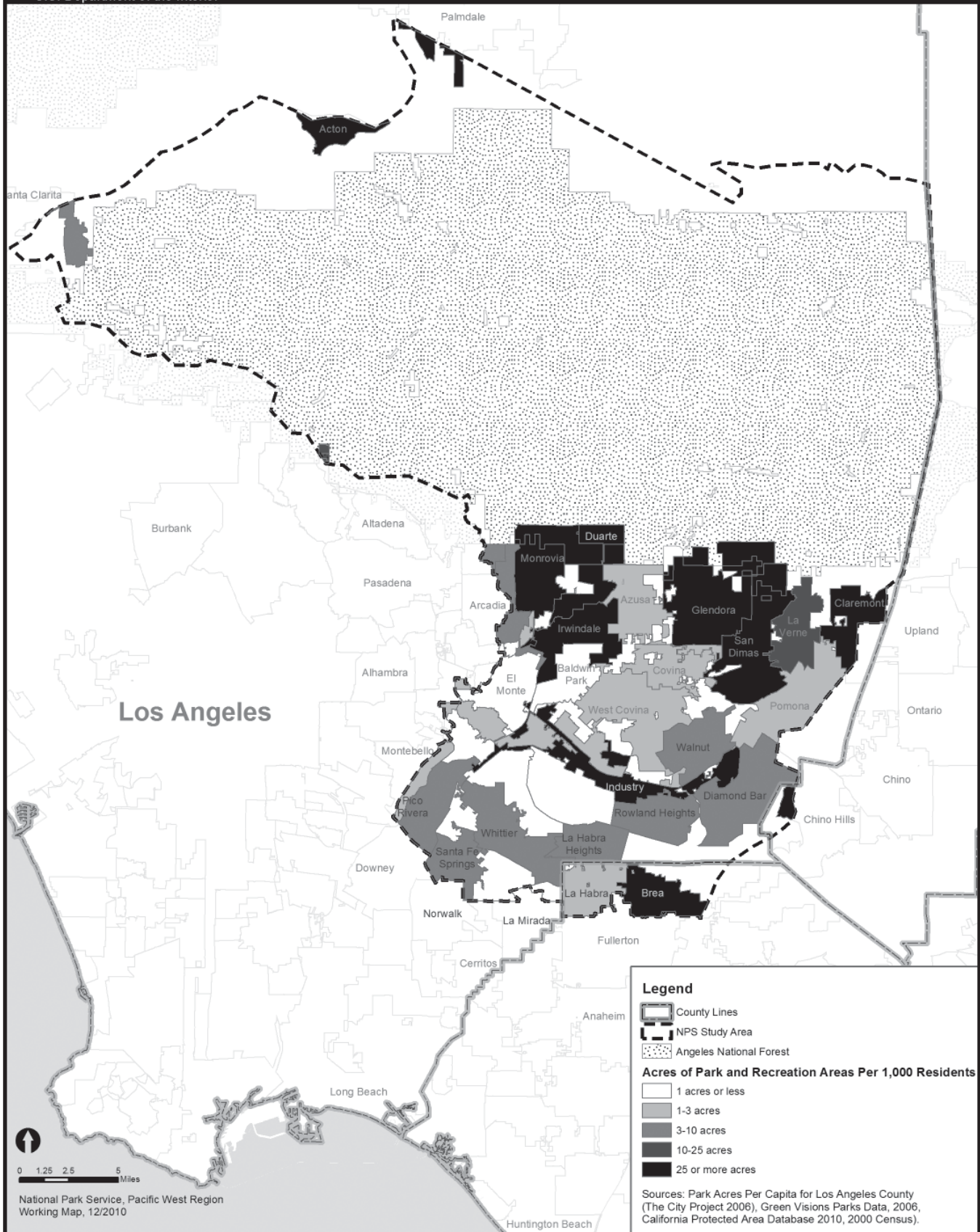
### NO ACTION ALTERNATIVE

If no action is taken as a result of this study, higher demands would be placed on existing recreation areas with increases in population growth. Current inequities in open space recreational opportunities would likely continue. New recreational opportunities and access would occur through existing agencies and local governments as funding

# Acres of Parks Per 1,000 Residents

## San Gabriel Watershed and Mountains Special Resource Study

National Park Service  
U.S. Department of the Interior



permits. Benefits would be incremental over time. Opportunities for recreational planning and open space connections on a regional level would likely not occur without additional funding or leadership from an existing agency. Lack of resources for recreation management would continue. Few on-site rangers would be available to manage visitor activities.

Regarding the capability of the U.S. Forest Service to fund and manage recreation, lack of resources would continue unless changes are enacted as a result of this study. As stated above, few on-site rangers would be available to manage visitor activities. There would be a continued lack of educational staff to teach responsible use and a lack of funding for improving facilities. Coordinated interpretation for significant resources in the study area would not occur. Interpretation and educational programs in the ANF would continue to be greatly limited by current funding and staffing, having a moderate adverse impact on visitor experience on the national forest.

#### **ALTERNATIVE A**

Each of the alternatives proposes legislation that would authorize more funding, provide opportunities for fundraising, and work more cooperatively with partner agencies to improve visitor services. In alternative A, which would provide the least additional resources, more U.S. Forest Service staff would be available within the new NRA to manage visitors. The NPS would also be able to provide staff assistance and visitor management technical assistance on the ANF.

Additional funding for improved facilities and more interpretive and educational programming would have a beneficial effect on the visitor experience within the ANF. However, alternative A would do little to ameliorate the lack of recreational opportunities available to urban areas that are currently deficient in parks and open space. Poor access to parks and open space for urban communities would continue to have a moderate adverse effect on recreational use and visitor experience in those areas.

#### **ALTERNATIVE C**

Alternative C addresses the lack of urban recreation opportunities through establishment of the NRA along the urban portions of the San Gabriel and Rio Hondo Rivers. There would be a targeted effort and leveraged funds to create more recreational areas within the NRA. Access would be improved by creating new transit options connecting communities to the NRA, building more trails, and

connecting recreation areas and open spaces.

In Alternative C, more funding would be made available to improve facilities and provide services in the NRA. Through cooperative agreements, additional staff may be available for visitor management, education, and interpretation. The NPS would also be able to provide staff and visitor management assistance within the NRA.

The voluntary information network would provide more opportunities to provide interpretive and educational programs about the resources of the San Gabriel River watershed, having an overall beneficial effect on the visitor experience. The information network would better inform residents of recreational opportunities throughout the watershed, potentially connecting visitors to more recreational opportunities. Actions to improve recreational opportunities in alternative C could also provide public health benefits to those communities near the San Gabriel River corridor.

#### **ALTERNATIVE D**

More recreational opportunities and educational programs would be available within the NRA than currently exist. There would be a targeted effort to create more recreational areas within the NRA and more trail connections to surrounding communities. The partnership would leverage funding to help provide more recreational opportunities within the NRA, create new transit options, build more trails, and connect recreation areas and open spaces.

This alternative is the most likely among the action alternatives to create new open space and recreational opportunities for urban communities. More recreational opportunities and educational programs could be made available in areas beyond the NRA through technical assistance and new leveraged funding. This alternative would propose legislation to authorize more funding, provide opportunities for fundraising, and work more cooperatively with partner agencies to improve visitor services.

Through cooperative agreements, additional staff may be available to the U.S. Forest Service for visitor management, education, and interpretation. The NPS would also be able to provide staff assistance and visitor management technical assistance over a much broader area than in alternatives A or C.

The larger NRA in this alternative would allow for coordinated interpretive and educational opportunities throughout the study area, providing the greatest beneficial effects on the visitor experience. Additionally, all of the resources found



to be nationally significant would be included in the NRA providing more opportunities for residents to learn about and appreciate these resources. Alternative D would have a greater beneficial effect on public health for communities throughout the region, as comprehensive planning and technical assistance would provide the most new opportunities for outdoor recreation in local communities.

## **CUMULATIVE IMPACTS**

Population growth trends in the study area and the surrounding region would likely continue to increase pressure on available open space. Considering that public lands in this area are currently among the most heavily visited nationally, recreation opportunities and quality are likely to diminish if nothing is done. The study area alternatives seek to ameliorate the condition to a greater or lesser degree. Therefore, the cumulative effect of growth and development trends plus the effects of the alternatives would likely result in a net beneficial condition in regard to visitation within the study area as a whole. However, the total cumulative effect is expected to at least as affected by economic conditions and population increases and distribution over time as by the actions taken as a result of this study.

## **Conclusions**

Under the no action alternative, recreation opportunities and visitation would continue as current trends indicate. That is, there would be insufficient opportunities and access for local and non-local visitors which continue to degrade the recreation experience. Under each of the action alternatives, this trend would be arrested to some degree, and would be considered beneficial. The size of the new unit and the capacity to manage the unit are important factors in assessing the potential benefits. With these considerations, all action alternatives would have a beneficial effect, but alternative D would have the greatest beneficial impact on recreation and visitation. Alternative A's benefits could be considerable, but limited in geographical extent to the ANF. Alternative C would benefit the San Gabriel River corridor, providing more opportunities for urban communities. Use, however, could increase along the river, further impacting already heavily visited areas. Finally, alternative D supports a comprehensive regional approach to addressing recreation and open space issues.

# **Socioeconomic Effects**

## **Affected Environment**

The study area lies predominately within Los Angeles County, with small portions found in San Bernardino County and Orange County. This section describes the socioeconomic conditions of these three counties, with more detail provided for Los Angeles County, particularly in the San Gabriel, Santa Clarita, and Antelope valleys.

## **POPULATION**

According to census block data, approximately 1.5 million people live within the boundary of the study area. Another 6.5 million live within 10 miles of the boundary. A total of 14.7 million live within 30 miles, in six different counties (U.S. Census Bureau 2000).

## **Los Angeles County**

With approximately 10 million residents, Los Angeles County is the most populous county in the United States. The county is home to 88 incorporated cities and many unincorporated areas. Over a quarter of all California residents live in Los Angeles County. The population density approaches 2,500 people per square mile. Ninety-nine percent of the population lives in an urban area (U.S. Census Bureau 2000).

Most of the population lives in the southern portion of the county, along the coastline and in the inland basins and valleys. Approximately 650,000 residents live along the San Gabriel River in adjoining cities from the mouth of San Gabriel Canyon to the southern extent of the this study's boundary (LADPW 2006a). High population densities are found throughout this stretch, with a number of communities containing more than 3,000 people per square mile and at least two (El Monte and Baldwin Park) containing over 10,000 people per square mile (LADPW 2006a).

## **San Bernardino and Orange counties**

Approximately 2 million people live in San Bernardino County, one of the largest counties in the United States by area. The population density is comparatively low, with approximately 100 people per square mile. Orange County is the second most populous county in California, with a 2008 population estimated at 3 million. The population is dense, with an estimated 3,800 people per square mile. Although characterized mostly by suburban communities, 34 incorporated cities are located in the county.

## **TRENDS IN POPULATION GROWTH**

### **Los Angeles County**

Los Angeles County grew 5.9 percent from 1998 to 2008 and is expected to continue growing, with one estimate projecting over 13 million residents by 2050 (California Department of Finance 2007a). The fastest growth rates, however, are found in the northern portions of the study area. For example, unincorporated portions of Los Angeles County in the Antelope Valley region are expected to double in population, from 100,000 in 2005 to 215,000, by 2035. The same unincorporated areas have already tripled in population since mid-1985, contributing to the rapid growth of the valley as a bedroom community to the Greater Los Angeles area (RWMG 2007). Likewise, the Santa Clarita Valley population grew in the 1990s by over 39 percent, reaching 212,611 by 2000 (Los Angeles County Dept. of Regional Planning 2010b). Along with Antelope Valley, Santa Clarita Valley continues to lead the county in population growth. The full build-out potential of Santa Clarita Valley, as described in city and county plans, would eventually allow 460,000 to 485,000 residents (Los Angeles County Dept. of Regional Planning 2010b).

### **San Bernardino and Orange Counties**

San Bernardino County is one of the fastest growing counties in California, with a 22.4 percent change in population reported between 1998 and 2008. San Bernardino is expected to maintain a similar growth rate from 2005 to 2025, with a 49.2 percent increase in total number of people. 94.3 percent of the population lives in an urban area. Orange County grew by 8.6 percent from 1998 to 2008 and is expected to grow another 19.7 percent from 2005 to 2025 (NPS 2010).

## **SOCIAL AND CULTURAL CHARACTERISTICS**

### **Los Angeles County**

Racial and ethnic diversity is comparatively high in Los Angeles County, with 25.9 percent of the total population reporting that they belong to a minority race group and nearly half of the population reporting a Hispanic origin (47.9%). Approximately 75 percent identify themselves as white, while most others identify themselves as African American (8.4%) or Asian (13.2%) (California Department of Finance (2007b).

Along the San Gabriel River corridor, those who identify themselves as Hispanic or Latino represent the majority of residents. Although only 37 percent of residents in communities adjacent to the river in the upper San Gabriel Valley identify themselves as Hispanic or Latino, in the lower San Gabriel Valley and upper coastal plain, the Hispanic or Latino populations are 75.9 percent and 68.7 percent respectively. Those identifying themselves as Asian constitute the second largest group in the lower San Gabriel Valley (14.5%) and a quarter (24.3%) of the upper San Gabriel Valley population (LADPW 2006a).

The northern part of the Los Angeles County presents less racial and ethnic diversity than the county as a whole. Among Antelope Valley residents, 34.4 percent identify as Hispanic or Latino, 13.2 percent as African American, and only 3.7 percent as Asian (Los Angeles County Department of Public Health 2009). The Santa Clarita area is even less diverse. Only 27 percent of the City of Santa Clarita's population, for example, identifies themselves as Hispanic or Latino (U.S. Census Bureau 2005).

Over 50 percent of adults in Los Angeles County have had some college education. The two primary languages are English (49.2% of households) and Spanish (32.3%).

### **San Bernardino and Orange Counties**

Nearly 20 percent of the total population of San Bernardino County reports that they belong to a minority race group. Of this group, 47.5 percent reports a Hispanic origin. The majority of the San Bernardino County population, 80.3 percent, identify themselves as white. Most others identify themselves as African American (9.4%) or Asian (5.9%). Nearly half of the adults in San Bernardino County have had some college education. The two primary languages in the county are English (64.5 percent of households) and Spanish (27.4 percent).

Approximately 22 percent of the total population

<b>Table 17: Population</b>				
<b>County</b>	<b>Total Population</b>	<b>Population Density (people per square mile)</b>	<b>Recent Population Change (1998-2008)</b>	<b>Projected Population Change (2005-2025)</b>
<b>Los Angeles County</b>	<b>9,862,049</b>	<b>2,428.6</b>	<b>5.9%</b>	<b>6.7%</b>
San Bernardino County	2,015,355	100.5	22.4%	49.2%
Orange County	3,010,759	3,814.0	8.6%	19.7%
Source: NPS 2010				

of Orange County reports that they belong to a minority race group. Of this group, 33.8 percent reports a Hispanic origin. The majority of the Orange County population, 78.4 percent, identify themselves as white. Most others identify themselves as Asian (16.2%), African American (2%), or two or more races (2.2%). A relatively high percentage of adults in Orange County have had some college education (62%). The two primary languages in the county are English and Spanish, with 62.8 percent of households primarily speaking the former and 20 percent speaking the latter. Ten percent of households primarily speak an Asian or Pacific Island language.

#### **TRENDS IN SOCIAL AND CULTURAL CHARACTERISTICS**

**Los Angeles County.** The Hispanic composition of the county is expected to increase. One projection estimates that by the year 2050, the Hispanic and Asian populations will account for more than 80 percent of the total county residents (California Department of Finance 2007a).

#### **EMPLOYMENT AND INCOME**

##### **Los Angeles County**

The median household income in Los Angeles County is approximately \$53,494 per year. Nearly 15 percent of the population lives in a household with income below the federally-determined poverty threshold (NPS 2010). Thirteen percent of the county's labor force was unemployed in November 2010 (CEDD 2010).

Within the study area, median household incomes ranged from \$39,914 to \$119,368 among census tracts north of the ANF. The highest incomes are reported in the tracts nearest Santa Clarita, while the lowest are found in the northernmost tracts near Palmdale. To the south of the ANF, median household incomes by census tract ranged from \$19,885 to \$110,555. Higher incomes tend to be associated with the foothill communities of the San Gabriel Mountains, the Puente Hills, and the San Jose Hills. Lower incomes tend to be

associated with valley areas, especially around the El Monte and Pico Rivera areas (See figure 2, Median Household Incomes, U.S. Census Bureau 2000).

In the San Gabriel Valley, education and health, professional and business services, retail trade, and government are the region's largest employment sectors. The region has suffered a decline in international trade and manufacturing. However, the industrial vacancy rate remains at low levels (4.1% in 2010), and the valley seems poised to rebound from the recent economic recession (LACEDC 2010).

In Antelope Valley, government, education and health, and professional business services are the largest employment sectors. The latter, along with retailing, has suffered the most through the recent economic downturn (LACEDC 2010).

Throughout the county, manufacturing and construction jobs have suffered the largest employment losses since 2008. In addition, government jobs have been declining at an increasing rate as local governments respond to growing budget problems (LACEDC 2010).

**Table 18: Social and Cultural Characteristics**

County	Racial Diversity (percent belonging to minority race groups)	Racial and Ethnic Composition	Educational Attainment (percent with some college)	Primary Household Language
<b>Los Angeles County</b>	<b>25.9%</b>	<b>W 74.1% *</b> <b>B/AA 9.4%</b> <b>AI/AN 1.0%</b> <b>A 13.2%</b> <b>NH/OP 0.3%</b> <b>Two+ 1.9%</b> <b>H 47.7%</b>	<b>51.1%</b>	<b>Eng 49.2% **</b> <b>Spa 32.3%</b> <b>O/IE 6.8%</b> <b>AsPac 10.3%</b> <b>OTH 1.4%</b>
San Bernardino County	19.7%	W 80.3% B/AA 9.4% AI/AN 1.5% A 5.9% NH/OP 0.4% Two+ 2.5% H 47.5%	49.2%	Eng 64.5% Spa 27.4% O/IE 3.2% AsPac 4.1% OTH 0.8%
Orange County	21.6%	W 78.4% B/AA 2.0% AI/AN 0.9% A 16.2% NH/OP 0.4% Two+ 2.2% H 33.8%	62.0%	Eng 62.8% Spa 20.0% O/IE 5.7% AsPac 10.5% OTH 1.0%
<p>*W = White Alone, B/AA = Black or African American Alone, AI/AN = American Indian and Alaska Native Alone, A = Asian Alone, NH/OP = Native Hawaiian and Other Pacific Islander Alone, Two+ = Two or More Races, H = Hispanic origin (any race).</p> <p>**Eng = English, Spa = Spanish, O/IE = Other Indo-European, AsPac = Asian and Pacific Island, OTH = Other</p> <p>Source: NPS 2010</p>				

**San Bernardino and Orange Counties.** The median household income in San Bernardino County is approximately \$55,995 per year. Twelve percent of the population lives in a household with income below the federally-determined poverty threshold (NPS 2010). Fourteen percent of the county's labor force was unemployed in November 2010 (CEDD 2010). The median household income in Orange County is approximately \$73,107 per year. Nine percent of the population lives in a household with income below the federally-determined poverty threshold (NPS 2010). Just over nine percent of the county's labor force was unemployed in November 2010 (CEDD 2010).

## **TOURISM**

### **Los Angeles County**

In 2007, the ratio of tourism establishments (arts, entertainment, recreation, accommodation, and food services) to all economic sectors in Los Angeles County was 12.1 percent. Nearly 11 percent of the labor force was employed in this sector and 4.7 percent of the county's sales are directly related to tourism.

Since 2008, the tourism industry has been in slight decline. The number of jobs in hotel accommodations has fallen from 41,200 in 2008 to an estimated 38,500 in 2010. Jobs related to travel arrangement and reservations fell from 12,000 in 2007 to 9,000 in the same year (LACEDC 2010).

Total spending for Los Angeles County's Park and Recreation Department in Fiscal Year 2009-2010



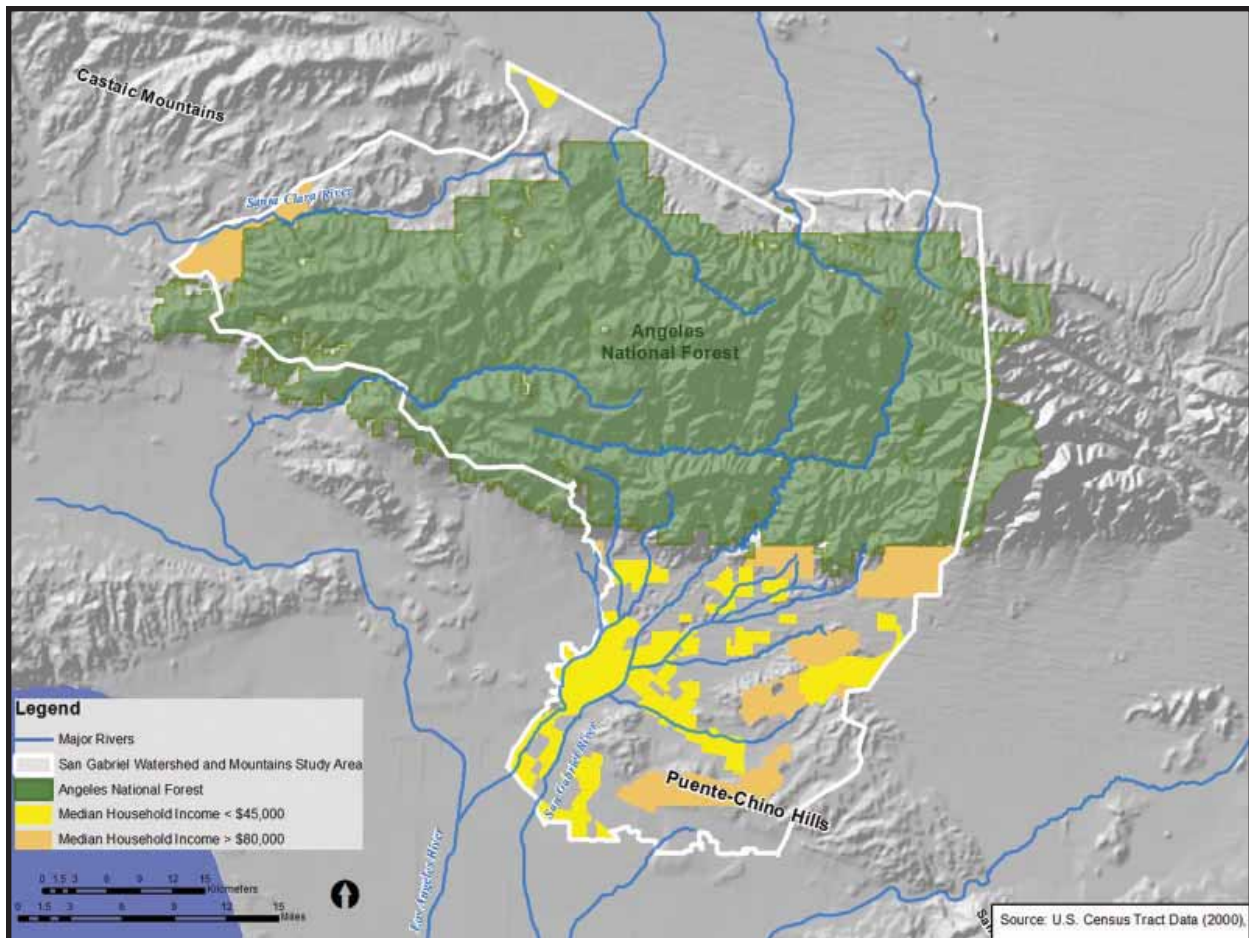
was \$148 million. Los Angeles County administers 94 local and regional parks, 337 miles of riding and hiking trails, and multiple gardens, centers, and golf courses (Los Angeles County 2009). The 88 municipalities of Los Angeles County operate numerous other parks and recreational facilities, many scattered throughout the study area.

The Angeles National Forest draws most of its visitors from the local region and very few tourists from elsewhere. Those who do visit the forest tend to spend little. (See *Recreational Use and Visitor Experience; Affected Environment*).

## San Bernardino and Orange Counties

In San Bernardino County, the ratio of tourism establishments to all economic sectors in 2007 was 10.1 percent. 11.2 percent of the labor force was employed in this sector and 3.8 percent of the county's sales are directly related to tourism (NPS 2010). The ratio of tourism establishments in Orange County was 8.6 percent, with 12.2 percent of the labor force employed in this sector, and 3.3 percent of the county's sales directly related to tourism (NPS 2010).

**Figure 2: Median Household Incomes**



**Table 19: Income and Unemployment**

County	Median Household Income*	Poverty (percent below the threshold)*	Unemployment (November 2010)**
Los Angeles County	\$53,494	14.6%	13.0%
San Bernardino County	\$55,995	12.1%	13.9%
Orange County	\$73,107	8.9%	9.3%
*Source: NPS 2010			
**Source: CEDD 2010			

## ECONOMIC IMPACTS OF SPECIAL DESIGNATIONS

Public comments on the preliminary alternatives requested that the NPS analyze 1) the economic value of an NRA to local communities, including job creation, tourism spending, and improved property values for adjacent communities, and 2) the potential adverse effects of designation including the potential for new designations and increased tourism to bring about increased traffic, noise, waste, and congestion associated with new designations and increased tourism. This section reviews literature on the economic impacts of national park units and other special designations.

### Economic Impacts of National Park Units

National park designation generally has a beneficial effect on the local economy. The National Park System received 274.9 million recreation visits in 2008. Park visitors spent \$11.56 billion in local gateway regions (within roughly 50 miles of the park). Visitors staying outside the parks in motels, hotels, cabins, and bed and breakfasts accounted for 55% of the total spending (NPS 2009). Over half of the spending was for lodging and meals, 17% for gas and local transportation, 9% for groceries, and 14% for souvenirs.

Local economic impacts are estimated after excluding spending by visitors from the local area (9.8% of the total). Combining local impacts across all parks yields a total impact, including direct and secondary effects, of 205,000 jobs, \$4.4 billion in labor income, and \$6.9 billion value added. The four economic sectors most directly affected by visitor spending are lodging, restaurants, retail trade, and amusements. Visitor spending supports over 50,000 jobs in each of the hotel and restaurant sectors, and over 23,000 jobs each in the retail trade and the amusements sectors (NPS 2009).

National park units also impact the local region through the NPS payroll. In FY 2008, the National Park Service employed 24,954 people with a total payroll of \$1.2 billion in wages and salaries and \$313 million in payroll benefits. Including the

induced effects of the spending of NPS wages and salaries in the local region, the total local economic impact of park payrolls are \$1.86 billion in labor income, \$2.11 billion in value added, and 36,816 jobs (including NPS jobs). The combined impacts of visitor spending and park payrolls, including secondary effects, are \$6.3 billion in labor income, \$9.0 billion in value added, and 241,442 local jobs. Visitor spending accounts for 85% of the total jobs and 77% of the total value added (NPS 2009).

In the Los Angeles Region, the Santa Monica Mountains NRA economic impacts include 215 jobs and \$5.3 million in labor income. Visitor spending for FY 2008 was \$17.1 million for all visitors. Table 21 contains visitor spending and economic impacts of partnership national parks such as Missouri River National Recreational River and Chattahoochee River NRA. While visitor counts were not available for the Boston Harbor Islands NRA, the Chesapeake Bay Gateways Network, or the Rosie the Riveter/ WWII Homefront National Historical Park, the employment benefits of the similar partnership parks is provided in Table 22(NPS 2009).

In an area as diverse as the Los Angeles Region, local governments are less likely to become dependent economic activity generated by parks and recreation areas. However, adjacent communities will receive some economic benefit from visitation.

With its close proximity to downtown Los Angeles and other large cities such as Santa Monica, ample infrastructure is available to support visitation. Therefore, impacts associated with potential development like that which occurs in gateway communities to many national park units is also not likely to occur. Gateway communities typically develop more park supporting facilities in areas that are remote. Given the close proximity to the Los Angeles metropolitan area, there is already sufficient existing infrastructure to provide services to visitors. Even the most remote areas of the San Gabriel Mountains are within a 90 minute drive of Los Angeles.

**Table 20: Tourism**

County	Tourism Establishments (Percent of all economic sectors)	Tourism Employment (Percent of total labor force)	Tourism Revenue (Percent of sales in the county)
<b>Los Angeles County</b>	<b>12.1%</b>	<b>10.8%</b>	<b>4.7%</b>
San Bernardino County	10.1%	11.2%	3.8%
Orange County	8.6%	12.2%	3.3%
Source: NPS 2010			

## Other Studies Documenting the Socioeconomic Impacts of Special Designations

Further review of the literature surrounding the economic impacts of special designations yields some broad concepts that apply, in addition to the projected increase in visitation demonstrated in the previous section, *Recreation Use and Visitor Experience*.

There have been some case studies following new federal designations such as wilderness and wild and scenic rivers. For example, information presented in the case of the South Yuba wild and scenic river designation, it is noted that property is more highly valued in the area due to the presence

of the river. It is noted that local property owners favored designation because it would further enhance the value of their property. Also, protection of the river would not jeopardize water supplies; rather it would protect water quality and conserve water for future needs. In the case of the Yuba River designation, the local parks and recreation department concluded that it is good for the local economy. Visitors generate \$10 per day, which is multiplied by a factor of three as spent in the local community. New visitors bring in more income that is available for services and offsetting costs. Further, it is noted, protection of the river resource prevents the impacts of development that might otherwise occur, and enhances recreation opportunities for the local population.

**Table 21. Spending and Economic Impacts of Visitors to NPS Partnership Parks on Local Economies, 2008**

Park Unit	Public Use Data		Visitor Spending 2008			Impacts of Non-local Visitor Spending	
	2008 Recreation Visits	2008 Overnight Stays	All Visitors (\$000's)	Non-local Visitors (\$000's)	Jobs	Labor Income (\$000's)	Value Added (\$000's)
Missouri National Recreational River	162,086	0	\$7,866	\$7,474	149	2,595	4,012
Chattahoochee River NRA	2,826,171	0	\$80,469	\$54,097	1016	25,150	39,112
Santa Monica Mountains NRA	419,374	144	\$17,166	\$11,443	215	5,320	8,273

Source: NPS 2009

Notes: Impacts of construction activity and park purchases of goods and services from local firms are not included. Local regions are defined as a 50-mile radius around each park.

**Table 22. Payroll Impacts of National Park Partnership Parks without Visit Counts, FY 2008**

Park Unit	Park Payroll			Impacts of Park Payroll		
	Salary (\$000's)	Payroll Benefits (\$000's)	NPS Jobs	Total Jobs	Labor Income (\$000's)	Value Added (\$000's)
Boston Harbor Islands NRA	608	122	16	22	930	1,064
Chesapeake Bay Program Office	1,174	301	17	29	1,862	2,120
Rosie The Riveter/WW II Homefront NHP	339	85	7	10	536	610

Source: NPS 2009

### Notes:

The number of employees is estimated as an annual average for each park, so that seasonal positions are converted to annual equivalents.

Value added is the sum of labor income, profits and rents, and indirect business taxes. It can also be defined as total sales net of the costs of all non-labor inputs. Value added is the preferred economic measure of the contribution of an industry or activity to the economy.

## Impact Analysis - Socioeconomics

### NO ACTION ALTERNATIVE

If none of the proposed alternatives are adopted, current social and economic trends as described in the affected environment section would continue in force. Trends in property values, economic activity, income, population, employment, recreation use and distribution, tourism, community relationships (as affected by local federal land use) would remain unchanged. This applies not only to those aspects of the local socioeconomic environment regarded as beneficial, but also those where adverse impacts have been identified. Areas identified as experiencing recreational high use would continue to be congested and noisy, with negative impacts on visitor experience and infrastructure. As in many other cases, an activity may be regarded as positive to some, and negative to others. Because the local population is increasing, the effect on local economies and opportunities may be indistinguishable from increases in non-resident tourist activity resulting in changes in federal designation, as proposed in the other alternatives.

### ALTERNATIVE A

In alternative A, national forest lands in the San Gabriel Mountains would be redesignated by Congress as a U.S. Forest Service managed national recreation area. Considering the existing visitation is predominantly local, and that economic indicators are at a low point, it is reasonable to expect that visitation by non-residents would be small initially and then increase slowly over time. At its greatest, the increase would likely not exceed 5 or 6 percent over current visitation.

Although greater recognition by a national audience may increase visitation in the short-term resulting in beneficial tourism impacts, its impact would be minor. Long-term visitation would increase gradually. The ANF would continue to serve mostly local and regional visitors. There would likely be modest increases in jobs associated with new visitors, and new resources would be available for ANF to add staff, improve facilities, and maintain resource quality. This new designation could improve property values in adjacent communities (NPS 1995).

Increased visitation would have modest beneficial effects on surrounding local communities which would provide supplies and services to such visitors. Increased investment in the ANF to provide more staffing for visitor services, planning, and restoration could result in additional jobs for the region.

### ALTERNATIVE C

The nature of impacts on socioeconomics expected under this alternative is similar to alternative A. However, there are differences between the alternatives that might be reflected in the amount and type of visitation to be expected.

This smaller, more urban NRA by its nature would be less of a recreation attraction for a national audience. As such, visitation from this source is expected to be lower than in alternative A. However, several factors would serve to improve and enhance close-to-home recreation, making such opportunities more accessible for local residents. The smaller NRA would better serve local residents by providing more recreational opportunities for urban communities along the river corridor. Increased visitation, although small, could have modest beneficial effects on surrounding local communities which would provide supplies and services to visitors. The new designation would result in additional jobs for the region, particularly with the emphasis on job training in alternative C. However, such effects would be negligible in the regional context.

### ALTERNATIVE D

Because the NRA in alternative D would be of greater size than alternatives A and C, it is likely benefits that more jobs and associated economic benefits would result.

The new designation of the forest and improved recreational opportunities throughout the study area would cause small increases in visitation over time that could have modest beneficial economic effects on surrounding local communities. These benefits would be in the form of providing supplies and services to such visitors. With a larger designation, and a greater emphasis on education and job training, alternative D may provide slightly more benefits than alternative C in terms of creating jobs. However, such effects would be negligible in the regional context.

### CUMULATIVE IMPACTS

The study area is a complex region with a long and storied socioeconomic history. Adverse and beneficial impacts due to an NRA designation, whether on the ANF, the San Gabriel River, or a broader region are likely to contribute no more than a very small amount to the overall socioeconomic context of the area. Many other factors, particularly outcomes related to the recent economic downturn, are likely to have a much greater impact on the region's socioeconomics. The cumulative effect of growth and development trends plus the beneficial



effects of each alternative, however, could result in a small, net beneficial condition to some local communities as a result of improved urban quality, land protection, and economic benefits from recreation and conservation. However, the total cumulative effect is expected to be more dependent upon regional economic conditions and population increases (and distribution) over time than on the actions taken as a result of this study.

## Conclusions

The action alternatives positively address current and future recreation needs. In terms of economic benefit associated with these objectives, the no action alternative would have the least benefit and alternatives A, C, and D would have beneficial effects to varying degrees. Alternative D, due to its geographic scope, particularly in urban areas, has the greatest potential for beneficial impacts to quality of life and other socioeconomic indicators.

Increased visitation would represent an adverse impact on infrastructure and social systems. Since visitation might be expected to increase in each of the action alternatives, infrastructure impacts would likely increase proportionally. The adverse impact in alternative A would likely be negligible, increasing to minor in both C and D. With congressional action approving the implementation of any of the action alternatives, or variants thereof, further planning would be undertaken. Additional environmental analysis would be prepared to look at site and area-specific activities and alternatives. Through that analysis, more specific conclusions can be drawn regarding direct, indirect and cumulative impacts. Joint planning efforts among stakeholders, and subsequent agreements, would be designed to optimize between the economic benefits and social costs so that the former is maximized and the latter is mitigated.

## Impact Analysis - Socially or Economically Disadvantaged Populations Socioeconomic Impacts (Environmental Justice)

As the analysis in the *Recreation Use and Visitor Experience; Affected Environment* describes, economically disadvantaged populations in the study area lack access and the ability to partake of existing opportunities due to lack of close-to-home open space, lack of effective transportation, lack of culturally advantageous facilities or opportunities, and lack of knowledge about recreation and natural resources. Under current conditions, all contribute to an impact on these populations. As stated, each action alternative attempts to remedy these current conditions to provide a net beneficial result.

### BACKGROUND ON ENVIRONMENTAL JUSTICE

Environmental justice must be considered in every major federal action by assessing environmental factors that negatively or disproportionately affect minority populations. Pursuant to Executive Order 12898, promulgated by President Clinton in 1994, federal agencies “shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States.”

The NPS has numerous partnerships programs with youth corps and conservation organizations that serve as a means to introduce minority and low income children and young adults to environmental and conservation issues.

Youth corps and job corps partnerships provide a solid environmental learning experience for the youth involved, while at the same time leaving a legacy of work which significantly benefits the parks and community.

The NPS also seeks to identify opportunities to develop partnerships with Tribal governments, consistent with mission needs to provide necessary technical assistance to enhance tribal capacity to address environmental, health, and welfare concerns.

### NO ACTION ALTERNATIVE

A portion of the local population can be categorized as socially or economically disadvantaged and potentially affected by each of the alternatives. Population growth trends over time will likely exacerbate the amount and intensity of

this condition. This equates directly to socially and economically disadvantaged populations who lack the means of access, and the ability to partake of existing opportunities due to physical barriers (e.g. adult and childhood obesity or other ailments). The existing deficiencies in open space, lack of effective transportation connecting communities to recreation opportunities, lack of culturally advantageous facilities or opportunities, and lack of knowledge about recreation and natural resources, under current conditions, all contribute to moderate adverse impacts on these populations.

### **ALTERNATIVE A**

Alternative A would have a generally beneficial impact on socially and economically disadvantaged populations by providing an improved recreational experience at the ANF. However, it would likely represent only a minor improvement for communities that are currently underserved for recreation. Of all the alternatives, this one places the least emphasis on developing new effective partnerships and cooperative management efforts that have the best chance of providing a remedy for these populations. Also, it would do little to increase access to recreation from underserved populations or provide close-to-home opportunities in urban communities.

### **ALTERNATIVE C**

Alternative C would have a greater beneficial impact on these populations, with efforts applied specifically in urban areas close to the San Gabriel River where some communities are underserved and economically disadvantaged. The alternative potentially provides job training and opportunities within these communities that have the potential both to improve economic access for recreation, but also to build programs and provide awareness regarding opportunities. To the extent that recreation opportunities can be designed to fit cultural preferences (for example, large group picnic and camping areas) for local disadvantaged populations, the greater will be the beneficial results. The development of effective and diverse partnerships in this alternative would also serve to build programs and cooperative agreements with entities that represent disadvantaged groups so that the necessary results can be obtained.

### **ALTERNATIVE D**

Again, due its expanded geographic and programmatic scope, alternative D holds the greatest potential benefit for socially and economically disadvantaged populations. Also, it presents the most opportunities for new close-to-home recreation opportunities for areas that are

currently underserved. In short, this alternative provides the best framework for implementing NPS' environmental justice policy as outlined above.

### **CUMULATIVE IMPACTS**

Population growth trends in the study area and the surrounding region are likely to put additional pressure on available open space. Considering that public lands in this area are currently among the most heavily visited within the system, recreation opportunities and qualities are likely to diminish if nothing is done. The study area alternatives seek to ameliorate the condition to a greater or lesser degree. Therefore, the cumulative effect of growth and development trends, plus the effects of each alternative, would likely result in a net beneficial condition in regard to recreational opportunities for disadvantaged populations within the study area. The overall level of cumulative impact, considering factors that exacerbate issues for the socially and economically disadvantaged, would decline as compared to the no action alternative.

### **Conclusions**

In general, it is anticipated that each of the action alternatives is likely to improve conditions regarding health and well-being of disadvantaged populations. Clearly, it is the stated intent of this congressionally-mandated study to do so. To do nothing would leave these populations to current trends in development. The creation of new public land open spaces would be advantageous. At the same time, the proposed changes in land use on existing public lands is not likely to affect commercial or non-commercial resources and values that economically disadvantaged populations might be dependent upon under current conditions.

The partnership program and stakeholder agreements set forth particularly in alternatives C and D would meet the intent of the U.S. Department of the Interior and NPS Environmental Justice strategy as outlined above. Nevertheless, it is important to seek effective involvement of potentially affected social and economically disadvantaged populations when a congressionally mandated plan goes forward.

## Land Use

### Affected Environment

The use, ownership, and regulation of land play important roles in the protection of resources in the study area. Many thousands of landowners are found within the study area, although about two-thirds of the area is owned and managed by one entity; the U.S. Forest Service. This section examines the current state and trends of land ownership, use, and development in the San Gabriel Mountains, the northern portions of the study area (Santa Clarita and Antelope valleys), and the urban areas to the south, including the San Gabriel Valley.

**The San Gabriel Mountains.** The U.S. Department of Agriculture, through the Angeles National Forest, owns and administers two-thirds of the study area, including the San Gabriel Mountains. The forest is managed for multiple direct use values, including watershed protection and recreation. It is assumed that this land will continue in public ownership indefinitely and will not be subject to further residential or commercial development.

**North of the San Gabriel Mountains.** The Antelope Valley region, which includes the study area lands north of the mountains and continues north into Kern County, was characterized by slow growth until the mid-1980s. By the 1990s, the growth rate had accelerated dramatically. Within 15 years, the population had nearly quadrupled (RWMG 2007). The projected growth rate for unincorporated Los Angeles County lands north of the San Gabriel mountains will double the population, from 100,000 in 2005 to 215,000 in 2035 (RWMG 2007). Much of the vacant land available for development lies in the southern end of the Antelope Valley region (RWMG 2007), portions of which are contained within the northernmost boundary of the study area. Because of this, these areas potentially face tremendous development pressure as the population rapidly expands.

Antelope Valley also contains the largest amount of productive farmland in Los Angeles County, mostly in unincorporated territory and outside of the study area. Agricultural uses are declining as urbanization accelerates, but the value of Antelope Valley's agricultural production was nearly \$271 million in 2006 and remains an important part of the Valley's economy.

The northwestern corner of the study area lies in the Santa Clarita Valley, which has its own

land use challenges. The Los Angeles County Planning Department has identified a list of needs for land use planning in this region including accommodation of growth to the area's build-out capacity while preserving open space, particularly through retention and expansion of an open space greenbelt around the valley and discouraging urban sprawl into foothill areas. The City of Santa Clarita, in cooperation with partners such as the Santa Monica Mountains Conservancy, has worked to acquire lands or require developers to preserve open space in a greenbelt around the city through an acquisition plan adopted in 2002. Approximately 50 percent of these acquisition objectives have been met to date. Some of these identified lands are within the study area, along with ongoing and planned development projects (Los Angeles County 2010b).

**South of the San Gabriel Mountains.** The primarily urbanized areas below the San Gabriel Mountains contain a variety of land uses. Open space is relatively sparse, with residential and commercial uses dominating. The most significant open spaces within the urbanized areas are at the Santa Fe Dam Recreation Area, Whittier Narrows, the Puente Hills, and Frank G. Bonelli Regional Park. Public facilities and institutions are scattered among residential land uses, which dominate throughout the valley. Commercial uses are primarily found near freeway intersections and along other major east-west corridors (LADPW 2006a). Areas characterized by industrial uses are found in the City of Industry and in wide swaths of the river corridor from Azusa to Baldwin Park, among other places.

**Prime and Unique Farmland.** Prime Farmland is land with the best combination of physical and chemical features able to sustain long-term production of agricultural crops. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. In order to have the Prime designation, this land must have been used for production of irrigated crops at some time during the four years prior to the mapping date. **Unique Farmland** is of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. In order to have the Unique Farmland designation, the land must have been cropped at some time during the four years prior to the mapping date.

The California Department of Conservation (CDC) Farmland Mapping and Monitoring Program (FMMP) program has identified approximately 200 acres of prime and unique farmland in the study

area. Most of which is located north of the San Gabriel Mountains in the Antelope Valley near Acton, Littlerock, and Valyermo. One small parcel of unique farmland is located in unincorporated Orange County near the City of Brea (FMMP 2008). As documented by the FMMP, the state's important farmlands and grazing lands decreased by 170,982 acres (267 square miles) between 2002 and 2004 (FMMP 2008). The highest-quality agricultural soils, known as Prime Farmland, comprised 46 percent of the loss (78,575 acres). Within the study, over 300 acres of prime and unique farmland were converted to other uses, primarily urban development between 2000-2008 (FMMP 2002, FMMP 2008). Most of the conversion occurred in the Orange County area near Brea. The majority of prime and unique farmland within the study area occurs along the 14-corridor in the Antelope Valley.

Retaining valuable farmland in Los Angeles County is expected to be difficult as projected growth in the County over the next 20 years is expected to continue. Increased population growth accompanying development may result in the conversion of farms and land with prime soil to non-agricultural uses. This scenario is especially likely in the North County area, which contains most of the Prime Farmland in Los Angeles County, and is also experiencing the most rapid population growth. Los Angeles County has designated areas surrounding agricultural lands as rural in an attempt to provide for rural development that is compatible with agricultural activities.

## **REGULATORY SETTING**

Jurisdiction of lands inside the study area belongs to multiple federal, state, and local entities. This section describes these entities and their respective management, planning, or regulatory activities.

### **Federal Agencies**

#### *United States Bureau of Land Management (BLM)*

The BLM manages small portions of the undeveloped or unused land in Antelope and Santa Clarita valleys. The California Desert Conservation Area Plan is used to manage BLM controlled areas.

#### United States Fish and Wildlife Service (USFWS)

The USFWS administers the Federal Endangered Species Act (FESA) and designates critical habitat for endangered species.

#### *United States Forest Service (USFS)*

The USFS manages approximately 420,000 acres of the Angeles National Forest.

#### *United States Army Corps of Engineers (USACOE)*

Among its responsibilities, the USACOE administers Section 404 of the Clean Water Act (CWA), which governs specified activities in waters of the United States, including wetlands. In this role, the USACOE requires that a permit be obtained if a project would place structures, including dredged or filled materials, within navigable waters or wetlands, or result in alteration of such areas.

#### *U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS)*

The NRCS maps soils and farmland uses to provide comprehensive information necessary for understanding, managing, conserving and sustaining the nation's limited soil resources. The NRCS also manages the Farmland Protection Program, which provides funds to help purchase development rights to keep productive farmland in agricultural uses.

### **State Agencies**

#### *California Department of Conservation [Prime and unique farmlands]*

In 1982, the State of California created the Farmland Mapping and Monitoring Program within the California Department of Conservation to carry on the mapping activity from the NRCS on a continuing basis. The California Department of Conservation administers the California Land Conservation Act of 1965, also known as the Williamson Act, for the conservation of farmland and other resource-oriented laws.

#### *California Department of Transportation (Caltrans)*

The Caltrans jurisdiction includes rights-of-way of state and interstate routes within California. Any work within the right-of-way of a federal or state transportation corridor is subject to Caltrans regulations governing allowable actions and modifications to the right-of-way. Caltrans includes the Division of Aeronautics, which is responsible for airport permitting and establishing a county Airport Land Use Commission (ALUC) for each county with one or more public airports. ALUCs are responsible for the preparation of land use plans for areas near aviation facilities.

#### *California Department of Forestry and Fire Protection (CDF)*

The CDF reviews and approves plans for timber harvesting on private lands. In addition, through its responsibility for fighting wildland fires, the CDF plays a role in planning development in forested areas.



### *California Department of Parks and Recreation (CDPR)*

The CDPR manages and provides sites for a variety of recreational and outdoor activities. The CDPR is a trustee agency that owns and operates all state parks and participates in land use planning that affects state parkland.

### **Regional and Local Agencies**

#### *Southern California Association of Governments (SCAG)*

As related to land use, SCAG is authorized to undertake intergovernmental review for federal assistance and direct federal development pursuant to Presidential Executive Order 12,372. Pursuant to CEQA (Public Resource Code Sections 21083 and 21087 and CEQA Guidelines Sections (15206 and 15125(b)), SCAG reviews projects of regional significance for consistency with regional plans. SCAG is also responsible for preparation of the Regional Housing Needs Assessment (RHNA), pursuant to California Government Code Section 65584(a). SCAG's RHNA provides a tool for providing local affordable housing development strategies.

SCAG's current Regional Comprehensive Plan and Guide (RCPG) 1996 is intended to provide a permissive framework for decision making by local governments regarding growth and development. The RCPG proposes strategies for local governments to use on a voluntary basis to reconcile local needs with state and federal planning requirements.

#### *Local Agency Formation Commissions*

The Local Agency Formation Commission (LAFCO) is the agency in each county that has the responsibility to create orderly local government boundaries, with the goal of encouraging "planned, well-ordered, efficient urban development patterns," the preservation of open-space lands, and the discouragement of urban sprawl. While LAFCOs have no direct land use authority, their actions determine which local government will be responsible for planning new areas. LAFCOs address a wide range of boundary actions, including creation of spheres of influence for cities, adjustments to boundaries of special districts, annexations, incorporations, detachments of areas from cities, and dissolution of cities.

### **General Plans**

The most comprehensive land use planning for the area is provided by city and county general plans, which local governments are required by state law to prepare as a guide for future development. General plans contain goals and policies concerning topics that are mandated by state law or which the jurisdiction has chosen to include. Required topics are land use, circulation, housing, conservation, open space, noise, and safety. Other topics that local governments frequently choose to address include public facilities, parks and recreation, community design, sustainability and growth management, among others. These plans provide general definitions and implementation methods for each land use designation in the district. City and county general plans must be consistent with each other. County general plans must cover areas not included by city general plans (i.e., unincorporated areas).

### **Specific and Master Plans**

A city or county may also provide land use planning by developing community or specific plans for smaller, more specific areas within their jurisdiction. These more localized plans provide for focused guidance for developing a specific area, with development standards tailored to the area, as well as systematic implementation of the general plan.

### **Zoning and Land Use Permits**

City and county zoning codes are the set of detailed requirements that implement the general plan policies at the level of the individual parcel. The zoning code presents standards for different uses and identifies which uses are allowed in the various zoning districts of the jurisdiction. Since 1971, state law has required the city or county zoning code to be consistent with the jurisdiction's general plan. Cities and counties typically implement their zoning codes through highly individualized land use ordinances that differ from jurisdiction to jurisdiction.

## Impact Analysis – Land Use

### PUBLIC CONCERNS

#### Local Jurisdictions and Land Use

Concerns were raised during the scoping and public review of the preliminary alternative that the proposed actions could result in loss of local land use control by local governments and agencies. This concern was anticipated, and it would not be the intent of Congress and this region's congressional representatives to contravene local land use plans and controls by virtue of proposed changes in federal land designation. Therefore, in actions common to all alternatives the NPS makes a commitment to putting forward alternatives that respect local land use control and private property rights. NPS laws and policies would only apply to lands that lie within NPS jurisdiction, and U.S. Forest Service laws and policies would similarly apply only to national forest lands. It is expected that any legislation produced from the outcome of this study would explicitly exclude use of eminent domain as a means of acquiring land. Local laws and ordinances would remain in force, and any actions undertaken through this effort would necessarily respect them.

#### Use of Eminent Domain

The public expressed concerns about the use of eminent domain and the possibility of regulatory authority over surrounding landowners and local agencies in alternatives B and C. This concern does not apply to alternative A, because that alternative applies only to lands currently managed by the U.S. Forest Service. Alternative B has been dismissed. In alternatives C and D, this concern is addressed by statements provided in the actions common to all alternatives; it is proposed that authorizing legislation clearly state that eminent domain would not be used as a means of acquiring land. Purchase would be from willing sellers only. Additionally, given funding availability, any land acquisition would be small and take place incrementally over time.

#### Private Property Owners and Inholders

Concerns were expressed that new land use designations would impact cabin owners and inholders in the ANF. There are no proposals made among the alternatives that would impact existing cabin owners and inholders. The ANF lands in question would remain within U.S. Forest Service jurisdiction in all of the alternatives.

## Urban Quality

As stated in the introductory material in this document, over fifty communities and 1.5 million residents lie within the study area. Development and growth trends are such that loss of connection to land and resource values is of concern, and open spaces are diminishing. Local populations are trending towards less healthful conditions, with obesity, diabetes, and respiratory or other physical ailments exacerbated by urban pollution, being of chief concern. These concerns are, in part, the impetus behind this study as articulated by the sponsors of its enabling legislation and as presented in Chapter 1 under *Purpose and Need*. Therefore, the intent of each action alternative is to address these issues in a positive fashion by providing opportunities to counter these trends to a greater or lesser degree, thereby improving the quality of urban life and the built environment.

### NO ACTION ALTERNATIVE

Existing efforts to protect and conserve land for recreation and open space would continue at current levels. Regional growth and development, and lack of regional or coordinated planning efforts would continue to challenge local agencies and organizations in their efforts to provide adequate access to recreation and open space.

Areas identified as experiencing recreational high use would continue to be congested and noisy, with negative impacts on visitor experience and infrastructure. As in many other cases, an activity may be regarded as positive to some, and negative to others. Because the local population is increasing, any resulting effect on local recreation opportunities and experiences would likely be indistinguishable from increases due to non-resident visitor activity that could occur with changes in federal land use designation, as proposed in the other alternatives.

Traffic and congestion would continue to be affected by regional growth and development. Localized congestion at heavily used recreation sites would continue to have moderate adverse impacts on traffic patterns in these areas.

Changes in federal land use designation would not occur in this alternative; hence the issue of impacts on local jurisdictions does not apply.

### ALTERNATIVE A

In alternative A, national forest lands in the San Gabriel Mountains would be redesignated by Congress as an U.S. Forest Service managed national recreation area. Improved recreation

opportunities and conservation within the Angeles National Forest would have an overall beneficial effect on urban life and the built environment for surrounding communities.

Although an increase in visitation would likely exacerbate crowding, noise, congestion and traffic at heavily used sites, alternative A is designed to provide additional resources for more heavily used areas. More resources would be available for public education, improved facilities, and restoration. The ANF would also provide for improved administration and management, thereby mitigating the adverse impacts of heavy use. Activities that would likely result under the action alternatives are as follows:

- New recreational developments would be limited by terrain and sensitive resources. Changes would likely be made within the footprint of existing recreation areas. Minor expansions would be possible for increased parking and day use facilities.
- Major new recreational destinations within the ANF would not be envisioned. It is more likely that newly increased funding would be applied to improving facilities and management at existing visitor areas.

When placed in the context of current transportation patterns, which are primarily affected by regional land use, growth and development, alternative A would have very little effect on traffic patterns throughout the study area. However, with increases in visitation, alternative A could add a negligible adverse impact to local traffic patterns associated with popular recreation areas.

As actions related to alternative A would apply only to national forest system lands, there would be no impact on local land use control.

### **ALTERNATIVE C**

The nature of impacts on land use expected under this alternative is similar to alternative A. However, there are differences between the alternatives that might be reflected in the amount and type of visitation to be expected. This smaller, more urban NRA by its nature would be less of a recreation attraction for a national audience. As such, visitation from this source is expected to be lower than in alternative A. However, several factors would serve to improve and enhance recreation opportunities that would be more accessible for local residents. The smaller NRA would better serve local residents by providing more recreational opportunities for urban communities along the river corridor. Because of a lack of remaining open

space in the NRA, new recreational opportunities would arise out of redevelopment opportunities, restoration of vacant or abandoned lands with habitat potential as they become available. The NRA would also work to improve recreational opportunities along waterways where compatible with flood protection efforts, and would work in partnership with local communities to explore new opportunities for recreation and open space. This is basically a continuation of efforts made as part of the Emerald Necklace Partnership (the no action alternative describes this partnership).

The potential for providing transportation improvements such as better transit connections to destinations within the NRA would, if implemented, make recreation opportunities more accessible for local communities thereby enhancing urban quality.

When placed in the context of current transportation patterns, which are primarily affected by regional land use, growth and development, alternative C would have very little effect. However, an emphasis on connecting people to recreation and improving transportation to major recreational destinations would help to relieve traffic congestion associated with heavy use within the national recreation area such as San Gabriel Canyon.

By providing new recreation opportunities and restoring lands along the San Gabriel River, alternative C would have an overall beneficial effect on urban life and the built environment.

NPS management policies would apply only to NPS-owned lands. There would be no impact on existing local jurisdictions and agencies.

### **ALTERNATIVE D**

Due to the expanded geographical size of the NRA and potentially higher national visibility, alternative D has the greatest likelihood for increased visitation in the long-term. Expanding partnerships and NPS technical assistance to other agencies in this environment are likely to improve the marketing of recreation opportunities beyond the capabilities of the other alternatives. Recreational opportunities in rural areas would reflect the types of existing uses (e.g. staging areas for equestrians, better trail connections, more trailheads and river access) such that the quality of the experience would be expected to improve.

When placed in the context of current transportation patterns which are primarily affected by land use, growth and development Alternative D would have very little effect. However, with a broader emphasis on connecting people

to recreation, providing more close-to-home recreation opportunities for urban communities, and improving transportation to major recreational destinations, Alternative D could help to reduce traffic congestion in heavily used recreation areas to a greater extent than alternative C.

By emphasizing and protecting interconnected ecosystems within and among urban zones, providing more recreational opportunities, and protecting open spaces, alternative D would have the greatest beneficial effect on urban quality and the built environment.

NPS management policies would apply only to NPS-owned lands. There would be no impact on existing local jurisdictions and agencies.

### **CUMULATIVE IMPACTS**

Population growth trends in the study area and the surrounding region are likely to put additional pressure on available open space, thereby impacting urban quality and land use. Considering that public lands in this area are currently among the most heavily visited within the system, recreation opportunities and qualities are likely to diminish if nothing is done. The study area alternatives seek to ameliorate the condition to a greater or lesser degree. Therefore, the cumulative effect of growth and development trends plus the effects of each alternative would likely result in a net beneficial condition to some local communities as a result of improved urban quality, land protection, and economic benefits from recreation and conservation. However, the total cumulative effect is expected to be more dependent upon regional economic conditions and population increases (and distribution) over time than on the actions taken as a result of this study.

### **Conclusions**

The action alternatives positively address current and future recreation and open space needs. In terms of the economic and open space benefits associated with these objectives, the no action alternative would have the least benefit and alternatives A, C and D would have beneficial effects to varying degrees.

Increased visitation would represent an adverse impact on infrastructure and social systems. Since visitation might be expected to increase in each of the action alternatives, infrastructure impacts would likely increase proportionally. The adverse impact in alternative A would likely be negligible, increasing to minor in both C and D. With congressional action approving the implementation of any of the action alternatives, or variants thereof, further planning would be undertaken. Additional environmental analysis would be prepared to look at site and area-specific activities and alternatives. Through that analysis, more specific conclusions can be drawn regarding direct, indirect and cumulative impacts. Joint planning efforts among stakeholders, and subsequent agreements, would be designed to optimize between the economic benefits and social costs so that the former is maximized and the latter is mitigated. None of the alternatives will adversely impact local land use control, as any proposed collaborative NRA designation would not have regulatory authority over its privately and publicly-owned lands. Finally, all of the action alternatives promote the additional protection of open space. Alternative A accomplishes this along the edges of the ANF by facilitating greater cooperation with outside land protection organizations. Alternatives C and D, go further to establish mechanisms for cooperation and coordination, with alternative D realizing the greatest benefit due to its geographical scope.



## Effects on Water Resources

### Affected Environment

A full description of the study area's surface water, groundwater basins, flood protection systems, water rights, and supply is provided in Chapter 2, *Resource Description*. An overview of the study area's surface water quality and trends affecting water quality is provided below.

#### SURFACE WATER QUALITY

While the geologic, hydrologic, climatic, and ecological characteristics for watersheds are unique in the nation, Southern California has also experienced one of the most dramatic environmental transformations due to rapid growth and development. For the past 150 years, the study area watersheds and wetlands have been impacted by agricultural and urban development (California Coastal Conservancy 2001).

Water quality varies greatly throughout the study area. The following section briefly describes water quality within the study area and the primary factors that impact waters considered to be impaired. Generally, water quality in the mountains and headwaters is better than water quality in the lower, more urban portions of the study area watersheds. As described in Chapter 3, *Significance*, several of the mountainous reaches are eligible for National Wild and Scenic River designation.

Sources of surface water pollution include agriculture, industry, wastewater, urban runoff, and widespread use of fertilizers, chemicals, solvents, and household products. Pollution comes from both point sources, such as industries and wastewater treatment plants, and non-point sources such as urban and agricultural runoff and trash. Major dischargers of wastewater in the study area include the San Jose, the Whittier Narrows, and the Pomona wastewater reclamation plants. Recreational use can also impact waterways.

Surface water quality is regulated by the U.S. Environmental Protection Agency and the California State Regional Water Quality Control Boards (RWQCBs) which maintain and update lists of impaired water bodies that exceed state and federal water quality standards. Impaired reaches are river stretches that are officially recognized by the State of California as affected by specific pollutants derived from unknown or nonpoint sources. Table 23 describes California's 2006 Clean Water Act, Section 303(d) List of Water Quality Limited River Segments and Lakes. Below is a description of the impairment categories/types of pollutants (LADPW 2006a and 2006b).

#### WATERWAY IMPAIRMENT CATEGORIES

**Metals.** Metals from stormwater runoff include lead, zinc, cadmium, copper, chromium, and nickel. Such metals can be toxic to aquatic animals and can bioaccumulate. Sources of metal in urban runoff include metal, paint, automobiles, brake pads, or preserved wood.

**Nutrients.** Nutrient pollutants including nitrogen and phosphorous are critical to the growth of plants. However, in high amounts, nutrients can result in excessive growth of vegetation such as algae, which results in water impairment. Common sources of nutrients include fertilizers used in landscaping and agriculture, human and animal waste, and effluent from wastewater treatment facilities.

**Pesticides and Other Organics.** Other organic compounds, aside from nutrients, found in waterways include adhesives, cleaners, sealants, solvents, and pesticides. They enter water bodies through urban runoff and improper disposal. When these substances bioaccumulate in animals and aquatic life, they can have an adverse impact on the health of those species.

**Pathogens (Bacteria).** Bacteria and viruses are common contaminants in urban runoff and stormwater. High levels of indicator bacteria (such as *Escherichia coli*) in stormwater sometimes results in the closure of beaches to contact recreation. Sources include sanitary sewer leaks and spills, malfunctioning septic tanks, and fecal matter from humans and animals.

**Trash.** Trash pollutants include packaging and other products in urban environments, lawn clippings, animal excrement street litter and other organic matter. These substances can harbor bacteria, viruses, vectors, and depress the dissolved oxygen levels in water bodies (LADPW 2006b).

#### GROUNDWATER QUALITY

Groundwater basin water quality is a concern in the study area and quality varies throughout the area based on naturally occurring conditions, historical land use patterns, and groundwater extraction patterns. In some areas groundwater quality has been affected by land use and production practices such as industrial discharges, seawater intrusion due to overdrafting, industrial discharges, agricultural chemical usage, livestock operations, urban runoff, and some naturally occurring constituents. The cost and effort of cleaning up some of the contaminated groundwater basins is extensive. Several sites in the San Gabriel Valley Basin are on the EPA's National Priorities List for Remediation (LADPW 2006b). Table

24 provides an overview of groundwater pollutants for study area groundwater basins

## **IMPACT ANALYSIS – WATER RESOURCES**

Judging by the current condition, and as an accepted tenet in land management, as recreation use grows there is a concomitant amount of stress placed upon natural resources such as water quality. As shown in other discussions, the intent of this study is to find a means whereby watershed resources and values can be conserved along with providing opportunities for people to appreciate and enjoy them. Current trends in land use and recreation include a diminishing availability of open spaces and a related deterioration in natural resource qualities associated with watershed values. The action alternatives represent incremental approaches to meet the intent of the study. Therefore, despite the projected increases in visitation that might be experienced under the alternatives, all contain measures that would, overall, improve and enhance watershed values. The major assumption to be made in this regard is that visitor populations and local communities will become more knowledgeable, appreciative, and understanding of watershed values through enhanced education and interpretation afforded in each alternative. Alternatives C and D, in particular, apply this assumption to water-based resources along the San Gabriel River System and represent affirmative approaches to watershed management, riparian values, and wetland and floodplain protection.

The alternatives are oriented to policy rather than activity. No specific actions are proposed other than federal designation and partnership development. Therefore, as with other resources, analysis of specific impacts on water resources is not possible beyond the general statement above. Should Congress act to establish new designations, further environmental analysis would be necessary to plan their implementation. That analysis would likely propose specific types of actions that can be evaluated more specifically in terms of potential effects on water resources and values associated with them.

**Table 23: Impaired Surface Waters within the Study Area**

Reach or Water body	Pollutant Category/Type
Walnut Creek Wash (Drains from Puddingstone Reservoir)	Miscellaneous (pH)
Sawpit Creek	Other Organics (Bis(2ethylhexyl)phthalate/DEHP)
<b>Santa Clara River Reach 7</b> (Bouquet Canyon Rd to above Lang Gaging Station)	Pathogens (Coliform Bacteria)
<b>San Jose Creek Reach 2</b> (Temple to I-10 at White Ave.)	Pathogens (Coliform Bacteria)
<b>San Jose Creek Reach 1</b> (San Gabriel River Confluence to Temple St.)	Nutrients (Ammonia)
San Gabriel River, East Fork	Trash
<b>San Gabriel River Reach 2</b> (Firestone Avenue to Whittier Narrows Dam)	Pathogens (Coliform Bacteria)
<b>Rio Hondo Reach 2</b> (At Spreading Grounds)	Nutrients (Ammonia)
<b>Rio Hondo Reach 1</b> (Confluence of the Los Angeles River to I-5)	Pathogens (Coliform Bacteria)
Monrovia Canyon Creek	Metals/Metalloids (Lead)
Coyote Creek	Nutrients (Ammonia)
Santa Fe Dam Park Lake	Metals/Metalloids (Copper)
Puddingstone Reservoir	Pesticides (Chlordane)
Peck Road Park Lake	Pesticides (Chlordane)
Legg Lake	Nutrients (Ammonia)
Crystal Lake	Nutrients (Organic Enrichment/Low Dissolved Oxygen)
Source: State Water Quality Control Board, 2006 303(d) impairment status.	

**Table 24: Groundwater Basin Water Quality**

Groundwater Basin	Pollutants
Coastal Plain of Los Angeles, Central Subbasin	Found in sample wells: Inorganics, radiological, nitrates, volatile organic compounds (VOCs) and semi-volatile organic compound (SVOCs)
San Gabriel Valley	Four areas are considered superfund sites (Whittier Narrows, Puente basin, Baldwin Park, and El Monte areas). Found in sample wells: Inorganics, radiological, nitrates, pesticides, VOCs and SVOCs
Raymond	Found in sample wells: Inorganics, radiological, nitrates, VOCs and SVOCs  A Superfund site exists near the Jet Propulsion Laboratories.
Upper Santa Ana Valley, Chino Subbasin	Most serious problems are high concentrations of dissolved solids.
San Fernando Valley	Found in sample wells: Inorganics, radiological, nitrates, pesticides, VOCs and SVOCs
Acton Valley Groundwater Basin	Found in sample wells: nitrates, inorganics
Antelope Valley	Found in sample wells: Inorganics, radiological, nitrates, pesticides, VOCs and SVOCs
Source: California Department of Water Resources 2003	

## Public Concerns

### WATER RIGHTS AND SUPPLY IMPACTS

The public indicated concern about the potential effects of a new federal designation or overlay on private water rights or the ability of state and local agencies to make decisions regarding water supply and quality. There would be no effect in this regard because all of the alternatives would respect and retain existing water rights (see *Actions Common to All Alternatives*, page 146). Water districts and agencies would continue to manage water supply and discharge. No change would be made to water rights.

However, there could be a beneficial impact on water quality, in each of the action alternatives, from increased interpretation and education, enhanced visitor management and restoration activities. For example, it is anticipated that there would be more law enforcement, better facilities, and increased education and interpretation in high use areas along the San Gabriel River.

It is the stated purpose of any alternative being considered in this study to improve watershed values for the dual purpose of providing quality water-based recreation and to protect or enhance the quality of water supplied to users downstream. These types of beneficial effects are enhanced by increasing allocations of lands into protective status under the various alternatives. The alternatives would also provide new opportunities to restore and improve waterways where possible. This would be done in partnership with water agencies, the Los Angeles County Department of Public Works and the Army Corps of Engineers.

Water rights and uses are expressly protected under any of the action alternatives. Similarly, since the redirection, reapportionment, or redistribution of water sources and supplies are not proposed in any alternative, there would be no impact on other resources or values from such actions. A concern was expressed in regard to the impact of water redistribution specifically on Native American sacred sites, to which it can be said there would be no effect.

### NO ACTION ALTERNATIVE

Groundwater basin water quality and surface water pollution would continue to be managed as they are now. Water quality would vary greatly from location to location throughout the study area, depending primarily on the level of development and land uses. Limited funding for restoration, planning, and public education to address water

quality impacts would result in continuing minor to moderate adverse impacts on water resources. The water quality of rivers and creeks in certain areas would continue to be a public health and safety concern.

### ALTERNATIVE A

If this alternative was selected, authorizing legislation would reaffirm the original purpose of the ANF to protect watershed resources. Protection of watershed resources would take precedence in determining future uses of the forest. Within the ANF, impairments to waterways are from primarily from trash. Additional resources for visitor education, and more rangers on-site in heavily used recreation areas could reduce pollution caused by recreational use, having a beneficial effect on water resources.

Alternative A would also emphasize restoration, which could improve the overall water quality of rivers and streams within the ANF. Improved water quality would have an indirect beneficial effect on public health and safety.

### ALTERNATIVE C

Alternative C would do little immediately to ameliorate the current watershed conditions expressed in the affected environment section. The new emphasis on river-based recreation holds the potential for additional impacts on water resources as described above. However, Alternative C would provide additional resources for visitor education, and more rangers on-site in heavily used recreation areas.

Alternative C would be focused only along the main corridors of the San Gabriel River within the NRA. Over time, restoration opportunities funded by the NRA partnership would also have a beneficial effect on water quality within the San Gabriel River. Water quality improvements would be greatest in those areas where current impairments are a result of recreational use. Improved water quality would have an indirect beneficial effect on public health and safety.

### ALTERNATIVE D

Alternative D would do little immediately to ameliorate the conditions within the study area at large as described in the affected environment section. The new emphasis on river-based recreation, and potentially on other recreation uses throughout the expanded NRA, holds the potential for additional impacts on water resources as described above. However, this alternative proposes reaffirmation of the original purpose



for the area, to protect watershed resources. Protection of watershed resources would take precedence in determining future uses. Alternative D would have similar beneficial effects to alternative C for water quality on rivers and creeks that are primarily impacted by recreational use. However, as alternative D would provide restoration opportunities throughout the San Gabriel Mountains and along the San Gabriel River and Puente Hills, the beneficial effects would be greater than in alternative C. Additionally, the NRA would also be able to provide technical assistance for improved recreational planning and restoration opportunities outside of the study area, providing the opportunity to focus on broader restoration efforts. Improved water quality would have an indirect beneficial effect on public health and safety.

### **CUMULATIVE IMPACTS**

Population growth and land use trends in the study area and the surrounding region are likely to continue to adversely impact water use and quality as described in the no action alternative. The study area alternatives seek to ameliorate these conditions to a greater or lesser degree. The total cumulative effect is expected to be more dependent upon local and regional land use over time than on the actions taken as a result of this study. However, restoration and improved public education and recreational facilities proposed in the alternatives would improve conditions to some degree. Alternative D would provide the greatest beneficial effects as it would provide the most resources for restoration, education and recreational improvements. A new emphasis on river-based recreation and trail use over a broad area, where use is expected to increase, has the potential to add to existing impacts within the watershed for a net negative impact downstream. This effect would be negligible in the context of the beneficial effects of watershed improvements that could result from the action alternatives.

### **Conclusions**

Existing threats and impacts to area water resources would continue and the alternatives would not ameliorate the overall conditions within the study area that are expressed in the affected environment section, and in the no action alternative. However, with increased restoration activities, better public recreation, and improved recreational facilities and visitor management, the action alternatives would have a beneficial effect on water resources. The new emphasis on river-based recreation, and potentially on other recreation uses throughout the expanded NRA, holds the potential for additional impacts on water resources downstream. With appropriate applied management and application of best management practices to mitigate nonpoint sources of sediment or other pollutants, adverse impacts would likely be only minor. The abatement of impacts from recreation would be heavily dependent upon monitoring, education, and applied management.

## Goals of the Alternatives

The following section compares the potential beneficial and adverse impacts of the action alternatives based on the goals established for all alternatives. The goals were developed by the study team, based on the public input received. They represent values that appeared to be shared by many of the respondents in the various public input opportunities throughout the study process.

### Address Current and Future Recreation and Open Space Needs

All three action alternatives (A, C, and D) seek to address recreation and open space needs within the study area. Alternative A would primarily improve the quality of recreation within the San Gabriel Mountains portion of the ANF. However, it would do little to address the needs of nearby urban communities that are currently deficient in parks and open space. Without addressing this need, increasing demands on the ANF to provide local recreational opportunities could diminish the visitor experience over time.

Alternative C would provide more recreation and open space opportunities for communities along the San Gabriel River corridor and would also provide resources to improve the recreational experience in the highly used San Gabriel Canyon area. Alternative D would provide the greatest ability to address current and future recreation and open space needs. A larger area is included in the NRA and technical assistance programs would allow the NRA assist local communities in making connections to NRA resources and in developing more close-to-home recreational opportunities. Alternative D would also provide more resources for regional open space conservation.

### Protect or Restore Significant Natural Resources and Important Habitats

Alternative A would provide improved protection of nationally significant resources within the San Gabriel Mountains. Significant native habitat would be improved by greater restoration efforts and improved planning and partnerships with other agencies to protect wildlife corridors. Alternative C would do the least in terms of protecting and restoring significant natural resources and important habitats as it contains the smallest amount of nationally significant resources and native habitat found within the study area. Restoration and protection would occur in the San

Gabriel River upper watershed and along the river corridor to Santa Fe Springs. However, significant resources located in other areas of the San Gabriel Mountains and Puente Hills would not benefit.

Alternative D provides the greatest opportunity to protect and restore natural resources and important habitats on a regional scale. The proposed NRA would contain most of the nationally significant regions identified in the resource analysis. Additionally, the NRA partnership would work regionally to protect and restore wildlife corridors and habitat. Studies have shown that protection of wildlife corridors enhances ecological diversity and provides additional protection from threats from nonnative species, altered fire regimes, and the effects of climate change.

### Preserve Historic and Cultural Resources

Most of the nationally significant cultural resources in the study area are located in the San Gabriel Mountains. As such, alternatives A and D provide the most potential for protecting significant cultural resources within the study area. Alternative C would allow for greater preservation of cultural and historical resources associated with the San Gabriel River, including historic mining sites, the site of the original San Gabriel Mission, and the Pio Pico State Historic Park. However, alternative C would preserve cultural resources to a lesser degree than alternatives A and D due to its narrower geographic focus.

### Maintain or improve water quality, water conservation and flood protection

All of the alternatives would respect existing management and structures necessary for flood protection. However, each of the action alternatives would have the potential to improve water quality. Alternative D would provide the most opportunities to improve water quality. Improved visitor education, visitor management, and restoration opportunities throughout the San Gabriel Mountains and along the San Gabriel River would provide numerous opportunities to improve water quality.

Alternative A would also provide regional benefits to water quality and conservation. The early conservation of the San Gabriel Mountains was intended for watershed protection and this would be reaffirmed in both Alternatives A and D. Protection of watershed resources and additional restoration throughout the mountains would

improve water quality both in the mountains and downstream. Alternative C would have benefits to the San Gabriel River watershed, through enhanced visitor management and education and restoration opportunities within the NRA. However, it would do nothing to improve the water quality of other watersheds located within the study area, such as the Los Angeles River, the Santa Clara River and rivers that drain into the Antelope Valley.

## Environmentally Preferred Alternative

The “environmentally preferred” alternative is the one that best protects, preserves and enhances historic, cultural and natural resources, and that causes the least damage to the biological and physical environment. The environmentally preferred alternative is not the same as an agency’s “preferred” alternative.

The environmentally preferable alternative is determined by applying criteria set forth in NEPA, as guided by direction from the CEQ. The CEQ has stated that the environmentally preferred alternative is the alternative that will promote the national environmental policy as expressed in Sections 101 and 102 of NEPA. This includes alternatives that:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.
- Ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.
- Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.
- Preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.
- Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life’s amenities
- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

All alternatives except “no action” would achieve the requirements of Sections 101 and 102 of NEPA. By permanently protecting nationally significant resources in the study area, all would (a) fulfill stewardship responsibilities to succeeding

generations, (b) ensure culturally and aesthetically pleasing surroundings, (c) attain a wide range of beneficial uses of the environment without degradation or undesirable consequences, (d) preserve important historic, cultural and natural aspects of our national heritage and maintain an environment that supports diversity and variety of individual choice, and (e) achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life’s amenities. However, the alternatives meet these criteria to a significantly different degree.

The NPS has determined that alternative D would be the environmentally preferable alternative because it would protect natural and cultural resources over a significantly larger area, provide greater opportunities for recreation and visitation, provide greater economic benefits, and foster a larger framework for cooperative management as compared to alternatives A and C.

The environmentally preferable alternative should not be viewed as the National Park Service’s preferred alternative. The Director of the National Park Service is required under law and policy to identify which alternative or combination of alternatives would be most effective and efficient in protecting significant resources and providing for visitor enjoyment. The Director will make this finding after the publication of the draft special resource study / environmental assessment, considering public and stakeholder comment. This finding will be included in the study package forwarded to the Secretary of the Interior.

**Table 25: Summary of Environmental Consequences**

Impact Topics	No Action	Alternative A
<b>Biological Resources - Native Plants</b>	Trends that currently have an adverse impact on native plants, such as invasive species, altered fire regimes, and habitat loss, would continue to have minor to moderate adverse effects on native plant communities.	<p>Protection and awareness of native plants through enhanced interpretation and educational efforts due to the new designation would have beneficial effects on native plant communities.</p> <p>There would be opportunities for increased staff and funding dedicated to the control of nonnative species.</p> <p>The USFS would have additional authorities to work with other land management agencies to protect important wildlife connections to the forest. Protection of habitat corridors enhances species diversity and resilience to threats such as altered fire regimes, invasive species, and climate change.</p>
<b>Biological Resources - Wildlife</b>	<p>Many of the study area native habitat types are severely reduced from their former range.</p> <p>Threats such as habitat loss and fragmentation as a result of development, air pollution, water pollution, and altered fire regimes would continue to have moderate adverse effects on the viability of many species and communities including those that are threatened or endangered.</p>	<p>In alternative A, the proposed designation would bring more resources to the USFS for habitat restoration, conservation, research, and planning for wildlife corridors.</p> <p>Designation would ensure that proposed new or future uses on the national forest would be compatible with the protection of significant resources and watershed values. This would have an overall beneficial effect on protecting wildlife resources within the ANF.</p>
<b>Cultural Resources</b>	<p>Trends that adversely impact cultural resources including, archeological and historical resources within the study area would continue.</p> <p>Within the ANF, cultural resources would continue to be threatened by erosion, fire, flood, vandalism, looting, and land use practices. Additional threats to cultural resources throughout the study area include flooding, water erosion, off-road vehicle use, unauthorized collecting of artifacts, and industrial activities such as mining.</p> <p>Such threats would continue to have minor to moderate adverse effects on cultural resources.</p>	<p>In alternative A, more resources would be available to the USFS for documentation, education, and interpretation of cultural resources within the ANF. The ANF may also be better able to form new partnerships for the protection of cultural resources.</p> <p>Beyond the ANF, existing threats to cultural resources would continue to have minor to moderate adverse effects on cultural resources as a result of natural deterioration of some historic resources due to lack of maintenance and preservation measures and loss of some sites over time.</p> <p>No dedicated federal funds would be available to document and interpret cultural resources in a comprehensive manner outside of the ANF.</p>



**Table 25: Summary of Environmental Consequences**

<b>Alternative C</b>	<b>Alternative D</b>
<p>Alternative C would provide beneficial effects on native plant protection and education along the San Gabriel River and in the highly visited upper watershed. This would occur through coordinated interpretive efforts, new resources for conservation, and new agency partnerships focused on conservation and restoration of native plant communities.</p> <p>Information centers located throughout the study area could also provide an opportunity for greater awareness with regard to native plant protection.</p> <p>As in alternative A, a component of native plant protection would be to focus on the control of nonnative species.</p>	<p>Alternative D would have the greatest benefit for native plant habitat as it recognizes and promotes protection of habitat in the San Gabriel Mountains, Puente Hills, and along the San Gabriel River corridor. The NPS would provide technical assistance on a voluntary basis to conserve wildlife corridors and native habitats.</p> <p>The larger NRA would also provide coordinated interpretive efforts, new resources for conservation, and new agency partnerships focused on conservation of native plant communities.</p>
<p>In Alternative C, the proposed designation would bring more resources to both the ANF and the San Gabriel River corridor for wildlife protection. Additionally, partnering entities would work to leverage greater funding for conservation along the San Gabriel River.</p> <p>Designation would ensure that proposed new or future uses on the national forest would be compatible with the protection of significant resources and watershed values. This would have an overall beneficial effect on protecting wildlife resources within the ANF.</p> <p>The potential for increased water and land-based recreation opportunities could result in a minor adverse effect on wildlife and wildlife habitat. This would be mitigated through visitor education programs, monitoring, and</p>	<p>Designation would ensure that proposed new or future uses on the national forest would be compatible with the protection of significant resources and watershed values. This would have an overall beneficial effect on protecting wildlife resources within the ANF.</p> <p>Through partnerships, new funding, and technical assistance programs, alternative D would provide the greatest opportunity to protect habitat and connect wildlife corridors important for significant resources.</p> <p>The potential for increased recreation opportunities, in areas where previous use has been light or nonexistent, could result in a minor adverse effect on wildlife and wildlife habitat. This would be mitigated through visitor education programs, monitoring, and restoration efforts.</p>
<p>In alternative C, NPS technical assistance for cultural resource protection would reinforce best management practices for protecting structures, landscapes, archeological resources, and ethnographic resources.</p> <p>Coordinated protection of cultural resources would be enhanced through NRA partnership agreements.</p> <p>Coordinated interpretation and education would have beneficial effects on the protection and understanding of cultural resources.</p> <p>An increase in coordinated land conservation efforts would also likely enhance the protection of cultural and ethnographic resources on lands that are as yet undisturbed.</p>	<p>Alternative D would be fundamentally the same as alternative C, but it would expand the protective boundaries and cover more sites and cultural themes since the area includes the entire San Gabriel Mountains portion of the ANF, the Puente Hills, and the San Gabriel River corridor.</p> <p>Alternative D would provide the most comprehensive and coordinated effort to protect cultural resources throughout the study area through:</p> <ul style="list-style-type: none"> <li>• More NPS technical assistance</li> <li>• More research and documentation of broader areas</li> <li>• More comprehensive interpretation and education of broad cultural themes throughout the NRA.</li> <li>• Expanded partnerships, coordination and consultation with stakeholder groups, including Native Americans.</li> </ul>

**Table 25: Summary of Environmental Consequences**

<b>Impact Topics</b>	<b>No Action</b>	<b>Alternative A</b>
<b>Recreation Use and Visitor and Experience</b>	<p>Higher demands would be placed on existing recreation areas with current trends in population growth.</p> <p>Inequities in recreation opportunities would likely continue.</p> <p>Recreational opportunities would occur only through existing agencies and local governments as funding permits. Lack of resources and personnel for recreation management would continue.</p> <p>Coordinated interpretation for significant resources would not occur.</p> <p>Interpretation and educational programs in the ANF would continue to be greatly limited by current funding and staffing, having a moderate adverse impact on visitor experience.</p>	<p>In alternative A, more USFS staff would be available within the new NRA to manage visitors.</p> <p>Additional funding for improved recreational facilities and more interpretive and educational programming would have a beneficial effect on the visitor experience within the ANF.</p> <p>Alternative A would do little to ameliorate the lack of recreational opportunities available to urban areas that are currently deficient in parks and open space.</p>
<b>Socioeconomics</b>	<p>Current trends in property values, economic activity, income, population, employment, recreation use and distribution, tourism, community relationships (as affected by local federal land use) would continue.</p> <p>Areas identified as experiencing recreational high use would continue to be congested and noisy, with negative impacts on visitor experience and infrastructure.</p>	<p>The NRA designation and improved recreational opportunities would cause small increases in visitation over time.</p> <p>Increased visitation would have modest beneficial effects on surrounding local communities which would provide services to such visitors.</p> <p>Increased investment in the ANF to provide more staffing for visitor services, planning, and restoration could result in additional jobs for the region.</p>
<b>Socioeconomics -Socially and Economically Disadvantaged Populations</b>	<p>The existing lack of open space, lack of effective transportation, lack of culturally advantageous facilities or opportunities, and lack of knowledge about recreation and natural resources would continue to have moderate adverse impact on socially and economically disadvantaged populations.</p>	<p>Alternative A would have a generally beneficial impact on socially and economically disadvantaged populations. However, it would likely represent only a minor improvement for communities that are currently underserved for opportunities to access natural resources and open space.</p>

**Table 25: Summary of Environmental Consequences**

<b>Alternative C</b>	<b>Alternative D</b>
<p>There would be more targeted planning efforts and leveraged funds to create recreational opportunities along the San Gabriel River. More trail connections and new transit options designed to connect communities to the NRA would improve access to recreational areas and open space.</p> <p>Through cooperative agreements, agencies would share staff to assist in visitor management. The NPS would also be able to provide staff assistance and visitor management technical assistance throughout the NRA.</p> <p>The voluntary information network would provide more opportunities to provide interpretive and educational programs about the resources of the San Gabriel River Watershed.</p> <p>Alternative C could also provide public health benefits to those communities near the San Gabriel River corridor.</p>	<p>Alternative D would have the greatest beneficial effect on recreational opportunities and visitor experience. More trail connections and new transit options would improve access to recreational areas and open space.</p> <p>The NPS would provide technical assistance to improve open space and recreation planning in surrounding communities.</p> <p>Through cooperative agreements, agencies would share staff to assist in visitor management. The NPS would also be able to provide staff assistance for visitor management throughout the NRA.</p> <p>The larger NRA and voluntary information network would allow for coordinated interpretive and educational opportunities throughout the study area providing the greatest beneficial effects on the visitor experience.</p> <p>Alternative D would have a greater beneficial effect on public health for communities throughout the region, through providing the most new opportunities for outdoor recreation.</p>
<p>Small increases in visitation to NRA destinations could have modest beneficial effects on surrounding local communities which would provide services to such visitors.</p> <p>The new designation would result in additional jobs to support the NRA. Job training would be incorporated into staffing and volunteer programs. Such effects would be negligible in the regional context.</p>	<p>Small increases in visitation over time could have modest beneficial economic effects on surrounding local communities which would provide services to such visitors.</p> <p>With a larger designation, and a greater emphasis on education and job training, alternative D may provide slightly more benefits than the other alternatives in terms of creating jobs. Such effects would be negligible in the regional context.</p>
<p>Alternative C would have a greater beneficial impact on socially and economically disadvantaged populations, with efforts applied specifically in urban areas close to the San Gabriel River.</p> <p>Alternative C provides job training and opportunities within these communities which has the potential both to improve access for recreation, but also to build programs to provide training and job opportunities.</p> <p>The development of effective and diverse partnerships would also serve to build programs and cooperative agreements with organizations that represent disadvantaged populations.</p>	<p>With regional technical assistance programs, job training, and improved transportation connections to recreation and open space, alternative D presents the most resources and assistance for providing such communities with better access to recreational opportunities.</p> <p>As in C, alternative D provides job training and career opportunities for local communities.</p> <p>As in alternative C, the development of effective and diverse partnerships would also serve to build programs and cooperative agreements with organizations that represent disadvantaged populations.</p>

**Table 25: Summary of Environmental Consequences**

Impact Topics	No Action	Alternative A
<b>Land Use</b>	<p>Existing efforts to protect and conserve lands would continue at current levels. Regional growth and development, and lack of regional or coordinated planning efforts would continue to challenge local agencies and organizations in their efforts conserve open space.</p> <p>Traffic and congestion would continue to be affected primarily by regional growth and development. However, Localized congestion at heavily used recreation sites would continue to have moderate adverse impacts on traffic patterns in these areas.</p>	<p>Improved recreation opportunities and land conservation within the ANF would have an overall beneficial effect on urban life and the built environment for surrounding communities.</p> <p>Alternative A would have very little effect on traffic patterns throughout the study area. However, with increases in visitation, alternative A could add a negligible adverse impact to local traffic patterns associated with popular recreation areas.</p> <p>Alternative A actions would apply only to national forest lands. There would be no impact on land use managed by existing agencies and local jurisdictions.</p>
<b>Water Resources</b>	<p>Water quality would vary greatly from location to location throughout the study area, depending primarily on the level of development and land uses.</p> <p>Limited funding for restoration, planning, and public education to address water quality impacts would result in continuing minor to moderate adverse impacts on water resources.</p> <p>The water quality of rivers and creeks in certain areas would continue to be a public health and safety concern.</p>	<p>Additional emphasis on restoration and the protection of watershed resources would have a beneficial effect on water resources in the ANF.</p> <p>Additional resources for visitor education and more rangers on-site in heavily used recreation areas could reduce pollution caused by recreational use thus having a beneficial effect on water resources in the ANF.</p> <p>Improved water quality would have an indirect beneficial effect on public health and safety.</p>



**Table 25: Summary of Environmental Consequences**

<b>Alternative C</b>	<b>Alternative D</b>
<p>Alternative C would have a beneficial impact on the availability of open space along the San Gabriel River corridor, having a beneficial effect on urban quality and the built environment in these areas.</p> <p>When placed in the context of current transportation patterns, which are primarily affected by regional land use, growth and development, alternative C would have very little effect. Transportation improvements to destinations within the NRA, if implemented, could alleviate traffic congestion in high use recreation areas. Such effects would be negligible in the regional context.</p> <p>NPS management policies would apply only to NPS-owned lands. There would be no impact on land use managed by existing agencies and local jurisdictions.</p>	<p>By emphasizing and protecting interconnected ecosystems within and among urban zones, providing more recreational opportunities, and protecting open spaces, alternative D would have the greatest beneficial effect on open space availability, urban quality, and the built environment.</p> <p>With a broader emphasis on connecting people to recreation, providing more close-to-home recreation opportunities for urban communities, and improving transportation to major recreational destinations, alternative D could have beneficial effects on reducing traffic congestion in high use recreation areas. Such effects would be negligible in the regional context.</p> <p>NPS management policies would apply only to NPS-owned lands. There would be no impact on land use managed by existing agencies and local jurisdictions.</p>
<p>Over time, restoration opportunities funded by the NRA partnership would have a beneficial effect on San Gabriel River water quality.</p> <p>Alternative C would provide additional resources for visitor education, and more rangers on-site in heavily used recreation areas along the main corridors of the San Gabriel River. Additional resources for visitor education and more rangers on-site in heavily used recreation areas could reduce pollution caused by recreational use thus having a beneficial effect on water resources where current impairments are a result of recreational use.</p> <p>The increased emphasis on river-based recreation, and potentially on other recreation uses throughout the expanded NRA, holds the potential for additional impacts on water resources. However, this would be mitigated through more visitor education programs and more on-site staff to manage visitation.</p> <p>Improved water quality would have an indirect beneficial effect on public health and safety.</p>	<p>Alternative D would provide more restoration opportunities throughout the San Gabriel Mountains, along the San Gabriel River, and Puente Hills. Over time, these efforts would have greater beneficial effects on water resources than in alternative C.</p> <p>Alternative D would have similar beneficial effects to alternative C for water quality on rivers and creeks that are primarily impacted by recreational use.</p> <p>Additionally, the NRA would provide regional technical assistance for improved recreational planning and restoration opportunities, providing the opportunity to focus on broader watershed restoration efforts.</p> <p>The increased emphasis on river-based recreation, and new recreational opportunities throughout the expanded NRA, holds the potential for additional impacts on water resources. However, this would be mitigated through more visitor education programs and more on-site staff to manage visitation.</p> <p>Improved water quality would have an indirect beneficial effect on public health and safety.</p>

