United States Department of Agriculture

San Gabriel Mountains National Monument Management Plan

Final Environmental Assessment

Forest Service | Angeles National Forest | Los Angeles County, California | April 2018

For More Information Contact:

Rachel Smith
Angeles National Forest
701 N. Santa Anita Ave.
Arcadia, CA 91006
Phone: (626) 574-5215
Fax: (626) 574-5235

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Chapter 1. Purpose and Need

Introduction

On October 10, 2014, President Barack Obama signed the Proclamation designating 346,177 acres of existing Federal lands as the San Gabriel Mountains National Monument (Monument). The Monument is the eighth national monument under Forest Service management. The Proclamation described the historical, natural, and cultural significance of the features within the proclaimed area that warranted the special designation of a national monument. The Proclamation directed that certain uses continue, including tribal rights to utilize the lands in traditional manners. The Proclamation also acknowledged the continuation of valid existing rights and uses, such as utilities and water infrastructure.

The Proclamation directed that the administration of these activities continue, but in a manner consistent with the intent of the Proclamation. The Federal lands and interests in lands within the boundaries of the Monument were withdrawn from location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing, with the exception of valid existing mining rights. The Proclamation for the Monument mandated the preparation of a monument management plan within 3 years, a transportation plan, and further, that the management framework needed to be developed in a collaborative manner. This environmental assessment (EA) analyzes the effects from the monument management plan.

The Monument is within the administrative boundary of the Angeles National Forest (ANF). The ANF is proposing to amend the existing Angeles National Forest Land Management Plan (ANF LMP, USDA Forest Service 2005a) with this Monument Management Plan (Monument Plan).

The existing ANF LMP was originally adopted in 2005, and includes 99 percent of all National Forest System (NFS) lands now within the Monument. The San Bernardino National Forest previously administered and managed approximately 4,002 acres of the Monument according to the 2005 San Bernardino Land Management Plan. However, the Regional Forester has assigned administrative and planning authority for the entire 346,177 acres of the Monument area to the ANF. The amended ANF LMP will apply to NFS lands within the ANF administrative boundary, which now includes the entire Monument. The changes associated with the ANF LMP and within the Monument management plan will apply only to the Monument area.

Management Direction

2005 Angeles National Forest Land Management Plan

The ANF LMP includes many resource protective measures applicable to the Monument, and has been refined through amendments and administrative changes with extensive public and scientific input. Using the 1982 Forest Service Planning Rule, the ANF LMP is based upon the principles of adaptive management as outlined in the report, “Sustaining the People’s Land,” which was published by a committee of scientists in 1999. The current plan has three parts: Vision, Strategy, and Design Criteria, which together provide integrated management direction that provides for multiple uses while protecting and enhancing natural resources.

2014 Land Management Plan Amendment

In 2013 and 2014, the four Southern Province Forests (Angeles, Cleveland, Los Padres, and San Bernardino National Forests) evaluated roadless areas, wilderness, land use zones, and the monitoring program. As a result, some land use zones were changed through an ANF LMP amendment in October 2014. Approximately 780 acres within the Monument were changed from *Back Country* and *Back Country Motorized Use Restricted* to *Back Country Non-Motorized* land use zone, and some other minor adjustments were made within the West Fork Inventoried Roadless Area.

2016 ANF LMP Plan Monitoring Program

The resulting monitoring strategy was completed as an administrative action under new monitoring requirements and procedural process outlined in the 2012 Forest Service Planning Rule. This was the result of the review of the monitoring program, and was done as a non-significant plan amendment.

Other Applicable Protection

The existing ANF LMP and its amendments set the current management framework for the ANF. The 2005 ANF LMP Biological Opinion and the 2013 Ongoing Activities Biological Opinion were issued by the U.S. Fish and Wildlife Service to the Angeles National Forest. These documents acknowledge the management direction included within the ANF LMP and "ongoing" activities occurring on the ANF and set minimization measures and conservation measures that ANF is required to abide by. In addition, agency policy requires ANF to consider the Regional Forester's list of ANF sensitive species during project and program analyses, and provide measures to protect species and their habitats.

In 2009, Congress designated approximately 39,039 acres as the Magic Mountain and Pleasant View Ridge Wilderness Areas. Both areas are within the Monument, and have been managed as wilderness since 2009.

The lands within the Monument are already under many other Federal protections in existing laws, regulations, and policies. The San Dimas Experimental Forest remains closed to general use, except under permit for research or limited educational purposes. Appendix A in Part 3 of the current ANF LMP lists relevant current protections.

Purpose and Need

The Proclamation requires the Forest Service to prepare a management plan for the Monument within three years. The Forest Service carefully compared the Proclamation mandates with the existing ANF LMP to identify whether any changes were needed. Based on the review, the Forest Service found that much of the proper care and management of the Monument's heritage and ecosystems' features could be achieved with the existing protections under the ANF LMP. The ANF LMP was crafted with adaptive management principles and balanced the need for recreational uses and commodity production with protections of ecosystems and special status species' conservation measures.

The responsible official determined that a limited amount of new direction would likely be needed as part of the Monument Plan that would be addressed in a land management plan amendment. These changes were originally identified and described in a preliminary "Need to Change" document. Identifying a need to change the plan is the first step of the plan amendment

process under the 2012 Planning Rule (36 CFR Part 219), which sets forth requirements for developing, amending, and revising land management plans for NFS units.

The Proclamation withdrew lands within the Monument from mineral and energy resources exploration and development, except valid existing rights present at the time of monument designation. Because of this withdrawal, the Forest Service needs to adjust the existing ANF LMP direction for the Monument area to bring it into conformance with the Proclamation.

The Forest Service shared the preliminary "Need to Change" document with the public during scoping. In response, the public submitted additional issues for the Forest Service to consider. The Forest Service took into consideration key issues brought up by the public and expanded the scope of the amendment to develop the proposed action (alternative 2) as part of the Draft Environmental Assessment.

To provide for protection and interpretation of scientific and historic objects identified in the Proclamation, and based on public comments, as well as protections already in place under the ANF LMP, the Forest Service identified the following resource areas in need of additional or changed direction as part of the Monument Plan.

Transportation and Access

The Proclamation requires that the Forest Service prepare a transportation plan for the Monument. However, transportation planning for the entire forest is primarily done through the travel management process as required by the 2005 Travel Management Rule (36 CFR 212). To avoid duplication, the Monument transportation plan provides a summary of the current transportation system. The Forest Service identified some limited areas where additional management direction is needed to address the Proclamation.

There is a need to develop plan direction that:

- Improves road and trail conditions to protect resources;
- Recognizes the need to collaborate with local communities and partners when planning new trailheads, facilities, and other types of access to the Monument; and
- Addresses traffic congestion and parking capacity, especially within concentrated use areas.

Sustainable Recreation

The ANF LMP provides plan direction for various aspects of recreation management. The plan components in the existing ANF LMP include desired conditions for recreational sites and includes standards, strategies, and tactics to manage recreation in the Forest. The Forest Service identified some limited areas where additional management direction is needed to address the Proclamation.

There is a need to develop plan direction that:

- Provides sustainable and diverse recreation opportunities to existing and new users that considers changes in population demographics, reflects desires of local communities, avoids user conflicts and emphasizes visitor education, and minimizes resource damage;
- Supports partnerships to accomplish sustainable recreation goals; and

- Balancing protection of the resources while enhancing users' recreational experiences, especially in high-use areas as well as in more remote, dispersed-use recreational areas.

Heritage Resources

The ANF LMP provides comprehensive direction to manage heritage resources, in addition to existing laws, regulations, and policy. The Forest Service identified some limited areas where additional management direction is needed to address the Proclamation.

There is a need to develop plan direction that:

- Emphasizes protections for heritage resources, particularly when impacted by fire or other ground disturbing activities;
- Ensures tribal, cultural, and traditional practices are preserved and recognized; and
- Supports partnerships to accomplish goals in managing heritage resources.

Biological Resources

The ANF LMP provides comprehensive direction that protects species and habitat, in addition to existing laws, regulations and policy. This includes protections for endangered, threatened, and sensitive species, including those in the Proclamation. The Forest Service identified some limited areas where additional management direction is needed to address the Proclamation.

There is a need to develop plan direction that:

- Enhances protections of habitat (including newly identified locations) for rare, sensitive, threatened, and endangered species, particularly Santa Ana sucker, California red-legged frog, and other riparian-dependent species.

Mineral Resources

Mineral and energy resources exploration and development of any kind are not suitable within the Monument, except where valid existing rights were present at the time of monument designation.

There is a need to develop plan direction that:

- Incorporates Proclamation withdrawal of mineral and energy resources exploration and development of any kind within the Monument, except where valid existing rights at the time of monument designation.
- Enhance resource protection measures from unauthorized mining.

Public Involvement

Introduction

The Forest Service developed a Public Involvement Plan in early 2015 to outline key opportunities for public engagement throughout the planning process, including identifying phases for required public involvement periods and value-added engagement opportunities, identification of interested parties, and approaches for maximizing public involvement.

Outside of the official comment periods described below, Forest Service staff continuously engaged with the public through email, phone, and in-person conversations. Forest Service staff

attended meetings held by other organizations at the request of interested community groups. These groups included organizations focused on social justice and underserved communities, such as the Asian Pacific Policy and Planning Council (A3PCON), San Gabriel Mountains Forever, and The City Project.

Forest Service staff also regularly attended monthly meetings of the San Gabriel Mountains Community Collaborative and provided informational presentations when requested. This group, which was formed in 2015, and is facilitated by the National Forest Foundation, represents various interests and local communities surrounding the Monument. This collaborative group includes 45 representatives from the general public, elected officials, and non-profit and private organizations.

Scoping

To initiate the scoping process, a notice of intent to prepare an environmental assessment was published in the Federal Register on June 12, 2015. A press release was also sent to local news media outlets. The planning project first appeared on the ANF's Schedule of Proposed Actions in July 2015. A scoping letter describing the "need for change" and proposed action was sent via regular mail or email to approximately 3,200 interested groups, individuals, and agencies on June 15, 2015, with comments requested to be returned by July 27, 2015. A map, fact sheet, and frequently asked questions document were also provided, which could be found on the ANF's public website. The Forest Supervisor granted a 15-day extension the public requested, extending the scoping period until August 11, 2015.

During the scoping period, the ANF held five public open houses at the following locations:

- June 22, 4-8 pm, Pacific Community Center, 501 S. Pacific Ave., Glendale, CA
- June 23, 4-8 pm, Palmdale Legacy Commons Senior Center, 930 East Avenue Q9, Palmdale, CA
- June 24, 4-8 pm, Glendora Public Library, 140 S Glendora Ave;, Glendora, CA
- June 25, 3-8 pm, Pico House, 424 N Main St, Los Angeles, CA
- June 26, 4-8 pm, Big Pines Lodge, 24537 Big Pines Highway, Wrightwood, CA

The focus of the open houses was the Need to Change document. Printed materials in English and Spanish were available at these open houses, including a Monument fact sheet, frequently asked questions, project schedule, and key milestones. A Spanish translator was available at all the open houses, and an Armenian translator was available at the Glendale meeting. Additional meetings to inform Chinese and Korean audiences were held.

The Forest Service invited the public to comment on the Need to Change and proposed action, identify potential conflicts or benefits, and provide any relevant information that would be useful in the subsequent environmental analysis. The Forest Service received and considered responses from 917 interested groups, individuals, and agencies in letters, emails, and website submissions that contained over 1,545 unique comments and concerns.

Taking public scoping comments into consideration, the forest developed a Draft Monument Plan and Draft EA, which included some modifications to the original needs identified in the Need to Change document. The key issues the public raised are listed below. Many of the comments expressed concerns that the existing ANF LMP may not:

- address the public and local communities' transportation needs associated with trailheads, facilities, and other types of access.
- address congestion and over-capacity in concentrated use areas, and as it may impact adjacent communities . Congestion and concentrated use could adversely impact resources and local communities.
- provide for sustainable and diverse recreation opportunities. Over use, competing uses, and corresponding limited recreation opportunities could lead to user conflicts, resource damage, and negative recreation experiences.
- adequately provide opportunities for use and enjoyment of the Monument by underserved communities and new user groups, which could adversely impact human health and well-being, community-agency relationships, and connections to the land.
- provide for adequate support of partnerships, which enables the Forest Service to meet its goals for sustainable recreation and management of heritage resources.
- address protection of the PCT, which could potentially impact the resources, values, and qualities of the trail, reducing the user experience.
- ensure protection of Tribal, cultural, and other heritage resources and practices, and does not identify a process for increasing knowledge of and expanding partnerships for enhanced protection of these Tribal, cultural, and heritage resources.
- enhance protection of habitat for sensitive, threatened, and endangered species, which could lead to negative impacts to species.
- address unauthorized mining activities, which could result in resource damage, especially in riparian areas.
- reflect a commitment to identify and incorporate the best available science to inform plans and actions for species' conservation and habitat improvement, which could result in habitat degradation, and loss of biodiversity.

After close consideration of the existing ANF LMP direction in relation to the issues identified, Alternative 2 was fully developed with specific plan components to address the key issues identified during scoping. Some scoping comments raised concerns that are best addressed during individual project development, rather than at the Forest Plan planning level. A full description of Alternative 2 is found in Chapter 2. For more information on the process for consideration of public comments, see the Scoping Outcome Summary available in the project record.

Draft EA Opportunity for Public Comment

The Forest Service released an early draft of Chapters 1 and 2 of the Draft EA on the ANF website in May 2016, to allow the public additional time to review before the official comment period for the Draft EA.

Copies of the full Draft EA were made available at the ANF Supervisor's Office and on the ANF website on August 19, 2016, providing a 60-day public comment period until October 17, 2016. In response to requests by the public, the comment period was extended for an additional 14 days to November 1, 2016.

The Forest Service sent a press release to local news media outlets on August 22, 2016. All notices included a web address for the ANF website where comments could be submitted.

During the comment period, the Forest Service held five public open houses at the following locations:

- September 10, 1–2:30 pm., Webinar (available on ANF website during public comment period)
- September 14, 4:30–7:30 pm, Pico House, 430 N Main St. Los Angeles, California
- September 15, 4:30–7:30 pm, The Centre, 20880 Centre Pointe Pkwy Santa Clarita, California
- September 17, 4:30–7:30 pm, ANF Headquarters, 701 North Santa Anita Avenue Arcadia, California
- October 4, 4:30–7:30 pm, Big Pines Lodge, Angeles Crest Highway (Highway 2) Wrightwood, California

The focus of the open houses was the proposed Monument Plan. Printed materials were available in English and Spanish at these open houses, including posters outlining key components of the proposed plan, public comment forms, a Monument fact sheet, frequently asked questions, the current schedule, and key milestones. A Spanish translator was available at all the open houses. Additional open houses were presented in Spanish, Chinese, and Korean to reach diverse audiences.

The Forest Service received and considered comments from 283 interested groups, individuals, and agencies in letters, emails, and website submissions that contained over 1,000 individual unique comments and concerns. Comments submitted in other languages were translated. The Forest Service developed Alternative 3 to address comments received during the 75-day comment period. See Chapter 2 for more details.

Some of the other concerns the public brought up during the comment period that did not lead to changes in Alternative 3 include: enumerating, quantifying, and defining the geographic area of the objects of interest; identifying more specifics of the transportation plan; omitted direction; continuing and adding utilities operations, and site-specific suggestions.

Objects of Interest – Many comments suggested the Forest Service provide a map and a list or quantification of "objects of interest." The Forest Service notes that any list and associated map of objects of interest would be continuously evolving, would require staff time well beyond current capacity, and would be of questionable utility. Instead of mapping and quantifying every object of interest, the Forest Service intends to manage protections within the Monument on a landscape scale, by focusing on protecting species' habitat. During this process, the Forest Service made changes to the Monument Plan to enhance broad-scale direction to protect the objects of interest.

Transportation Plan – The Forest Service received many comments regarding the need to develop a detailed transportation plan. Transportation planning for the entire forest is primarily done through the travel management process. The Forest Service is currently updating the motor vehicle use map (MVUM), and developing a Travel Analysis Report, which identifies additional needs, as well as roads that are likely not needed.

In addition, the Forest Service is re-evaluating road management objectives 1–5 for National Forest System roads. Particular attention is placed on native surface roads that would benefit from improvements, such as an engineered surface or drainage structures that would control and reduce surface runoff, erosion, and sedimentation. These site-specific projects would be identified and

prioritized for future funding opportunities, but are not specifically identified within the Monument Plan.

Several comments addressed the need to develop regional transportation alternatives, plans, and mass transit options. These comments spurred the Forest Service to convene multi-stakeholder workshops to stimulate collaborative discussion, implement a pilot shuttle from a Metro stop to a forest trailhead, and identify opportunities to envision integrated approaches to access and transit. However, the Forest Service is not a transportation agency, and any future transit initiatives to enhance access and reduce vehicle congestion is not a task that the Forest Service can take on alone. The Forest Service shares a desire for public transportation to alleviate the traffic congestion and better connect communities with the Monument, and is committed to continuing efforts to bring transportation agencies, communities and partners together to discuss access to the Monument.

Omitted Plan Direction – Several commenters were interested in seeing a Monument Plan with all of the existing ANF LMP plan direction that applies to the Monument along with any new direction. In doing so, all of the plan direction for the Monument could be found in one stand-alone document. While the Forest Service originally considered this approach, it concluded that the existing ANF LMP was mostly consistent with the Proclamation and largely provided the protections required. Rather, the Forest Service developed a focused Monument Plan as an amendment to the existing ANF LMP to capture the limited additional direction needed. The existing ANF LMP, combined with the Monument Plan, sets the direction for managing the Monument. However, in response to these concerns, an electronic version will be provided, which will include the ANF LMP direction relevant to the Monument, as well as the Monument Plan amendment.

Continuing and adding utilities operations – Utility operations would continue to be allowed in accordance with the terms of existing special use authorizations.

Site-specific suggestions – Many commenters had suggestions about specific projects or sites. The Monument Plan does not address specific projects, but provides programmatic direction for the Monument. Plan components in the Monument Plan, together with applicable plan components from the ANF LMP, will guide future site-specific projects.

Tribal Consultation

Tribal consultation associated with the Monument Plan was formally initiated with federally recognized Tribes following the official designation of the Monument in October 2014. The meeting was held at the ANF Supervisors Office amongst the ANF Forest Supervisor, ANF Tribal Relations Program Manager, and the Cultural Policy Director of the San Manuel Band of Serrano Mission Indians. Follow-up letters were sent to all three federally recognized Tribes with cultural ties to lands within the Monument, including the San Manuel Band of Serrano Mission Indians on July 23, 2015, the Santa Ynez Band of Mission Indians on July 28, 2015, and the Tejon Indian Tribe on July 28, 2015.

The “Need to Change” document was provided to federally and non-federally recognized Tribes with a request for comments on the initial monument plan development strategy. In addition, the ANF Forest Supervisor invited the three federally recognized Tribes to meet in September 2015 to discuss the scoping and need to change documents. The Forest Service received no requests for meetings with the ANF Forest Supervisor at that time.

The Monument Plan and ongoing analysis was an agenda topic during the ANF's Tribal meeting held in January 2016. The Forest Service sent invitation letters to each of the three federally recognized Tribes, in addition to over 123 other Native American groups, individuals, and interested parties on November 17, 2015. The letters invited recipients to participate in a dialogue with the Forest Service to discuss a range of topics, in addition to the current status of the Monument Plan. Individuals representing a number of non-federally recognized Tribes attended. The Forest Service provided an update on the Monument Plan at this meeting.

In April 2016, the Forest's Tribal relations manager contacted the Cultural Policy Director of the San Manuel Band of Serrano Mission Indians to discuss the development of the Monument Plan and to respond to their request for information. Following this discussion, the ANF Forest Supervisor and representatives from the Tribe participated in a formal meeting on April 18, 2016.

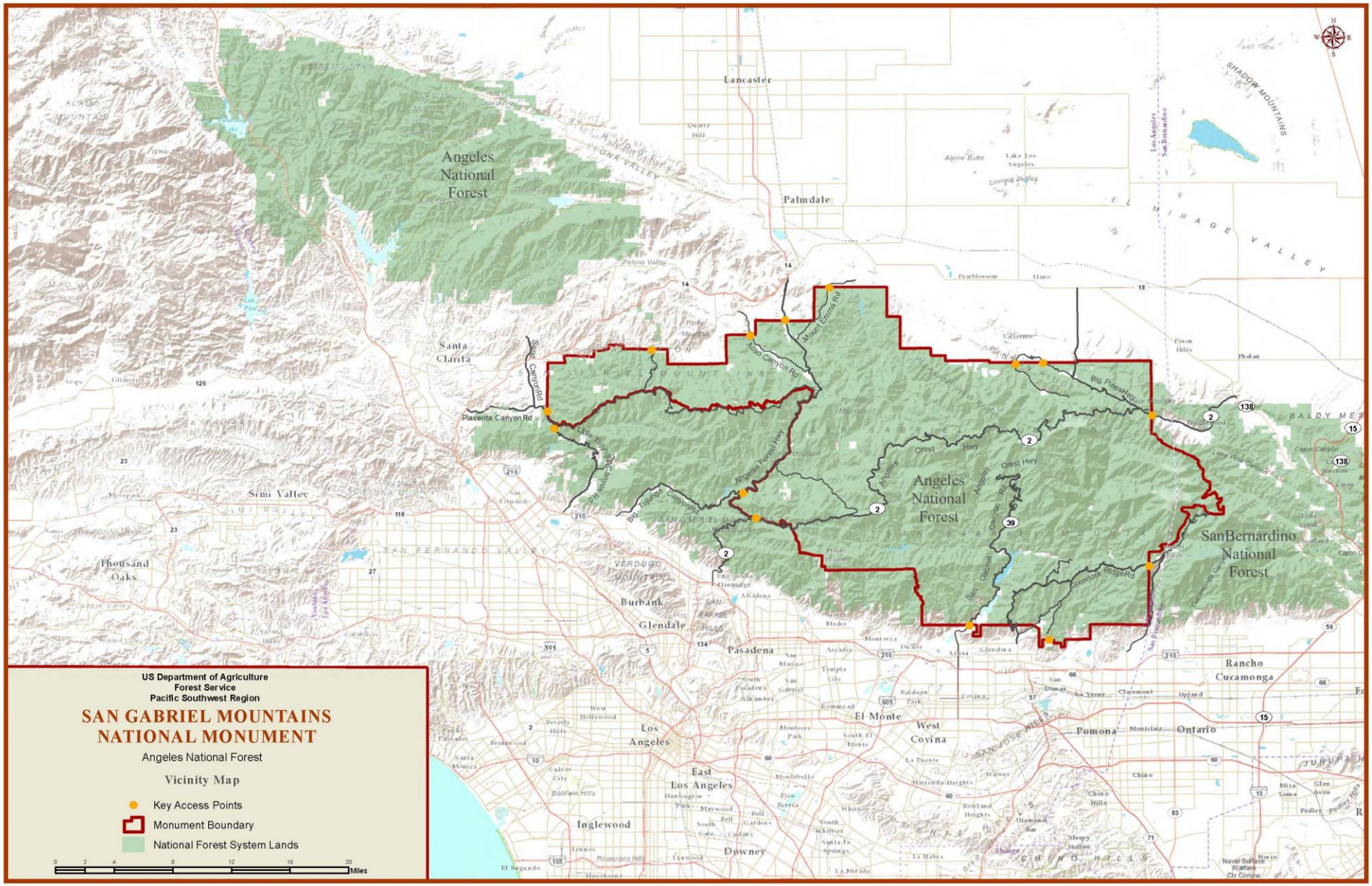
Following these efforts, the Forest Service held two additional Tribal forums (October 2016 and March 2017) to discuss the Draft Monument Plan and EA with the local Native American community, in addition to federally recognized Tribes. The ANF's Tribal Relations Program Manager met with the Director of Cultural Resource Policy for San Manuel Band of Serrano Mission Indians at the San Bernardino National Forest Supervisors Office on October 18, 2016, to receive additional input on the Draft Monument Plan and EA. As a result of these consultation efforts and input, the Forest Service made substantial changes to the Monument Plan, including clarification of the ANF's management of cultural resources and new approaches and emphasis on Tribal collaboration within the Monument, particularly in relation to traditional Tribal resources and gathering activities.

Since the January 2016 meeting, the ANF's Tribal Relations Program Manager has also been in regular contact with two groups representing the Gabrieleño Tribe, a non-federally recognized tribe with cultural ties to lands within the Monument. Their concerns included access for collection of traditional Tribal resources, restoration of and access to significant cultural resource sites for ceremonial purposes, site documentation and record keeping, and preservation of significant or at-risk cultural resources.

Chapter 2. Proposed Action and Alternative Development

Monument Planning Location

The planning area of the existing ANF LMP is the entire ANF. In the monument planning process, the planning area is the Monument. The Monument area is located in the northern and southeastern portions of the San Gabriel Mountains, approximately 30 miles northeast of downtown Los Angeles.



Map 1. San Gabriel Mountains National Monument Map

Alternatives Development

The Forest Service identified key issues through the "need to change" and scoping process as described in Chapter 1. Alternative 2 was developed based on the need to change and key issues brought up during scoping. Alternative 3 was developed in response to public comments on the Draft EA.

Alternatives Analyzed in Detail

- Alternative 1 – No Action (Continue current management)
- Alternative 2 – Proposed Action
- Alternative 3 – Modified Proposed Action

Alternative 1

Current management would continue in accordance with the 2005 ANF LMP. No changes would be made to the existing land management plan, aside from the mineral withdrawal provided by the Proclamation. Continuing current management would include the use of standard operating procedures and best management practices from the ANF LMP for managing lands within the Monument.

Alternative 2

The Forest Service proposes adding management direction as an Amendment to the ANF LMP to capture the changes in the Monument Plan. The majority of the ANF LMP direction still applies to the Monument. The Monument Plan EA tiers to the Final Environmental Impact Statement, volumes 1 and 2 for the LMP for the Angeles, Cleveland, Los Padres, and San Bernardino National Forests. To gain efficiency, the existing plan components are not repeated in the Monument Plan, which is available on the ANF website and in the project record.

Existing Land Management Plan Direction that has been Modified or Replaced

The following language in the ANF LMP has been replaced with new or modified direction that is found in the next section.

1. "There is a low level of increase in roaded acres over time, as defined by road density analysis."

   (from ANF LMP Part 1, Managed Recreation in a Natural Setting, Goal 3.1 – Provide for Public Use and Natural Resource Protection, page 33.)

2. "Habitat conditions are stable or improving over time as indicated by the status of management indicator species."

   (from ANF LMP Part 1, Managed Recreation in a Natural Setting, Goal 3.1 – Provide for Public Use and Natural Resource Protection, page 35.)

3. Table 2.1.3 Suitable uses commodity and commercial uses, Angeles National Forest:

Activity or Use	Land Use Zone						
	Developed Areas Interface	**Back Country**	**Back Country Motorized Use Restricted**	**Back Country Non-Motorized**	**Critical Biological**	**Wilderness**	**Experimental Forest**
Oil and Gas Exploration and Development Areas	Suitable	Suitable	By Exception	By Exception	Not Suitable	Not Suitable	Not Suitable
Minerals Resources Exploration and Development	Suitable	Suitable	By Exception	By Exception	By exception	Not Suitable	Not Suitable

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

(from ANF LMP Part 2, Suitable Land Use Zones, Land Use Zones, Table 2.1.3, page 6.)

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

    - Monitor management indicator species (MIS)."

(from ANF LMP Part 2, Appendix B – Program Strategies and Tactics, WL 2 - Management of Species of Concern, page 99.)

5. "Monitor and manage withdrawal status to document the condition of lands that could affect other actions (e.g., watershed protection, mining):

    - Review existing withdrawals to determine if continuation is consistent with the statutory objectives of the programs for which the lands were dedicated.

    - Recommend for withdrawal from mineral entry TEP species key habitats in areas of mineral potential where habitat is not protected by any other means and would benefit by withdrawal. Protective measures will be maintained for the period of time needed to provide the necessary protection for TEP species and key habitats. Implement in occupied habitats for the arroyo toad, California red-legged frog, mountain yellow-legged frog, southwestern willow flycatcher, and least Bell's vireo."

(from ANF LMP Part 2, Appendix B – Program Strategies and Tactics, Lands 4 – Mineral Withdrawals, page 122.)

- Limit withdrawals from mineral entry to maintain opportunities to access mineral and energy resources where environmentally sustainable and threatened, endangered, proposed, candidate, and sensitive species are not impacted.
- Assure long-term access and availability for leasing of oil and gas resources from environmentally suitable lands for regional, statewide and national energy needs.

(from ANF LMP Part 2, Appendix B – Program Strategies and Tactics, ME 1 – Minerals Management, page 123.)

New Direction that Applies

The Forest Service proposes adding the following management direction as part of the Monument Plan for Alternative 2. This new direction will apply in addition to the ANF LMP direction, except as described above.

Transportation

Desired Conditions

1. The Monument is accessible through alternative transportation and public transportation options in coordination with other agencies and gateway communities to provide greater access for those who do not have personal vehicles, reduce vehicle congestion, address parking capacity issues, and improve public safety.
2. Road density within the Monument remains stable or is decreasing. The number of automobiles is decreasing over time.
3. Roads and trails are maintained to standard.

Management Approaches

1. Improve needed operational maintenance level 2 NFS roads to standard so they qualify for Federal Lands Transportation Program funding (operational maintenance level 3+) and other related Federal funding.
2. Improve non-motorized trails to standard so they qualify for Federal Lands Transportation Program funds ("provide an engineered surface") and other related Federal funding.
3. Decommission and rehabilitate high-risk, low-value roads identified in the roads analysis and travel analysis processes.
4. The number of inventoried unauthorized roads and trails is reduced, and the development and proliferation of new unauthorized facilities is minimized.
5. Coordinate projects with California State Parks and the Off-Highway Motor Vehicle Recreation Program, including projects that restore areas with unauthorized off-highway vehicle uses.
6. Evaluate alternative transportation and public transportation opportunities.
7. Coordinate with local, regional, and State governments on transportation planning, including the Southern California Association of Governments, Caltrans, local government transit authorities, and Metro to improve transportation connectivity within the Monument, while minimizing adverse resource effects.
8. Coordinate with programs such as CAR-LESS CA.
9. Coordinate with the Federal Lands Collaborative Long-Range Transportation Planning effort to ensure it is responsive to the transit/transportation needs of the Monument.
10. Maintain awareness that "driving for pleasure" is and will continue to be an important use within the Monument.
11. Update the ANF's motor vehicle use map as necessary to identify currently designated

roads, trails and areas for public motor vehicle use.

12. Manage high visitor use and traffic congestion using the following strategies:
    - Consider using temporary one-way traffic flows and closures during peak volumes.
    - Evaluate the use of parking capacity limits.
    - Enforce parking capacity.
    - Prevent or limit parking in riparian areas to reduce resource damage.
    - Explore opportunities to increase parking capacity in key areas.

Sustainable Recreation

Desired Conditions

1. Recreation opportunities, including products, services, and the built environment, support the needs and expectations of the diverse population in the surrounding area, including urban visitors, youth, people with disabilities, aging populations, and different ethnic groups.
2. Youth are engaged in outdoor recreation and conservation education opportunities, fostering the next generation of public land stewards.
3. Interpretation materials capture the rich cultural history that shaped the area, including Native Americans, Spanish missionaries and colonialists, Mexican rancheros, Euro-Americans, and Asian settlers and prospectors.
4. Public outreach and education uses contemporary social media, new technology, and culturally relevant media outlets. Engaging schools, communities, universities, museums, and other educational institutions invested in elevating public awareness of the environment, conservation, and outdoor recreation presents exceptional opportunities to re-imagine Angelenos' connections to their surrounding forests and open spaces.
5. Conservation education focuses on themes of urbanization, fire, heritage resources, and wildlife and plants, which are the main management challenges within the Monument.
6. Signs are universal and public information and education is multilingual to ensure communication is intentional, meets information needs, and conveys a message of public access for all.

Guidelines

1. Along the Pacific Crest National Scenic Trail (PCT) within the Monument, new recreation events, such as foot races or horseback endurance events and fundraising events should be limited to designated crossings only. Existing recreation events may be allowed to continue at current levels.
2. All new road and trail crossings of the PCT within the Monument will be evaluated and planned to minimize impacts to the scenic, natural, and experiential values of the trail. New roads and new trails, including new motorized and mechanized transport trails, within the PCT foreground should be designed to minimize the visual, aural, and resource impacts to the PCT. Exemptions may be allowed if required by law to provide access to private lands or documented as the only prudent and feasible alternative.

3. Maintain or increase the number of conservation education programs or events per year within the Monument.

Management Approaches

1. Prioritize work with external partners to develop sustainable recreation studies, recreation design plans, new products, or recreation design features to improve recreation management within the Monument and ensure relevance to the Monument's diverse visitor use base.
2. Evaluate the need for recreation carrying capacity in high use areas such as San Gabriel Canyon, following the Interagency Visitor Use Management Framework (http://visitorusemanagement.nps.gov), including:
    - Identifying visitor capacities and strategies to manage use levels within capacities.
    - Documenting criteria and rationale for establishing visitor capacities.
    - Documenting the relationship between the amount of visitor use and existing conditions and how management actions are expected to affect that relationship.
3. Work with gateway communities and local partners to manage potential impacts and maximize potential benefits associated with Monument designation by addressing issues such as identification of appropriate access points and parking capacity at access points.
4. Develop an Monument conservation education plan.
5. Expand the use of multilingual information and outreach including interpretive signs, standard recreation signs, online information and social media, and multilingual personnel such as recreation staff, law enforcement, and volunteers.
6. Prioritize youth engagement efforts aligned with the Region 5 Integrated Youth Engagement Strategy, and continue participation in programs such as the Southern California Consortium "Generation Green" program.
7. Develop criteria for appropriate types of special events, requests, and emerging uses within the Monument.
8. Implement adaptive management processes at recreation facilities to engage traditionally underserved communities, including persons with disabilities, urban visitors, aging populations, diverse ethnic groups, youth, and day-use emphasis (see appendix C of the ANF LMP Part 3, Monitoring Requirements).

Heritage Resources

Desired Conditions

1. Heritage resources are protected and preserved for cultural and scientific value and public benefit.
2. Historic and Native American heritage resources eligible for the National Register of Historic Places are protected and preserved.
3. Priority Heritage Assets are protected and enhance the Monument's distinct characteristics.
4. Historic properties within designated wilderness areas are documented and protected, and values and connections between heritage and wilderness values are promoted.

Standards

1. Road and trail maintenance and use must be managed to prevent adverse effects to values or attributes that make heritage resources eligible for the National Register of Historic Places.

Guidelines

1. Projects should be designed to avoid, minimize, or mitigate adverse effects or impacts to significant cultural properties.
2. Heritage sites should be protected during fire suppression and rehabilitation activities where feasible.

Management Approaches

1. Review recorded or documented historic properties within designated wilderness to identify any that support or enhance wilderness values and characteristics. Manage these identified resources as Priority Heritage Assets, regularly monitoring unidentified wilderness Priority Heritage Assets and promoting values and connections between heritage and wilderness values. Assess and review documented and unevaluated heritage resources to identify those resources that enhance the Monument's distinct characteristics and to regularly monitor those at risk. Manage these identified resources as Priority Heritage Assets. Of the 44 sites identified within the Monument, those identified as Priority Heritage Assets will be monitored every 5 years. If new resources are identified and determined to be Priority Heritage Assets, they will also be monitored every 5 years.
2. Use partnerships to develop and implement stewardship plans for heritage resource sites, focusing on those sites with recognized significance or at risk from public or land use effects.
3. Evaluate historic sites for appropriate management. Develop site management plans for noteworthy heritage resources.
4. In consultation with Tribes, work to improve the interpretative potential of Native American resources within the Monument, focusing on traditional uses, Tribal history, and the current relationship of Tribes to the San Gabriel Mountains.
5. Evaluate the following heritage sites for eligibility under the National Register of Historic Places: Aliso-Arrastre Special Interest Area; Eldoradoville, located along the East Fork of the San Gabriel River; Mt. Wilson Observatory; and San Dimas Experimental Forest. Nominate eligible sites for listing.

Biological Resources

Desired Conditions

1. Habitat conditions are stable or improving over time as indicated by the status of focal species and other elements of the 2016 Monitoring Strategy. Habitats of U.S. Fish and Wildlife Service (Fish and Wildlife Service) listed and Forest Service sensitive species, along with all species specifically listed in the Proclamation as objects of interest in the Monument are managed to preserve and protect these species.
2. Maintain and improve habitat for fish, wildlife, and plants, including those with the following designations: game species, harvest species, and focal species.

Management Approaches

1. Monitor at-risk species according to the 2012 Planning Rule direction on monitoring.

Mineral Resources

Standards

1. Valid Federal mineral rights existing within the Monument at the time of the Proclamation must be managed to protect the objects of interest listed in the Proclamation.

Designated Areas

Desired Conditions

1. Designated wilderness within the Monument is maintained as a naturally evolving and natural-appearing landscape that provides for primitive and unconfined recreation use. The sense of remoteness and solitude is maintained.

Suitability of Lands

1. Mineral and energy resources exploration and development is not suitable within the Monument, except where valid existing rights are present on the date of the Proclamation (table 1).
2. Within the Monument, the PCT foreground is not suitable for special-use authorizations for new communication sites and wind generation sites.

Table 1. Suitable uses commodity and commercial uses, San Gabriel Mountains National Monument

Activity or Use	Land Use Zone						
	Developed Areas Interface	Back Country	Back Country Motorized Use Restricted	Back Country Non-Motorized	Critical Biological	Wilderness	Experimental Forest
Oil and Gas Exploration and Development Areas[1]	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable
Minerals Resources Exploration and Development[1]	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable

[1] With the exception of valid existing rights.

Land Use Zones

Critical Biological Land Use Zone

The Critical Biological Land Use Zone includes areas on the ANF considered important for the protection of species at-risk. There are no changes to the definitions of critical biological land use zones (CBLUZ) in ANF LMP direction that applies to this zone. Three new CBLUZs are proposed as part of this alternative. See table 2 and figure 2 through figure 4.

Table 2. San Gabriel Mountains National Monument Critical Biological Land Use Zones (CBLUZ)

Primary Species Protected and Primary Uses			
CBLUZ	**Primary Species Protected**	**Place**	**Primary Uses****
East Fork San Gabriel River	Santa Ana sucker	San Gabriel Canyon	CBLUZ location is from just above the Oaks day use site upstream to the private land parcel near the Bridge to Nowhere, including the Cattle Canyon tributary upstream to the upper extent of the Santa Ana designated critical habitat. Existing transportation and other uses will continue.
North Fork San Gabriel River	Santa Ana sucker	San Gabriel Canyon/Angeles Uplands East	CBLUZ location is from the West Fork/North Fork confluence upstream to the northern extent of the Santa Ana sucker Designated Critical Habitat, including the Bichota Canyon tributary of the North Fork San Gabriel River. Existing uses will continue.
Aliso Canyon Creek	California red-legged frog	Soledad Front Country	The current West Wide Energy Corridor and the SCE transmission line corridors will be managed for utility infrastructure, including new and upgraded transmission lines. Expansion of these corridors would not be allowed without a plan amendment. Access to utility corridors will be maintained while minimizing road infrastructure within the CBLUZ. Existing Transportation and other uses will continue.

**This is a partial list of activities associated with these CBLUZs. See Suitable Uses Tables in Part 2 of the ANF LMP (pp. 4-7) for a full description of all suitable uses within CBLUZs.

Existing Wilderness Zone

This zone includes congressionally designated wildernesses. There are no changes to the ANF LMP direction that applies to this zone. However, two wilderness areas were designated in 2009 that occur within the Monument: Magic Mountain Wilderness and Pleasant View Ridge Wilderness. The portions of these two wilderness areas within the Monument will be zoned Existing Wilderness (figure 1). The Pleasant View Wilderness will be part of the Angeles High Country Place and the Magic Mountain Wilderness will be part of the Soledad Front Country Place. The ANF LMP uses “places” to describe the theme, setting, desired conditions, and program emphasis of an area. For a description of these two wilderness areas, see table 3.

Table 3. Descriptions for wilderness areas designated by Congress in 2009

Title	Place	Acres
Magic Mountain Wilderness	Soledad Front Country	11,938
The United States Congress designated the Magic Mountain Wilderness in 2009. The Magic Mountain Wilderness is generally bounded by: Santa Clara Divide Road (3N17.7) on the south; Backcountry Discovery Trail 1 (3N37) on the east; and forest boundaries on the north and west. A closed road traverses the mountain from the community of Lange to Magic Mountain. This corridor separates the Magic Mountain Wilderness into two portions. The Magic Mountain Wilderness's chaparral-covered hillsides and oak-studded canyons provide a scenic vista and suitable habitat for the California condor. The area also offers primitive recreational opportunities for the rapidly urbanizing Santa Clarita Valley. There are no officially designated trails within this wilderness. However, several social trails exist, which were created by visitor use.		
Pleasant View Ridge Wilderness	Angeles High Country, Mojave Front Country	27,040
The United States Congress designated the Pleasant View Ridge Wilderness in 2009. This wilderness area is located roughly 30 miles northeast of La Canada, north of the Angeles Crest Highway where the San Gabriel Mountains slope north to meet the Mojave Desert. The area features 8,200-foot Mt. Williamson and other dramatic peaks, formidable cliffs, the headwaters of Little Rock Creek, remote backcountry, and some of the most magnificent canyon country in the San Gabriel Mountains. The Pleasant View Ridge Wilderness is generally bounded by: California Highway 2 (Angeles Crest Scenic Byway) on the south; Little Rock Canyon on the west; the forest boundary on the north; and High Desert National Recreation Trail (10W02 Burckhardt) on the northeast. The area can be accessed from California State Highway 2 at Vincent's Gap, Islip Trailhead, Buckhorn Campground, and Three Points Trailhead and from the Pacific Crest National Scenic Trail and High Desert National Recreation Trail. Trails going through this wilderness include: High Desert National Recreation Trail (10W02 Burckhardt), Islip Saddle (9W02), and Pacific Crest National Scenic Trail.		

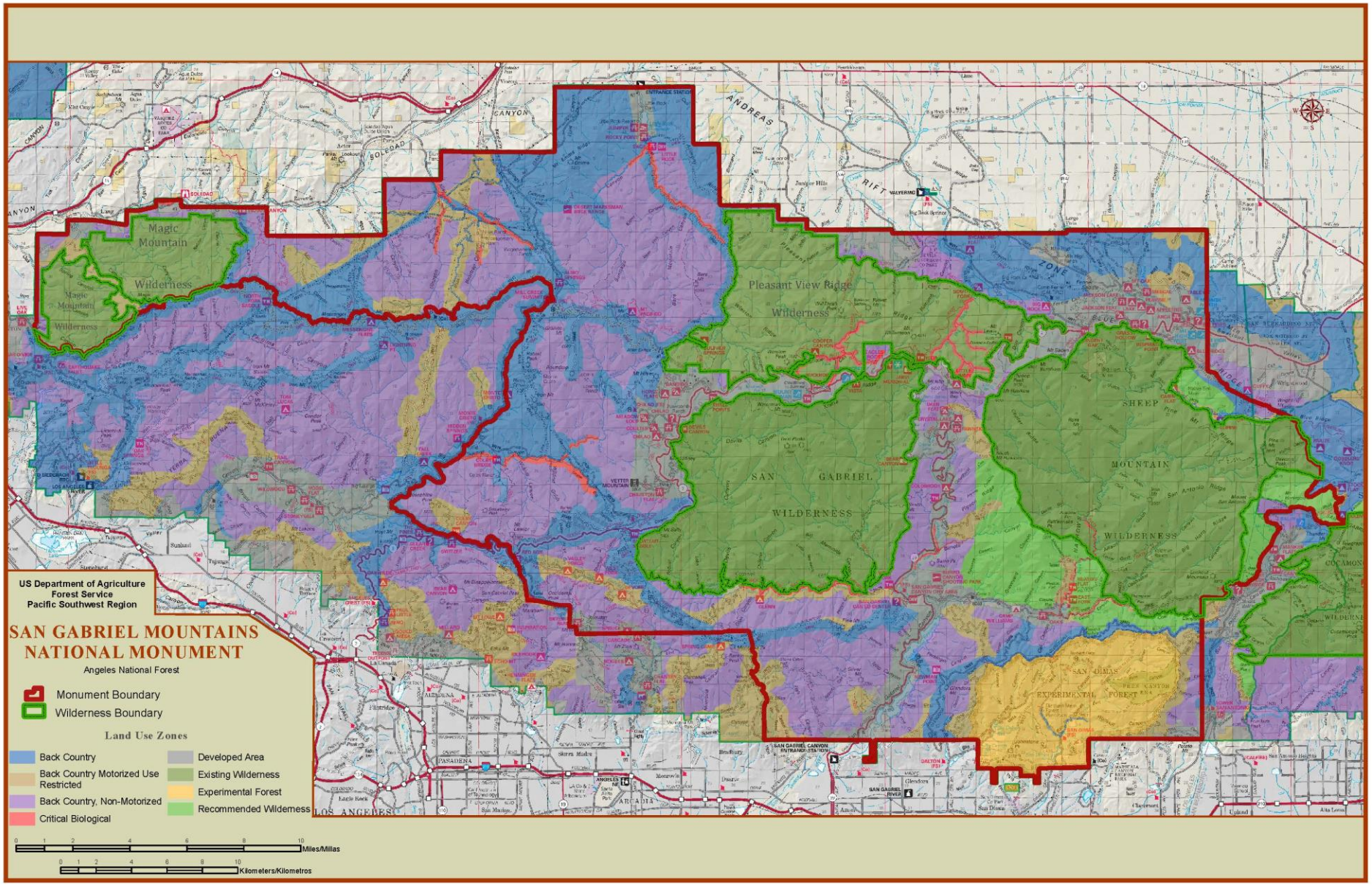


Figure 1. Proposed land use zones map updated for wilderness designations made by Congress in 2009

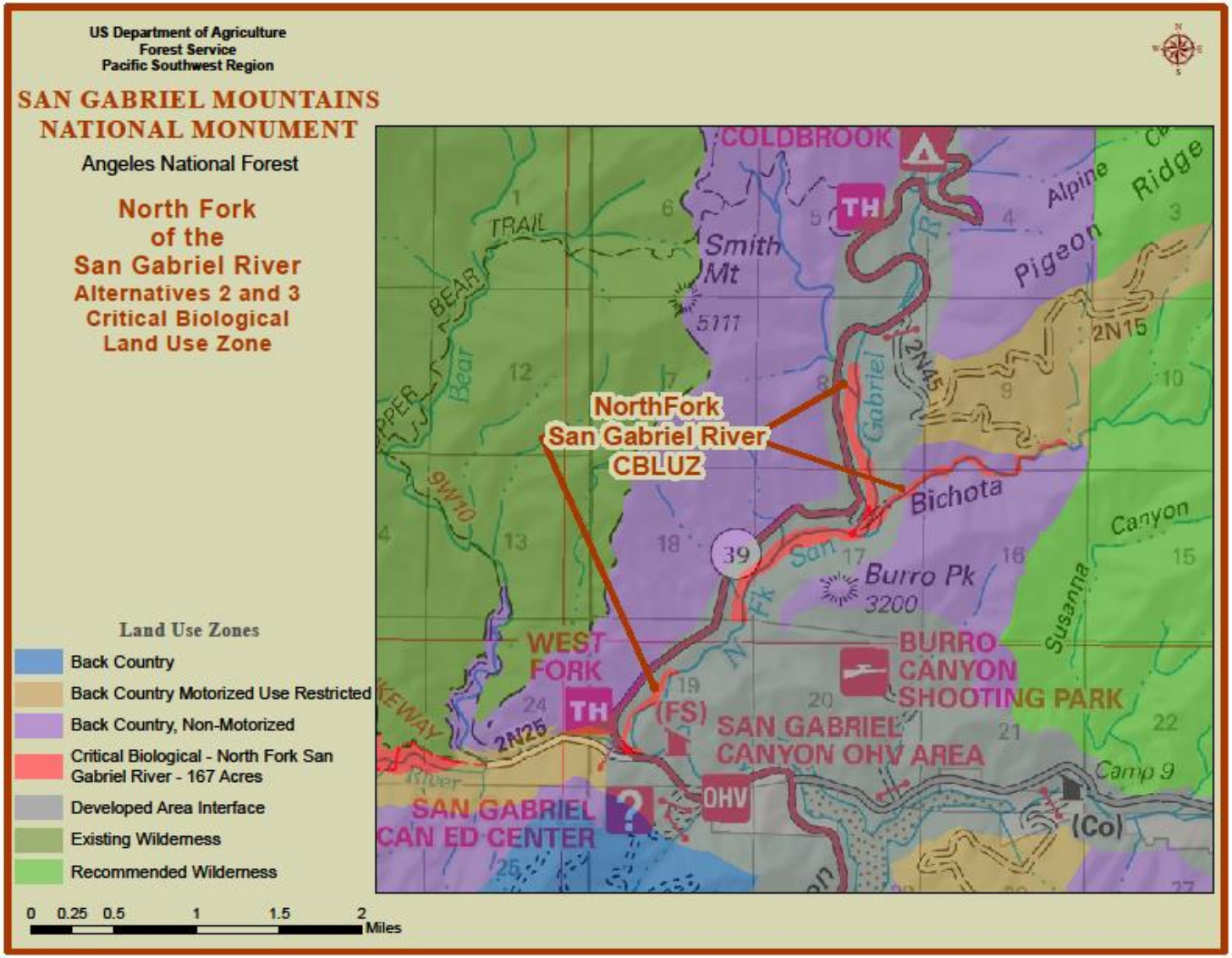


Figure 2. San Gabriel Mountains National Monument land use zones in detail, alternatives 2 and 3 – North Fork of San Gabriel River

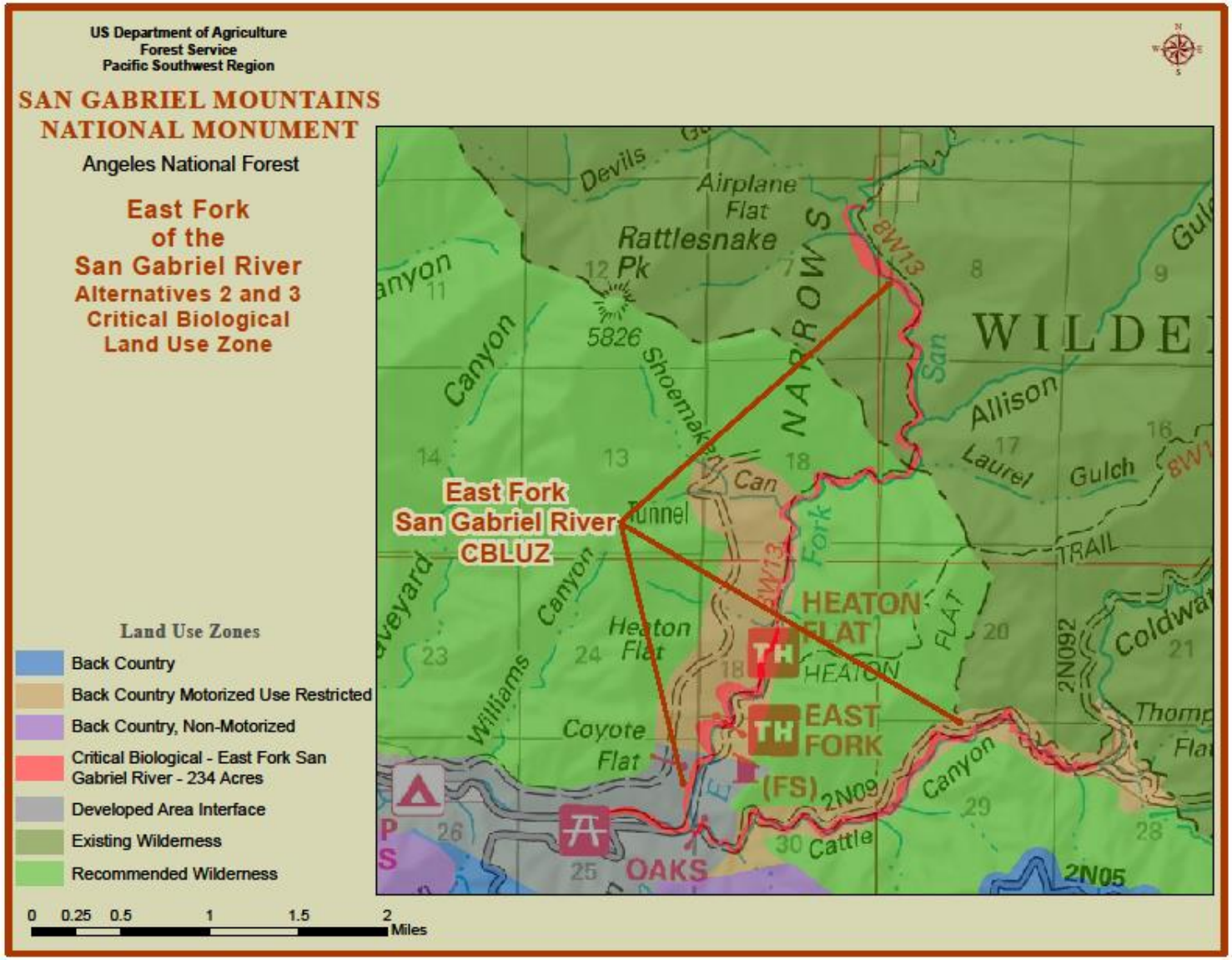


Figure 3. San Gabriel Mountains National Monument Land Use Zones in detail, alternatives 2 and 3 – East Fork of San Gabriel River

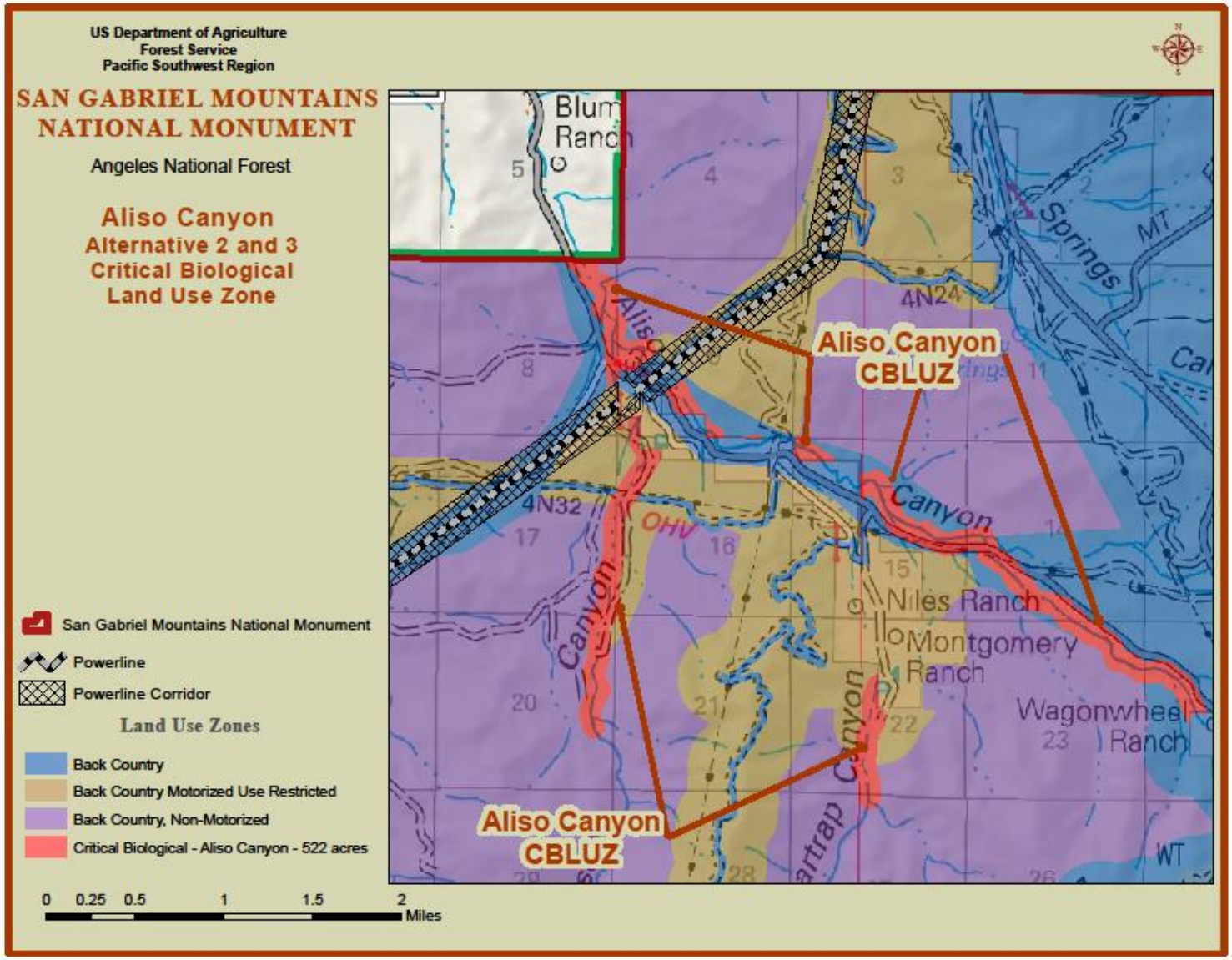


Figure 4. San Gabriel Mountains National Monument land use zones in detail, alternatives 2 and 3 – Aliso Canyon

Alternative 3

Existing Land Management Plan Direction that has been Modified or Replaced

Similar to Alternative 2, the majority of the ANF LMP direction still applies to the Monument under Alternative 3. The ANF LMP plan direction that no longer applies to the Monument under this alternative is the same as what is described for alternative 2. In addition, under alternative 3, S57 from the ANF LMP Part 3, would no longer apply.

> "S57: Free use rock, invertebrate fossil, and mineral collecting for non-commercial personal uses must be approved by the authorized officer."
> *(from ANF LMP Part 3, Plan Standards Required by (36 CFR 219), page 3)*

Summary of Changes from Alternative 2

Based on the comments received on the Draft EA and Draft Monument Plan, the Forest Service adjusted the Monument Plan structure and plan direction from Alternative 2 to develop Alternative 3. This section provides a summary of these adjustments. Specific changes to plan components and other plan content can be found in the next section.

Overall

- Editing plan components to remove redundancy and improve clarity and conciseness.
- Making changes to ensure that plan direction is located in the appropriate plan components category, as defined by the 2012 planning rule and Forest Service Planning Rule Directives.

Vision

- Adding an overall vision statement based on public comment and adding a goal to expand work with partners to accomplish management objectives for the Monument.

Transportation and Access

- Adding and modifying plan components to address public concerns about access points, public safety, parking capacity, connectivity (including alternative transportation), and providing sustainable recreation opportunities to different user groups. In addition, adding management approaches to describe the coordination and involvement needed across different organizations, governments, and communities to successfully achieve a collective vision for access to and within the Monument.

Sustainable Recreation

- Adding and modifying plan components to address public concerns about providing quality recreational settings to diverse user groups while balancing resource impacts, and prioritize outreach and service delivery for culturally diverse groups.

Visitor Experience, Information, and Environmental Education

- Adding a new section and additional plan components on Visitor Experience, Information, and Environmental Education to highlight the diversity of users and an overall increased emphasis on conservation education programs, and adding an objective to develop and implement a Master Visitor Reception, Interpretation, and Education Plan within 3 years.

Heritage Resources

- Adding and modifying plan components to promote protection of cultural resources and historic properties, emphasize building relationships and working better with tribes, educational institutions, professional associations, and other programs to protect, manage, interpret, and monitor cultural resources and historic properties within the Monument, and promote traditional plant gathering by Tribes.

Biological Resources

- Adding and modifying plan components to clarify that corrective actions for Monument resources will be based on the overall ANF LMP monitoring strategy, with emphasis for Threatened, Endangered, Proposed, Candidate, and Forest Service Sensitive (TEPCS) species habitat protection.

Mineral Resources

- Adding and modifying plan components to clarify that free-use rock, invertebrate fossils, and mineral collecting for non-commercial personal uses is not suitable within the Monument, as prohibited under 36 CFR 261.9(b), and management approaches to expand enforcement of mining laws and regulations and provide education on resource damage from unauthorized mining activities.

Designated Areas and Areas Recommended for Designation

- Moving plan direction for the PCT from the sustainable recreation section to a new section heading and clarifying constraints on building new trails or roads that either cross or are built within the foreground of the PCT. This included clarifying with a suitability statement that new roads are not suitable within the foreground of the PCT (with certain exceptions).

Land Use Zones

- Clarify that the prohibition on mineral and energy resources exploration and development within the Monument excludes activities within permitted sediment placement sites. Expanding a segment of the West Fork of the San Gabriel River CBLUZ.

Climate Change

- Adding plan components to continue climate change reporting and educate the public on climate change impacts.

New Direction that Applies

The Forest Service proposes adding the following management direction as part of the Monument Plan for Alternative 3. Differences between Alternative 3 and Alternative 2 are indicated with *italicized* text.

Vision

The San Gabriel Mountains National Monument reflects a unique recreational and educational gateway to America's most urban national forest in the nation's most populous county. The Monument offers exceptional interpretation and educational opportunities that can elevate understanding of the region's natural and cultural heritage, while fostering new generations of environmental stewards. In addition to the natural and cultural wonders, the Monument includes critical infrastructure that sustains the surrounding metropolis, including flood control and water

storage, delivery and diversion, energy development, utilities, and telecommunication facilities. This mix of natural wonders and infrastructure sets this monument apart from others and highlights the vital need for biodiversity and access to open space existing in harmony with essential services that sustain quality of life for surrounding communities.

Diversity and inclusivity are reflected in the visiting public, agency employees, volunteers, and partners, who are integrated into the fabric of the Monument. This monument is our monument. A variety of sustainable recreation opportunities and well-maintained facilities are available to the public. A transportation plan promoting safe, manageable access opportunities accommodates visitor needs in balance with resource protection and user capacity considerations. Monument operations are conducted in close cooperation with surrounding communities. Management actions balance resource protection, recreation, water management, and infrastructure needs. Collaboration and partnerships enliven connections to local and regional organizations and communities to support protection of objects of interest, enhance recreation opportunities, and achieve ecological restoration goals. A resilient, healthy, and sustainable forest landscape accessible and welcoming to all who call Southern California home, for present and future generations, showcases this monument's importance and potential to the nation.

Goal

1. *Expand ANF network of partnerships to accomplish management aspirations, including improved interpretive materials and educational opportunities.*

Transportation

Desired Conditions

1. The Monument is accessible through alternative transportation and public transportation options in coordination with other agencies and gateway communities to provide greater access for those who do not use personal vehicles, and for the benefit of reducing vehicle congestion, addressing parking capacity issues, and improving public safety.
2. Road density within the Monument remains stable or is decreasing. The number of automobiles *in high-use areas* decreases over time *as a result of alternative modes of transportation*.
3. Roads and trails are maintained to standard.
4. *Sufficient access points and parking areas are provided to serve visitors to the Monument during peak seasons in a manner that minimizes adverse impacts to resources and the gateway communities and neighborhoods that surround the* Monument.
5. *Transportation connectivity to and within the Monument is improved through coordination with State, county, local, and regional government entities; municipalities; Tribal governments; other agencies; and the public.*
6. *The road and trail system is sufficient to provide a good balance of recreation opportunities for all users, including hikers, hunters, bicyclists, equestrians, OHV enthusiasts, and motorists, consistent with sustainable recreation practices.*
7. *The road and trail system includes easy-to-interpret signage that includes standard symbols recognized internationally. Up-to-date maps are available and in different media formats that clearly identify roads and trails, recreation opportunities, parking, and*

alternative transportation options that are understood by visitors who may not speak English.

8. *The number of unauthorized roads and trails is decreased.*

Goal

1. *Evaluate alternative transportation and public transportation opportunities, including identifying programs that facilitate access from underserved communities, ways to link to public transportation options in gateway communities, and sites appropriate for bus access at key recreation areas.*

Standard

1. *Outside of the San Gabriel and Little Rock OHV areas, all vehicles are limited to designated roads and trails.*

Guideline

1. *Parking capacity should be considered during the planning of any new trail heads, including how parking may affect gateway communities when trails are located in their vicinity.*

Management Approaches

1. *Where appropriate, upgrade Road Management Objectives to maximize opportunities to improve roads and protect resources.*
2. *Analyze roads shown as "Likely Not Needed" in the roads analysis and travel analysis processes and determine if appropriate to decommission.*
3. Coordinate projects with California State Parks and the Off-Highway Motor Vehicle Recreation Program, including projects that *maintain routes open to OHV use and* restore areas of unauthorized off-highway vehicle uses.
4. *Collaborate with gateway communities and local partners to manage potential impacts and maximize potential benefits associated with Monument designation by addressing issues such as identification of appropriate access points, parking capacity at access points, and alternative public transportation access options.*
5. Coordinate with local, *county and State* governments on transportation planning.
6. *Coordinate with the Federal Highway Administration - Central Federal Lands Highway Division, and other regional transportation and planning agencies to improve access to the* Monument.
7. Coordinate with Caltrans to improve transportation *and wildlife* connectivity within the Monument, while minimizing adverse resource effects.
8. Coordinate with *transportation agencies to explore opportunities to connect with communities throughout Los Angeles County, working closely with Metro and Metrolink Stations and other regional, municipal, and local public or private transit systems.*
9. Coordinate with the Federal Lands Collaborative Long-Range Transportation Planning effort to ensure it is responsive to the transit/transportation needs of the Monument.
10. Driving for pleasure is and will continue to be an important use within the Monument. *For some members of the public with mobility limitations, driving may be the only means*

of experiencing the Monument.

11. Update the ANF's motor vehicle use map as necessary to identify currently designated roads, trails and areas for public motor vehicle use.
12. Manage high visitor use and traffic congestion using the following strategies:
    - Consider using temporary one-way traffic flows and closures during peak volume periods, while utilizing adequate signage, guidance, and traffic controls consistent with established standards.
    - Evaluate the use of parking capacity limits.
    - Enforce parking capacity limits and locations established by the appropriate governing authority.
    - Prevent or limit parking in riparian areas to reduce resource damage.
    - Explore opportunities to increase or better distribute parking capacity in key areas, including providing access by shuttles or other forms of public transportation. Parking locations should be clearly identified and delineated.

Sustainable Recreation

Desired Conditions

1. Recreation opportunities, including products, services, and the built environment, support the needs and expectations of the diverse population.
2. *The Forest Service provides quality recreational settings and opportunities, allowing the growing and increasingly diverse visitor population to gain their desired recreation experiences throughout the Monumen*t.
3. *The Forest Service provides a comprehensive, well-maintained and sustainable trail system. Standard international symbols are used at trailheads and wayfinding points.*
4. Public information and education is multilingual where possible to ensure communication meets informationeds and conveys a message of public access.

Goals

1. *Actively manage recreation in concentrated use areas to improve recreational quality. Avoid or reduce impact on special status species and aquatic species through improved management of dispersed recreation, designated river access points, transit stops, designated parking, and high quality support infrastructure and visitor services.*
2. *Strategies aimed at provision of outreach, communication, and recreation service delivery for diverse groups will remain a priority of the Forest Service.*

Management Approaches

1. Prioritize work with external partners to conduct sustainable recreation studies, develop recreation design plans, new products, or recreation design features to improve recreation management within the Monument and ensure relevance to the Monument's diverse visitor use base.
2. Evaluate the sustainable recreation carrying capacity in high use areas such as San Gabriel Canyon, following the Interagency Visitor Use Management Framework.

Visitor Experience, Information, and Environmental Education

Desired Condition

1. *The Forest Service provides visitors with culturally relevant and easily accessible information to guide and enrich their experience.*

Goal

1. Maintain or increase the number of conservation education programs/events per year within the Monument.

Objective

1. *Develop and implement the Master Visitor Reception, Interpretation and Education Plan with an emphasis on outreaching to diverse youth within 3 years. The plan will focus on engagement of youth in outdoor recreation and conservation opportunities, educate them about Monument resources, help foster the next generation of public land stewards, and work toward achieving the Desired Conditions.*

Management Approaches

1. Interpretation materials capture the rich cultural history that shaped the area, including Native Americans, Spanish missionaries and colonialists, Mexican rancheros, Euro-Americans, and Asian settlers and prospectors.
2. Public outreach and education uses contemporary social media, new technology, and culturally relevant media outlets. Engage schools, communities, universities, museums, and other educational institutions invested in elevating public awareness of the environment, conservation, and outdoor recreation presents exceptional opportunities to re-imagine Angelenos' connections to their surrounding forests and open spaces.
3. Expand the use of multilingual information in outreach.

Heritage Resources

Desired Conditions

1. *Cultural resources and historic properties* are protected and preserved for cultural and scientific value and public benefit.
2. Priority Heritage Assets *receive enhanced monitoring and protection* and enhance the Monument's distinct characteristics.
3. *Cultural resources and historic properties are documented and protected, and heritage values and connections are promoted as an integral feature of the Monument.*

Goal

1. *The cultural resources identified in Management Approach 7 are to be enhanced through interpretative measures such as exhibits, displays, formal evaluation and National Register nominations and listing, protection and stabilization treatments, public education, and outreach efforts.*

Standards

1. *Cultural resources and historic properties within the Monument will be managed in*

accordance with Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR 800.

2. *Pursuant to the Programmatic Agreement between the USDA Forest Service, Pacific Southwest Region (Region 5), California State Historic Preservation Officer, Nevada State Historic Preservation Officer, and the Advisory Council, all cultural resources within the Monument are treated as historic properties and assumed eligible for the National Register of Historic Places until formally evaluated and determined, through consensus, not eligible.*

Guidelines

1. Projects *within the Monument* should be designed to avoid, or minimize, adverse effects or impacts to *cultural resources and historic properties*.
2. *Cultural resources and historic properties* should be protected during fire suppression and rehabilitation activities, where feasible.

Management Approaches

1. Review all recorded and documented cultural resources and historic properties *located within the Monument. Identify at-risk cultural resources and historic properties for enhanced monitoring and protection as Priority Heritage Assets.*
2. Assess and review documented and unevaluated *cultural resources and historic properties* to identify those resources that enhance the Monument's distinct characteristics and cultural themes, as identified in the Proclamation. Regularly monitor those identified as at-risk every 5 years, at a minimum. *Depending on the monitoring findings, at-risk cultural resources monitoring may occur at more frequent intervals.* Manage these identified resources as Priority Heritage Assets. As new resources are identified within the Monument and determined to meet the criteria to be managed as Priority Heritage Assets, they will also be monitored on a 5-year cycle, *or more frequently if necessary*.
3. Use partnerships to develop and implement stewardship plans for *identified Priority Heritage Assets, emphasizing those cultural resource and historic property sites specifically named in the Proclamation.*
4. In consultation with Tribes, work to improve the interpretative potential of Native American resources within the Monument, focusing on traditional uses, Tribal history, and the current relationship of local Tribes to the San Gabriel Mountains.
5. *Develop partnerships with local universities for student and faculty involvement, including research opportunities, field schools, internships, and other education programs that may assist the Monument with protection and management of cultural resources and historic properties.*
6. *Continue the Forest's relationship with the Society for California Archaeology, and work cooperatively with the California Archaeological Site Stewardship Program to assist with site monitoring when feasible.*
7. Evaluate the following *cultural resources and historic properties* for eligibility under the National Register of Historic Places: Aliso-Arrastre Special Interest Area; Eldoradoville, located along the East Fork of the San Gabriel River; Mt. Wilson Observatory; and San Dimas Experimental Forest. *Prioritize the remaining cultural resources and historic properties for evaluation to determine their eligibility for listing.* Nominate sites eligible

for listing following evaluation.

8. *Work with Biological Resources staff to map and identify tribally significant plant species within the Monument in an effort to manage, protect, and promote plant gathering/harvesting by Tribal members.*
9. *Prioritize survey efforts and the identification of data gaps within the Monument to better manage cultural resources.*

Biological Resources

Desired Conditions

1. Habitat conditions are stable or improving over time as indicated by the *2016 Angeles Land Management Plan Monitoring Strategy*.
2. Habitats of *special status species (threatened and endangered and Forest Service sensitive) in the Monument* are managed to preserve and protect these species.

Goal

1. *When land management plan monitoring indicates that habitat conditions are degrading or destabilizing, corrective actions will be taken. Corrective actions may include, but are not limited to, restoration, modification of management actions, or other options suitable for the species or watershed affected.*

Mineral Resources

Suitability of Lands

1. *Free-use rock, invertebrate fossil, and mineral collecting for non-commercial personal uses is not suitable within the Monument.*

Management Approaches

1. *Coordinate with local, State and Federal agencies to coordinate enforcement efforts, including enforcement of unauthorized mining activities.*
2. *Develop partnerships with local volunteer groups to document illegal mining activities.*
3. *Develop an education program on the resource damage of illegal mining.*

Designated Areas and Areas Recommended for Designation

Desired Conditions

1. Designated Wilderness *and Recommended Wilderness* within the Monument are maintained as a naturally evolving and natural-appearing landscape that provides for primitive and unconfined recreation use. The sense of remoteness and solitude is maintained.
2. *The nature and purpose of the Pacific Crest National Scenic Trail (PCT) are to provide for outstanding journeys on foot or on horseback in the spectacularly wild landscapes of high Pacific mountain ridges. Tranquility and closeness with nature can be found consistently along the trail, evoking a feeling of extended retreat from civilization, even if only venturing out for a day.*

Guidelines

1. New recreation events, such as foot races or horseback endurance events and fundraising events should be limited to designated crossings only on the Pacific Crest National Scenic Trail (PCT) within the Monument. Existing recreation events may be allowed to continue at current levels.
2. *Within the Monument, new trails that are proposed to cross the PCT or to be built within the foreground of the PCT, should be designed to minimize conflicting uses and to minimize the scenic, aural, and resource impacts to the PCT.*

Suitability of Lands

1. Within the Monument, the PCT foreground is not suitable for special-use authorizations for new communication sites and wind generation sites.
2. *New roads are not suitable within the foreground of the PCT unless required by law to provide access to private lands or documented as the only prudent and feasible alternative.*

Land Use Zones

Suitability of Lands

1. Mineral and energy resources exploration and development are not suitable within the Monument, except where valid rights already exist at the time of the Proclamation (table 4). *Activities within permitted sediment placement sites are not considered mineral and energy resources exploration and development projects.*

Table 4. Suitable uses commodity and commercial uses, San Gabriel Mountains National Monument

Activity or Use	Land Use Zone						
	Developed Areas Interface	Back Country	Back Country Motorized Use Restricted	Back Country Non-Motorized	Critical Biological	Wilderness	Experimental Forest
Oil and Gas Exploration and Development Areas[1]	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable
Minerals Resources Exploration and Development[1]	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable

[1] With the exception of valid existing rights.

Critical Biological Land Use Zone

This zone includes areas on the ANF that are considered important for the protection of at-risk species. There are no changes to the definitions of critical biological land use zones (CBLUZ) in ANF LMP direction that apply to this zone (ANF LMP Part 2, p. 9). As in Alternative 2, three new CBLUZs are proposed, and in this alternative, the expansion of the West Fork of the San Gabriel River CBLUZ is proposed. See table 2 and figure 2 through figure 4 in alternative 2 above and figure 6 below.

Table 5. San Gabriel Mountains National Monument critical biological land use zones (CBLUZ)

CBLUZ	Primary Species Protected	Place	Primary Uses**
East Fork San Gabriel River	Santa Ana sucker	San Gabriel Canyon	CBLUZ location is from just above the Oaks day use site upstream to the private land parcel near the Bridge to Nowhere, including the Cattle Canyon tributary upstream to the upper extent of the Santa Ana designated critical habitat. *This area is currently managed as a wild trout stream and this designation is retained.* Existing transportation and other uses *such as hiking, fishing and dispersed recreation* will continue. *Overnight camping is not allowed.*
North Fork San Gabriel River	Santa Ana sucker	San Gabriel Canyon/Angeles Uplands East	CBLUZ location is from the West Fork/North Fork confluence upstream to the northern extent of the Santa Ana sucker Designated Critical Habitat, including a segment of the Bichota Canyon tributary of the North Fork San Gabriel River. Existing uses *such as hiking, fishing and dispersed recreation* will continue. *Overnight camping is not allowed.*
Aliso Canyon Creek	California red-legged frog	Soledad Front Country	The current West Wide Energy Corridor and the SCE transmission line corridor will be managed for utility infrastructure, including new and upgraded transmission lines. Expansion of these corridors would not be allowed without a Plan amendment. *Existing road networks would be condensed where appropriate, reducing redundancy, while allowing ongoing maintenance of infrastructure.* Access to utility corridors will be maintained while minimizing road infrastructure within the CBLUZ. Existing Transportation and other uses *such as hiking, fishing and dispersed recreation* will continue. *Overnight camping is not allowed.*
West Fork San Gabriel River	Santa Ana sucker	San Gabriel Canyon	CBLUZ location is Cogswell Dam downstream to the *beginning of the wild trout area* (2nd bridge) *and includes lower segment of Bear Canyon creek.* This area is currently managed as a wild trout stream and this designation is retained. Management of the Cogswell Dam for flood control and water conservation including water release is not in conflict with the CBLUZ designation and is retained. Installation of toilets can be considered neutral or beneficial use. Administrative use and use of NFS Road 2N25 as a hiking and bicycle path will be retained. *Maintenance and use of the disabled access fishing platforms along the West Fork will continue.*

**This is a partial list of activities associated with these CBLUZs. See Suitable Use Tables in Part 2 of the ANF LMP (pp. 4-7) for a full description of all suitable uses within CBLUZs.

Existing Wilderness Zone

This zone includes congressionally designated wildernesses. There are no changes to the ANF LMP direction that applies to this zone. However, two wilderness areas were designated since 2005 that occur within the Monument: Magic Mountain Wilderness and Pleasant View Ridge

Wilderness. The portions of these two wilderness areas within the Monument will be zoned Existing Wilderness (figure 5). The Pleasant View Wilderness will be part of the Angeles High Country Place and the Magic Mountain Wilderness will be part of the Soledad Front Country Place. The ANF LMP uses "places" to describe the theme, setting, desired conditions and program emphasis of an area. For a description of these two wilderness areas see table 6.

Table 6. Descriptions for wilderness areas designated by Congress in 2009

Title	Place	Acres
Magic Mountain Wilderness	Soledad Front Country	11,938
The United States Congress designated the Magic Mountain Wilderness in 2009. The Magic Mountain Wilderness is generally bounded by: Santa Clara Divide Road (3N17.7) on the south; Backcountry Discovery Trail 1 (3N37) on the east; and forest boundaries on the north and west. A closed road traverses the mountain from the community of Lange to Magic Mountain. This corridor separates the Magic Mountain Wilderness into two portions. The Magic Mountain Wilderness's chaparral-covered hillsides and oak-studded canyons provide a scenic vista and suitable habitat for the California condor. The area also offers primitive recreational opportunities for the rapidly urbanizing Santa Clarita Valley. There are no officially designated trails within this wilderness. However, several social trails exist, which were created by visitor use.		
Pleasant View Ridge Wilderness	Angeles High Country, Mojave Front Country	27,040
The United States Congress designated the Pleasant View Ridge Wilderness in 2009. This wilderness area is located roughly 30 miles northeast of La Cañada, north of the Angeles Crest Highway where the San Gabriel Mountains slope north to meet the Mojave Desert. The area features 8,200-foot Mt. Williamson and other dramatic peaks, formidable cliffs, the headwaters of Little Rock and South Fork Big Rock Creeks (which provide Designated Critical Habitat for the endangered mountain yellow-legged frog), remote backcountry, and some of the most magnificent canyon country in the San Gabriel Mountains. The Pleasant View Ridge Wilderness is generally bounded by: California Highway 2 (Angeles Crest Scenic Byway) on the south; Little Rock Canyon on the west; and the forest boundary on the north; and High Desert National Recreation Trail (10W02 Burckhardt) on the northeast. The area can be accessed from California State Highway 2 at Vincent's Gap, Islip Trailhead, Buckhorn Campground, and Three Points Trailhead and from the Pacific Crest National Scenic Trail and High Desert National Recreation Trail. Trails going through this wilderness include: High Desert National Recreation Trail (10W02 Burckhardt), Islip Saddle (9W02), and Pacific Crest National Scenic Trail.		

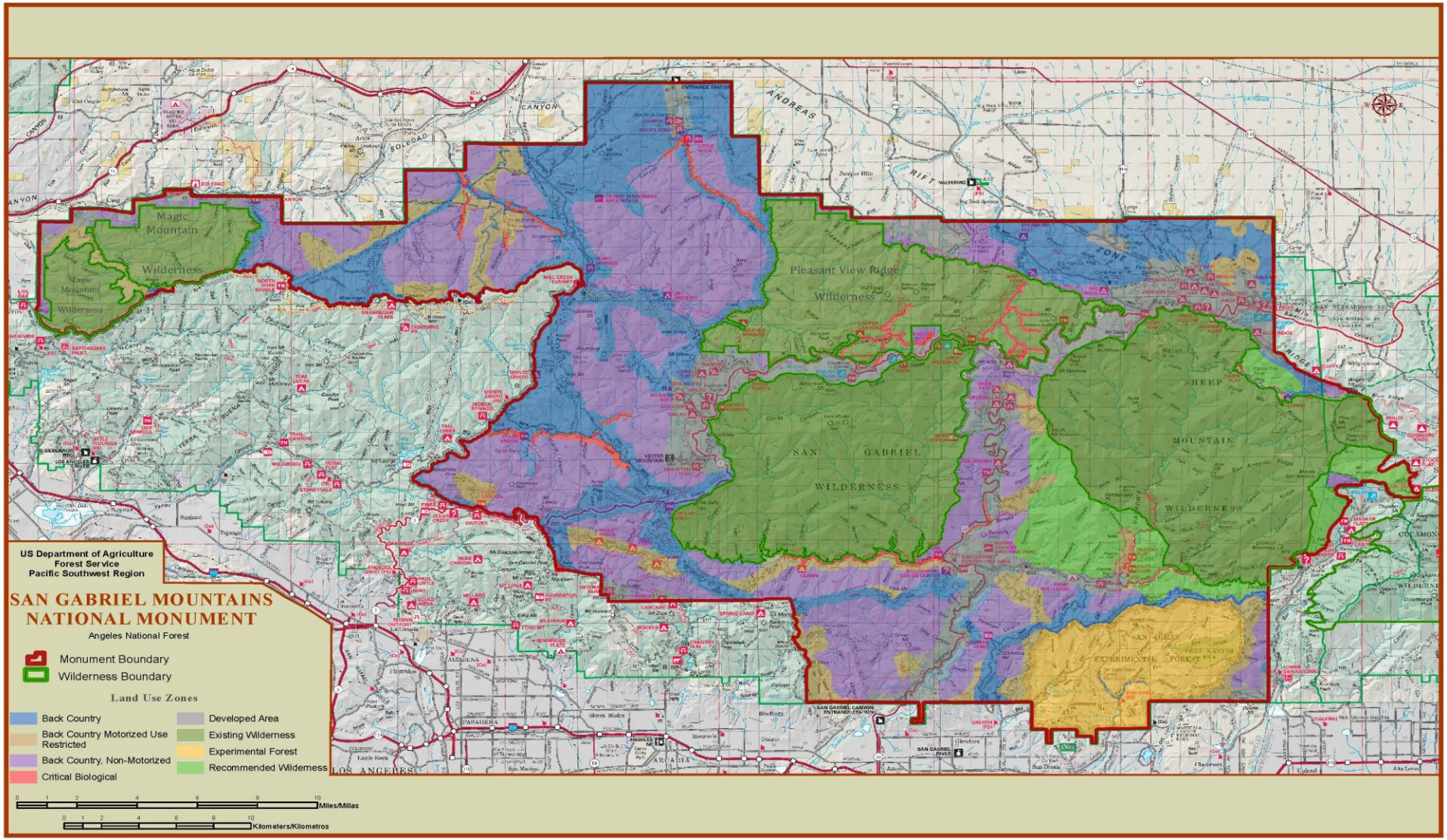


Figure 5. Proposed land use zones map updated for wilderness designations made by Congress in 2009

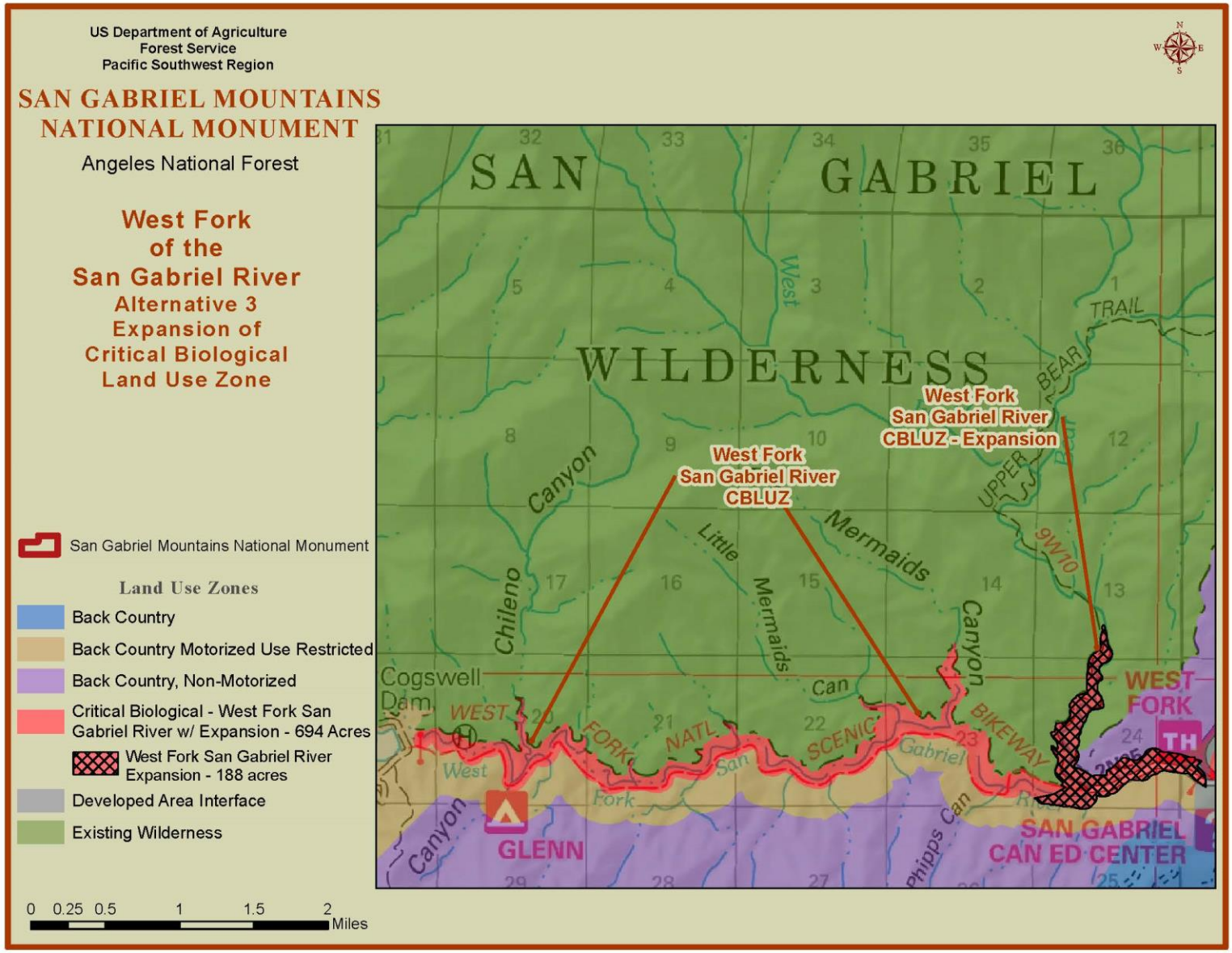


Figure 6. San Gabriel Mountains National Monument land use zones in detail, alternative 3 – West Fork of San Gabriel River

Climate Change

Management Approaches

1. *Consider Forest Service climate change assessment and databases to inform management decisions (i.e., regional climate change trend reports; vulnerability assessments of key resources; adaptation strategies, management recommendations, and template for assessing climate change impacts and management options).*

2. *Continue reporting measures related to climate change adaptation and sustainable operations.*

3. *Educate the public about ecosystems and potential impacts of climate change and other stressors. Interpretation and conservation education materials and activities convey up-to-date and clear messages about impacts of climate change on biodiversity.*

Alternatives Considered, but Eliminated from Detailed Analysis from Scoping

The Forest Service carefully considered the alternatives discussed below and determined they would not be carried forward into detailed analysis in the EA. For an alternative to be analyzed in detail in the EA, it must meet the purpose and need for action and address one or more key issues.

Alternatives not considered in detail in the EA may include, but are not limited to, those that do not meet the purpose and need, are technologically or economically infeasible or illegal, or would result in unreasonable environmental harm.

Public scoping comments provided a large number of suggestions for actions to address some of the key issues and other relevant resource concerns identified above.

1. Some public comments suggested the Forest Service operate a tram/bus/rail system to shuttle visitors into and out of the Monument. This suggestion is outside the capacity of the Forest Service to provide with current funding and staffing, and was, therefore, considered unfeasible. is and
2. Commenters proposed the construction of new bike paths into the Monument, more recreational facilities (such as bathrooms, trash cans, parking, etc.), and entrance stations at entrances to the Monument. These types of action are outside the scope of the planning effort, as defined by the purpose and need. Site-specific analysis would be necessary and appropriate for considering this kind of development within the Monument.
3. Some commenters suggested the Forest Service should complete Travel Management Regulation Subpart A, B, and C planning in conjunction with the Monument Plan amendment. The Forest Service has considered incorporating these processes into the Monument Plan amendment process, but has determined it would be best addressed in a focused planning effort in parallel. The Forest Service conducted a forestwide roads analysis process that included all ANF system roads. The Forest Service also recently completed a Subpart A (Travel Analysis) Process. This existing direction continues to guide and inform decisions within the Monument.

4. Comments advocated that the Forest Service provide more funding/staffing for the Monument or charge additional fees for admission to the Monument to pay for additional facilities. While previous monument designations indicate that resources may increase, this is not a decision that can be made within the current Monument Plan, as funding levels are based upon Congressional appropriation processes that fluctuate from year to year. Changing the fee structure is a site-specific action outside the scope of the planning effort.

Chapter 3. Affected Environment and Environmental Consequences

Analysis Area

Located in the northern and southeastern portions of the San Gabriel Mountain Range, approximately 30 miles northeast of downtown Los Angeles, the recently designated Monument encompasses 346,177 acres in southern California. The San Gabriel Mountains are some of the steepest and most rugged mountains in the United States, which are actively uplifting and slipping, being squeezed between the San Andreas, Sierra Madre, and the Cucamonga Faults.

These mountains are the headwaters of the Los Angeles and the San Gabriel Rivers, and include headwaters to tributaries of the Santa Clara and Mojave Rivers. They also contribute significant runoff to the Santa Clara River (via Soledad Canyon). Many of the streams have water flow throughout the summer either because of dam leakage or because of groundwater flow through the fractured bedrock or alluvial floodplains that feeds the springs and seeps found throughout the Monument. With close proximity to a major urban area, many riparian areas receive heavy recreational use in the summer.

The major desert-flowing drainages are Little Rock and Big Rock Creek. Chaparral shrubland is the dominant plant vegetation type and includes scrub oaks, chamise, manzanita, wild lilac, and buckbrush. Other important vegetation types include mixed conifer forest, which is composed of Jeffrey pine, Coulter pine, sugar pine, ponderosa pine, white fir, and bigcone Douglas fir; riparian woodlands including white alder, sycamore, and willow; and subalpine forests. Other vegetation types such as hardwood forest types, dry meadows, and dry-land vegetation types are found mostly in the northern part of the Monument and along its northwestern edge. These include pinyon pine/juniper woodland; semi-desert chaparral; and Joshua tree/creosote woodlands within the adjacent Mojave Desert.

Analysis Assumptions

Consideration of the environmental effects of the alternatives relies on a number of key assumptions:

- The ANF LMP FEIS (USDA Forest Service 2005b) provides supporting analysis for the existing ANF LMP plan components that continue to apply to the Monument area.
- Management plans, which include plan components, do not have direct effects. Land management plans provides a programmatic framework for future site-specific actions. They

do not authorize or mandate any site-specific projects or activities (including ground-disturbing actions).

- The analysis assumes the continuation of several services, programs, and activities, including, but not limited to, road and trail maintenance; operating administrative facilities; and administering recreational uses, special use permits, and currently authorized mining operations.
- Future site-specific projects and activities will be consistent with plan components (desired conditions, objectives, goals, standards, guidelines, and suitability) in the Monument Plan. Laws, regulations, and policies will be followed when planning or implementing site-specific projects and activities.
- The existing ANF LMP Monitoring Program will be used to monitor the Monument area.
- The designation of the Monument was completed under a presidential proclamation and is not a component of this analysis. Monument designation, which has already occurred with the issuance of the executive order, could increase recreational visitation due to higher visibility.
- Monument designation has withdrawn mineral rights and will reduce opportunities for mining and oil and gas development.

Heritage Resources

Affected Environment

Approximately 7 percent of the land within the Monument boundaries has been surveyed for cultural resources because of the area's very steep topography, in addition to a large percentage being designated wilderness. Wilderness areas, by definition, are rugged natural areas that are devoid to a large extent of public infrastructure, transmission lines, roads, dams, cabins, etc. This has greatly limited Forest Service actions or undertakings, reducing surveys and identification efforts that would occur under Section 106 of the National Historic Preservation Act. As a result, surveys are primarily tied to Section 110 opportunities. As of June 2015, 25,542 of 346,177 acres have been surveyed. Approximately 565 cultural resource inventories have occurred within the Monument boundary. They vary in acreage and intensity. As of June 2015, roughly 704 cultural resources have been documented, including historic or Native American habitation; resource procurement type sites; historic roads, trails, and transmission lines; water conveyance systems (dams); recreation camps; and isolated finds.

Sites can be managed in four different ways according to the Forest Service Cultural Resource Use Categories (2363.31):

1. Preservation (2363.31a) – Preservation is appropriate for cultural resources whose primary value warrants protection in place. The management focus of cultural resources in this category is preservation and protection. This category includes, but is not limited to:
    - Properties or areas that are important to a specific group's traditions or religions (Traditional Cultural Place and Sacred Site).
    - Cultural resources that are exceptionally unique or extraordinarily valuable.

- Cultural resources that may have future scientific potential.

2. Enhancement (2363.31b) – Enhancement is appropriate for cultural resources that have the potential to provide public educational, informational, or recreational benefits above all other uses. The management focus is sustainable use (historic administrative sites), adaptive reuse (historic cabin and lookout rentals), interpretation, and other development that benefits agency management and public use of cultural resources.
3. Scientific (2363.31c) – Scientific investigation is for cultural resources whose primary value is in their ability to reveal information about past human cultures and environments above all other uses. This category includes cultural resources suitable for data extraction through various research methods and experimental studies that have broader management benefit. The management focus is preservation, protection, and research.
4. Release from Management under the National Historic Preservation Act (2363.31d) – The agency official may release those cultural resources that have negligible scientific, historic, cultural, or interpretive value and that are not eligible to the National Register. This includes:
    - Cultural resources whose research potential is effectively exhausted as soon as they have been documented.
    - Historic properties that have had their salient information collected and preserved through mitigation.
    - Historic properties destroyed by any natural event or human activity.

The majority of sites that were analyzed fall under Preservation. While only a few of the most significant cultural resources and sites were called out in the Proclamation, the approximately 600 sites currently in the Preservation category, along with those that may be identified in the future, currently receive the same protections as sites determined eligible or listed on the National Register of Historic Places. Several sites meet the criteria for Enhancement, including the historic Big Pines and Crystal Lake Recreation Camps, San Gabriel Pictograph Boulder, Eldoradoville (Mt. San Antonio Mining District), Jackson Lake Rock House/Ranger Residence, Mt. Wilson Trail, Mt. Baldy Trail, Burkhart's Trail, Mt. Wilson Observatory, and the San Dimas Experimental Forest. A number of sites within the Monument meet the criteria for Scientific, including at-risk Native American and historic sites and sites that have experienced damage through multiple fire suppression activities. Approximately 42 sites analyzed could be released from management under the National Historic Preservation Act.

Sites Named in the Proclamation

Aliso-Arrastre Special Interest Area

The Aliso-Arrastre Middle and North Special Interest Area comprises 7,850 acres and is significant and distinguished for its heritage resource values. The Special Interest Area (SIA) has many Native American archaeological sites including long-term occupation sites, seasonal encampments and special-use procurement, processing, rock art, and storage sites. A significant element within the SIA is the concentration of stone circle features so far identified within the SIA, many of which are interpreted as house rings, storage caches, and religious sites. These stone circle features may be unique in southern California. Several sites containing cupule rock art features are also located within the SIA. One of these sites was recently listed on the National

Register of Historic Places as part of a multiple property listing for this class of resource that can be found across the Forest.

The span of Native American habitation within the SIA ranges from the historic period to the Late and Middle Prehistoric Periods, and likely even earlier. Glass trade beads and pottery show evidence of Native American habitation and occupation in the historic period, and dates from projectile points, shell bead types, and C^{14} from earth-ovens prove habitation and settlement of this area in the Late and Middle Prehistoric Periods. Artifacts include objects manufactured from steatite obtained from the Channel Islands, obsidian obtained from Owens Valley, and fused shale obtained from Grimes Canyon, 35 kilometers inland from Ventura, California. These indicate the existence of strong trade networks with both desert and coastal groups over substantial periods of time. The SIA contains archaeological materials that provide a unique opportunity to obtain valuable data related to past human life-ways and environmental adaptations, as well as paleo-environmental conditions.

The SIA encompasses ANF administered lands within the Aliso, Arrastre, and Kentucky Springs Watersheds. The SIA is situated south of the town of Acton and north of the Santa Clara Divide. Access from the north is from State Route 14 along Aliso Canyon Road and from the east along the Angeles Forest Highway. NFS roads 4N24 and 4N32 travel through the interior of the SIA, and 3N17 provides access from the south. The SIA has many other national forest uses including a transmission line corridor (lines, roads), clay mining operations, and hiking and riding trails. Elevations range from 2,950 to 5,900 feet for the combined SIA, with vegetation consisting primarily of chaparral at the lower elevations and a montane chaparral mix with stands of Coulter pine, canyon oak, and incense cedar at higher elevations (ANF LMP Part 2, pages 84-85).

There are approximately 90 documented cultural resources within the Aliso-Arrastre SIA, with most of these managed under the Preservation (2363.31a) and Scientific (2363.31c) categories.

Eldoradoville

Eldoradoville was a town established in the mid-to-late 1850s to support the mining operations in the East Fork of the San Gabriel River. The town was ultimately destroyed during the flood of 1938, but what remains is still located at the confluence of Cattle Canyon and the East Fork of the San Gabriel River. The site consists of a series of concrete pads, retaining walls, a cobble rockwork flagpole base, and nonnative vegetation on the primary terrace above the East Fork of the San Gabriel River. Earlier placer workings are located upstream. Placer mining is the mining of the streambed for gravel deposits and can involve washing, dredging, or hydraulic mining. The site is the approximate geographic location of the historic “Prospect Bar” and “Eldoradoville” mining towns of the mid-1800s, historic “Camp Bonita” of the Great Hiking Era, and the historic “"Hooverville” of the 1930s. The remains are most consistent with the 1909 to 1938 Camp Bonita occupation.

In May 1859, a gold mining boom town known as Prospect Bar, consisting of a boarding house, two or three stores, post office, blacksmith, saloon, butcher shop, etc., arose during a flurry of mining activity on the East Fork of the San Gabriel River. That settlement was described as being located 4 miles up the East Fork, near the confluence of that stream and Cattle Canyon. The site was flooded out in a storm in November 1859. By March 1860, the miners had returned and formed a mining district, naming the town Eldoradoville. The town was a lawless Wild West settlement, governed by the knife and gun. There were three stores, and six saloons with gambling and dance halls. The residents turned out on Election Day in 1860, voting 34-23-14 for

Stephen Douglas over Breckenridge and Lincoln, respectively. In 1861, the district produced an average of $15,000 per month in shipments of gold. During January 1862, another deluge completely obliterated the town and all other mining works in the East Fork, leaving nothing but mud and rock. Large-scale mining in the area never again reached the height of that period. In 1909, Jay Gardner Scott founded a small resort camp at the junction of the East Fork and Cattle Canyon. Originally named "Scott's Camp," it was soon changed to Camp Bonita. A small lodge and store were built, along with tents to accommodate fishermen. Henry Willard took over the camp in 1914, and made the resort very popular, running a stage three times a week into the East Fork. Flooding damaged the resort in the 1920s and early 1930s, and it was finally destroyed in the great flood of 1938. Concurrent with this operation was the resettlement of Eldoradoville by Depression-era miners, at a site named Hooverville. It was one of many such shantytowns to spring up from unemployed families searching for honest work during the Great Depression. Most of the structures associated with the settlements were tents and even converted automobiles. Hooverville and other such settlements were also completely destroyed in the flood of 1938.

While the much of the archaeological remains of Prospect Bar, Eldoradoville, Camp Bonita, and the depression-era Hooverville were wiped out by a number of historic floods, their historical occupation of this area and its role in local history is significant. The area's potential for future management associated with the Enhancement (2363.31b) category is extremely high, with opportunities for education and interpretation of these events to the public.

Mt. Wilson Observatory

The atmosphere over Mt. Wilson is very stable, allowing for high magnification, and making it an ideal location for astronomical study. One of the main values (in regards to the Observatory complex's current historic integrity) is its continuous use and operation as one of the most significant astronomical research facilities in the country, if not the world, especially during the first half of the 20th century. Many of the most important discoveries in the field of astronomy have occurred at this facility. In 1889, the Harvard Observatory on Mt. Wilson featured a 13-inch lens, and enabled the photography of 1,150 stars and the completion of a star map of the heavens. In 1908, the 60-inch Snow Solar Telescope was constructed by George E. Hale at the site. That instrument enabled much of the study of sunspots and other modern solar observations. In 1917, the 100-inch Hooker Telescope, the largest ever made until 1948, was constructed on-site. Over its lifetime, it revolutionized the concepts of space and the universe, allowing the mapping of the galaxy, and the siting of distant galaxies. In 1936, Dr. Edwin Hubble used the Hooker Telescope to record the second ever supernova witnessed by man. Hubble also acquired significant data and evidence from his work at the Mt. Wilson Observatory in developing his property "Hubble's law," which proposed and supported the implication that the Universe is expanding. Later additions to the site include a 50-foot interferometer for measuring stellar diameters, a 20-inch reflecting telescope, a 10-inch photographic refractor, and a 6-inch visual refractor.

The Mt. Wilson Observatory is an exceptionally unique cultural resource, meeting both the Preservation and Enhancement categories, and offers potential partnership opportunities to promote this incredible resource nationally as well as globally as a southern California "point of historical interest." In addition to the historic observatories and telescopes, many of the historic housing and support facilities have been maintained and function just as they did during both Hubble, Hale, and Einstein's tenure at the Observatory. The site is currently being interpreted by the Mt. Wilson Observatory and offers weekend tours, school group tours, and other opportunities. There may be future opportunities to educate the public about the history of science, the significance of the discoveries made at the Mt. Wilson Observatory, Albert Einstein's

research at the Observatory in the 1930s, night sky darkness protection, and women's role as "human computers" during the observatory's early days.

Historic Features within the San Dimas Experimental Forest

The San Dimas Experimental Forest (SDEF) is a protected field laboratory jointly managed by the Pacific Southwest Research Station and the ANF for studies of hydrology, fire, chaparral, and related ecosystems since it was established in 1933. The SDEF, established in 1933, is the only Forest Service experimental forest in southern California. The SDEF maintains some of the earliest and most comprehensive records from continuously monitored watersheds and has greatly contributed to our understanding of natural processes and chaparral ecosystems. The SDEF includes a range of facilities that were constructed through unemployment relief programs during the Great Depression in the 1930s, like the Civilian Conservation Corps and Work Projects Administration programs. The Lysimeter facility (tunnel and instrument room) is the largest of its kind in the world. It is a significant engineering structure and is the most elaborate research facility on the SDEF.

An inventory and evaluation report for the SDEF concluded that it appears eligible for listing on the National Register of Historic Places as a historic district. The SDEF retains a high degree of integrity of location, design, setting, materials, workmanship, feeling, and association to its period of significance. Local researchers, including professors and their students, from universities and colleges have contributed and continued the legacy of research under special permitted access. The SDEF potential for future management associated with both the Enhancement and Scientific categories is extremely high, with opportunities for education and interpretation of these events to the public and, in its ability as a cultural resource, to continue its historic function as a leading field laboratory and research center for chaparral and related ecosystems studies for the last 68 years. Over the years, data have been collected on water (precipitation, streamflow, etc.), soils and slope stability, effects of fire, vegetation management, chaparral ecology and physiology, vegetation classification, litter decomposition, and community structure of fauna.

Potential National Register Districts

Big Pines Recreation Camp

In 1922, Los Angeles County established Big Pines Recreation Camp on the northeastern slopes of the San Gabriel Mountains. A majority of the land was under lease to Los Angeles County until 1941, when the Camp was transferred entirely to the ANF. While many of the original Camp facilities and remaining structures have been renovated to modern recreational facilities over the years, a significant number of the original camp buildings and landscape features remain at separate areas within the district: the Camp headquarters complex or "Arch" area, the Ski Club and Zoo complex, staff residence and service complexes, organizational camps, and a tract of recreational homes originally built at the Camp for Los Angeles County supervisors and staff. The popular "Arch" area received its nickname from the twin stone towers of the Davidson Arch, which supported the pedestrian overpass spanning the Big Pines Highway. Due to highway widening, only the north tower remains today. Another popular area within Big Pines was the Ski Club. Skiing became so popular and well known at Big Pines that it was selected as the 1932 Winter Olympic Ski Jump competition venue; however, due to the lack of snowfall, the venue was moved to Lake Placid.

The Big Pines Recreation Camp has been nominated and documentation submitted for listing as a Historic District on the National Register of Historic Places for its leading role in the

development of public recreation in the Los Angeles area and for its creative and distinctive style of California Bungalow and other Craftsman-era architectural traditions combined with National Camp Rustic and Chalet styles developed in the grand resort architecture of national parks such as Glacier, Yellowstone, and Yosemite. One building in the potential Big Pines Historic District, the Jackson Lake Rock House, was stabilized and restored in 2015, thus, it is one of the many contributors of the Big Pines Historic District that meets the Enhancement criteria, specifically for the adaptive reuse of historic buildings and structures.

Mount San Antonio Historic Mining District

Mining is reported to have first occurred in the San Gabriel Mountains as early as 1834, and within San Gabriel Canyon by 1855. During the next decade, a rush or boom occurred within the East Fork of the San Gabriel Canyon that continued until 1862, when heavy rains caused the San Gabriel River to flood, sweeping away most mining equipment and evidence of this period of furious mining activity. The historic mining town of Eldoradoville, located along the East Fork of the San Gabriel River, was also swept away by the flood of 1862. At its peak, Eldoradoville had a population of approximately 1,500 (ca. 1861), had general stores, saloons, dance halls, along with numerous mining camps along the river made up of tents, wooden shacks, and stone cabins. During the Civil War, Army agents monitored Eldoradoville and the miners within San Gabriel Canyon for suspected pro-secessionist/Confederate activity.

Another contributing resource within the district is the remains of the Baldora Mine Complex. The well-preserved ball mill mine complex represents the most intact and complete example of this type of mine in California. Seven horizontal and vertical adits, an ore cart system, an aerial cable system, two ball mills, and two cabins comprise the Baldora Mine Complex. The Complex provides an excellent representation of early mining techniques and technology in use and economic activity within the region during the early exploration of San Gabriel Canyon.

The Bighorn Mine, like the Baldora Mine Complex, represents the most intact and significant mining operation that remains on the ANF. As stated, flooding removed much of the ruins and remains of mining activity within the study area. Whatever survived these flood events was also impacted and/or destroyed by wildfires. The Bighorn Mine, however, with its location on the east face of Mount Baden-Powell and high above (7,000 feet) the headwaters of the East Fork of the San Gabriel River, has survived with its mill buildings substantially intact and provides a glimpse into the efforts and ingenuity of the miners of this era.

This area was one of the most significant concentrations of early mining activity within southern California. The remains of the mining operations, buildings, equipment, and cabins have been documented within the ANF, specifically in the Sheep Mountain Wilderness, within areas around Mount San Antonio and the East Fork of the San Gabriel River. A large number of the mining sites have been evaluated and found eligible for listing on the National Register of Historic Places, and as contributing elements of the Mount San Antonio Historic Mining District.

Environmental Consequences

All Alternatives

The goals outlined in Part 1 of the ANF LMP, the Heritage program strategies outlined in Part 2, and standards in Part 3, emphasize preservation and protection of cultural resources from adverse effects. Under all alternatives, management for preservation and protection would continue to remain a program priority and emphasis. Impacts on cultural resources include any activity that

could adversely affect those attributes and significant values that contribute to their eligibility for the National Register. In accordance with the Region 5 Programmatic Agreement for Section 106 compliance, and Part 3 of the LMP (S60), all cultural resources within the Monument would continue to be managed as assumed eligible for the National Register and afforded the same protections and consideration as those determined eligible, until a formal evaluation can occur. Federal actions and undertakings that could potentially impact cultural resources would continue to be reviewed, assessed for effects, and if determined unavoidable, mitigated at the project level, in accordance with Section 106 of the National Historic Preservation Act, and its implementing regulations, 36 CFR 800.

Alternative 1

Indirect Effects

Current management would continue in accordance with the 2005 ANF LMP, relevant amendments, Federal laws, regulations, statutes, Executive Orders, agreement documents, and interim management direction, as described above. Current management seeks to avoid, minimize, and resolve any potential negative impacts on cultural resources from activities at the project-specific level.

Impacts from unauthorized or unmanaged activities that do not initiate Section 106, such as an increase in indirect affects resulting from off-OHV trail activity, user-created hiking trails, unauthorized collection, vandalism, trampling, or other forms of unregulated surface disturbance, may increase under alternative 1. Impacts resulting from these types of activities or potential conditions would continue under all plan alternatives, and continue to be managed under the ANF's heritage program and in accordance with Section 110 of the National Historic Preservation Act.

Alternative 2

Alternative 2 includes plan components and management approaches that emphasize protections for heritage resources, help ensure traditional uses (e.g., gathering, collecting, and ceremonial) remain accessible and are protected, and support partnerships to meet management goals for heritage resources. It also includes new direction associated with the purposeful management of recreation uses and transportation, engaging youth and underserved communities in interpretation and education, reducing the number of unauthorized roads, and minimizing development and proliferation of new unauthorized routes and user-created trails. These can also influence heritage resources.

Indirect Effects

Under alternative 2, negative effects from authorized or regulated activities are not expected because protection of known sites would continue to be emphasized under existing ANF LMP direction, Federal laws and regulations, and agreement documents, through avoidance, project modification, or implementation of protection measures at the site-specific level. As such, any future activities in support of alternative 2, would be reviewed and assessed at the project level, where cultural resource surveys and identification efforts would occur, and the individual project or undertaking is analyzed for direct, indirect, and cumulative effects to historic properties. This process ensures that all regulated or managed activities would seek to avoid and minimize effects or impacts to historic properties.

This alternative includes new plan components with a focus on opportunities to improve access to the Monument, while also addressing concerns related to vehicle congestion, parking capacity, and public safety. Improved access could increase contact with cultural resource sites by visitors who could intentionally or unintentionally damage sites by collecting surface artifacts, vandalizing, illegally digging, or otherwise adversely or negatively impacting significant historical values or site attributes. Portions of this data loss could affect National Register of Historic Places eligible and potentially eligible sites, resulting in irreplaceable loss of the sites; cultural constituents, information, and future data potential. However, alternative 2 plan components are expected to have a net positive impact by increasing the ability of cultural resource personnel to better monitor sites and areas, and by reducing the number of user-created trails and roads, which could deter vandalism, OHV or off-designated trail impacts, or other damage to cultural resources. Because of these additional plan components, alternative 2 is expected to provide more beneficial effects in terms of addressing unauthorized or unmanaged activities than alternative 1.

Cumulative Effects

Reasonably foreseeable future projects would likely include ground-disturbing activities associated with improving visitor access, increased OHV activity, trail and campground use and maintenance, an increase in invasive species (and associated actions for their treatment or removal), access road maintenance/grading, forest health and fuel reduction, special use facility maintenance and improvements, and fire suppression activities. Some of these activities could increase with alternative 2 (such as visitor access and recreation use/trail and campground maintenance), while others could remain relatively constant and in line with past and current operation levels (such as fuels reduction and special-use permit facility maintenance).

Modest positive cumulative effects associated with alternative 2 are expected over time with facility changes associated with focused, resource-sensitive recreational management; alternative transportation; additional parking; and reducing resource damage in sensitive areas, such as riparian areas, critical habitat, or other special interest areas by the removal and minimization of user-created trails and off designated trail OHV activities. Future projects and activities would be managed for compliance with existing Federal laws, policies, and regulations.

No ground-disturbing or other type of action or activity is being proposed as part of this alternative; any potential cumulative effects that may result from the any future projects implemented as a result of alternative 2 would be analyzed as part of the site-specific environmental analysis for a given project, ensuring protection or mitigation measures are in place before project implementation (i.e., avoidance measures and/project modification/redesign strategies, in accordance with Section 106 [36 CFR 800], R5 Programmatic Agreement).

Alternative 3

Alternative 3 includes additional plan components and management approaches related to interpretative efforts and strategies; increased partnership with Tribes, local universities, and professional organizations; and collaboration with Tribes and the Forest’s Biological Resource staff to manage and protect traditional Tribal resources (e.g., gathering, harvesting, and collecting activities).

Indirect Effects

Overall, indirect effects from alternative 3 are expected to be beneficial and have a more positive impact on cultural resources than alternative 2. With the additional or modified plan direction in alternative 3, there is greater potential than alternative 2 to reduce negative impacts associated with both planned and unregulated or unauthorized activities that are expected with an increase in visitor access and recreational use. This includes management approaches to expand collaboration and partnerships with interested groups and organizations (such as Tribes, academic institutions, and professional societies) to support protection, monitoring, and site stewardship of significant or at-risk resources.

The modified plan direction in alternative 3 emphasizes collaboration efforts with Tribes and the ANF's Biological Resource group, which is expected to provide additional protections of tribally significant plant species and traditional resources within the Monument compared to alternative 2. Alternative 3 is also expected to bring additional benefits to Tribal resources by expanding upon existing Tribal consultation efforts to improve the public outreach and interpretative potential within the Monument, so that it is more comprehensive and includes Native American history, past and current uses, and the current and ongoing relationship that Tribes have with the lands comprising the Monument.

Finally, alternative 3 provides additional emphasis compared to alternative 2 on Section 110 survey efforts within the Monument to increase the heritage program's ability to identify, manage, and protect cultural resources. Increasing our survey coverage would fill current data gaps by providing information necessary to avoid effects to cultural resources during implementation of future projects under the Monument Plan. This is expected to be particularly beneficial for planned Section 106 undertakings, but also valuable to designing and implementing protection measures, monitoring efforts, etc., for those unregulated activities that could result from the potential increase in visitor access and recreational use (e.g., vandalism, trampling, OHV impacts, graffiti, etc.).

Cumulative Effects

Cumulative effects for alternative 3 would be the same as alternative 2.

Hydrology

Affected Environment

The Monument includes watersheds that are critical to providing the quality and quantity of water needed to support plants and wildlife, as well as for drinking water and other human uses. The watershed resource consists of surface water, groundwater, riparian areas, and the soils and landscapes that make up the watersheds. The relationship between groundwater extraction, water diversions, and instream flow requirements to support aquatic species and riparian habitat is important to the proper functioning of sustainable forest ecosystems and the recovery of listed species. The challenge is to balance the needs of water users with resource needs for the maintenance or improvement of riparian and wetland habitat.

Composed of steep, naturally erosive mountains formed by dynamic geologic forces and characterized by high relative relief, deep dissection, and innumerable extremely steep slopes, the watersheds of the Monument provide a delivery system for precipitation and sediment to reach streams. As a result, the valley-side slopes in the mountains are geologically active environments,

in which rates of debris production and removal are extremely rapid by comparison with other areas and regions (Cooke 1984). Past storm events in the area have resulted in substantial sedimentation in the four reservoirs (Palmdale Little Rock, Cogswell, San Gabriel, and Morris). Monument managers play a unique and important role in water resources, as they are responsible for the headwaters and primary source areas for major river systems and have stewardship over the primary recharge area for most aquifers within the San Gabriel Mountains.

Watershed inputs and channel configuration vary over time, but are more or less balanced in a dynamic equilibrium in natural systems. This balance can be affected by Forest Service management activities, off-forest uses, and natural events, such as earthquakes and wildland fires. Heavy precipitation and flood events cause erosion and sedimentation, and naturally occurring chemical compounds found in the rocks can affect surface water quality. Management activities, public uses, and natural events that disturb the soil surface, as well as those that impede or remove streamflow, generally increase the closer a ground-disturbing activity is to a stream, riparian area, or wetland. Surface water, floodplains, groundwater, wetlands, and riparian areas are closely related through proximity to one another and through interflow of water traveling at the subsurface between streams and groundwater aquifers (Winter and Chavez 1998).

Urbanization near and adjacent to national forests can and is already having a marked effect on national forest resources. Many stream channels downstream of the national forests' boundaries have been altered through flow management or channelization, which has caused a break in the connectivity with natural streams that previously flowed through towns, cities, and farmland to the Pacific Ocean.

Annual precipitation

The climate in this region is best described as Mediterranean, characterized by wet winters and dry summers, with mild seasonal changes. Warm and dry conditions and occasional summer showers dominate from May to October, and cool, intermittently wet conditions often occur between November and April. Snowpack may accumulate at higher elevations during the winter and early spring months, with snow usually melting before June. It is cyclic in nature, with consecutive years of low rainfall and extended droughts, as well as years with high rainfall and associated flooding.

Average annual precipitation on the national forests varies dramatically with elevation. Little or no precipitation occurs in the planning area during approximately three-quarters of the year (Fujioka et al. 1998). The San Gabriel Range is a physiographic barrier that causes air masses to rise as winds blow over the range, and locally, there are increases in precipitation as a result. The upper elevations receive the highest rainfall in southern California. Precipitation data have been collected at San Antonio Canyon just outside the Monument since 1900. For San Antonio Canyon, precipitation averaged 42 inches at 3,400 feet elevation (Nourse 1999). At higher elevations, annual precipitation amounts can reach 60 inches, much of which falls as snow. Short-duration, high-intensity storms are relatively common. Precipitation varies considerably from year to year, reflecting precipitation patterns found over much of southern California, which experiences the highest inter-annual variability in precipitation in the Nation.

Streams and River Networks

High variability in precipitation and runoff in southern California can result in large flood events, which scour channels and redistribute sediments and bedload. The winter of 2005 was an example of this type of regional flooding. Local flood peaks generally occur during major rainfall

events, which threaten life and property. Large-scale and high-return-interval floods are associated with major sub-tropical events and with northern Pacific frontal systems in the planning area. Post-fire flood events intensify the large amounts of sediment released by the bare slopes that "bulk" the flood flow volumes to double or triple their average volumes.

The upper San Gabriel River watershed (Graf 1988) has a long history of large flood events and associated sedimentation. Severe storms have occurred in the San Gabriel Range that have led to extensive floods. A maximum discharge of 24,000 cfs was recorded at a U.S. Geological Survey gage in San Antonio Canyon in March 1938. This was followed about 30 years later in 1969 by a flood of 16,400 cfs at the same stream gage.

Because of early recognition of the economic potential for irrigation and hydroelectric power, streamflows in parts of the San Gabriel Range have been monitored intermittently since the late 1800s (Nourse 1999). Diversion and use of surface flows and groundwater for hydroelectric power, irrigation, and domestic use is common within the Monument. Water uses in some areas have been extensively studied. Historic flow patterns in southern California streams reflect the region's climate of long, dry summers and short, wet winters. Peaks of stream discharge occur in the winter and early spring and then decline into the summer months. Gaging data from the Lower San Antonio Canyon, just outside the Monument, show mean annual runoff was 23 cfs. Hydrologic studies analyzed month-to-month variations in streamflow and precipitation, and found peak runoff rates occurred in April, while the greatest precipitation occurred in February. It is assumed that this delayed runoff pattern reflects springtime melting snow, combined with water storage and release from surface deposits that have absorbed runoff.

At the same stream gage, droughts have led to minimal surface flows. In late summer and early fall 1951, zero flow was recorded. Similar low flows were recorded in 1954 and 1963. For this site, stream diversions, combined with widespread infiltration of stream water into thick alluvial deposits, have led to common extended periods of very low flows or zero flows in the channel along lower San Antonio Canyon (Nourse 1999). Streamflow patterns in other areas of the San Gabriel Range within the Monument that have not been studied as thoroughly are probably similar.

The San Gabriel Range river systems are dominated by short, high-magnitude storm events and, as a result, many rivers exhibit braided channel morphology. Braided channels are generally characterized by abundant bedload, steep channel gradients, highly erodible banks, and highly variable discharge (Graf 1988). In dryland river systems, flood events are almost always the factors that convert meandering channels to a braided morphology. Due to the role of large storm events, the change from braided back to meandering channel morphology is much slower than the change from meandering to braided channel geometry. The combination of high-intensity rainfall events, poor soil development, and steep slopes often generates high-magnitude storm events that transform stream channel morphology and associated riparian habitat, which should be recognized when describing aquatic and riparian habitat areas and evaluating potential human impacts on stream channel morphology and aquatic and riparian habitat.

The planning area includes watersheds on both NFS lands and lands of other ownership within the boundaries of the Monument. Approximately 67 percent of the watersheds are in non-NFS ownership overall for the ANF (table 7). Watershed condition ratings for Monument watersheds are included in these totals.

Table 7. Watershed acreage, land ownership and summary of watershed condition ratings for the San Gabriel Mountains National Monument

Watersheds	Watershed Acreage	Non-NFS land Acreage	Percent of Watershed in Non-NFS land	Watershed Condition Rating		
				Good	Moderate	Poor
39	344,602	8,558	2	11	18	10

NFS: National Forest System

The importance of water yields from vegetation and fuels treatments depends on aspect, elevation, soils, geology and vegetation cover, as well as on annual precipitation. The Monument is a source of water for municipal, commercial, and agricultural uses, and for streamflows necessary to maintain healthy aquatic and riparian resources. Streamflows from ANF watersheds result from total precipitation minus losses from evaporation, transpiration, and groundwater storage. Trees and chaparral have an impact on water available to streamflow by intercepting precipitation in their canopies, which is then evaporated back into the atmosphere. Trees also transpire large amounts of water, which depletes water reserves in the soil and increases the groundwater capacity for subsequent rainfall or snowmelt (Troendle and Kaufmann 1987).

Estimated water yield conditions (on NFS lands only) have not changed measurably since the analysis conducted for the ANF LMP, which estimated the total annual water yield from the southern California national forests. It is expected that short-term changes in water yield from the Monument management would occur during the implementation of this Monument Plan. However, the limited amount of precipitation and high evapotranspiration rates common in this climatic zone severely limit the long-term changes in water yield (Ziemer 1981).

There are approximately 385 miles of streams and 6,765 acres of lakes and reservoirs within the planning area, although most reservoirs are on non-NFS lands (table 8).

Table 8. Water bodies located within the San Gabriel Mountains National Monument

National Monument	Miles of Perennial and Intermittent streams	Acres of Lakes and Reservoirs
San Gabriel Mountains National Monument	284	6,765

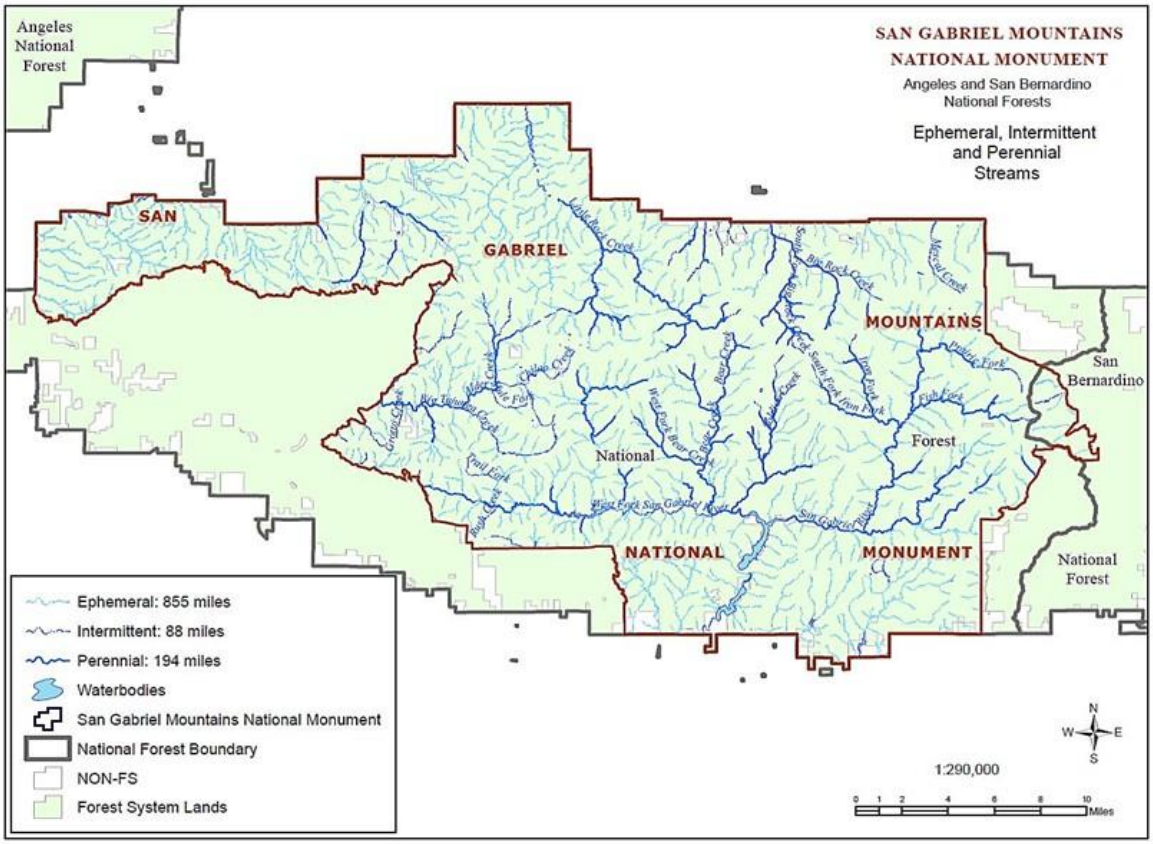


Figure 7. Intermittent and perennial streams in the San Gabriel Mountains National Monument

Water Quality

Surface Water - Quality

Watershed conditions, or watershed health, on the national forests vary, depending on amount of disturbance that has occurred within each watershed and the effect of the disturbance on the natural integrity of the watershed as a whole. The 39 watersheds in the Monument have been analyzed and assigned a watershed condition rating based on disturbance and overall watershed health criteria identified in the watershed condition rating methodology (USDA Forest Service 2000). Eleven watersheds were in good condition, 18 are in moderate condition, and 10 are in poor condition. These results are an indicator of potential water quality problems in these watershed.

Roads and Water Quality

Roads are a large source of increased sediment into stream channels on the Monument. Precipitation run-off from roads is a concern because of the efficiency with which it can reach a stream. In an unroaded area, or when there is an adequate buffer between the road and the stream, run-off from rain or snowmelt typically infiltrates into the soil of a vegetated slope before it can reach a stream channel. This process is interrupted when a road traverses a slope and collects and diverts the run-off. If no effective mitigations are applied to disperse the run-off collected on a road, it can serve as a conduit where water travels down the road surface and flows directly into

nearby channels, increasing the turbidity and rate of streamflow. In turn, the available energy of a stream increases, resulting in accelerated erosion of banks and the streambed.

Generally, higher densities of roads within a watershed result in quicker run-off to the stream network and increase the risk of channel erosion and downstream sedimentation. Although overall road densities across the Monument are low, roads can affect riparian conservation areas and water resources. Deposition of sediments, or sedimentation, occurs where or when flow rates are not sufficient for their transport in suspension. It can cause adverse ecological and economic consequences if the amount of sediment exceeds the transport capacity of a stream system. Sedimentation can inhibit flow through diversion structures, reduce reservoir capacity, increase costs of sediment removal from sediment catchments, and increase the costs of water treatment. It also can adversely affect aquatic habitat by burying important gravels needed for spawning, filling interstitial spaces in a streambed inhabited by aquatic insects, reducing pool depths, and changing the balance of scouring and deposition within a stream system. Impacts of sedimentation would be analyzed during project-level analyses.

The primary water concerns in road management are location, design, layout and maintenance. When located adjacent to or across a stream, roads and trails can act as constriction points when flows are directed through undersized culverts and can serve as direct conduits of sediment-laden run-off into a stream, leading to sedimentation. Roads and trails constructed along an unstable slope can weaken its structure, resulting in landslides and creating a source of sediments from the disturbed material. Low-water road crossings (armored and unarmored fords, cement slab crossings, etc.) can disrupt streamflows, affect channel geometry and function, and deliver sediment directly into the stream from the approaches to the stream crossing. Roads or trails would lessen infiltration to aquifers and increase surface run-off. Improper drainage can result in concentration of water that may cause slope instability and increased erosion and sedimentation, and may also alter aquifer recharge infiltration.

Recreation Impacts

Although only about 2 percent of the land base across the Monument is suitable for recreation activities, the demands placed upon Monument riparian areas for recreation use are anticipated to continue to increase. In southern California, riparian areas and lakes, reservoirs, and streams are the most sought-after locales for much of this recreation use. Water provides basic needs in campgrounds and other recreation sites. Most wilderness visitors also travel to and camp near lakes or streams. The availability of water enhances most recreational uses and, conversely, recreational pursuits have varying degrees of impact on these resources. Many developed and dispersed recreation sites, summer homes, and organization camps are located near lakes and streams.

Because use is concentrated on the few available sites near water, over-use can reduce the health and vigor of riparian vegetation and compact soils. Recreation sites and riparian areas both have a limited capacity to meet the demands being placed upon them. Concentrated overuse typically affects riparian conservation areas; it results in trampling of streambanks and riparian vegetation, leads to soil compaction, and causes erosion and sedimentation. The risk of water pollution from human waste, dishwashing, trash accumulation, and horse use is also higher where people congregate. In general, most areas across the Monument experience only minor amounts of these effects, except at areas of concentrated use that are mainly associated with dispersed recreation. Although there is a component of year-round use composed mainly of dispersed use and hiking, most Monument visitation decreases between October and April. Camping is not allowed within

100 feet of water bodies, and there are processes to assess current use of an area and to determine corrective measures when impacts do occur. Dispersed camping that takes place off-road has become an increasing problem that degrades both riparian areas and streams.

OHV use can lead to compacted and displaced soils, and runoff and sedimentation can result. This activity is currently allowed within the Monument within designated areas. Designated OHV areas are designed to reduce effects from OHVs on stream courses and other sensitive areas.

Shooting areas on the Monument represent an area of concentrated use that can lead to riparian conservation area and water quality effects. Trampling of the area, uncontrolled vehicle use, erosion, sedimentation, and physical damage to riparian vegetation can result from recreational shooting. In addition, high concentrations of lead shot targets left in shooting areas can cause water quality degradation. In addition, the Monument has an increasing problem with large amounts of trash, such as refrigerators, scrap metal, and old cars being left on a site after shooters use them for targets.

Impacts from group events, including groups accompanied by outfitters and guides, are unique to the particular activity and differ with respect to location, size of group, time period, and type of activity. These activities can also have effects similar to those described for other ground-disturbing activities, although the effects are generally short-term and can be mitigated by the terms of the permit. Recreation residences are of long-term duration and can have effects similar to those described for other ground-disturbing and water extraction activities, depending on the terms of the permit and how they are administered.

When adverse changes in vegetation structure, fish and wildlife populations, stream channel stability, or water quality indicate that habitat is declining beyond acceptable levels, the alternative is to use adaptive management techniques to modify, disperse, decrease, or eliminate existing use based on the Adaptive Mitigation for Recreation Uses (Appendix D of the ANF LMP). In some cases, management options are limited and the challenges are compounded when there are no comparable areas nearby to accommodate existing uses.

Energy and Minerals

There are 109 active mining claims of approximately 2000 acres within 23 sections in the Monument. Currently, mineral exploration and developments have the potential to adversely affect water quality by adding sediment and/or toxic substances from road, drilling and boring activities. Owners of existing active mining claims have the minerals rights to develop their claims and submit requests for exploration and development of their claims under the Mining Law of 1872 and the 36 CFR 228 regulations. The potential exists for spills of blasting agents, drilling fluids, and oil and gas products to enter surface and ground waters.

Both historical mining operations and abandoned mine lands continue to affect riparian conservation areas and water quality from run-off, erosion, and sedimentation, as well as from leaking chemical compounds. Placer mining on the national forests generally is located along streams within riparian conservation areas. Placer mining activity involves removing any riparian vegetation and processing gravel substrates. Past placer mining practices on the national forests have led to introduction of heavy sediment loads into the stream channels and, in some cases, alteration of the stream channel and floodplain system. Monument streams particularly affected by past placer mining activities include the San Gabriel River. Generally, effects from large- and small-scale mining can include type conversion, soil compaction, riparian vegetation removal,

physical habitat destruction, interference with hydrologic function, alteration of water quantity, water quality degradation, increased run-off, erosion, and sedimentation.

Past and current mining activity can cause large long-term impacts on surface and groundwater quality. Metal ores can contain sulfides of metals such as iron, zinc, lead, and copper. Deep in the ground, sulfides are normally stable, but mining exposes these ores to air or water, and the result is oxidation to metal sulfates and sulfuric acid. Metals that come in contact with acidic run-off dissolve easily and enter a water body in solution. Aquatic life and riparian vegetation are poisoned by acidic water. Without protective vegetation along streambanks, channel erosion also would also occur. Some mining activity, such as exploration, simply disturbs the soil, leaving surfaces exposed to erosive forces.

Current mining occurring on the Monument is limited to less than 2,000 acres of areas with mining claims. Ground disturbances and stream sedimentation from most current operations, except for gravel operations on the ANF, are small. The placer gold operations mostly use small suction dredges that work instream to separate gold from stream gravels. Suction dredging can legally occur in the Monument on existing mining claims. These operations can cause some alteration of substrates within stream channels. Gold operations working outside stream channels are required to use settling ponds for process waters and to rehabilitate and revegetate mined areas when mining is completed. When vegetative cover is removed, or when soils are disturbed or compacted, there is a short-term increase in sedimentation. Natural precipitation and flood events can also cause sedimentation. Natural occurrences of chemical compounds in surface water reduce water quality. Mining operations, thus, have the potential to contaminate surface and groundwater.

Mining operations—especially adits, shafts and pits—can potentially alter aquifer integrity, groundwater quality and quantity. Plans of operation and reclamation plans are designed and administered to mitigate adverse impacts. Lode mining, which involves digging of tunnels, adits and shafts, can intercept and change groundwater flow and aquifer physical properties. Placer mining, gravel pits, and rock quarries that move large quantities of sediment within a stream channel or alter the stream channel and floodplain system, could affect the quantity of water infiltrating to the aquifer.

Surface Water - Uses

Year-round demand for water is magnified by the large and increasing human populations surrounding and using national forests (Davis 1998). National forests provide domestic-use and drinking water for many southern California communities. Much of the water from Monument streams is appropriated, meaning that the amount and location of the diversion is registered with the State; some watersheds may be adjudicated in the future. Adjudication is a binding, court-approved allocation of specific amounts of water to specific persons within a watershed; adjudication restricts forest water uses. Large streams flow off the Monument, where the water is captured for private, municipal, industrial, or agricultural uses.

Surface water found on the Monument plays a vital role in sustaining natural resources. Surface water has several State-designated beneficial uses that include municipal supply in several watersheds and non-consumptive and consumptive uses, both of which are highly valued and depend on high-quality water.

Non-consumptive Water Uses

A primary responsibility of the Forest Service is to ensure that adequate amounts and quality of water are available to support natural resources, such as fish, wildlife, and riparian vegetation found on the national forests, and to provide water for fire suppression. The dynamics of streamflow and the proximity of groundwater largely determine the extent and character of riparian, wetland, and aquatic habitats. Seasonality, volume, duration, and year-to-year variability of streamflow all greatly influence the structure and composition of ecological communities found in the stream channel and adjacent wetlands.

Consumptive Surface Water Uses

Water rights are subject to State of California jurisdiction. Most major reservoirs in and around the Monument store water for public water supplies, groundwater recharge, flood control, and agricultural uses outside the national forest boundaries. Community drinking water supplies are wholly or partially provided in watersheds on the Monument. All Monument watersheds have water rights on file with the State of California, and may or may not be fully appropriated. The State Water Resources Control Board regulates water supply. The State Water Resources Control Board would rule a Monument stream segment or watershed to be fully appropriated (that is, no water is available for new water rights applications) on a case-by-case basis. The demand for water is apparent in the number of existing water rights associated with each watershed. All watersheds on the Monument have at least one water right filing.

Riparian Areas and Wetlands

Riparian habitats are typically narrow, linear shrub or woodlands or forests that line perennial and ephemeral streams. Wetlands may consist of bogs, fens, marshes, and wet or dry meadows, and within the Monument, these wetlands often coincide with high water tables associated with riparian areas. Any designated areas within the planning area may have special considerations for hydrologic effects of land management, including riparian reserves, riparian protection areas, streamside exclusion zones, meadows, wetlands such as fens, and areas included in partnership agreements.

Riparian forests and woodlands differ sharply from surrounding uplands by having a canopy cover dominated by a variety of deciduous broad-leaved trees, often with multi-layered canopies. Riparian habitats and wetlands are highly productive and vital for wildlife as they provide food, cover, shade, ameliorated microclimate, water, and wildlife nesting and foraging habitats. Many upland wildlife species use riparian habitats during some part of their life cycle. Riparian habitats are most prevalent along mid- to larger-order streams at elevations below 4,000 feet in the foothills and valleys.

Stream hydrology, channel geomorphology, and proximity to groundwater are a few of the factors controlling the extent of riparian, wetland, and aquatic habitats. Seasonality, volume, duration, and year-to-year variability of streamflow influence the structure and composition of plant communities along channels and in floodplains. Groundwater fluctuations also affect riparian communities by creating springs, seeps, and ephemeral water bodies.

Riparian ecosystems are characterized by the trees, shrubs, or herbaceous vegetation that require free or unbounded water, or by conditions that are moister than those of surrounding areas. On most areas of the national forests, annual precipitation does not exceed losses to transpiration and evaporation; moisture availability is frequently a limiting factor affecting vegetation location, pattern, and composition. To date, riparian ecosystems on the national forests have only been

partially mapped from field investigations. These linear features on the landscape are difficult to accurately map across large areas.

Riparian and aquatic ecosystems, wetlands, reservoir/lakeside zones, and floodplains are all included in riparian conservation areas (RCAs). Although the terms riparian ecosystems and RCAs will be used interchangeably in the following discussions, by strict ecological definition they may not be the same in all instances. RCAs are an administratively designated zone designed to call attention to the need for special management practices to maintain and/or improve watershed and riparian resources. The RCAs serve to protect watercourses from soil erosion and vegetative disturbances from other than natural processes adjacent to the watercourse and areas upslope. Riparian ecosystems are managed to maintain or improve conditions for riparian-dependent resources. Preferential consideration is given to riparian-dependent resources when conflicts among land use activities occur. RCAs overlap all land use zones.

RCAs are managed primarily to protect and maintain the following important habitat components for threatened and endangered species and non-federally listed fish, wildlife, and plant species habitat: (a) water quality; (b) water quantity; (c) site productivity; (d) channel stability; and (e) riparian vegetation.

The National Forest Management Act (ANF LMP, 2005) requires that special attention be given to the land and vegetation for approximately 30 meters (approximately 100 feet) from the edges of all intermittent streams, and 100 meters for perennial streams and lakes. This requirement is intended to protect riparian-dependent resources and stream water quality from adverse effects, primarily erosion and sedimentation, related to national forest management activities. RCAs include this minimum required distance from the edge of water bodies and, in addition, extend to include wider distances based on imperiled species habitat requirements and water quality protection needs determined during the past 15 years. RCA boundaries would include aquatic ecosystems, floodplains and riparian vegetation, wetlands, and meadows.

RCA acreage has been modeled and represents approximately 5 percent of the Monument (table 9). These acreage values are undoubtedly lower than actual, since wetlands, especially vernal pools smaller than 1 acre, were not generally modeled.

RCAs are key to maintaining productive fisheries and wildlife habitat, attenuating flood flows, providing quality water for downstream users, supplying groundwater recharge, being available as diverse scenery and recreation locations, and sustaining forage production. The objective is to protect the riparian ecosystem and vegetation, with an emphasis on preventing the causes of management-initiated watershed and riparian degradation.

Table 9. Percent of modeled RCA acreage relative to total NFS land base

National Monument	NFS Land Total	RCA Total	Percent RCA Out of Total NFS Land
San Gabriel Mountains National Monument	346, 177	17,266	5

NFS: National Forest System; RCA: Riparian Conservation Area

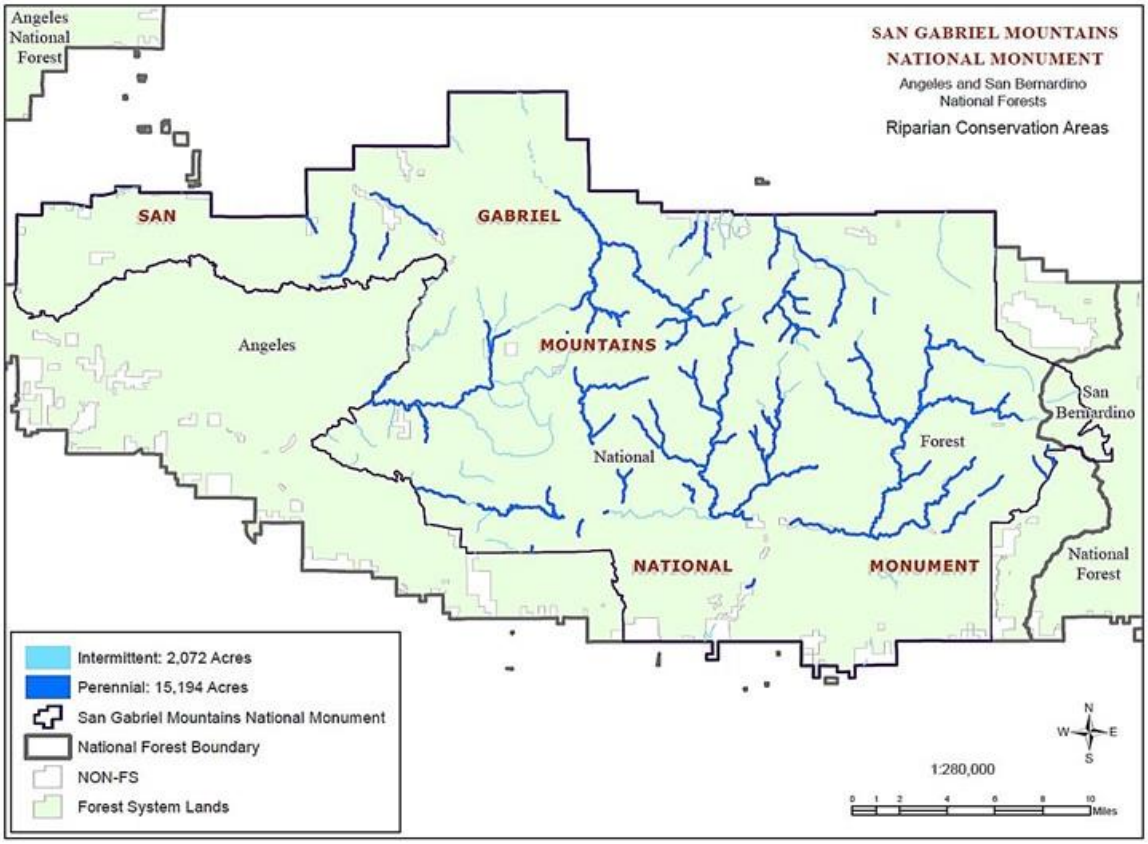


Figure 8. Map of riparian resources, San Gabriel Mountains National Monument

Riparian Areas - Quality

In the overall southern California geographic area, riparian habitats have declined in quality and quantity at low elevations, where they historically were most extensive. Estimates indicate that channelization and diversion of streams in the past century have reduced the extent of riparian habitats in southern California by more than 90 percent (Faber and others 1989). More recently, strong regulatory policies on “no net loss” of wetlands and floodplains have helped to check this decline (Stephenson and Calcarone 1999).

The health, vigor, and structural condition of the riparian vegetation are generally good, except where affected by large-acreage wildland fires (Stephenson and Calcarone 1999). Foothill riparian areas are often cool and shady places near large and growing urban populations, so increases in recreation pressure are inevitable. Riparian habitat degradation currently tends to be localized in a few popular, easily accessible areas (Stephenson and Calcarone 1999), such as along portions of the East Fork San Gabriel River.

Riparian vegetation can vary from alders along streams to chaparral in the coastal foothills, to conifers and oaks in the montane conifer forests (Stephenson and Calcarone 1999). The extended drought and the subsequent bark beetle infestations are currently reducing streamside vegetative cover, especially in mature, primarily mixed conifer forests, or oak and chaparral stands. In the short term, this is increasing the large woody debris supply on sections of some streams; in the long term, the supply may be diminished below normal because of the slow rate of regrowth in

many of these areas. One of the biggest threats is that these riparian areas within the vegetation mortality zones are very likely to burn in a wildland fire, in which case the vegetation and the large woody material would also be lost in the short term.

Riparian Area Invasive Plants

Next to streamflow alterations, the biggest factor threatening the health of riparian ecosystems is the spread of invasive nonnative plant and animal species. Reservoirs and other artificial aquatic habitats have facilitated the introduction of a wide variety of nonnative aquatic species into stream systems. Collectively, introduced species have caused serious declines in the capability of riverine habitats to support native species (Stephenson and Calcarone 1999).

Groundwater - springs, seeps and recharge

Porosity and permeability characteristics of geology surface layers help determine the runoff characteristics of a drainage basin dependent on available precipitation (Freeze and Cherry 1979, Fetter 1994). Surface geology controls the amount of water that infiltrates in to the ground, the infiltration rate, and the amount and duration of groundwater drainage during dry periods. In turn, contrasts between geologic layers related to the location of perennial springs.

Nourse (2003) discussed analysis of hydrogeologic conditions and surface flow rates in the San Gabriel Range, and Wiedlin (2001) discussed quantitative aspects of the water resources, including long-term precipitation analysis. For the area they studied, nearly half of the approximately 40 inches of annual precipitation input drains out of the area in the form of surface water and groundwater. Although the rate of drainage following recharge events was quite high, several stream segments located below perennial springs flowed year-round even during extended periods of drought. For the study, most of the major springs existed because of underground bedrock barriers or “dams” that force groundwater contained in alluvium or talus to the surface. Further, spring flow can be influenced by favorably oriented bedrock fracture systems that channel deep-seated groundwater into narrow, near-surface conduits (Nourse 1999). Many drainages are fed by groundwater sources in the summer and early fall. Streams flowing through bedrock canyons often have perennial flow because groundwater feeds deep pools and bedrock serves as a natural barrier to infiltration (Stephenson and Calcarone 1999). Several important aquifers exist that absorb water from a stream at one position in the drainage, then discharge it along lower portions of the same drainage (Nourse 1994).

Groundwater

Groundwater (the water beneath the Earth's surface) is an integral part of the biological and physical ecosystem within national forests. Like surface water, groundwater depends on precipitation as its source. Together with surface water, it defines the water balance within a watershed. Groundwater and surface water are physically connected in some settings, such as along alluvial channels and fractured bedrock stream channels. The exchange of water between surface flow and groundwater flow is called interflow; it results in recharge of aquifers when there is a surplus of surface water, and seepage into stream channels from aquifers when surface water dries up.

Groundwater - Quantity

The quantity of groundwater available on the Monument is unknown. An article in the magazine *Western Water* (July/August 2003), “California Groundwater: Managing a Hidden Resource,” states: “Individual regions are beginning to map the extent of the problem, but 'unfortunately, comprehensive information regarding California's groundwater quality and quantity is lacking,'

according to a March 2003 report by the State Board [of Water Resources]. "This lack of information impairs the ability of regulators and the public to protect and manage the state's groundwater basins/subbasins'" (Pitzer 2003, p. 13). There is less information on groundwater aquifers in the mountains underlying the four national forests in southern California than there is on aquifers underlying much of the rest of California.

Groundwater is extracted through springs, horizontal wells, and vertical wells. The State of California considers the subsurface flow of a stream as surface water, which is governed by the State Water Resources Control Board, with permitting, regulatory, and statutory adjudicative authority.

Major alluvial aquifers (many of which are recharged from NFS lands) are well documented by the State of California, but the "bedrock fracture aquifers" and "porous rock layers" are less well-known and difficult to inventory. All aquifers are subject to overdrafting (extracting more groundwater than sustains or recharges an aquifer); contamination; insufficient recharge due to drought; and changed underground conditions due to earthquakes, tunneling, drilling, and other causes.

Groundwater is a limited renewable resource because of the slow rate of groundwater movement through bedrock, the human dependence on groundwater sources, the decline in aquifer levels during extended drought cycles, the dependence on recharge from seasonal precipitation, and the restricted storage capacity of the bedrock. The potential for the overdraft of groundwater is already recognized within some areas on NFS lands, especially adjacent to national forest boundaries where development is encroaching, and on inholdings and areas with intermixed private and NFS lands. Currently, information is limited to assess the effects of Forest Service and off-forest uses and proposals for groundwater developments.

Following fires or vegetation manipulation, where the slopes have adjusted to a stable angle in conjunction with the local climate and forest vegetation, the increase in water entering shallow aquifers can result in slope movement (landslides, debris flows, and erosion). Both roads and stream channels experience impacts from groundwater-related slope instability.

Past studies that quantify water loss via transpiration and its effects on groundwater indicate that removing vegetation would not increase groundwater reserves in low precipitation climates like southern California. Vegetative cover is beneficial to slopes, and helps reduce erosion and debris flows, so there is a balance of minimizing sedimentation (water quality) with evapotranspiration with vegetation types (Wohlgemuth 2005).

Water is slowly released from aquifers back to the channel throughout the year. Reservoirs can store winter precipitation and augment late summer groundwater levels as water soaks into the substrate. If soil is compacted, or if land is covered with developments or paved, less area is available for water infiltration and more is likely to run off. These conditions also add to increasing flood flows.

Groundwater - Quality

It is generally assumed that groundwater is safe for consumption without treatment (U.S. Geological Survey 1998). As a result of EPA's Surface Water Treatment rule, wells on NFS lands are drilled to reduce the potential risk of contaminated or non-potable surface water supplies, since groundwater is less easy to contaminate than surface water. Aquifers filter and de-

contaminate groundwater during long residence; furthermore, properly constructed wells include seals designed to keep contamination out. Nevertheless, groundwater and the aquifers can become contaminated. The quality of groundwater extracted from springs and wells involves both biological and chemical characteristics.

Groundwater - Uses

On-forest resource and management uses for groundwater include campgrounds, administration sites, and recreational cabins. Maintenance of streamflow, distribution of plants and animals, and sociological and economic interests all depend on groundwater. The diversity of plants found in meadows often is a function of the availability of shallow groundwater. The presence of groundwater within the root zone for much of the year maintains many of the valuable habitats within the national forests. Release of water from groundwater aquifers maintains base flows of streams during dry periods. In some cases, groundwater seeps and springs are important to maintaining riparian area viability and habitat. In coming years, national forest managers anticipate increased requests for extraction, storage, and distribution facilities on NFS lands for groundwater resources.

Environmental Consequences

Alternative 1

Indirect Effects

The current primary national forest management uses that affect the condition of surface water, riparian conservation areas, and groundwater include: fuels and vegetation treatment; recreation use and development; road and trail construction and maintenance; water extraction and management; mining; other special uses that occur streamside, such as recreation residences and organization camps; special land use designations such as research natural areas, wilderness and special interest areas; unauthorized activities; water pipelines and storage, transmission lines; and watershed restoration. Effects of existing management on transportation, sustainable uses, heritage resources, biological resources, energy and mineral resources, designated areas, and suitability of lands are described in detail in the ANF LMP.

Alternative 2

Indirect Effects

Transportation

Reducing road density through road decommissioning could lead to improved watershed conditions because reduced roads may lead to less surface runoff from roads under this alternative.

These efforts would work to reduce effects, such as ground disturbance from OHVs by managing their use, and reducing effects such as vegetation destruction or soil disturbance from vehicle parking in riparian areas.

Alternative 2 could have positive effects to water resources, provided reductions in passenger car vehicle use occur in locations and at times when overcapacity is occurring, along with improvements to traffic flow and parking taking place. Alternative transportation and connectivity

to public transportation outside of the Monument could further reduce congestion and parking problems and effects to water resources.

Restoration of riparian conservation areas under alternative 2 may include obliteration or relocation of roads away from stream channels, riparian areas, steep slopes, high-erosion-hazard areas, and areas of mass movement. Positive changes to the road system could involve the removal of unnecessary roads, along with responsible investments and improvements in roads determined to be needed for long-term access and use. Realignment of roads and other travel ways to cross riparian areas and streams at a perpendicular, rather than acute, angle also reduces chronic sedimentation and improves the quality of riparian and aquatic habitats in presently affected stream reaches. Road reconstruction may be necessary to provide stable cut-and-fill slopes and adequate drainage that would allow run-off to be filtered through vegetated buffers or sediment traps before entering the stream channel. Effective seasonal road closures are also a viable management tool that can reduce severe road damage from ruts and maintain a road's integrity, thus reducing road maintenance needs while decreasing riparian and water quality impacts.

Sustainable Recreation

With the application of alternative 2 Sustainable Recreation plan components, there could be a shift in patterns of Monument visitation, meaning that the peak periods for recreating, which are currently weekends and summer months, could be extended to weekdays and into the spring and fall. This shift could result in overuse of riparian conservation areas and effects on riparian-dependent resources and water quality. Under alternative 2, environmental education may play a role in reducing impacts from recreation on watershed resources by increasing users' awareness of impacts on watersheds. Parking area restrictions and a transportation plan under alternative 2 may alleviate watershed damage compared to alternative 1.

Overuse of riparian conservation areas by developed and dispersed recreation under alternative 2 could have potential for affecting water quality, riparian habitat and the ability of the stream channel to function properly. Similar effects can result from overuse in open off-highway vehicle areas and along trails, including motorized, non-motorized, mechanized, pack stock, and hiking forms of recreation. Parking area restrictions, management, and a transportation plan under alternative 2 may alleviate watershed damage.

The addition of plan components related to the PCT would provide indirect beneficial impacts to watershed resources because organized events would stay at current levels and trail crossing would be minimized.

Visitor Experience, Information and Education

There would be no appreciable detrimental impacts to watershed resources from visitor information, information and education plan components. Plan components related to education of watershed issues may have a positive resource benefit over time because of increases in awareness of the impacts that can occur in Monument watersheds.

Heritage Resources

There would be no appreciable detrimental effects to water resources from heritage resources plan components.

Biological Resources

There would be no appreciable detrimental impacts to watershed resources from biological resources plan components. Efforts to improve aquatic habitat from plan components may have a positive effect on watershed resources.

Mineral Resources

The withdrawal of Monument lands from Federal mining laws (with the exception of existing rights) took effect when the Monument was established. Valid mining activities with existing rights may continue to operate, but no new oil, gas, mineral resource exploration and development is allowed. This has removed the opportunity for new legal mining activities that could negatively affect water quality.

Designated Areas

There would be no appreciable detrimental impacts to watershed resources from the designated area plan component.

Suitability of Lands

Alternative 2 would have similar potential for additional water rights and developments (extractions or diversions) or additions to and retrofitting of existing projects. Beneficial use of water (purpose of the extraction) in the form of water diversions from existing streams would not vary by alternative.

Cumulative Effects

The cumulative effects analysis for watershed resources pertains to the planning period of 15 years, which is generally a shorter period of time than many natural watershed processes. This analysis for water and riparian resources pertains to the watersheds that contain all or a portion of NFS lands administered by the ANF within the Monument. Many of the watersheds originating on NFS lands are held in mixed ownership at their lower elevations, commonly with urban developments near and adjacent to the Monument, which contributes to cumulative watershed impacts. Through active coordination and cooperation with local community groups, governments, and other agencies, watershed restoration projects could reduce the effects of connected areas of ground disturbance that have led to a loss of riparian and water connectivity with off-forest stream channels, and that could reduce the potential for future adverse cumulative effects.

Projected human population growth throughout all of southern California is expected to bring major increases in pressure on the Monument's natural resources, including development and use of resources to support community growth (such as water, energy and transportation). Demand is expected to continue for new or upgraded interstates, state highways and/or large utility or water projects crossing the Monument. Increased adjacent urban development has the potential to affect Monument water and riparian resources through increased run-off and pollutants from roads, roofs, driveways, fertilized yards, and agricultural uses. This development also raises the potential for an increase in unauthorized uses and criminal activities on the Monument. During the short term, there would be an expected increase in accidental or unintentional human-caused wildland fires due to the inability to remove and treat vegetation associated with the cyclical tree mortality issue on the Monument. All of these issues would present effects that can detrimentally affect water and riparian areas.

The possibility for damage to riparian ecosystems is similar. Resource protection measures described in the ANF LMP should prevent widespread or long-term deterioration of water quality or riparian resources. During implementation of this plan, some short-term adverse effects can be expected, but no long-term negative effects are anticipated. Cumulative watershed effects analyses using the USDA Forest Service, Region 5 methodology (FSH 2509.22) would be developed and discussed at the project level.

Potential cumulative effects on water and riparian resources resulting from past, current, and future management are based on the total amount of disturbance. The same watersheds where management activities historically have been concentrated would continue to incur most of the activities under both alternatives 2 and 3. The impacts of management activities on watershed health can be detected by assessing the conditions of its water and riparian resources. As such, these resources are excellent indicators of cumulative effects. Presently, most of the Monument watersheds are rated as being in good to moderate condition. High-risk watersheds would be evaluated and prioritized for rehabilitation based on feasibility, funds available, and overall benefits to watershed health.

The cumulative effects of management activities and the expansion of urban populations toward NFS lands trend toward increased pressure to develop more groundwater resources, both on-Monument and adjacent to NFS lands. The results are increased risks of damage to groundwater quality, decreased levels of groundwater availability, and increased costs of developing and maintaining deeper and larger wells. An increase in water diversions and impoundments can affect water quality and the functioning of streams, ponds, lakes and wetlands. Potential cumulative effects as a result of water put to beneficial use through diversions of surface water would depend on the demand for future water rights. Substantial diversions from Monument streams occur at this time for public water supply and hydroelectric projects, and additional new proposals are expected. Adverse effects on riparian-dependent resources have occurred at existing sites, and additional diversions would increase these effects. Most special designation areas on the Monument are virtually untouched by roads or large-scale management activities and generally retain pristine watershed characteristics.

Increased recreation, resulting from expanded population growth, can lead to increased ground disturbance from higher trail density, trampling, and degradation of riparian areas and other activities that threaten watershed health, especially in popular locations. These activities may limit management options in watersheds of mixed ownership where watershed condition and water quality are of concern.

Because of higher risks of ground disturbance and other watershed impacts, implementation of the no-action alternative would have the highest risk of adverse cumulative effects on the water and riparian resource and overall watershed condition.

Alternative 3

Indirect Effects

Similar to alternative 2 except there are more protections in place which could indirectly reduce the effects to aquatic habitat. For Transportation, the upgrade of road management objectives and the reduction in unauthorized roads and trails is likely to benefit riparian habitat and water quality by decreasing erosion issues. In Sustainable Recreation, a well-maintained trail system which is clearly delineated could have indirect effects of reducing erosion. Management of dispersed

recreation with designated river access points could result in an increase in water quality and riparian habitat. With a goal of corrective actions when monitoring indicates habitat conditions are degrading, the stream courses and riparian vegetation could benefit. With an increased emphasis on enforcement, partnerships, and education programs on effects of illegal mining, channel braiding could be reduced. The expansion of the CBLUZ in West Fork of the San Gabriel could indirectly benefit aquatic species because no additional roads will be built.

Cumulative Effects

Same as for alternative 2.

Recreation

Affected Environment

The newly designated Monument area has long been a popular destination for local users. The ANF has begun initial investments to improve visitor experiences in the San Gabriel Mountains because of its new status as a national monument. The ANF received funds to hire additional youth conservation corps crews to improve visitor recreation sites and visitor centers in 2016. The ANF added staff on the organizational chart including a partnership coordinator, a volunteer coordinator, a conservation education coordinator, and three visitor information specialists. The ANF also replaced entry signs throughout the Monument area.

Recreation Settings and Opportunities

The Forest Service uses the recreation opportunity spectrum (ROS) to analyze a variety of recreation opportunities that can be enjoyed in diverse settings. A recreation opportunity is defined as availability of a real choice for a user to participate in a preferred activity within a preferred setting to realize desired experiences (USDA Forest Service 2005b). Recreation opportunities include non-motorized, motorized, developed, and dispersed recreation on land, water, and in the air. The social, managerial, and physical attributes of a place, when combined, provide a distinct set of recreation opportunities.

The ROS provides a framework for stratifying and defining classes of outdoor recreation environments, activities, and experience opportunities. The settings, activities, and opportunities for obtaining experiences are arranged along a continuum or spectrum divided into six classes: primitive, semi-primitive non-motorized, semi-primitive motorized, roaded natural, rural, and urban (USDA Forest Service 2005). The ROS class characterizations are shown in table 10.

Table 10. Recreation opportunity spectrum class characterizations

ROS Class	Characterization
Primitive (P)	Characterized by an essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free of evidence of human-induced restrictions and controls. Motorized use within the area is not permitted. There are no developed facilities.

ROS Class	Characterization
Semi-Primitive Non-Motorized (SP)	Characterized by a predominantly natural or natural-appearing environment of moderate to large size. Interaction among users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but would be subtle. Motorized recreation is not permitted, but local roads used for other resource management activities may be present on a limited basis. Use of such roads is restricted to minimize impacts on recreation experience opportunities. A minimum of developed facilities (if any) are provided.
Semi-Primitive Motorized (SPM)	Characterized by a predominantly natural or natural-appearing environment of moderate to large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present but would be subtle. Motorized use of local primitive or collector roads with predominantly natural surfaces and trails suitable for motorbikes is permitted. Developed facilities are present but are more rustic in nature.
Roaded Natural (RN)	Characterized by predominantly natural-appearing environments with moderate evidence of the sights and sounds of people. Such evidence usually harmonizes with the natural environment. Interaction among users may be moderate to high, with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is allowed and incorporated into construction standards and design of facilities, which are present and well defined.
Rural (R)	Characterized by a substantially developed environment and a background with natural appearing elements. Moderate to high social encounters and interaction between users is typical. Renewable resource modification and utilization practices are used to enhance specific recreation activities. Sights and sounds of humans are predominant on the site and roads and motorized use is extensive. Facilities are more highly developed for user comfort with ample parking.

ANF LMP FEIS Part 1 p 247 (USDA Forest Service 2005b)

The ROS settings represent a range from a very high probability of solitude, self-reliance, challenge, and risk to a very social experience where self-reliance, challenge, and risk are less important (USDA Forest Service 1982). The physical setting is defined by the absence or presence of human sights and sounds, size, and the amount of environmental modification caused by human activity. The social setting reflects the amount and type of contact between individuals or groups. The managerial setting reflects the amount and kind of restrictions placed on people's actions by the respective administering agency or private landowner (USDA Forest Service 1986).

The Monument provides important recreational opportunities and open space for millions of residents in Los Angeles County and the surrounding areas. The San Gabriel Mountains comprise approximately 70 percent of the open space in Los Angeles County (USDI National Park Service 2016). The site also provides general educational, cultural, and recreational opportunities including hiking, hunting, fishing, horseback riding, rock climbing and cycling, and archeological, astronomical and geological interpretation (USDA Forest Service 2014c).A majority of the Monument acreage is within the Primitive (132,788 acres) and Semi-Primitive Non-Motorized (110,352 acres) ROS classes. The remaining acreage is within the Semi-Primitive Motorized (51,761 acres), Roaded Natural (32,413 acres), and Rural (8,910 acres) ROS classes. The approximate percentages of the Monument acreage within each class are 38.4 percent

Primitive, 31.9 percent Semi-Primitive Non-Motorized, 15 percent Semi-Primitive Motorized, 9.4 percent Roaded Natural, and 2.6 percent Rural.

The ANF LMP allocates areas of the ANF to different land use zones. The ROS classifications reflect the overall theme and character expressed by the land use zones. The land use zones identify where certain uses or management activities are intended or allowed.

Table 11. Land use zones and associated ROS classes

Land Use Zone	ROS
Existing and Recommended Wilderness (EW/RW)	Primitive
Back Country Non-Motorized (BCNM)	Semi-primitive Non-motorized
Back Country Motorized Use Restricted (BCMUR)	Semi-primitive non-motorized with some Roaded Natural and Semi-primitive motorized
Back Country (BC)	Semi-primitive motorized, Roaded Natural with some Rural
Developed Area Intermix (DAI)	Rural and Roaded Natural
Critical Biological (CB)	Varies
Experimental Forest (EF)	Semi-primitive non-motorized and Semi-primitive motorized

Developed Recreation

Developed recreation sites including campgrounds, group campgrounds, picnic areas, trailheads, visitor centers, day use areas, fishing sites, boating sites, interpretive sites, and information and observation sites are located within the Monument. The main developed recreation areas or complexes within the Monument include, Big Pines, Chilao, Crystal Lake, Grassy Hollow, and Little Rock.

Dispersed Recreation

Dispersed Camping and Day Use

Dispersed camping (also known as remote or primitive camping), and day use activities such as picnicking, relaxing, viewing wildlife, etc., occur outside of developed campgrounds. These activities occur in both wilderness and non-wilderness areas, with or without a vehicle; however, most dispersed camping use occurs by vehicle. Most use is in forested areas with level ground near water. Within the Monument, dispersed camping and day use is generally allowed, except where posted signs specify otherwise (USDA Forest Service 2013a) and within the Critical Biological Land Use Zones and the Experimental Forest (ANF LMP Table 2.1.2). The ANF has approximately 2,000 acres for potential dispersed vehicle camping opportunities, and available acreage is limited by steep terrain and urban influences. Since the Monument makes up nearly half of the ANF acreage, there are approximately 1,000 acres for potential dispersed vehicle camping opportunities within the Monument.

Wildlife and Nature Viewing

Wildlife and nature viewing activities in southern California remain popular. Viewing natural features was listed as one of the top 10 main activities in the 2011 NVUM survey for the ANF (USDA Forest Service 2011a).

Water Play

Water play is an activity defined as sitting by, wading through, or swimming in streams and lakes (especially during the warmer summer months). There may be associated activities in or near adjacent riparian areas, including picnicking, large family gatherings, and cooking. Water play use is very high in the lower-elevation canyons of the Monument.

Recreational Target Shooting

Recreational target shooting is not allowed anywhere on the ANF other than in designated ranges. Recreational target shooting sites (such as gun clubs and concession-operated shooting ranges under special-use authorization to the Forest Service) have structured settings similar to facilities found on private land. The Burro Canyon Shooting Range is the only permitted recreational shooting site within the Monument.

Hunting and Fishing

Hunting is permitted during hunting seasons designated by the California Department of Fish and Wildlife. A state hunting license is needed at all times. Popular game includes mule deer, bear, coyotes, jackrabbits, ducks, geese, dove, and pigeons. Fishing opportunities are available in rivers and reservoirs within the Monument.

Winter Sports and Snow Play

Winter sports opportunities including cross-country skiing, snow camping, hiking, and snow play are some popular uses of the ANF when it is blanketed with snow. Downhill skiing is available at the local commercial ski areas: Mt. Baldy Ski Lifts, Mountain High East, West, and North Resorts and Mt. Waterman.

Special Area Designations

Several special designations within the Monument allow for varying levels and types of recreational use. The four wilderness areas, Magic Mountain Wilderness, Pleasant View Ridge Wilderness, San Gabriel Wilderness, and Sheep Mountain Wilderness (including the adjacent Sheep Mountain recommended wilderness lands) provide opportunities for solitude and primitive recreation; no motorized or mechanized use is allowed within wilderness. The San Dimas Experimental Forest is closed to general use except under permit for research or limited education purposes. Descriptions and analysis of other special area designations are included in the Wilderness and Special Designated Areas section below.

Recreation Special-use Authorizations

Recreation special-use authorizations within the Monument include recreation residences, ski areas, shooting areas, campground concession operations, outfitters and guides, and special events. Event examples are the Crystal Lake Marathon and the Amgen bicycle race. Recreation special-use authorizations within the Monument continue to be managed in compliance with applicable existing rules and regulations.

Trails and Access

Driving for pleasure is a popular activity on scenic routes through the Monument. There are 49 miles of scenic highways within the Monument. Highway 39 and Highway 2 (the Angeles Crest Scenic Highway), are major routes providing access into and through the Monument.

There are two designated open OHV areas within the Monument: the San Gabriel Canyon OHV area includes 150 acres of rocky, sandy, reservoir land; and the Little Rock OHV area includes the Little Rock OHV trail. Outside of the two open OHV areas, vehicles are limited to designated routes, as shown on the Motor Vehicle Use Map. The open OHV areas have been effective in managing and reducing the impacts associated with cross-country OHV use and the proliferation of user-created routes.

Approximately 243 miles of non-motorized system trails within the Monument provide hiking, horseback riding, and mountain biking opportunities. The Monument has 87 miles of national trails, including the Pacific Crest National Scenic Trail and the Silver Moccasin, Gabrielino, and High Desert National Recreation Trails. All trails, except the PCT and those within the wilderness areas are open to mountain bikes. The West Fork National Scenic Bikeway parallels more than 8 miles of the West Fork San Gabriel River. This gated, paved road provides a relatively flat, paved route for bicyclists of various abilities. (San Gabriel Mountains Forever, 2016).

Sustainable Recreation

In 2010, the Forest Service developed an approach to sustainable recreation called Framework for Sustainable Recreation (USDA Forest Service 2010).

The goal of sustainable recreation is to:

- Provide a diverse range of quality natural and cultural resource based recreation opportunities, and protect the natural, cultural, and scenic environment for present and future generations to enjoy
- Partner with public and private recreation benefit providers to meet public needs and expectations, and
- Perform and plan by implementing systems and processes to ensure effective decisions and sound investments.

Building upon the strategic guidance in the Framework for Sustainable Recreation, the 2012 Forest Service Planning Rule defines sustainable recreation as “the set of recreation settings and opportunities on the NFS that is ecologically, economically, and socially sustainable for present and future generations” (36 CFR 219.19). This definition recognizes the role the recreation program plays in supporting the overall Forest Service mission of sustainability. National forests contribute to the social, environmental, and economic sustainability of many rural and urban communities, including those surrounding the Monument (Bricker, Winter, and Schultz 2010; Jennings, Larson, and Yun 2016; Winter 2013). For example, social sustainability is fostered through opportunities to support and enhance social and community ties as a part of recreational experiences. The important contributions to public health through recreation on forest lands are essential additions to social sustainability. Environmental sustainability is enhanced directly through the conservation of natural resources and delivery of ecosystem services, such as clean drinking water. Enhancements of environmental sustainability also occur through an increased connection to the environment and resulting stewardship that are fostered through recreation in

natural settings. Economic sustainability is enhanced through such activities as expenditures in surrounding communities during a forest visit and employment opportunities created through recreation management. Attending to the equitable distribution and quality of these dimensions of sustainability in a diverse and highly urbanized region further contributes to the region's vitality and role of the Forest Service as a public land management agency.

The sustainability of recreation opportunities on the Monument and the ability to contribute to the sustainability of surrounding communities depends on the balance among social, environmental, and economic conditions, commonly known as the three spheres of sustainability (Bricker, Winter and Schultz 2010). Each of the three components are discussed below, as they pertain to sustainable recreation.

Social Components of Sustainable Recreation

Most visitors come to know the national forests through direct recreation experiences. Visitor use, visitor satisfaction, and recreation trends are important to consider to help ensure that visitors have opportunities to achieve their desired experiences through a variety of recreation opportunities and settings. Satisfied visitors keep visiting, and new generations of visitors are connected to public lands, and are inspired to care for these areas and to support NFS lands.

Visitor Use and Visitor Satisfaction

The National Visitor Use Monitoring (NVUM) system monitors visitor use, participation, and satisfaction. The most recent information is summarized below. The complete report for the ANF (2011) may be viewed and downloaded individually and/or combined from the NVUM website (USDA Forest Service 2011b).

Table 12. Total estimated visits to the Angeles National Forest (National Visitor Use Monitoring data)

Angeles National Forest Visitation	Fiscal Year
3,636,000	2011
3,181,000	2006
3,500,000	2001

For 2011, the total estimated visits to the ANF were between 3.6 million and 4.2 million. The Monument is the most heavily used area on the ANF. The 346,177-acre Monument makes up nearly half of the 700,000-acre Angeles National Forest, but likely receives well over half of the annual visitation, due to highly popular sites such as the San Gabriel Canyon, and the Monument's proximity to the Los Angeles metropolitan area. Multiple access points along the foothill communities provide access to the Monument. Highway 2, the Angeles Crest Highway, serves as a commuter route transecting the Monument, connecting communities to the north. Visitation is expected to increase since the area has been designated a national monument (USDA Forest Service 2014d).

National monument designation may increase the visibility of the area and influence visitors' expectations of the types of experiences they will find. Changes in designation may imply differences in the availability of services, promotional expenditures, allowable uses, or uniquely

attractive features of the site (Weiler and Seidl 2004). Several studies have shown increased visitation and associated economic growth due to monument designation, by comparing pre- and post-designation visitation for monuments throughout the west. (Headwaters Economic 2011 and 2014, BBC Research and Consulting 2012, Downstream Strategies 2013, and Economic and Planning System, Inc. 2014). The studies have shown increases in visitation ranging from 30 percent to over 300 percent in the 10 years following monument designation. These studies have primarily focused on monuments near smaller rural communities throughout the western United States, several of which had very low visitation prior to monument designation. Although not directly comparable to the Monument, which already had high visitation prior to designation and is near multiple major metropolitan areas, it is still likely that the monument designation would result in higher visitation than would otherwise occur without the national designation.

Population growth also continues to drive an increased demand in southern California national forests outdoor recreation.

Angeles National Forest National Visitor Use Monitoring Results

Once every five years, each national forest and grassland has a year of field data collection. The NVUM program provides information about recreation visitors to National Forest System managed lands at the national, regional, and forest level. The following 2011 analysis on the visitor use monitoring survey results applies to the entire ANF.[1]

Over 35 percent of visits are made by females. Hispanic American visitors account for just over 20 percent of all visits. Among other racial minorities, Asian (15 percent) and Native American (5 percent) are the most common. About 16 percent of the visits are made by children under 16 years old. About 10 percent are from people aged 60 and older. Nearly half have traveled less than 25 miles to get to the ANF, and more than a quarter traveled from 26 to 50 miles away (USDA Forest Service 2011a). Most visits are day visits. Half of all Forest visits last no more than 3.5 hours. More than three-quarters last 6 hours or less. Most wilderness visits are less than 4 hours.

Despite having primarily local visitors, frequent users are uncommon. Most visitors (93.5 percent) visit only one site during their ANF visit. Less than 12 percent of visits come from people who visit more than 50 times per year (USDA Forest Service 2011a). Average people per vehicle is 2.5.

Hiking and walking are the most commonly reported main activities (46.2 percent), followed by downhill skiing (9.4 percent), relaxing (7.5 percent), some other activity (6.2 percent), fishing (5.5 percent), OHV use (3.6 percent), motorized water activities (3.4 percent), bicycling

[1] The descriptive information about national forest visitors is based upon only those visitors that were interviewed. Every effort was made to incorporate distinct seasonal use patterns and activities that vary greatly by season into the sampling frame. The sampling plan took into account both the spatial and seasonal spread of visitation patterns across the forest. Even so, because of the small sample size of site-days, or because some user groups decline to participate in the survey, it is possible to under-represent certain user groups, particularly for activities that are quite limited in where or when they occur.
Note that the results of the NVUM activity analysis DO NOT identify the types of activities visitors would like to have offered on the national forests. It also does not tell us about displaced forest visitors, those who no longer visit the forest because the activities they desire are not offered.

(2.9 percent), viewing natural features (2.8 percent), developed camping (2.8 percent), driving for pleasure (2.4 percent), and picnicking (1.7 percent) (USDA Forest Service 2011a).

Approximately 30 percent of ANF visitors reported using developed recreation facilities such as visitor centers, developed fishing sites, developed swimming areas, information sites, and designated OHV areas.

Overall satisfaction is high, with 77 percent of the visitors indicating they are very satisfied, and 18.2 percent somewhat satisfied. Areas with lower satisfaction and high importance to visitors, which may need more work for day use developed sites include restroom cleanliness and value for fee paid; for overnight developed sites and recreation, information availability; and for general forest undeveloped areas, signage adequacy.

Trends and Projections

Population growth is projected to be the primary driver in growth of numbers of adults participating in outdoor recreation (Cordell 2012). Visitor use will inevitably grow over time, especially in areas adjacent to major metropolitan areas like Los Angeles. As with similar areas projected to see an increase in use, visitation levels may increase at already popular sites, as well as expanding the level of use at sites with currently lower levels of visitation. In the temperate southern California region, recreation use tends to span most seasons of the year. It is possible that increases in year-round use will be seen.

As population increases, visitor demographics of the population and national forest visitors will also become more diverse and will have changing expectations for recreation opportunities (Struglia and Winter 2002). For example, more Hispanic/Latino visitors are expected. In 2010, the Hispanic population in the Los Angeles region represented about 50 percent of the population, and by 2060 Hispanics will be almost 60 percent of the population (California State Parks 2013). Studies have shown that Latinos prefer to recreate at sites with facilities and areas large enough to accommodate families and large groups (Madsen et al. 2014; Roberts et al. 2009). Another demographic change that may impact visitor expectations is the increasing population of baby boomers who wish to remain active in retirement. A California State Parks study says, “This generation, born and bred in prosperity, is looking for an amenity-rich and meaningful outdoor recreation experience, increasing the need for programs, facilities, and infrastructure. Boomer seniors will be drawn to conservation and heritage causes…” (California State Parks 2005). On the other end of the spectrum, millennials (the generation born between 1982 and 2000) have grown up with technology and connection with social networking sites. This generation’s view of the outdoors is likely to be areas close to home, where they can socialize and interact with their family and friends. Others in this generation engage in outdoor recreation and use technology to enhance and share their experiences (Outdoor Industry 2014). This is a very diverse generation that will require a variety of approaches to effectively engage and serve in outdoor recreation settings (Roberts et al. 2009).

Another challenges within the Monument include the lack of cell phone service in many areas when many visitors rely on cell phones for information and navigation. Visitors may also be unfamiliar with outdoor ethics and stewardship skills, or unfamiliar with potential wildlife encounters, such as with bears. Access, and the unique needs and desired recreation experiences for youth and minority populations is another important consideration for recreation managers. The decline of outdoor recreation participation among children has been well documented by books such as *Last Child in the Woods* by Richard Louv (Louv 2006). More people live in urban

areas, families have less time to spend outdoors, and parents and their children often have fears about nature. A 2016 National Geographic article titled *Can the Selfie Generation Unplug and Get Into Parks?* and an excerpt from an interview with Jon Jarvis, the Director of the National Park Service explain this concern:

> *In this anniversary year of the National Park Service, we have heard a lot about budgets and maintenance backlogs, about overcrowding and climate change. But the greatest concern of the keepers of our special places is the next generation. The parks have a diversity problem—age and color. At a time when nearly one in four Americans is under the age of 18 and half the babies born are racial or ethnic minorities, they say most park visitors are older and white. "If we were a business, we'd be out of business in the long term," Jarvis said* (Egan 2016).

The following from the Outdoor Foundation's Special Report on youth further emphasizes the importance of re-connecting youth to nature:

> *The United States is now facing an unprecedented public health and conservation problem. Reconnecting youth with the outdoors has become critical to the health of future generations and the health of our natural landscapes. Our children are desperate for the physical, mental and social benefits of a healthy, active outdoor lifestyle, and our natural landscapes need the support and protection of individuals with a strong connection to the outdoors* (Outdoor Foundation 2010).

Some under-represented groups, both rural and urban, may not have transportation nor the financial means to access forest recreational settings and recreational opportunities. A number of factors, such as fees, lack of transportation, and unfamiliarity with being outdoors, may deter some people from recreating on the Forest (Crano, Quist and Winter 2008; Burns, Covelli, and Graefe 2008). In some cases, families rely on public transportation, often limiting their ability to access national forest recreation sites, unless they are near public transportation routes. See additional discussion in the socioeconomic section.

Because more people now live in urban areas, wildland recreation skills may be less well-developed owing to fewer opportunities to engage with semi-developed or wild outdoor settings, potentially leading to more safety and liability concerns and search-and-rescue operations. Also, emerging technologies will continue to create new uses with as yet unknown impacts; however, it is clear that conservation education and partnerships will play vital roles in the health and stewardship of the national forests (USDA Forest Service 2005b, FEIS part 1 p. 498).

As the diversity of recreation visitors increases, satisfaction of users becomes more contingent on culturally competent recreation service delivery and communication (Roberts et al. 2009). As management focus remains on the sustainability of the recreation setting and the national forest niche of nature-based activities, cooperation and partnerships with local communities and other recreation providers will be necessary to provide a full range of recreation opportunities (USDA Forest Service 2005b, part 1 p. 501).

Conservation Education, Volunteers, and Partnerships

Volunteers help the ANF serve visitors and protect and restore natural resources and recreation facilities. The ANF reported that volunteers provided 85,139 hours of service to the ANF, valued

at approximately $2 million during fiscal year 2016. A significant portion of this volunteer effort takes place within the Monument.

In addition, the ANF's partnerships and organization-agreement hours totaled 63,065 hours, valued at approximately $1.5 million (USDA 2016). There are numerous volunteer and partner organizations that support recreation and resource management within the Monument.

San Gabriel Mountains Community Collaborative is a collaborative group facilitated by the National Forest Foundation, the non-profit partner of the Forest Service. The purpose statement of the collaborative is to:

> *Represent the general public by integrating diverse perspectives to identify, analyze, prioritize, and advocate for values, resources, investments, management objectives, and implementation practices that sustainably benefit all communities throughout the region, the Angeles National Forest, and the San Gabriel Mountains National Monument.*

The collaborative is an important connection to the diverse community surrounding the Monument, and a key partner in community engagement in Monument planning and management. (San Gabriel Mountains Community Collaborative 2016).

Conservation education is a broad category that includes interpretation, environmental education, and visitor information. Since the adoption of the 2005 ANF LMP, additional conservation education programs on the ANF have been started. In FY 2013, these programs reached at least 5,000 youth. Some of the ongoing programs include the field ranger program, resource assistance program, and the Southern California Consortium (an environmental education, outreach, and recruitment program whose focus is to educate underserved urban communities). Environmental education, interpretation, and visitor information is also consistently available at the four visitors' centers within the Monument.

Environmental Components of Sustainable Recreation

The underlying conditions of the natural environment are the foundation for sustainable recreation settings and opportunities. Environmental sustainability is addressed through a toolbox of approaches, with a goal of maintaining or enhancing the broad array of ecosystem services delivered by the Monument area (see, for example, Burn and Winter 2008).

Environmental sustainability is assessed by examining the conditions and trends affecting the quality of recreation settings. The ANF has taken several management actions to reduce or manage impacts from recreation use and move toward a more sustainable environment that will, in turn, provide more sustainable recreation settings.

Following are descriptions of environmental conditions and trends affecting recreational settings, and some of the recreation management actions that are being implemented.

Fire

Several recent large fires on the ANF have affected recreation opportunities and the quality of recreational settings. For example, the Fish Fire of 2016 resulted in an emergency closure area within the Monument. The closure order restricts dispersed recreation and travel on NFS roads

and trails throughout the closure area. The closure is in place to protect natural resources and provide for public safety (Order No. 16-08).

As year-long fire seasons are becoming the norm, fire restrictions, such as burning bans are increasingly impacting the recreation experience as campers are unable to enjoy evening campfires or cook over open flames, and in some cases, areas are closed to public use. Fire restrictions are put in place and become more restrictive as fire danger levels increase. Specific campground, trail, and area public safety closures are also used as needed. Frequently, fire impacts trail conditions, leading to an increased need for trail maintenance.

Managed Recreation and Visitor Use Impacts

In addition to environmental conditions, unmanaged recreation has been identified by the Forest Service as one of four key threats to the Nation‘s forests and grasslands. The use of OHVs is seen as a major component of unmanaged use (USDA Forest Service 2006b). OHV use trends including increasing numbers of participants and changing technology that have allowed access to previously inaccessible areas, may impact recreational settings from the presence of fugitive dust and soil disturbance, spread of noxious weeds, and proliferation of unauthorized routes.

On the ANF, travel management designations through the Motor Vehicle Use Map, and designation of the two OHV open areas have been implemented to manage impacts associated with motor vehicle use.

Figure 9. Obstacle course in the San Gabriel Canyon OHV area

In some cases, popular recreation areas and activities overlap with important wildlife habitat and pose potential impacts to sensitive wildlife species. For example, Williamson Rock, a popular rock climbing area, is under a temporary closure based on concerns related to protection of the mountain yellow-legged frog and its critical habitat. Hikers on the Pacific Crest National Scenic

Trail are also being routed around the closure area. Potential impacts from recreation within the creek habitat include disturbance of egg masses, trampling of individual frogs, capturing and handling of tadpoles and adult frogs, and generalized disruption of mating and migration. Recreation may also impact habitat by altering stream beds or banks, and introducing pollutants, disease, garbage, or human waste into the creek. The ANF is preparing an environmental impact statement to address the resource concerns and to determine an appropriate resolution at project level (Forest Order No 05-01-17-02, March 23, 2017).

In watersheds, including the San Gabriel Canyon, there are conflicts with visitor-created "recreational dams" that may potentially impact Santa Ana sucker habitat. Many visitors are drawn to cool water in streams during the hot summer months and visitors create "recreational dams" to form deeper pools along the stream. The ANF staff and volunteers periodically removes recreational dams. Discussion of potential water quality and habitat issues are included in the Hydrology and Aquatic Species sections.

Figure 10. San Gabriel Canyon

All recreation has the potential to result in visitor use impacts, especially in popular and high use areas. One approach to address visitor use impacts is to concentrate use at developed sites and along designated roads and trails.

Other current management actions include limiting types of use with higher impacts to specific areas, educating visitors regarding high impact behaviors and encouraging low impact behaviors, encouraging use in impact-resistant locations, directing use away from sensitive resources, limiting use to existing or designated sites or trails, or rehabilitating or hardening sites. The existing ANF LMP provides flexibility to implement necessary management actions, and a hierarchy of appropriate recreation management activities is included in Appendix D – Adaptive Mitigation for Recreation Uses, of the ANF LMP Part 3.

Economic Components of Sustainable Recreation

In addition to appropriated funds, the ANF depends on a variety of funding sources (such as grants, partner and volunteer contributions, fee revenue) to meet visitor needs. Overcoming budget challenges requires that the agency forge strategic partnerships and inspire citizen stewards, both of which can help increase economic sustainability. Working with private

recreation providers, such as outfitters and guides or organizations holding special events, to promote recreational opportunities on national forests and grasslands has the potential to contribute to local economies by creating new jobs or increasing visitation to local communities.

The monument designation itself did not prompt a Monument-specific entrance fee for visitors. The use of the Adventure Pass is still in effect throughout four Southern California National Forests. An Adventure Pass is required for forest visitors parked at standard amenity fee sites that provide designated developed parking, picnic tables, toilet facilities, security, interpretive signs, and trash receptacles. Site-specific fees are required at most drive-in campgrounds and at OHV areas (USDA Forest Service 2014c).

Environmental Consequences

Alternative 1

Indirect Effects

Driving for pleasure would continue to be a popular activity within the Monument. Opportunities for scenic driving and OHV open areas would continue to be available. However, based on existing plan direction, there would be a low level of increase in roaded acres over time, as defined by road density analysis: therefore, road density within the Monument may increase, and the number of automobiles in the Monument would likely increase over time, adding to the visitor capacity and vehicle congestion issues, and degrading visitor experiences. Routine road and trail maintenance would continue, however, road and trail improvements would not be prioritized. Alternative transportation options would not be emphasized, and existing access issues to the Monument would remain.

Current management would continue in accordance with the 2005 ANF LMP, relevant amendments, and interim management direction. The existing vision, strategy, and design criteria for recreation are in place and provide a solid framework for addressing management of recreation resources within the Monument. A wide variety of developed recreation facilities is available within the Monument. Existing plan language in Goal 3.1 directs that facilities and infrastructure are high quality, well-maintained, safe, accessible, and consistent with visitors' expectations. The existing management by land use zone provides for a variety of recreational settings and opportunities across the Monument by corresponding to the recreation opportunity spectrum classes, and by specifying appropriate uses and levels of development in each zone.

Recreation opportunities ranging from primitive, non-motorized hiking experiences in the Monument’s four wilderness areas, to OHV riding opportunities in OHV open areas, and a variety of opportunities for camping, picnicking, fishing, hunting, horseback riding, mountain biking, water play, and participation in conservation education programs would continue to be provided within the Monument. The appropriate levels of recreation site development and management would continue to be guided by the ROS classes and their associated land use zones.

Management of recreation would also continue to be subject to the 2005 ANF LMP Appendix D - Adaptive Mitigation for Recreation Uses. The recreation implementation guidelines apply to all existing and new recreation sites and uses whenever a conflict between uses or sensitive resources is detected. Sensitive resources include threatened, endangered, proposed, candidate, and sensitive species (TEPCS) and habitats; riparian habitats, soil and watersheds; heritage resources; user conflicts; or other resources (USDA Forest Service 2005a).

Developed facilities are not suitable within the Critical Biological Land Use Zone (ANF LMP Table 2.1.3). Management of existing CBLUZs would continue; however, none would be expanded or added, so there would be no reduction in opportunities for developed recreation facilities within the Monument.

Social components of sustainable recreation would not be emphasized; however, visitor information and interpretation programs and partnership development would continue at current levels. This would be a missed opportunity to engage potential new partners and to provide additional information, interpretation, and outreach that would improve visitor experiences and satisfaction, commensurate with the higher expectations associated with monument designation.

As anticipated visitation to the Monument increases, both due to population growth and monument designation, and as the population of the surrounding communities diversifies, there will be a greater need for proactive recreation management approaches and partnerships. In alternative 1, without a monument management plan, there would be no foreseeable added emphasis or specific direction regarding visitor reception, interpretation and outreach, access, and partnership development. This would potentially result in reduced visitor satisfaction over time, increased conflicts between different uses, and the inability of visitors to achieve their desired recreational experiences, within the Monument.

Special-use authorizations within the Monument would continue to be managed under existing rules and regulations. New, emerging uses and requests would continue to be considered on a case-by-case basis, and may require additional review and consideration to determine whether the proposed uses are consistent with management of the Monument.

Alternative 2

Indirect Effects

Transportation

New desired conditions focus on opportunities to improve access to the Monument through coordination of alternative transportation options with other agencies and gateway communities, while also addressing concerns related to vehicle congestion, limited parking capacity, and public safety; roads and trails would be maintained to standard. The modified desired condition in alternative 2 that road density within the Monument remains stable or is decreasing, and that the number of automobiles in the Monument is reducing over time would help to address visitor capacity and vehicle congestion issues and improve visitor experiences over what would be seen with current management under alternative 1.

New management approaches emphasize the importance of keeping up with the maintenance of the road and trail system within the Monument to provide access. The management approaches recognize that driving for pleasure and the use of designated roads and trails within the Monument are important recreational opportunities. The management approaches to improve maintenance level 2 roads and non-motorized trails to standards that qualify for Federal Lands Transportation Program (FLTP) funding (operational maintenance level 3+ for roads, and provide an engineered surface for non-motorized trails) would address road maintenance and restoration, especially in fire-damaged areas, and improve the road and trail conditions throughout the Monument.

Additional guidelines for improving the management of new recreation events and new road and trail crossings of the PCT would enhance protection of the quiet, non-motorized experience along the trail.

Proposed new additions to transportation management approaches regarding alternative transportation and sustainable recreation management approaches regarding conservation education and outreach support improve access to the Monument for underprivileged youth and minority populations. These efforts would help address recreation equity, so that the visitor demographic represents the demographics of the area's surrounding population. These efforts are important to help the Monument remain relevant as a recreation and open space resource for local communities, and appealing to volunteers and partners.

Sustainable Recreation

In alternative 2, as Monument planning and management continues into the future as a collaborative, partnership-driven effort, the results would likely be increased resources such as volunteers, and increased management capacity to address resource management challenges and move the area toward the desired conditions. Many of the new or modified plan components address social aspects of sustainable recreation. The environmental and economic components of sustainable recreation are primarily addressed by existing direction in the ANF LMP.

Social components of sustainable recreation are addressed by emphasizing providing recreation opportunities that meet needs and expectations of the diverse visitor population; outreach to youth and minority populations that may not otherwise have an interest in visiting the Monument; and working with partners and gateway communities to both mitigate impacts and maximize benefits associated with monument designation. Conservation education and interpretation would be relevant and meaningful to a diverse audience. All of these efforts would be expected to improve visitor satisfaction and recreation equity—helping visitors match their desired experiences with opportunities within the Monument.

Providing information and education about the range of recreation settings and opportunities available would help visitors determine where to go to achieve their desired recreation experiences. This would help reduce conflicts between motorized and non-motorized users and conflicts between different types of non-motorized use, and is also a means to disperse use across the Monument and provide alternatives to popular high use areas that are currently at or exceeding capacity.

An added desired condition about products, services, and the built environment being aligned with visitor needs and expectations speaks to addressing the needs and expectation of changing demographics, such as higher percentages of Hispanic/Latino and minority visitors, and engaging visitors of differing generations such as baby boomers, millennials, and youth. Outreach efforts are expected to provide necessary information to facilitate visitation and access. Culturally relevant interpretive messages would help connect people to the land and provide a sense of welcome to all visitors.

Additional focus on youth engagement and fostering the next generation of public land stewards is also provided in a new desired condition. This is critically important, especially in the urban setting where youth may not otherwise have access to quality outdoor experiences.

A new guideline would maintain or increase the number of conservation education programs or events per year within the Monument. A new management approach would be to develop an Monument conservation education plan. Prioritizing information, outreach and conservation education efforts can also be a key management strategy toward reducing recreation related resources impacts. Fostering a connection between people and the land would, in turn, increase understanding of the connection between visitor actions and resource impacts, and lead to increased compliance with Monument rules and reduce recreation related resource impacts.

Implementation of the alternative 2 would result in quality, sustainable recreation opportunities that would likely result in increased visitor satisfaction. Visitor satisfaction would continue to be monitored over time and management approaches adjusted as needed to best meet visitor needs and expectations.

In addition to existing ANF LMP direction, ecological components of sustainable recreation are addressed by the added management approach to follow the interagency visitor use management framework to address visitor capacity in high use areas. As the population of Los Angeles and surrounding areas continues to increase, and emphasis is placed on outreach and conservation education opportunities within the Monument. In alternative 2, it is expected that recreational visitor use of the Monument will also continue to increase, and with it, the associated visitor use impacts. There will be an ongoing need for Forest Service recreation managers to assess the recreation demands and trends, and adjust management approaches as needed to meet visitor use demands while minimizing impacts. The Monument Plan provides clear guidelines for managing recreation within the Monument in a socially and ecologically sustainable manner.

The proposed addition of the East Fork San Gabriel River, North Fork San Gabriel River, and Aliso Canyon Critical Biological Land Use Zones (CBLUZ) would reduce dispersed camping opportunities in these areas.

Concentrated recreational use can have impacts on streams, riparian areas, and other resources. Proposed additions to sustainable recreation management approaches would provide clear guidelines for managing visitor use to protect aquatic and other resources, as needed. The management approaches would prioritize work with partners on sustainable recreation studies and design, evaluating recreation carrying capacity in high use areas, and working with gateway communities and local partners to manage potential impacts and maximize potential benefits associated with monument designation.

Economic components of sustainable recreation would be supported through a likely increase in partnerships, as a result of plan components that prioritize this work. Due to the large and diverse population base in the Los Angeles Basin, there are many existing and potential partnership and volunteer opportunities to support the Monument.

In alternative 2, a commitment to increase active engagement with the field ranger program, resource assistance program, the Southern California Consortium, and other partners would contribute to recreation service delivery at the same time, providing job training and employment opportunities for youth from the surrounding region.

Monitoring required by the ANF LMP would continue to determine if trends in visitor satisfaction survey results are indicating that the ANF provides quality, sustainable recreation opportunities that result in increased visitor satisfaction (USDA Forest Service 2005a).

New management approaches in alternative 2, including prioritizing work with external partners to develop sustainable recreation studies and recreation design plans; evaluating the need for recreation carrying capacity in high use areas; and working with gateway communities to identify appropriate access points and parking capacity at access points would improve management of developed and dispersed recreation resources.

Special-use authorizations within the Monument would continue to be managed under existing rules and regulations. Alternative 2 adds a management approach to develop criteria to guide consideration of appropriate types of special event and emerging uses within the Monument. California National Forests are often the first to see emerging uses and new technology in recreation equipment and activities. Development of Monument-specific criteria is expected to better protect Monument natural resources and recreational settings and experiences, as new and emerging uses are evaluated during the permitting process. Development of criteria would also help streamline the process of considering requests for new and emerging uses and ensure that approved uses are consistent with the Monument Plan.

Heritage Resources

The proposed desired conditions for heritage resources emphasize the importance of protecting these resources for their cultural and scientific values and their public benefits. New management approaches address the development of partnerships to plan for appropriate management of the heritage resources and improve interpretive potential associated with the resources. Sustainable recreation desired conditions emphasize interpretative materials that capture the rich cultural history that shaped the area. This emphasis is expected to improve overall management, interpretation, and public awareness of cultural resources within the Monument, to a greater extent than in alternative 1.

Management of recreation would continue as described in alternative 1, including adaptive mitigation for recreation uses to protect sensitive heritage resources.

Biological Resources

Concentrated recreational use can have impacts on streams, riparian areas, and other resources. Proposed additions to sustainable recreation management approaches would provide a framework for managing visitor use to protect aquatic and other resources, as needed. The management approaches would prioritize working with partners on sustainable recreation studies and design, evaluating recreation carrying capacity in high use areas, and working with gateway communities and local partners to manage potential impacts and maximize potential benefits associated with monument designation.

Management of recreation would continue as described in alternative 1, including adaptive mitigation for recreation uses to protect sensitive biological resources.

Mineral Resources

Public comments expressed value in recreational gold panning and rock-hounding activities within the Monument. An additional plan standard and a revised suitability of lands table updated the Monument Plan to emphasize that prospecting, including recreational gold panning and mineral collecting are prohibited activities (see the Mineral Resources section for specific prohibitions and additional information).

Designated Areas

The proposed desired conditions for designated wilderness within the Monument would help protect opportunities for primitive and unconfined recreation and solitude by providing more direction than in the current ANF LMP.

The new guidelines relevant to special-use authorizations along the PCT and minimizing impacts from new road and trail crossings is expected to better address and minimize impacts to the scenic, natural, and experiential values of the trail for which the PCT was originally designated.

Suitability of Lands

A range of recreation opportunities would continue to be available, as described in alternative 1.

Developed facilities and dispersed camping are not suitable within the Critical Biological Land Use Zone (CBLUZ). The addition of the East Fork San Gabriel River, North Fork San Gabriel River, and Aliso Canyon CBLUZ in alternative 2 would reduce future opportunities for recreation facility development and dispersed camping in these areas.

Cumulative Effects

The increased national profile of the area due to the national monument designation, ongoing population growth in Los Angeles and San Bernardino Counties, and increased emphasis from the Framework for Sustainable Recreation and new plan components in alternative 2 on outreach and access to youth, minorities, and underserved populations who may not currently be visiting the Monument would cumulatively add to increased visitor use levels.

The ANF experiences high levels of developed and dispersed recreation. Recreation use includes hiking, fishing, camping, OHV use, as well as other forms of outdoor recreation. Recreation is expected to continue to occur across the ANF and will likely increase as population in the Los Angeles area continues to grow. Reasonably foreseeable actions include new OHV routes and trail connections with equestrian trails onto the ANF.

Increased visitation is also expected to cumulatively add to management issues that may impact the recreational settings and experiences across the Monument, such as increased invasive species; lighting of dark skies; unauthorized uses and criminal activities such as arson, cultivation and manufacturing of drugs, and trash dumping and unauthorized use such as off-route motorized and non-motorized vehicle travel and target shooting outside of authorized areas.

If Congress approves the recommended Rim of the Valley addition to the neighboring Santa Monica Mountains National Recreation Area, this would cumulatively add to the higher national profile of the public lands surrounding Los Angeles. Another designation may lead to increased national interest and visitation. However, this additional designation would also likely result in increased opportunities for partnerships and capacity building. The Rim of the Valley study noted needs similar to those of the Monument, including outreach to urban populations and youth, and alternative transportation and public access (USDI National Park Service 2016).

Alternative 3

Indirect Effects

Transportation

The effects of transportation plan components for alternative 3 would be similar to those described for alternative 2. Alternative 3 has additional desired conditions that address the need for sufficient access points, parking areas, and transportation connectivity to and within the Monument. Emphasis is also placed on providing a balance of road- and trail-related recreational opportunities for all users and providing up-to-date signage, information, and maps with international symbols. Alternative 3 provides additional plan direction that would enhance the road- and trail-related recreation opportunities and provide access for a more diverse group of visitors across the Monument to a greater extent than in alternative 2.

Sustainable Recreation

The effects on sustainable recreation would be similar to those described for alternative 2. A goal is to expand the partnership network further emphasizes the importance of partners in sustainable management of Monument resources compared to alternative 2, which further enhances opportunities for proactive recreation management and increases the management capacity to address recreation-related issues.

New, emerging uses and requests would continue to be considered on a case-by-case basis, and may require additional review and consideration, as compared with alternative 2, to determine whether the proposed uses are consistent with the purposes of the Monument.

Visitor Experience, Information, and Education

Alternative 3 places a greater emphasis than alternative 2 on visitor experience, information, and education by including a new objective to develop and implement a Visitor Reception, Interpretation, and Education Plan within 3 years. The commitment to developing the Visitor Reception, Interpretation, and Education Plan is expected to result in earlier engagement of existing and potential partners to provide information and education throughout the Monument than would occur in alternative 2. Development of the Visitor Reception, Interpretation, and Education Plan would provide the public with a more clearly defined plan for future visitor experience information and education actions that will be taken, and opportunities that will be available, thereby increasing information available to the public to help visitors know where to go to achieve their desired recreation experiences. Ultimately, additional visitor reception, interpretation, and education is expected to increase the satisfaction of Monument visitors to a greater extent than in alternative 2. The new management approach related to climate change education is expected to enhance visitor understanding about ecosystems in the Monument and potential impacts of climate change. With a greater understanding of ecosystems and the potential impact of climate change, visitors would be more likely to make environmentally responsible decisions while recreating.

Heritage Resources

Effects related to heritage resources would be similar to those described for alternative 2. However, a new goal and several new management approaches place more emphasis on interpretation, public education, outreach, and partnerships that would further enhance the public benefits of heritage resources within the Monument.

Biological Resources

Effects to biological resources would be the same as described for alternative 2, with the exception of an added goal to actively manage recreation in concentrated use areas to improve recreational quality and mitigate impact on aquatic species.

Mineral Resources

Effects related to mineral resources would be the same as described for alternative 2.

Designated Areas

Effects related to designated areas would be similar as described for alternative 2, but with a change in effects to recreation management as it relates to the the CBLUZ boundary, described below.

Suitability of Lands

The new CBLUZ boundary along the East Fork San Gabriel River would accommodate additional development needed for recreation management that would not be accommodated in alternative 2. The additional acres to the existing CBLUZ on the West Fork San Gabriel River would reduce the opportunity for new infrastructure development in the expanded portion, but dispersed recreation and existing uses would be the same as in alternative 2.

Cumulative Effects

Cumulative effects for alternative 3 would be the same as described for alternative 2.

Scenery

Affected Environment

Scenery is an integral component of all forest settings, and contributes to the quality of the users' outdoor recreational experience. Scenery is a combination of natural landscape features including vegetation, water features, landform and geology, and human-made elements. When people experience the landscape, scenery combines all the ecological features and the human elements, including the built environment. The composition of these attributes is what gives a landscape its character or image.

The scenery management system is a tool for integrating the benefits, values, desires, and preferences regarding aesthetics and scenery for all levels of land and resource management planning. People are concerned about the quality of their environment and the aesthetic values of landscapes. The scenery management system recognizes the interdependence of aesthetics and ecological systems and promotes natural appearing landscapes.

Existing Condition

The Monument is a regional, year-round recreation destination and an important recreational setting for millions of residents in Los Angeles County and the surrounding areas. The scenery of the Monument is characterized by steep and rugged mountains, snowcapped mountain peaks in the winter, and deep canyons with cool, perennial streams. Vegetation communities are diverse and change with elevation. Many areas are dominated by chaparral shrubland, which includes scrub oaks, chamise, manzanita, wild lilac, and buckbrush. Mixed conifer forests, which occur at higher elevations, are comprised of Jeffrey pine, sugar pine, white fir, and riparian woodlands

including white alder, sycamore, and willow. The peaks of the San Gabriel Mountains frame the Los Angeles skyline and are the backyard for many populations. Jackson Lake and Crystal Lake, along with perennial streams, are scenic water features.

The rugged wildland landscapes of southern California are increasingly valued for the visual contrast they provide in a rapidly urbanizing region. The contrast between the urban and natural settings is the unique characteristic that distinguishes this area from other regions of the country. As the resident population continues to increase, so too will the desire to conserve these remaining vestiges of regional open space and scenic heritage in a natural-appearing condition (USDA Forest Service 2013b, page100).

National forest visitation in Southern California has increased over the past two decades because of the area's population growth. Driving for pleasure and viewing scenery have become some of the more popular national forest activities. On the ANF, the activities seeing the greatest number of participants are hiking/walking, viewing natural features, relaxing, viewing wildlife, and driving for pleasure (USDA Forest Service 2011a). Visitors expect a certain level of 'naturalness' in the recreation and tourism settings they pursue. Even individuals who have never visited these national forests expect a certain level of 'natural intactness' in these landscapes. This natural beauty contributes to their sense of well-being and quality of life. The scenic integrity of national forest landscapes (which measures landscapes' inherent scenic attractiveness and the public's visual expectations for naturalness) is the system by which projected alterations in national forest landscapes are evaluated (USDA Forest Service 2013b, page 100)

Figure 11. East Fork San Gabriel at Oaks Picnic Area

Scenic Attractiveness

Scenic Attractiveness is the scenic importance of a landscape based on human perceptions of the intrinsic beauty of landform, rock-form, water-form, and vegetation pattern. It reflects varying

visual perception attributes of variety, unity, vividness, intactness, coherence, mystery, uniqueness, harmony, balance and pattern. Scenic attractiveness is classified as: (1) Distinctive, (2) Typical and (3) Indistinctive. Distinctive landscapes (or those classified as scenic attractiveness class A (SAC-A)) are in areas where landform, vegetation patterns, water characteristics and cultural features combine to provide unusual, unique, or outstanding scenic quality. SAC-A landscapes represent approximately 36 percent of the landscapes within the Monument. The distinctive landscapes are the more common ones of the region (or those classified as scenic attractiveness class B (SAC-B)) and consist of areas where landform, vegetation patterns, water characteristics and cultural features combine to provide ordinary or common scenic quality. The remaining indistinctive landscapes (about 2 percent of the Monument) fall under the scenic attractiveness class C (SAC-C), which are areas where landform, vegetation patterns, water characteristics and cultural land use have low scenic quality.

Table 13. Scenic attractiveness acres and percent of total acres by class within the Monument

Scenic Attractiveness Class	Acres	Percent of Monument
SAC A – Distinctive Landscapes	121,877	36
SAC B – Typical (common) Landscapes	207,911	62
SAC C – Indistinctive Landscapes	6,376	2

Acre calculations include NFS lands only. Acre calculations are approximate and may not add up to the total acreage of the Monument.

Figure 12. San Gabriel Wilderness viewed from the Jarvi Memorial on Angeles Crest Scenic Byway, Highway 2

Scenic Expectations of the Public

National forest visitors are attracted to a variety of areas for the natural character they possess. Visitors and residents value the forested backdrops that frame the urban complex (USDA Forest Service 2013b, page 101). The Monument's roads, trails, recreation sites and use areas provide visitors with scenic routes and vantage points to view and experience the Monument's rugged landscape. Some visitors treasure the less traveled, hidden, and seldom-seen valleys and canyons, seeking backcountry experiences or solitude in wilderness areas.

National forest travel routes have been evaluated for the estimated level of public concern for alterations to the landscape. Travel routes classified as concern level 1 (including those routes that are designated state scenic highways or national forest scenic byways) indicate that the public is most concerned about alterations; concern level 3 indicates the least concern (USDA Forest Service 2013b). In evaluating landscape visibility, landscape managers have recognized that "distance" is one of the primary perceptual factors for determining whether alterations are visually noticed. Foreground distance zones reveal even the subtlest alterations; background distance zones are able to absorb greater alterations, provided color contrasts are minimized. Some of the more secluded areas of the national forests are identified as "seldom seen" indicating remote areas of the landscape infrequently viewed by the public or only visible from aerial viewpoints. (USDA Forest Service 2013b, page 101).

Scenic Integrity Objectives

Scenic integrity objectives (SIOs) were derived from an inventory of scenic attributes and their related social values by compiling data on distance zones, scenic attractiveness/classes, existing scenic integrity, and public importance. SIO's define the minimum level to which landscapes are to be managed from an aesthetics standpoint and have been designated for all areas of the national forest. At the project level, all national forest activities are subject to review of the scenic integrity objectives. There are six scenic integrity classifications. Of those six very high, high and moderate scenic integrity are used to manage scenic resources, therefore making them scenic integrity objectives for the ANF. Each scenic integrity objective depicts a level of scenic integrity used to direct scenery management: very high (unaltered), high (appears unaltered), moderate (slightly altered). Generally, landscapes that are most attractive (as classified by scenic attractiveness class) and viewed from popular travel routes (as classified by concern level) are assigned higher scenic integrity objectives (USDA Forest Service 2013b, pages 103-104).

Under the current ANF LMP, the Monument land base would be largely managed to maintain or achieve a natural undeveloped appearance, with assigned scenic integrity objectives of high and very high (about 96 percent). About 3 percent of the land base could have a slightly altered appearance, with an assigned scenic integrity objective of moderate. No landscapes are managed with an assigned scenic integrity objective of low, very low, nor unacceptably low.

Table 14. Scenic integrity objective acres and percent of total acres by class within the Monument

Scenic Integrity Objective	Acres	Percent of Monument
Very High (unaltered)	132,788	39
High (appears unaltered)	191,715	57
Moderate (slightly altered)	11,661	3

Acre calculations include NFS lands only. Acre calculations are approximate and may not add up to the total acreage of the Monument.

The scenic integrity objective map and acres differ from those in the current ANF LMP. In 2009, Congress designated two wilderness areas (Pleasant View Ridge and Magic Mountain). These wilderness areas are managed for very high scenic integrity objective, in accordance with the ANF LMP.

In some landscapes, human influence is evident through changes in vegetation patterns, landform alterations, or the introduction of structural elements. For the most part, the Monument landscapes remain natural-appearing in character, with many of the valued landscape attributes still intact. Most of the human-influenced alterations affecting scenic integrity have occurred along main recreation use corridors with a variety of recreation developments (such as campgrounds, trailheads, day use sites, and visitor centers), utility corridors, and communication sites. The designated wilderness areas provide the largest area of landscapes possessing an unaltered or naturally evolving character. If any heavily altered or unacceptably altered landscapes occur in key places, they are the priority areas for landscape restoration. No unacceptably altered landscapes were identified within the Monument.

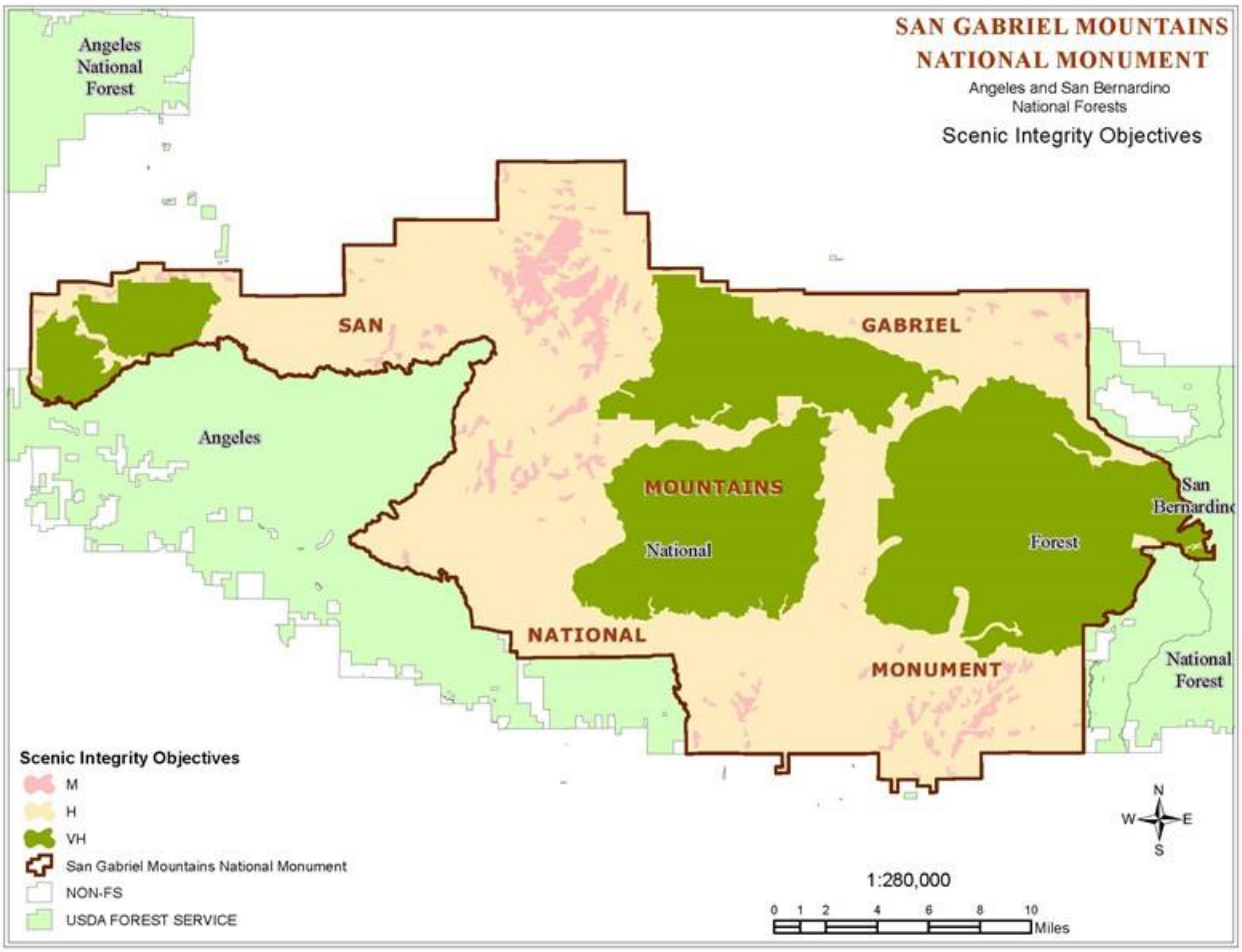


Figure 13. San Gabriel Mountains National Monument scenic integrity objectives map

Environmental Consequences

Alternative 1

Under alternative 1, current management would continue in accordance with the ANF LMP, relevant amendments, and the Monument Proclamation. Current management direction is outlined in the ANF LMP (USDA Forest Service 2005a).

The ANF LMP has plan components for scenery management (also referred to in the ANF LMP as landscape and aesthetic management) that provide for natural and natural-appearing scenic character in the Monument, with many of the valued landscape attributes still intact. The existing vision, strategy, and design criteria for scenery are in place and provide a solid framework for addressing management of scenic resources within the Monument.

Alternative 2

All ANF LMP direction for scenery management (also referred to in the ANF LMP as landscape and aesthetic management) would continue to be applied.

Indirect Effects

Transportation

Plan components for transportation would benefit scenery viewing opportunities. Management approaches that maintain awareness for “driving for pleasure” link directly to the importance for scenery management at the project level.

Sustainable Recreation

Plan components that manage for sustainable recreation have the potential to improve scenic integrity in the short term and long term as conservation education programs and events occur and other plan components are implemented. Plan components would be consistent with scenery management as outlined through scenic integrity objectives and current ANF LMP components for scenery.

This alternative proposes several new plan components for the Pacific Crest National Scenic Trail (PCT) that minimize visual impacts to the trail. These, along with current ANF LMP components for scenery, would provide additional benefits for maintaining and enhancing scenery, as viewed from the PCT.

Heritage Resources, Biological Resources, Mineral Resources, Designated Areas

Plan components for heritage, biological, and mineral resources and designated areas would be consistent with scenery management as outlined through scenic integrity objectives and current ANF LMP components for scenery. There could be additional minor improvements to scenic resources as a result of these plan components.

Suitability of Lands

A new suitability plan component, along with current ANF LMP components for scenery, would provide additional benefits for maintaining and enhancing natural-appearing scenery in the foreground distance zone of the PCT, and would be consistent with scenery management as outlined through scenic integrity objectives. In addition, new CBLUZs would help conserve the state of naturalness that benefits scenic resources.

Scenic Integrity Objectives

Alternative 2 changes none of the assigned scenic integrity objectives. Landscapes would continue to be managed at the same scenic integrity objectives levels outlined in the ANF LMP. Landscapes would be managed to maintain the respective scenic integrity objectives of very high, high, and moderate.

Other general effects to scenic resources are covered in the ANF LMP FEIS (USDA Forest Service 2005b, pages 521-526) and ANF LMP amendment Final Supplemental EIS (FSEIS,USDA Forest Service 2013b, pages 244-248). The effects described in these documents apply in this analysis for the Monument, since these types of occurrences and activities would continue under this alternative. These documents also cover the potential visibility of potential alterations. The visibility of potential alterations would be the same as those described in these previous analyses.

The exception to the above is the effects of minerals and energy management-related activities on landscape character. The landscape character and scenic integrity would be more natural and natural-appearing in the long term, and effects would be less than what is described in the ANF LMP FEIS and ANF LMP Amendment FSEIS.

Cumulative Effects

As described in the ANF LMP FEIS (USDA Forest Service 2005b, page 524), cumulative effects on national forest landscapes result from the introduction of a series of vegetation management activities or the addition of structural elements in a close geographic proximity or time frame. Landscape cumulative effects are more pronounced in foreground situations and less so in the background. The potential for cumulative effects outside of the planning area on adjacent NFS lands remains the same as described in the ANF LMP FEIS.

Alternative 3

Indirect Effects

All ANF LMP direction for scenery management (also referred to in the ANF LMP as landscape and aesthetic management and described above) would continue to be applied.

Transportation

Environmental consequences for scenery from transportation plan components would be the same as those described for alternative 2.

Sustainable Recreation and Visitor Experience, Information, and Environmental Education

Plan components that manage for sustainable recreation and visitor experience, information, and environmental education have the potential to improve scenic integrity in the short term and long term as conservation education programs and events occur and other plan components are implemented. Plan components would be consistent with scenery management as outlined through scenic integrity objectives and current ANF LMP components for scenery.

Climate Change, Heritage Resources, Biological Resources, Mineral Resources

Plan components for climate change and heritage, biological, and mineral resources would be consistent with scenery management as outlined through scenic integrity objectives and current

ANF LMP components for scenery. There could be additional minor improvements to scenic resources as a result of these plan components. Plan components for mineral resources also have the potential to provide for natural-appearing scenery in the short and long term by addressing resource damage.

Designated Areas and Areas Recommended for Designation

Plan components for designated areas and areas recommended for designation would be consistent with scenery management as outlined through scenic integrity objectives and current ANF LMP components for scenery.

Alternative 3 proposes one desired condition and two guidelines for the PCT, while alternative 2 includes two guidelines. The plan components minimize scenic impacts to the PCT. The plan components for this trail along with current ANF LMP components for scenery would provide additional benefits for maintaining and enhancing natural-appearing scenery viewed from the PCT.

Suitability of Lands

Environmental consequences for scenery from a new suitability plan component would be the same as those described for alternative 2.

Scenic Integrity Objectives

Alternative 3 changes none of the assigned scenic integrity objectives. Environmental consequences for scenery and scenic integrity objectives would be the same as those described for alternative 2.

Cumulative Effects

Cumulative effects for alternative 3 would the same as those described for alternative 2.

Socioeconomics

Affected Environment

Existing Condition

Certain defining features of an area influence and shape the nature of recreation and corresponding economic activity. These features include population characteristics, employment in recreation sectors, area racial and ethnic composition, and unique area amenities. The Monument provides many recreation opportunities, and thus, plays a principal role in the community. This discussion gives further insight on the extent of these social and economic connections.

The majority of ANF recreation visitors come from Los Angeles (about 60 percent) and San Bernardino (about 20 percent) Counties (U.S. Department of Agriculture 2011). Therefore, the social and economic effects from the recreational use would likely be concentrated in the region adjacent to the Monument including Los Angeles and San Bernardino Counties.

Demographics

According to the U.S. Census Bureau, population growth between 2000 and 2014 in the planning area was driven by significant growth in San Bernardino County (22 percent), which was much greater than the California population growth of 12.4 percent. In 2014,[2] San Bernardino County was home to approximately 2.1 million people and Los Angeles County contains about 10 million people (U.S. Department of Commerce 2015a). Population growth is expected to increase demand for recreation opportunities on national forests.

Scoping comments reveal concern for youth and minorities to access the Monument (see the Environmental Justice section for additional demographic data). In 2014, of the total planning area population, 24.3 percent were under 18 years old, which is similar to the California youth population of 27 percent (U.S. Department of Commerce 2015a). Additionally, 19 percent of ANF visitors in 2011 were estimated to be age 19 or younger (USDA Forest Service 2011a).

Recreation Economy

Recreational visitation to the Monument generates employment and income in the surrounding communities. Local economies often benefit from the recreation opportunities provided by National Forest System (NFS) land. Federal land designations have also been found to influence local economies. Clinea et al. (2011) describe that "While such designations can change land use patterns and restrict the use of natural resources, they can also lead to greater regional economic activity resulting from an increase in recreation and tourism." In addition to the national monument designation, there are several overlapping national designations that apply to the lands within the Monument that influence the recreation opportunities available, which affect the social and economic conditions in the area. Four congressionally designated wilderness areas are within the Monument: Magic Mountain, Pleasant View Ridge, San Gabriel, and Sheep Mountain. The wilderness areas provide primitive, non-motorized recreation opportunities and opportunities for solitude. There are several authorized recreation special uses such as ski areas and shooting ranges, in addition to permitted special events that provide various guided and organized recreation opportunities. Although NVUM recreation visitation data are not available for the time since the official monument designation was made, jobs and income in tourism- and service-related sectors could be affected, so it is important to understand the existing condition of the recreation economy.

At the county level, specifically related to the recreation sector are the accommodation and food services (18 percent growth in jobs) and the arts, entertainment, and recreation (23 percent growth in jobs) sectors, which also experienced significant increases in employment (U.S. Department of Commerce 2015b). The major increase in real estate and rental and leasing and accommodation and food services sectors could indicate that people are coming into the area and renting vacation housing and participating in recreation activities. While recreation use in the area could be a driver of these recreation-related employment increases, the statistics generally imply that the regional area is supporting more recreation use than it did in 2001. Travel and tourism-related employment in 2013 (includes retail trade, passenger transport, arts, entertainment, and recreation, and accommodation and food) made up about 15 percent of total employment in the two-county planning area, with the accommodation and food sector having the greatest

[2] The 2014 data are calculated by the American Community Survey of the Census Bureau using annual surveys conducted during 2010-2014, and are representative of average characteristics during this period.

contribution to employment (10 percent of total employment) (U.S. Department of Commerce 2015c).

Additionally, from 2001 to 2014, jobs in non-service-related sectors decreased by 33 percent and jobs in service-related sectors increased by 10 percent (U.S. Department of Commerce 2015b). Overall, in 2014, service-related jobs comprise about 71 percent of the two-county planning area employment and non-service-related jobs comprise 17 percent of employment. Government employment accounts for the other 12 percent of employment (U.S. Department of Commerce 2015b). Service sector growth is sometimes attributed to the tourism opportunities and quality of life provided by the area's unique natural amenities; some of which can be found on the Forest. However, growth in the service sector is also influenced by other county-wide shifts in urbanized areas (data are at the county level for San Bernardino and Los Angeles Counties so it captures all service-sector growth). Population and employment changes may be related to natural amenities often provided by NFS lands. Additionally, natural amenities on the Angeles National Forest may attract residents who would not otherwise live in the area. Recreationists also spend dollars in the area that would not otherwise be spent if opportunities on NFS lands did not exist. Therefore, the amenities provided by the Monument are likely contributing to the local economy.

The services sectors account for a growing portion of total employment, while non-service sector jobs have decreased. However, service sector jobs may not pay as much in wages as non-service sector jobs, which could decrease area economic well-being. In 2014 (adjusted to 2015 dollars), service and non-service sector jobs paid on average $52,391 and $59,128 per year, respectively, in the two-county planning area (U.S. Department of Labor 2015). It may not be true that decreases in economic well-being have resulted from increases in service sector employment; people might move to the area to take a service sector job, but exchange the lower wage they may receive for the unique natural and recreation amenities provided by the Forest Service. In this manner, some may benefit from a secondary value not provided by their place of employment, but by the benefits they gain from living or recreating in the area. This added value is discussed more in the social values section below.

The tourism industry supports some of the sectors detailed above and changes in tourism directly and indirectly impact local economies. From 1998 to 2013, jobs in industries that include travel and tourism employment grew from 498,240 to 664,269 jobs, a 33.3 percent increase (U.S. Department of Commerce 2015c). In 2013, San Bernardino and Los Angeles Counties had about 15 percent of total private employment in the travel- and tourism-related sectors, which is similar to the United States, which had 15.5 percent of total private employment in the travel- and tourism-related sectors (U.S. Department of Commerce 2015c). This indicates that employment in tourism-related industries is growing and the tourism sector is a moderate contributor to employment in the two-county planning area.

According to the latest available information on recreation visitation from the NVUM Report for 2011, the ANF had approximately 3.6 million annual visits (USDA Forest Service 2011a). The average total Forest trip spending per party was $98, and the median was $38 (USDA Forest Service 2011a). This recreation visitation to the Monument translates to jobs and labor income in the planning area. See the recreation section above for more information on the recreation visitation.

As reported by the NVUM survey data, visitors indicated that, if for some reason they were unable to visit the ANF, 52 percent of visitors would choose to go elsewhere for the same activity (USDA Forest Service 2011a). This shows that generally, substitute behavior choice is activity

driven. Depending on the availability of recreation opportunities in the area, visitors may substitute other recreation sites off the ANF if they have the ability to get to other recreation areas, therefore, shifting the economic contributions to another area. However, studies in California have shown that "Latinos are often repeat visitors, who learned about the sites from family and friends, and who have plans to return to those sites in the future…Latinos may be less likely to leave one site and substitute another place unless those substituted sites meet the same reminder of homelands criteria" (Chavez et al. 2008).

Social Values

Social values attached to the Monument area, including sense of place, are often tied to the physical and aesthetic characteristics of areas, history of visitation to the area, types of activities engaged in over time, and more broadly, the value of the view of the ANF from the surrounding urban areas. Recreation opportunities, access to recreation and trails, shaded watersheds offering respite from the summer heat, connection to the outdoors, and the benefits experienced by adjacent communities are all values provided by the Monument area that contribute to sense of place. Many of these are values and practices that were around when community members were growing up and that they would like to pass on to future generations.

The ability to mine in the Monument boundaries was an issue raised during scoping. People enjoy recreational prospecting for gold and silver in the area. Some commenters remarked that mining is an activity that connected them to the past. These people value the opportunity to collect minerals from the area and believe that restrictions on mining use will negatively impact this aspect of their well-being. Others offered a contrary view, suggesting that they value the untouched outdoors and believe that mining activities create waste and destroy natural resources (such as water quality), therefore, mining opportunities negatively impact their well-being. These are examples of the diverse and sometimes conflicting values.

Recreational activities might similarly be embedded in strongly held values, and an activity may contribute to one's personal and social identity at the same time as it contributes to a sense of place (Schneider and Winter 1998). Recreation opportunities also contribute to local economies. Some commenters voiced their values for a variety of recreation opportunities, such as climbing, fishing, camping, and hiking. These opportunities connect people to nature and the land.

Communities adjacent to the Monument have expressed their values for the recreation contributions to the local economy, parking availability, and minimal traffic. They also value the security, safety, and the tranquility that come along with living adjacent to NFS land. These gateway communities believe that management activities that increase visitation could result in crowding and negatively affect their well-being. The NVUM data report that the average crowding rating based on visitor perception of how crowded the recreation site felt to them for all site types on the ANF was 4.7 in 2006 and 5 in 2011 (10 being overcrowded and 1 being hardly anyone there) (USDA Forest Service 2006c, USDA Forest Service 2011a). Any management actions that increase visitation could change this crowding rating. However, social perceptions of crowding vary greatly and are an integral part in determining the maximum population size that the environment and communities can sustain.

Ecosystem Services

Ecosystem services are benefits people receive from the environment and "these include provisioning services such as air, water, energy, fiber, and minerals; regulating services such as soil stabilization; and cultural services such as cultural heritage values, and recreational

experiences" (FSH 1909.12 Chapter 20). The Monument provides many ecosystem services to area residents and visitors. The economic opportunities (such as jobs from recreation) and the social and cultural values derived from the Monument are explained in the preceding sections. The array and quality of these ecosystem services in the short and long term are important to consider (Patterson 2014).

Environmental Consequences

Alternative 1

Indirect Effects

Current management would continue in accordance with the 2005 ANF LMP and relevant amendments. As it applies to socioeconomics, this includes the ANF LMP "Goal 3.1: Provide for public use and natural resource protection."

Adjacent communities that value uncrowded conditions and public safety could be negatively affected by alternative 1, because there are no actions to alleviate congestion from automobiles, as there are under alternatives 2 and 3 plan components for sustainable recreation, parking, transportation, and public safety. Alternative 1 would also not address sustainable recreation that supports the recreation economy, social values, and ecosystem services provided by the Monument for the long term.

Alternative 2

Indirect Effects

Transportation

People living in communities adjacent to the Monument value uncrowded conditions and access to the Monument. They are concerned with potential crowding that could result from the Monument designation and Monument Plan. This alternative includes new plan components with a focus on opportunities to improve access to the Monument, while also addressing concerns related to vehicle congestion, parking capacity, and public safety. Desired conditions to reduce the number of automobiles over time and to coordinate with partners to establish alternative and public transportation options would help to address visitor capacity and vehicle congestion issues. However, with expected increases in visitation over time under all alternatives, adjacent communities that value uncrowded conditions and public safety could be negatively affected. These potential negative effects would be less under this alternative compared to alternative 1 because of the new plan components to address sustainable recreation, parking, transportation, and public safety. See the transportation section for more details.

Sustainable Recreation

Recreation Economy

Plan components under alternative 2 address sustainable recreation, which may positively affect the recreation economy relative to alternative 1, because the jobs and income supported by recreation visitation and natural resources would be maintained over time. By planning to sustain recreation use, the recreation economy would be stable. In addition, components that address

social sustainability and improve access to the Monument would also enhance the local economies that rely on recreation visitors to support jobs in the area, compared to alternative 1.

Social Values

A variety of recreation opportunities ranging from primitive, non-motorized hiking experiences in the Monument's four wilderness areas, to OHV riding opportunities in OHV open areas, and a variety of opportunities for camping, picnicking, fishing, hunting, horseback riding, mountain biking, water play, and participating in conservation education programs would continue to be provided within the Monument. Implementation of this alternative would result in quality, sustainable recreation opportunities, more so than the no-action alternative. Alternative 2 includes new plan components that address youth engagement, providing recreation opportunities that support the diverse population, and a broadened array of education materials and outreach methods. This would have positive impacts on people's values for recreation opportunities on the Monument that provide them with a sense of place. See the recreation section for more details.

Ecosystem Services

Anticipated increases in recreation use due to population increases and monument designation could impact the provision of clean water, air, recreation opportunities, sense of place, and other benefits the Monument provides. More specifically, "Urban areas are examples where this use is particularly concentrated, and this concept is acutely felt in California because of population expansion, land conversion, drought, and other factors that escalate demand for ecosystem services, or interrupt their supply" (Patterson 2014). Over time, alternative 2 aims to address these benefits through social sustainability, sustainable recreation, and transportation plan components, as referenced above. Without components that address sustainable recreation, sites could suffer from overcrowding and degraded natural resources that people come to enjoy. In addition, new plan components address biological resources to improve habitat for fish, wildlife, and plants, which in turn would improve ecosystem services. Therefore, alternative 2 minimizes possible negative impacts to the provision of ecosystem services in the planning area.

Cumulative Effects

The geographic scope for the social and economic cumulative effects analysis is the two-county region identified in the affected environment section. The social and economic analysis is unique among the resources and uses in that the effects occur primarily off the forests. In this way, the indirect effects described above are cumulative in nature.

The recreation-related effects identified in the social and economic environmental consequences section could accrue alongside impacts associated with other projects and land management plans in the surrounding area. Both action alternatives include a plan component for recreation opportunities that support the needs of the diverse population. However, other adjacent lands continue to emphasize the provision of recreation opportunities in their land and resource management plans. Recreation visitation to the planning area is affected by changes in recreation opportunities and demand outside of the planning area. The cumulative effects of the action alternatives would likely be similar increases in visitor use within the Monument as recreation and use of open space is promoted across the region..

The economy can be affected by a variety of factors including population growth, recreation demand, changes in interest rates, recession, growth of new sectors, tax policy, and state economic policy. All alternatives would contribute negligible to minor overall impacts in an area

already brimming with a diverse economy. The cumulative effect of growth and development trends plus the beneficial effects of the action alternatives could result in a small, net beneficial condition to some local communities as a result of improved land protection and economic benefits from recreation. Overall cumulative effects would continue to depend on regional economic conditions and population increases rather than proposed actions. Because any changes in economic activity from the action alternatives would be indirect and minimal, there would be very minimal cumulative economic effects.

Alternative 3

Indirect Effects

Transportation

People living in communities adjacent to the Monument value uncrowded conditions and access to the Monument. They are concerned with potential crowding that could result from the Monument designation. Similar to alternative 2, alternative 3 includes plan components with a focus on opportunities to improve access to the Monument, while also addressing concerns related to vehicle congestion, parking capacity, and public safety. Desired conditions to reduce the number of automobiles over time and to coordinate with partners to establish alternative and public transportation options would help to address increasing visitor capacity and vehicle congestion.

Under this alternative, additional plan components are included to address access points during peak season to minimize adverse impacts to gateway communities, as well as coordination with other governments on transportation planning. With expected increases in visitation over time under all alternatives, residents of adjacent communities who value uncrowded conditions and public safety could be negatively affected, but alternative 3 is expected to reduce those negative impacts more than the other alternatives. See the transportation section for more details.

Sustainable Recreation

Recreation Economy

Plan components under alternative 3 address sustainable recreation in more ways than under the other alternatives (see the recreation section for more details), which would likely have greater positive effects on the recreation economy because the jobs and income supported by recreation visitation and natural resources would be better maintained over time. Since the quality of the recreation opportunities is likely to improve over time under this alternative, short-term effects to the recreation economy would likely be minimal. By planning to sustain recreation use and the quality of the experience, the recreation economy would be stable over the long term. In addition, components that address social sustainability and improving access to the Monument would also enhance the local economies that rely on recreation visitors to support jobs in the area.

Social Values

Recreation opportunities ranging from primitive, non-motorized hiking experiences in the wilderness areas, to OHV riding opportunities in OHV open areas, and a variety of opportunities for camping, picnicking, fishing, hunting, horseback riding, mountain biking, water play, and participating in conservation education programs would continue to be provided within the Monument under all alternatives. However, the management and sustainability of these

opportunities would likely have the greatest positive impacts on social values for recreation under alternative 3. This alternative includes a plan component to expand partnerships to improve interpretive materials and education opportunities. Plan components that address youth engagement, providing recreation opportunities that support the diverse population, and education materials and outreach methods are included under both action alternatives. Alternative 3 includes additional plan components that address providing a comprehensive, well-maintained, and sustainable trail system, as well as active management of recreation in concentrated use areas. These will have positive impacts on people's values for recreation opportunities on the Monument that provide them with a sense of place. See the Recreation section for more details.

Ecosystem Services

Anticipated increases in recreation use due to population increases and monument designation could impact the clean water and air, recreation opportunities, sense of place, and other benefits provided by the Monument under all of the alternatives. Over time, the action alternatives aim to address these benefits provided to people by the Forest through social sustainability, sustainable recreation, and transportation plan components, as referenced above. Alternative 3 includes additional plan components that further address active management in concentrated use areas and monitoring for degraded habitat conditions. In addition, the modified proposed action includes plan components for coordinating with Caltrans to improve wildlife connectivity, transportation planning, and parking capacity considerations. Without components that address sustainable recreation, sites could suffer from overcrowding and degraded natural resources. By planning for sustainable recreation use, the benefits provided by the Monument would continue to be available. In addition, new plan components address biological resources to improve habitat for fish, wildlife, and plants, which in turn would improve ecosystem services. Therefore, alternative 3 further minimizes possible negative impacts to the provision of ecosystem services compared to the other alternatives.

Cumulative Effects

The cumulative effects of the action alternatives would likely be similar increases in visitor use within the Monument, as recreation and use of open space is promoted across the region. This could negatively affect individuals who value the untouched outdoors and uncongested recreation opportunities; however, the visitor use and sustainable recreation plan components under alternative 3 would likely reduce these negative effects more than alternative 2. See the cumulative effects under alternative 2, as they are similar for alternative 3.

Environmental Justice

Affected Environment

Existing Condition

Environmental justice includes the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies (U.S. EPA 2013). Environmental justice populations include minority or low-income populations. Fair treatment means that environmental justice populations do not bear a greater burden of environmental harms and risks than the general population from Forest Service programs and policies (USDA 2014). Executive Order 12898 requires Federal agencies to "identify and address

the… disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

According to the Council on Environmental Quality's Environmental Justice Guidelines for NEPA (1997) "minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent, or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis." Table 15 shows the share of minority populations in the planning area.

Council on Environmental Quality guidance on identifying low-income populations states "agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect." Table 16 shows the shares of those living below the poverty level in the planning area.

Estimates from the U.S. Census Bureau for 2014 indicate that planning area counties (Los Angeles and San Bernardino Counties) contained higher proportions of racial and ethnic minorities than the state (table 15). Analysis area counties have larger shares of Black or African American and Hispanic populations than California overall (U.S. Department of Commerce 2015a). The percentage of people of Hispanic origin was much greater in the planning area than in California. Forest visitation reflects some of this diversity, although it is not proportionally representative of all minority groups. As of 2011, 20.1 percent of Angeles National Forest visitors were of Hispanic/Latino ethnicity, which was the second greatest proportion of visitors next to those identifying themselves as white (USDA Forest Service 2011a). Therefore, the analysis addresses the potential for disproportionate and adverse effects to minority populations.

Table 15. Estimated racial and ethnic origin composition of 2014[3] population

Location	White Alone	Black or African American Alone	American Indian and Alaska Native Alone	Asian Alone	Native Hawaiian and Other Pacific Islander Alone	Some Other Race	Two or more races	Hispanic Origin
California	39.2%	5.7%	0.8%	13.3%	0.4%	0.2%	2.7%	38.2%
Los Angeles County	27.2%	8.0%	0.5%	13.8%	0.2%	0.2%	2.2%	48.1%
San Bernardino County	31.8%	8.2%	0.9%	6.4%	0.3%	0.2%	2.2%	50.5%

Source: U.S. Department of Commerce 2015a

Estimates from the U.S. Census Bureau for 2014 indicate that Los Angeles and San Bernardino Counties contained greater shares of people living below the poverty level than the state, as seen in table 16 (U.S. Department of Commerce 2015a). Both Los Angeles and San Bernardino counties had higher rates of people and families living in poverty than California and the United States. It is important to note that this analysis is at the county level and low-income populations could be concentrated in smaller geographic regions.

[3] These data are calculated by American Community Survey of the Census Bureau using annual surveys conducted during 2009-2014 and are representative of average characteristics during this period.

Table 16. Share of 2014[4] population living below poverty level

Location	People Below Poverty	Families Below Poverty
United States	15.6%	11.5%
California	16.4%	12.3%
Los Angeles County	18.4%	14.6%
San Bernardino County	19.2%	15.3%

Source: U.S. Department of Commerce 2015a

Members of ethnic and minority populations in the planning area, as well as many economically disadvantaged populations lack access to existing recreation opportunities due to lack of close-to-home open space, transportation options, appropriate facilities or opportunities, and access to culturally relevant outreach about recreation opportunities on forest lands. This was noted through scoping as a social sustainability issue. A specific focus on minority populations was reflected in the comments during the scoping process. As communicated through scoping, some youth and minority populations currently lack access to recreational opportunities and people believe that improvements to access and education could enhance social sustainability in the two-county planning area.

Concerns about access to open space stem from where low-income and minority populations live in relation to the open space. "More than 30% of the land area of Los Angeles County, 807,731 acres in total, is designated as green space. A large number of those acres, however, are in a small number of large parks…Together, Angeles National Forest and Santa Monica Mountains National Recreation Area account for 84% of all park space in the county" (García and Strongin 2011). However, there are disparities in access to these green spaces based on race, ethnicity, income, poverty, and access to cars. Although visitation in some areas is already diverse, it is for these reasons that people are concerned about opportunities to improve access for these environmental justice communities.

Chavez (2003) found that Latino family groups were at natural resource recreation areas in California to rest and relax and have enjoyable family outings. She also found that Latinos were at these natural resource recreation areas because the areas were reminders of homelands. Proximity to homelands (such as Mexico from southern California) can contribute to the maintenance of Latino cultures, such as adding to the cultural identity through language or cultural activities. The opportunities for recreational leisure with families on the Monument and educational opportunities contribute to Latinos' sense of place and well-being.

Equitable access and enjoyment of forestlands helps ensure that health benefits provided from those experiences are also equally distributed (Jennings et al. 2016). As stated earlier in this document, recreation participation on the Forest and within the Monument area is highest among White recreationists. Hispanics are represented as second highest among those recreating, although that is not proportionate to their percentages in the overall population. Furthermore, recreationists from ethnic and racial minority groups tend to be concentrated in specific areas of the Monument. Chavez and Olson (2005) reported that 40 percent of visitors to the Angeles high country and San Gabriel Canyon were Latino. Winter and Chavez (2008 unpublished data; cited

[4] see 3 above.

in Milburn and Winter 2015) found in multiple areas on the same forest surrounding the San Gabriel and San Antonio Canyons that a majority (55 percent) of visitors self-identified as Latino. In addition, many scoping comments indicated that Asian Pacific Islander visitors use and value the Monument for recreation. This information indicates that management actions to meet the needs of diverse visitors should be concentrated in specific areas and that changes to visitor capacity and access in specific locations may have disproportionate impacts to minority populations.

Environmental Consequences

Alternative 1

Indirect Effects

Current management would continue in accordance with the 2005 ANF LMP and relevant amendments.

Effects to access, visitor information, education, and heritage resources as they pertain to environmental justice populations under alternative 1 would be less positive than those effects under alternatives 2 and 3. Without plan components that address the provision of access for diverse populations, multilingual signs, education materials, outreach using relevant media outlets, multilingual staff and protection of Native American heritage resources, alternative 1 would continue to have minimal positive impacts for how low-income and minority populations interact with the Monument. This alternative does not include management approaches for working with gateway communities and local partners to offer recreation opportunities and engage with a culturally diverse visitor population. Therefore, there would be no benefit for the economically disadvantaged, minority, and youth populations in the planning area because this alternative does not provide increased access and education for recreation opportunities.

Alternative 2

Indirect Effects

As detailed in table 15 and table 16, there are environmental justice populations (minority and low-income) within the planning area. The planning area has greater proportions of people from Hispanic/Latino origin than California overall. There were many scoping comments that addressed environmental justice concerns due to the diverse and low-income characteristics of people living close to and recreating in the San Gabriel Mountains. Access, multilingual outreach, and cultural understanding are very important to a large community that could be affected by the management of the Monument, and they feel that disproportionate impacts on underrepresented populations might occur. However, as defined under Executive Order 12898, the Forest Service does not expect “disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”

Alternative 2 may result in beneficial impacts to these low-income and minority populations over time through plan components aimed at increasing access to the Monument by partnering to improve public transportation, providing information to diverse groups, and engaging underserved populations.

Transportation

Multiple plan components address the Forest Service's intent for providing access for diverse populations by coordinating with local governments on transportation planning and evaluating alternative and public transportation opportunities, within the scope permissible by Forest Service authority. The effects to access for the environmental justice communities would be positive under alternative 2, compared to alternative 1, due to these new plan components.

The desired condition under alternative 2 to reduce the number of automobiles over time could have negative implications for low-income and minority populations if alternative accommodations are not available. Alternative 2 includes plan components to coordinate with external agencies to improve transportation connectivity within the Monument, which could provide the supplemental access accommodations for these communities. Where recreation access to the Monument provides physical, mental, cultural, and social benefits to low-income and minority communities, there is also economic value in aiding the health and well-being of these communities. The Monument will continue to support connections to the land, to community, and to culture for an increasingly diverse recreating public.

Visitor Experience, Information, and Education

Multiple plan components address the Forest Service's intent for multilingual signs, education materials, outreach using relevant media outlets, and multilingual staff. Effects would be positive and greater than alternative 1.

Additional plan components under alternative 2 for conservation education are focused specifically on engaging diverse youth, and as part of that engagement, incorporating the area's rich cultural history into interpretive messages. Alternative 2 includes management approaches for working with gateway communities and local partners to offer recreation opportunities and engage with a culturally diverse visitor population. These plan components would likely benefit the economically disadvantaged, minority, and youth populations in the planning area by providing increased access and education for recreation opportunities.

Heritage Resources

Additional plan components address resources of concern unique to Native American communities, as outlined in the heritage resources section. For example, alternative 2 includes a component that Native American heritage resources eligible for the National Register of Historic Places are protected and preserved. This would have a greater positive impact than alternative 1 for the Native American populations that value the preservation of their heritage resources.

Cumulative Effects

Indirect effects of alternative 2 on low-income and minority populations would accrue alongside other projects and land management plans that affect the way underserved communities' access and use open space lands in the surrounding area. Other neighboring lands (such as Federal, State, county, and city) continue to emphasize the provision of recreation opportunities in their land and resource management plans. For example, Griffith City Park and Topanga State Park planning documents include goals for low-cost access opportunities via public transportation and education resources about the connection between diverse visitors and the resources of the park (City of Los Angeles 2013, Topanga State Park 2012).

With many public lands available for use in the area surrounding the Monument, there may be minimal positive cumulative impacts over time from alternative 2, in terms of access and use for low-income and minority populations over time.

Alternative 3

Indirect Effects

Transportation

Potential effects are similar to what is described above for alternative 2. However, the positive effects to access for the environmental justice communities would be greater under alternative 3, compared to the other alternatives because of additional plan components such as providing updated signage and maps that identify alternative transportation options for visitors who may not speak English, and coordinating with transportation agencies to connect to inner cities and transit systems.

The effects of reducing the number of automobiles over time from plan components under alternative 3 are similar to those effects explained under alternative 2 above.

Visitor Experience, Information, and Education

Potential effects are similar to what is described above for alternative 2. However, additional plan components are included in alternative 3 to provide visitors with culturally relevant and easily accessible information and to develop a Master Visitor Reception, Interpretation, and Education Plan that focuses on outreach to diverse youth within 3 years. These plan components are expected to have additional positive impacts on minority populations in the area compared to the other alternatives.

Heritage Resources

Potential effects are similar to what is described above for alternative 2. However, alternative 3 includes a component that cultural resources and historic properties are documented and protected, and heritage values and connections are promoted as an integral feature of the Monument. This broader assessment and promotion would have greater positive impacts than the other alternatives on Native American populations that value their connection to and preservation of their heritage resources on the Monument.

Cumulative Effects

With many public lands available for use in the area surrounding the Monument, there may be minimal positive cumulative impacts over time from alternative 3 in terms of access and use for low-income and minority populations over time.

Mineral Resources

Affected Environment

There are 109 mining claims of approximately 2000 acres within 23 sections within the Monument (figure 14). Owners of existing active mining claims have the mineral rights to develop their claims and submit requests for exploration and development of their claims under

the Mining Law of 1872 and the 36 CFR 228 regulations. Most of the existing mining claims within the Monument have roads accessing the claim boundaries.

The North Star Mine, located in Arrastre Canyon, is an active mine with an approved operating plan. The North Star Mine is an anorthocite-syenite deposit that has been in production since 1988. Anorthocite-syenite is a high grade aluminum oxide ore, and because of the quality and value of the material, it is considered a locatable mineral deposit (Annis 2014).

The Curtis Tungsten Mine is located in Cattle Canyon in the Sheep Mountain Wilderness, and has been operating without an approved plan of operation. This mine has 10 mining claims that were located between 1968 and 1976. The Forest Service is performing a validity exam to determine if it has valid existing rights to mine within the wilderness.

Several mines are located near Iron Mountain and Granite Mountain, and are known as the Mont Cristo Claims. There is a patented mining claim in the center of these claims with several underground mines located throughout the claims. Some of these mines have underground operations that are doing limited mining and have no known impacts to the surface resources.

Three active mining claims with three inactive historical mines are located within the Sheep Mountain Wilderness. Those inactive mines are known as the Gold Dollar Mine, Eagle Mine, and Allison Mine. The claimants of these three mining claims have not requested the Forest Service to perform validity exams nor have they submitted a Notice of Intent to operate these mines.

There is also a mine, known as the Triangle Rock Quarry, where gabbro was mined as a common variety ore salable mineral material. This mine was in operation until 2008, when the mine operators abandoned the property because of the economic downturn.

In 2009, the State of California established a moratorium on suction dredging, until the state could fully evaluate the impacts on state waters and aquatic habitat. Suction dredging is a form of mining for placer gold deposits in alluvial (river) gravels. The state developed an environmental impact report (EIR) on suction dredging with input from the public in 2012. In 2017, the State of California sent out a notice that they were finalizing regulations for allowing suction dredging and those regulations would be finalized in early 2018. Once the suction dredging moratorium is lifted, it is possible that some miners would submit proposals for suction dredge mining on existing valid mining claims.

Many people collect gems and minerals in the Monument and are associated with gem and mineral clubs. Gem and mineral collection has been a common practice in the past. Several sites within the Monument are known for their mineral deposits, and some of these areas are documented in the mindat.org website, where specific minerals and mineral site locations are documented.

There are many areas within the Monument, including the East Fork of the San Gabriel River, where illegal mining has occurred for many years, resulting in significant ground disturbance.

When the Monument was created under the Proclamation, all Federal lands, subject to valid existing rights, were withdrawn from all forms of entry, sale, leasing, or other disposition under public land or other Federal laws, including location , entry, and patent under the mining laws. This includes gold panning and gem and mineral collecting under the guise of prospecting. The Proclamation includes the following statement: “Warning is hereby given to all unauthorized

persons not to appropriate, injure, destroy, or remove any feature of the monument and not to locate or settle upon any of the lands thereof." The removal of placer gold and gems or minerals from Monument lands for recreational purposes is already prohibited under 36 CFR 261.9(b), since placer gold and gems and minerals are a natural feature and Federal property. The withdrawal of mineral rights includes the Pacific Crest National Scenic Trail (PCT); no segments of the PCT within the Monument are located in areas with existing mining claims. Finally, the Mineral Materials Act of 1947 no longer applies to the Monument, because it is inapplicable within national monuments.

Environmental Consequences

All Alternatives

Mining operators and mining claim holders could be limited if their proposals are not consistent with the proper care and management of the objects protected by the Proclamation.

The use of vacuum or suction dredge equipment, otherwise known as suction dredging, is currently prohibited and unlawful throughout California. Under existing state law the California Department of Fish and Wildlife is also currently prohibited from issuing any permits for suction dredging in California under the Fish and Game Code. There is a potential for some of the owners of the mining claims to submit requests for suction dredging once the State of California lifts the moratorium. If proposals for suction dredging on these mining claims are submitted, they will be processed according to the 36 CFR 228 regulations.

The operations of the North Star Mine will continue under their existing operating plan. The operating plan will be reviewed periodically for compliance with existing regulations and ANF LMP direction for these lands. In addition, the mining operation will be restored according to the rehabilitation plan when operations cease in those areas.

Submission of proposals to mine on existing mining claims will be conducted according to policy and direction in 36 CFR 228 regulations. These regulations provide for the protection of surface resources as well as provide for a miner to redeem their minerals. Because these mining claims are located in the Monument, where land use objectives have changed, operating mines and processing new requests within these existing valid mining claims will result in less impact to objects of interest within the Monument.

The Curtis Tungsten mining claims are in the process of being examined and validated. Some or all portions of the mining claims may be determined to be invalid. If the mining claims are determined to be valid, the owner of the claims may submit a proposal to mine the Tungsten. The proposal will be processed according to the 36 CFR 228 regulations.

Illegal mining are trespassing issues. Unauthorized mining operations have the potential to cause unwanted disturbances and impacts to multiple resources. Past disturbances of illegal mining have resulted in substantial impacts to riparian-dependent ecosystems. Protection of resources and reclamation of the illegal mining are limited because Plans of Operation and rehabilitation bonds have not been issued for these unauthorized mining activities.

The creation of the Monument did not change the legal status of mineral and gem collecting for non-commercial personal use. Removal of minerals, gems, or any natural feature from NFS lands is prohibited under 36 CFR 261.9(b).

The withdrawal of mineral rights from the Monument has removed additional lands, within the Monument, from being available for mineral extraction and mining. In addition, the emphasis of management in habitats of species to preserve and protect these species, specifically listed in the Proclamation as objects of interest, will have a cumulative effect to mineral extraction and mining in the Monument. This will occur in areas where existing mining claims exist and TEPCS are located.

Alternative 2

There would be no additional effects than described above for all alternatives. This alternative simply makes plan direction and land use zones consistent with the "mineral withdrawal" from the Proclamation.

Alternative 3

Alternative 3 adds clarification that free-use rock, invertebrate fossils, and mineral collecting for non-commercial personal uses are not suitable within the Monument, as prohibited under 36 CFR 261.9(b). It also adds clarification that activities within permitted sediment placement sites are not considered mineral and energy resources exploration and development projects. These are clarifications and do not have any additional negative effects.

Alternative 3 adds several management approaches to expand enforcement of and provide education on resource damage from unauthorized mining activities, working with local, State, and Federal agencies, as well as with partners and volunteers. This is expected to better address illegal mining issues and reduce impacts from these activities compared to the other alternatives.

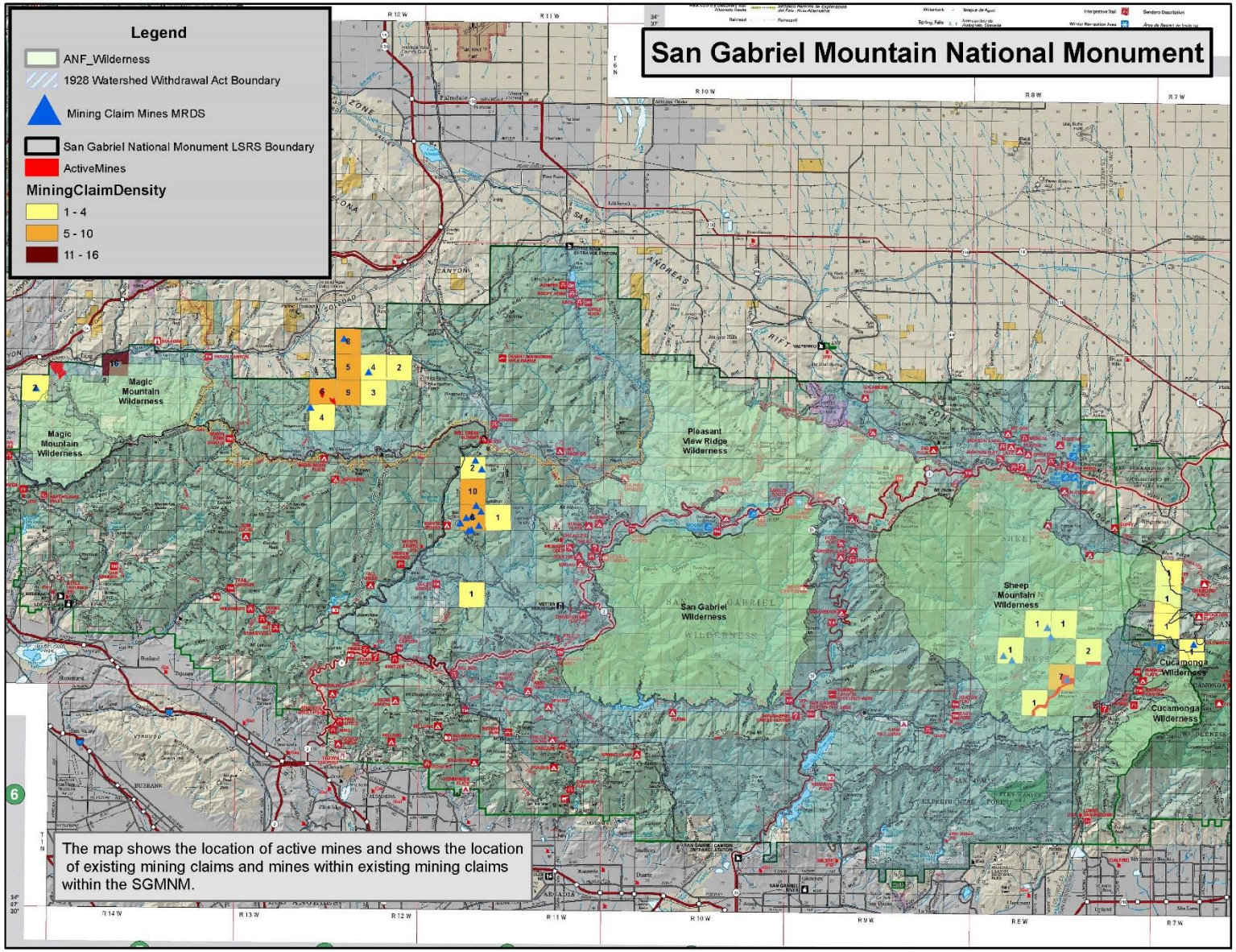


Figure 14. San Gabriel Mountains National Monument active mines and existing mining claims map

Aquatic Wildlife Species

Affected Environment

All U.S. Fish and Wildlife Service listed, proposed, or candidate species, and designated critical habitat along with all species known to occur or potentially occur in the planning area are included in table 17. The species and designated critical habitat in table 18 were evaluated for potential presence in the planning area. Species that are not known to occur or are not expected to occur in the Monument are not carried forward into the effects analysis.

All information on the habitat and distribution for each species listed in table 17 can be found in the ANF LMP Final EIS (USDA Forest Service 2005a). For a detailed description of the existing condition and species accounts for each species listed in table 18, see the ANF LMP (USDA Forest Service 2005a). Specifically, the animal species section from the ANF LMP is hereby incorporated by reference.

The Proclamation specifically identifies a number of special status aquatic species, including the following: Santa Ana sucker, arroyo chub, Santa Ana speckled dace, mountain yellow-legged frog, California red-legged frog, and arroyo toad. These species are listed in the table below, along with other special status (such as federally listed or Forest Service sensitive) aquatic species.

Table 17. Special status aquatic species

Species	Status*	Habitat/Distribution/Threats	Species present?	Critical Habitat present?	Effects analysis needed?
Actinemys marmorata Western Pond Turtle	FSS, SSC	Suitable habitat present. Species present in multiple water bodies, some of which include: East and West Forks of the San Gabriel River, Santa Clara River, upper Castaic Creek, Aliso Canyon, Pacoima Creek, Little Tujunga Creek, Big Tujunga Creek, and Alder Creek. Threat include: loss of suitable habitat such as low-elevation pool habitat, water management, invasive species, illegal collection, and siltation by multiple means (e.g., mining, OHV use, grazing, and fire).	Yes	Yes	Yes
Thamnophis hammondii Two-striped Garter Snake	FSS, SSC	Suitable habitat present. Species present in multiple streams, some of which include: Bear Gulch, Big Rock Creek, Chileno Creek, Little Rock Creek, and forks/tributaries of the San Gabriel River drainage. Recreation use may be a threat to this species.	Yes	Yes	Yes

Species	Status*	Habitat/Distribution/Threats	Species present?	Critical Habitat present?	Effects analysis needed?
Batrachoseps gabrieli San Gabriel Mountains Slender Salamander	FSS	Suitable habitat present. Species present in eastern San Gabriel Mountains, includes: Cow Canyon, Alpine Canyon and south of Alpine Canyon, Cloudburst Canyon, and San Antonio Canyon. Recreation use may be a threat.	Yes	Yes	Yes
Ensatina eschscholtzii croceater Yellow-blotched salamander (Ensatina)	FSS, SSC	Suitable habitat present. Species not known to occur in planning area. Specific threats not known in the planning area.	Unknown	Yes	Yes
Gila orcutti Arroyo Chub**	FSS, SSC	Suitable habitat present. Species present in multiple streams, some of which include: Pacoima Creek; Big Tujunga Creek; the West, East, And North forks of the San Gabriel River; Cattle Canyon; Bear Creek; San Francisquito Creek. Known threats include: habitat fragmentation, invasive species, and water management (e.g., dewatering).	Yes	Yes	Yes
Rhinichthys osculus Santa Ana Speckled Dace**	FSS, SSC	Suitable habitat present. Species present in east, north, and west forks of the San Gabriel River, including Cattle Canyon Creek, Bear Creek, and Fish Canyon. Threats include: invasive species, habitat degradation, and water management (e.g., dewatering).	Yes	Yes	Yes
Rana draytonii California red-legged frog**	FT	Suitable habitat present. No records within monument planning area, but have been found on the Angeles National Forest (e.g., San Francisquito Creek). Threat include: invasive species, recreation, water management, grazing, activities that spread chytrid fungus.	Yes	No	Yes
Rana muscosa Mountain yellow-legged frog**	FE	Suitable habitat present. Species present in multiple locations within San Gabriel Mountains: Bear Gulch, Devil's Canyon, Little Rock Creek, South Fork Big Rock Creek, and Vincent Gulch. Threats include: invasive species, chytrid fungus, loss of breeding pools, and disturbance from recreation and other land use activities.	Yes	Yes	Yes

Species	Status*	Habitat/Distribution/Threats	Species present?	Critical Habitat present?	Effects analysis needed?
Anaxyrus californicus Arroyo toad**	FE	Suitable habitat present. Species present in Castaic Creek, Big Tujunga Creek (including Mill Creek, Alder Creek), and on desert side of San Gabriel Mountains along Little Rock Creek. Threats include: water management (e.g., flow timing/quantity), invasive species, roads, camping, OHV recreation, grazing, mining, and other activities that cause siltation.	Yes.	Yes	Yes
Catostomus santaanae Santa Ana sucker**	FT	Suitable habitat present. Species present in multiple streams, including: East, North, and West Forks of the San Gabriel River, Big Tujunga Creek, and San Francisquito Creek. Threats include: habitat fragmentation, habitat degradation, water management, streamflow alterations, invasive species, mining, and recreational use including hand-built dams.	Yes	Yes	Yes
Gasterosteus aculeatus williamsoni Unarmored threespine stickleback	FE	Suitable habitat present. Species present in Santa Clara River watershed. Threats include: disease, vehicles and sedimentation, habitat disturbance, water management (e.g., diversion, extraction), toxic substances, and invasive species.	Yes	No	Yes

*FSS= Forest Service sensitive; SSC = California Department of Fish and Wildlife species of special concern: FE = federally endangered.

** Special status aquatic species specifically identified in the Proclamation of the San Gabriel Mountains National Monument.

Life history and status of aquatic analysis species is provided in the "species document" within the LMP Final EIS (USDA Forest Service 2005a) for Southern California National Forests, and is hereby incorporated by reference.

General conditions of aquatic habitat are described in the Hydrology section.

Environmental Consequences

Alternative 1

Indirect Effects

Current management would continue in accordance with the 2005ANF LMP, relevant amendments, and interim management direction. In addition, the minimization measures and conservation measures in the Ongoing Activities Biological Opinion (USDI Fish and Wildlife Service 2013) would continue to be followed.

While the ANF LMP has numerous requirements in place that provide substantial protection for aquatic resources, the two action alternatives would provide for an additional layer of protection.

For example, the expansion of CBLUZs proposed by the action alternatives would not occur under the alternative 1. In addition, there may be less effort toward education related to special status species, and the timing and magnitude of efforts to reduce congestion and parking issues. Future actions would require site-specific analysis if they are outside the purview of existing management documents (such as ANF LMP, "Ongoing Activities" Biological Opinion.).

Alternative 2

Indirect Effects

Transportation

Several planning components in alternative 2 would likely have impacts on aquatic species. Most impacts are expected to be beneficial or less than the current management (alternative 1). As described in Transportation Desired Condition #2, road density would remain stable or be reduced, and the number of vehicles over time is decreasing. Vehicle congestion and parking issues are a known issue within the Monument. For example, the East Fork San Gabriel River, which supports the federally listed Santa Ana sucker, experiences very high visitor use during warm months, with related impacts, such as modification of riparian vegetation and alteration of in-stream habitat (such as rock dams). Reduced automobile use in response to the development and implementation of a transportation plan encouraging public transit could result in a corresponding reduction in impacts from roads located near streams. In addition, reduced automobile use could result in decreased overall trash within the Monument, as visitors would be less likely to bring large amounts of personal gear, equipment, and food if they are using public transportation. Road, parking area, and trail condition improvements could reduce impacts such as sediment input, as well as reduce the risk of direct impacts to individual aquatic organisms that use the terrestrial environment (such as frogs and toads).

In addition, decommissioning and rehabilitation of high-risk and low-value roads and trails and the minimization of unauthorized facilities and roads and trails would likely have a beneficial impact on aquatic species by reducing the potential for direct effects from injury or mortality if that infrastructure overlaps with aquatic habitats. It would likely also reduce sedimentation and runoff that may contain hazardous materials such as oil and gas, into riparian and aquatic systems.

Sustainable Recreation

Increased public education and ranger presence would likely result in benefits to aquatic habitat and water quality. It is also likely that the combination of these recreational management improvements would provide an overall benefit to aquatic habitat through reduced physical impacts. Increased emphasis on public/conservation education and awareness and management of heavily impacted areas by establishing carrying capacities and strategies to manage use levels in these areas has the potential to benefit all aquatic species through a reduction in negative effects (such as sedimentation or loss of riparian vegetation). Conservation education related to wildlife may be beneficial to aquatic species and their habitat. Presumably, education informed by best available scientific information from the social sciences regarding human-caused impacts would reduce the likelihood of behavior that negatively affects aquatic habitat, some of which include: disturbance of near-stream vegetation, physical/chemical/biological contaminant introduction, sediment impacts from stream access and in-stream modifications, and introduction of nonnative plants and animals. This benefit could extend to hydrologically connected roads and trails located outside of riparian areas, but capable of impacting downstream or adjacent habitat. Recreation

and parking capacity limits could reduce visitor use in or near sensitive aquatic habitat, with a corresponding reduction in negative effects. Implementation of site and visitor use-oriented conservation education strategies should be monitored for their effectiveness in maintaining or improving the visitor experience, as well as habitat and species condition.

Biological Resources

The two biological resources desired conditions in this alternative would result in habitat conditions stabilizing or improving over time, and would include actions to be taken to preserve and protect species. These plan components should result in habitat conditions that are stable or improving over time, which would benefit aquatic species within the Monument and aid in the recovery of special status species. Monitoring in accordance to the 2012 Planning Rule should indicate how habitat conditions are changing over time. This should help managers adjust land management decisions to improve conditions for aquatic species over time. Overall, these plan components should have a net benefit to aquatic resources within the Monument compared to alternative 1.

Designated Areas and Areas Recommended for Designation

Continued conservative management of designated wilderness and recommended designated wilderness within the Monument would provide benefits to wildlife habitat conditions. No impacts to aquatic resources are anticipated from the designated areas and areas recommended for designation plan component.

Suitability of Lands

The Monument Plan establishes three new Critical Biological Land Use Zones (CBLUZ): Aliso Canyon (approximately 523 acres), and East and North Forks San Gabriel River (approximately 400 acres in combination).

As stated in the ANF LMP (part 3, S13), the following language guides management in CBLUZs: Manage Critical Biological land use zones so that activity and discretionary uses are either neutral or beneficial for the species and habitats for which the area was established. Accept short-term adverse impacts to threatened, endangered, proposed, candidate and sensitive (TEPCS) if such impacts will be compensated by the accrual of long-term benefits to habitat for TEPCS. It is important to note that any short-term adverse impacts to threatened and endangered species would occur at the project level, would be analyzed under a separate NEPA analysis, and are not a component of this analysis.

The designation of CBLUZs within the Monument would effectively limit the types of future projects and activities that could affect species by restricting certain uses that are inconsistent with this land use zone designation. As a result, changes in management associated with CBLUZ designation or expansion are expected to benefit special status species within or near the new areas (table 18). It is recognized that short-term negative impacts could occur within these areas, but long-term benefit is assumed due to increased protection of aquatic habitat through changes in suitable uses (such as no dispersed camping or no increase in road density).

Table 18. Critical Biological Land Use Zone addition/expansions changes

CBLUZ	Primary Species Protected	Description
East Fork San Gabriel River	Santa Ana sucker	CBLUZ location is from just above the Oaks day use site upstream to the private land parcel near the Bridge to Nowhere, including the Cattle Canyon tributary upstream to the upper extent of the Santa Ana designated critical habitat. This area is currently managed as a wild trout stream and this designation is retained. Existing transportation and other uses would continue.
North Fork San Gabriel River	Santa Ana sucker	CBLUZ location is from the West Fork/North Fork confluence upstream to the northern extent of the Santa Ana sucker Designated Critical Habitat, including the Bichota Canyon tributary of the North Fork San Gabriel River. Existing uses would continue.
Aliso Canyon Creek	California red-legged frog	The current West Wide Energy Corridor and the SCE transmission line corridor will be managed for utility infrastructure, including new and upgraded transmission lines. Expansion of these corridors would not be allowed without a Plan amendment. Existing road networks would be condensed where appropriate, reducing redundancy, while allowing ongoing maintenance of infrastructure. Access to utility corridors will be maintained while minimizing road infrastructure within the CBLUZ. Existing Transportation and other uses would continue.

Cumulative Effects

The combination of indirect effects identified in the above aquatic analysis with the effects of past, present, and reasonably foreseeable future actions (see appendix B available in the project record), is expected to reduce the overall cumulative effects, as compared to current management (no action). For example, the beneficial effects from an increased emphasis on aquatic habitat and species protections (such as vehicle restrictions with CBLUZ expansion), are likely to reduce the negative effects of some ongoing activities, such as motorized vehicle use or road construction near streams.

Alternative 3

Alternative 3 adds no indirect effects to aquatic species from plan components developed for cultural resources and designated areas. The indirect effects are the same as alternative 2 except for the following:

Indirect Effects

Transportation

The impacts of this alternative are expected to be similar to alternative 2, with the exception that the Transportation Desired Condition #8 emphasizes the reduction of unauthorized roads and trails. By selecting environmentally optimized roads and trails for recreation, both environmental harm and potential conflict between motorized and non-motorized recreation can be minimized (Shilling et al. 2012).

Sustainable Recreation

Effects are expected to be nearly identical to alternative 2 with two minor differences. Goal 1 under alternative 3 provides more focus on improving recreation quality and avoiding impacts on special status and aquatic species in concentrated use areas. This would be done by improving the built environment and managing and directing use, where appropriate. Over time, this should reduce the impact on special status species and aquatic habitats. In addition, there is a possibility of a slight reduction in recreation-related effects due to an increase in CBLUZ acreage. For example, the area open to dispersed camping would be reduced, which could produce a corresponding reduction in camping-related effects (such as near-stream vegetation disturbance, sedimentation, and pollutants) to aquatic species and their habitat.

Visitor Experience, Information, and Education

Alternative 3 emphasizes visitor experience, information, and education. In the Draft EA Proposed Action, some of this emphasis was included in sustainable recreation plan components. No adverse impacts to aquatic species are anticipated from the visitor experience, information, and education plan components. In general, these efforts are anticipated to have a positive benefit for aquatic species.

Heritage Resources

No impacts to aquatic resources are anticipated from the heritage resources plan components.

Biological Resources

Impacts from the plan components in alternative 3 are similar to alternative 2 with minor differences. Special status species are afforded an additional plan component that aims to protect and preserve their habitats. Many of the special status species within the Monument are aquatic species and would benefit from this approach.

This alternative also relies on the ANF LMP monitoring strategy to inform how habitat conditions are trending over time. However, it goes farther than alternative 2 by stating that when monitoring indicates that habitat conditions are degrading, managers will take corrective actions to improve habitat conditions. This would help future managers take necessary action to improve or stabilize habitat conditions for aquatic species.

Mineral Resources

Alternative 3 includes plan components that would focus on addressing illegal mining within the Monument. It provides managers with guidance on coordinating with other local, State and Federal agencies to address illegal mining. It also provides direction to establish a method to identify when and where illegal mining is occurring and implement public education programs about the impacts of illegal mining. This should help managers focus on developing partnerships with appropriate regulatory agencies to address illegal mining within the Monument. The direct and indirect effects from illegal mining activities are numerous from direct habitat destruction to indirectly polluting aquatic habitat and water sources. Legal mining activities on public lands require a plan of operations, which includes requirements for environmental protection (36 CFR 228.8). If these plan components result in reduced illegal mining, there should be a net decrease in impacts on aquatic species.

Designated Areas and Areas Recommended for Designation

Continued conservative management of designated wilderness and recommended designated wilderness within the Monument would provide benefits to aquatic species and habitat conditions. No impacts to aquatic species are anticipated from the designated areas and areas recommended for designation plan component.

Suitability of Lands

Alternative 3 changes the size and spatial extent of CBLUZs, as compared to alternative 2. Table 19 displays the additions and changes.

Changes in management associated with CBLUZ designation or expansion are expected to benefit special status species within or near the new areas (table 19). It is recognized that short-term negative impacts (such as road decommissioning) could occur within these areas, but long-term benefit is assumed because of the increased protection of aquatic habitat through changes in suitable uses (such as no dispersed camping and no increase in road density). This should result in a net increase in protection and preservation of wildlife species found in or near these CBLUZs, when compared to the no-action alternative.

Table 19. Critical Biological Land Use Zone additions/expansions (acres by alternative)

CBLUZ	Primary Species Protected	No Action (current condition)	Alternative 2	Alternative 3
East Fork and North Fork San Gabriel River	Santa Ana sucker	0	401	399
West Fork San Gabriel River	Santa Ana sucker	506	506	694
Aliso Canyon Creek	California red-legged frog	0	548	523

Threatened, Endangered, Proposed, and Candidate Species Determination

The actions proposed for this Monument Plan LMP amendment are currently expected to be a net positive for federally listed species within the Monument. The LMP components for alternative 3 would not directly affect any designated critical habitat or any federally listed species. The indirect effects are expected to be positive over the long term and consistent with the following Biological Assessment (and related Biological Opinion) from 2012: “Forest Service Ongoing Activities Associated with Recreation, Roads/Trails, and Administrative Sites on the Angeles National Forest” (USDA Forest Service 2012). An amendment/addendum to the existing Land Management Plan Biological Assessment/Opinion is being produced for this plan with additional corresponding consultation with the Fish and Wildlife Service.

The following determination applies to all federally listed species present within the planning area and their critical habitat (where applicable): “**May affect, not likely to adversely affect**.”

Overall Rationale for Determinations

- This decision is programmatic, and does not authorize any new activities.

- Even with measures taken to minimize effects, future proposed activities at project-level planning under the direction of the new Monument Plan could impact habitat characteristics, species, or their designated critical habitat.
- The plan components under this alternative are expected to be incrementally beneficial when compared to alternative 1.
- The existing ANF LMP and the proposed Monument Plan both encourage and emphasize maintenance or improvement of TEPCS habitat.
- Continuing management in alignment with the unchanged programmatic design features in the ANF LMP would likely prevent or minimize impacts to these species.
- This Monument Plan is consistent with the Ongoing Activities Biological Opinion (USDI Fish and Wildlife Service 2013) and the Biological Assessment (and related Biological Opinion) for the Revised Management Plans (USDA Forest Service 2012). The Monument Plan does not change the determinations, or constitute new information that results in effects beyond what was considered in the previous consultations.

Federally Listed Species and Designated Critical Habitat

The following determination applies to all federally listed species present within the planning area and their critical habitat (where applicable): "**May affect, not likely to adversely affect.**"

Forest Service Region 5 Sensitive Species (Alternatives 2 and 3)

All references for this section are from the ANF LMP (USDA Forest Service 2005a). This monument plan is a programmatic-level environmental assessment with no proposed ground-disturbing activities, and therefore, there are no direct impacts to any Forest Service Region 5 Sensitive Species (table 17) as a result of implementing the proposed action. However, it is anticipated that the plan direction provided in alternatives 2 and 3 would provide more protection and preservation of aquatic species than alternative 1. Any potential direct effects would be due to any future proposed activities under the direction of the new Monument Plan. The impacts of these future activities at project-level planning and their effects would be analyzed in a separate NEPA analysis process.

Although planning activities would not directly affect any of the Forest Service Region 5 Sensitive Species outlined in table 23, future proposed activities under the direction of the new Monument Plan could impact individuals and suitable habitat characteristics. Therefore, the following determination applies to sensitive species within the planning area: "**May affect individuals, but not likely to result in a trend toward Federal listing or loss of viability**."

Table 20. Summary of effects determination (alternatives 2 and 3)

Scientific Name Common Name	Status	Determination	Rationale
Actinemys marmorata Western Pond Turtle	*FSS, SSC*	May affect individuals, not likely to result in trend toward Federal listing or loss of viability	Potential impacts from transportation-related increases in visitation. Long-term benefit expected due to increased emphasis on aquatic species/habitat maintenance and improvement, including addition/expansion of CBLUZs.

Scientific Name Common Name	Status	Determination	Rationale
Thamnophis hammondii Two-striped Garter Snake	FSS, SSC	May affect individuals, not likely to result in trend toward Federal listing or loss of viability	
Batrachoseps gabrieli San Gabriel Mountains Slender Salamander	FSS	May affect individuals, not likely to result in trend toward Federal listing or loss of viability	
Ensatina eschscholtzii croceater Yellow-blotched salamander (Ensatina)	FSS, SSC	May affect individuals, not likely to result in trend toward Federal listing or loss of viability	
Gila orcutti Arroyo Chub**	FSS, SSC	May affect individuals, not likely to result in trend toward Federal listing or loss of viability	
Rhinichthys osculus Santa Ana Speckled Dace**	FSS, SSC	May affect individuals, not likely to result in trend toward Federal listing or loss of viability	
Rana draytonii California red-legged frog**	FT	May affect, not likely to adversely affect.	Long-term benefit expected due to increased emphasis on aquatic species/habitat maintenance and improvement, including addition/expansion of CBLUZs (e.g., Aliso Canyon).
Rana muscosa Mountain yellow-legged frog**	FE	May affect, not likely to adversely affect.	Long-term benefit expected due to increased emphasis on aquatic species/habitat maintenance and improvement, including addition/expansion of CBLUZs.
Anaxyrus californicus Arroyo toad**	FE	May affect, not likely to adversely affect.	Long-term benefit expected due to increased emphasis on aquatic species/habitat maintenance and improvement, including addition/expansion of CBLUZs.
Catostomus santaanae Santa Ana sucker**	FT	May affect, not likely to adversely affect.	Long-term benefit expected due to increased emphasis on aquatic species/habitat maintenance and improvement, including addition/expansion of CBLUZs (e.g., East and North Forks San Gabriel River).

Scientific Name Common Name	Status	Determination	Rationale
Gasterosteus aculeatus williamsoni Unarmored threespine stickleback	FE	May affect, not likely to adversely affect.	Long-term benefit expected due to increased emphasis on aquatic species/habitat maintenance and improvement, including addition/expansion of CBLUZs.

*FSS= Forest Service sensitive; SSC = California Department of Fish and Wildlife species of special concern: FE = federally endangered.

** Special status aquatic species specifically identified in the Proclamation of the San Gabriel Mountains National Monument.

Terrestrial Wildlife Species

Affected Environment

This analysis evaluates and discloses the potential environmental consequences on the wildlife resource that may result with the adoption of the Monument Plan.

All U.S Fish and Wildlife Service listed, proposed, or candidate species and designated critical habitat, along with all Forest Service sensitive species known to occur in the planning area or have the potential to occur in the area are included in table 21. The species and designated critical habitat in table 21 were evaluated for potential presence in the planning area. Species that are not known to occur or are not expected to occur in the Monument are not carried forward into the effects analysis.

All of the information on the habitat and distribution for each species listed in table 21 can be found in the ANF LMP Final EIS (USDA Forest Service 2005a). For a detailed description of the existing condition and species accounts for each species listed in table 21, see the ANF LMP (USDA Forest Service 2005a). Specifically, the animal species section from the ANF LMP is hereby incorporated by reference.

Table 21. Terrestrial wildlife species

Scientific Name Common Name	Status*	Habitat/Distribution/Threats	Species/ Habitat present?	Critical Habitat present?	Effects analysis needed?
Gymnogyps californianus California condor	FE	California condor nesting sites are typically located in chaparral, conifer forest, or oak woodland communities. They typically nest on bare ground in caves and crevices, behind rock slabs, or on large ledges or potholes on high sandstone cliffs in isolated, extremely steep rugged areas. Condors have been observed sporadically within the Monument boundary. No critical habitat for this species occurs within the Monument boundary.	Yes	No	Yes
Vireo bellii pusillus least Bell's vireo	FE	Least Bell's vireo is an obligate low-elevation riparian species inhabiting dens, low-elevation, willow-dominated riparian habitats with lush understory vegetation in the immediate vicinity of watercourse. Nesting least Bell's vireos have been confirmed nesting in San Francisquito Canyon and have been sporadically sighted during the breeding season on Big Tujunga Creek, and the upper Santa Clara River on the AANF, and they have been observed breeding within the Monument planning area in Little Rock Creek, just below the Little Rock Dam. No critical habitat for this species occurs within the Monument boundary.	Yes	No	Yes
Empidonax traillii extimus Southwestern willow flycatcher	FE	The southwestern willow flycatcher is a riparian obligate during the breeding season, occurring primarily in densely vegetated riparian habitats and preferring streamside associations of cottonwood, willow, alder, and other riparian vegetation. They can also occur in woodland edges, meadows, and brushy fields. There is one unconfirmed record for the southwestern willow flycatcher on the ANF and one record of an individual building a nest just north of the Forest in Soledad Canyon. Approximately 12.5 acres of designated critical habitat for this species exists within the Monument boundary in San Gabriel Canyon in the San Gabriel River drainage.	Yes	Yes	Yes
Polioptila californica californica Coastal California gnatcatcher	FT	Coastal California gnatcatchers are obligate, permanent residents of coastal sage scrub. The species generally occurs at elevations below 3,000 feet. Although the plant species composition varies among sites occupied by coastal California gnatcatchers, California sagebrush (*Artemesia californica*) and California buckwheat (*Eriogonum fasciculatum*) are usually dominant or codominant plants. This species is suspected to occur in the lower foothill areas of the San Gabriel Mountains on the ANF, but no positive sightings have been observed. No critical habitat for this species occurs within the Monument boundary.	Yes	No	Yes

Scientific Name Common Name	Status*	Habitat/Distribution/Threats	Species/ Habitat present?	Critical Habitat present?	Effects analysis needed?
Coccyzus americanus occidentalis Western yellow-billed cuckoo	FT	Yellow-billed cuckoos breed in broad, well-developed, low-elevation riparian woodlands dominated by cottonwood (*Populus* spp.) and willow (*Salix* ssp.). However, studies in the Lower Colorado River Valley and throughout the species' range have shown that smaller willow-cottonwood stands (<99 acres [40 hectares]) have low rates of occupancy, whereas large sites (>198 acres [80 hectares]) have the highest occupancy rates. Elevations where yellow-billed cuckoos are still present in California are less than 2,900 feet; although historic habitat in Owen's Valley went up to 4,600 feet. Although yellow-billed cuckoo have been observed in the breeding season at various locations near the central and southern California coast, it has not been observed within the Monument boundary. It is considered in this analysis, however, due to the existing habitat components within the Monument that could support breeding populations. No critical habitat for this species occurs within the Monument boundary.	Yes	No	Yes
Gopherus agassizii Desert tortoise	FT	In California, desert tortoise occurs primarily in the creosote, shadscale, and Joshua tree/Mohave yucca series of the Mojave Desert scrub and the lower Colorado River valley subdivision of Sonoran desert scrub. Optimal habit has been characterized as creosote brush scrub in which annual precipitation is 2 to 8 inches (5 to 20 centimeters), diversity of perennial plants is relatively high, and production of ephemerals is high. The desert tortoise occurs in very low numbers along the northern edge of the San Gabriel and San Bernardino Mountains. However, most of the Monument boundary near the desert's edge is at higher elevations and at steeper slopes than desert tortoises typically inhabit, and, it is possible that some of the few individuals observed or collected on or immediately adjacent to the forests were released from captivity. Desert tortoises are being analyzed due to their potential occurrence within and adjacent to the Monument.	Yes	No	Yes

Scientific Name Common Name	Status*	Habitat/Distribution/Threats	Species/ Habitat present?	Critical Habitat present?	Effects analysis needed?
Accipiter gentilis Northern goshawk	FSS	Northern goshawks occur in a variety of coniferous forest communities in the western United States, primarily in ponderosa pine (*Pinus ponderosa*), Jeffrey pine (*P. jeffereyi*), mixed conifer, white fir (*Abies concolor*), and lodgepole pine (*P. contorta*). Nest stands are typically composed of large trees that have high canopy closure, are near the bottom of moderate hill slopes, and have a sparse understory. When foraging, northern goshawks use a wider range of forest types and conditions, but most populations still exhibit a preference for high canopy closure and a high density of larger trees. No breeding populations have been observed within the Monument boundary, however, due to the existing habitat components within the Monument that could support breeding populations, this species is being analyzed.	Yes	N/A	Yes
Haliaeetus leucocephalus Bald eagle	FSS	Bald eagles breed in a variety of habitats in California, including offshore islands; coastal cliffs and pinnacles; and along coastal rivers, interior valley streams and wetlands, and mountain lakes and rivers. Nest trees include a variety of hardwoods as well as conifers. Most eagle nesting territories are now found in montane habitat in ponderosa pine and mixed conifer forests. Bald eagles are known to nest and breed in San Gabriel Canyon and have been observed within the Monument boundary. A pair of bald eagles successfully fledged young in 2016 and 2017. Bald eagles also use the area for roosting dispersal, and foraging.	Yes	N/A	Yes
Strix occidentalis occidentalis California spotted owl	FSS	The California spotted owl is a forest-dwelling owl that is found throughout most forests and deep canyons of the western United States. In southern California, California spotted owls occur in four general but distinct forest types: riparian/hardwood forests, live oak/bigcone Douglas-fir forest, mixed conifer forest, and redwood/California laurel forests. California spotted owls occur predominantly on NFS lands in all of the major mountain ranges in southern California including within the Monument boundary.	Yes	N/A	Yes
Vireo vicinior Gray vireo	FSS	Gray vireos tend to breed in two general habitat types: montane chaparral dominated by chamise (*Adenostoma fasciculatum*, redshank (*A. sparsifolium*, ceanothus (*Ceanothus* spp.); and in pinyon-juniper woodlands. Gray vireos were detected at several locations in the northern San Gabriel Mountains. There are no known or confirmed locations within the Monument boundary.	Yes	N/A	Yes

Scientific Name Common Name	Status*	Habitat/Distribution/Threats	Species/ Habitat present?	Critical Habitat present?	Effects analysis needed?
Antrozous pallidus Pallid bat	FSS	Pallid bats are found in a variety of habitats, including rocky canyons, open farmland, scattered desert scrub, grassland, shrubland, woodland, and mixed conifer forests. Pallid bats appear to be more prevalent within edges, open stands, particularly hardwoods, and open areas without trees. Pallid bats roost in rock crevices, mines, caves, tree hollows, and a variety of anthropogenic structures. Pallid bats have been observed within the Monument boundary.	Yes	N/A	Yes
Corynorhinus townsendii Townsend's big-eared bat	FSS	The distribution of this species is strongly correlated with the availability of suitable caves and cave analogues (mines, rock shelters, tunnels, buildings) for roosting. Population centers occur in areas dominated by exposed, cavity-forming rock and/or historic mining areas. Abandoned mines are particularly important as roost sties in areas where there are not suitable caves. Habitat for this species occurs within the Monument boundary. An individual was recorded within the Big Tujunga watershed, within the Monument boundary.	Yes	N/A	Yes
Myotis thysanodes Fringed myotis	FSS	Fringed myotis occupies a wide variety of habitats from low desert scrub to high-elevation coniferous forest. Roost sites are essential for metabolic economy, for juvenile growth, and as night roosts to consume prey. They roost in crevices in a variety of locations such as caves, buildings, mineshafts, cliff faces, trees, and bridges for maternity and night roosts. Fringed myotis bats have been observed within the Monument boundary.	Yes	N/A	Yes
Ovis canadensis nelsoni Nelson's bighorn sheep	FSS	Nelson's bighorn sheep inhabit dry, relatively barren, desert mountain ranges. Escape terrain is identified as the single most important habitat component for bighorn sheep in these mountains. Escape terrain is defined as steep slopes of 80 percent or steeper, with abundant rock outcrops and sparse shrub cover. Nelson's bighorn sheep in the San Gabriel Mountains occur at elevations of 3,000 to 10,064 feet [914 to 3,068 meters], to the summit of Mount San Antonio. During the winter and spring, Nelson's bighorn sheep occur primarily in escarpment chaparral in the lower canyons at 3,000 to 6,000 feet (914 to 1,829 meters). Bighorn sheep use range habitat throughout the Sheep Mountain and San Gabriel Wilderness areas, including South Fork Campground, South Fork Big Rock Creek, the Williamson Rock area, the northern end of San Gabriel Canyon, and various locations within the Monument boundary.	Yes	N/A	Yes

Scientific Name Common Name	Status*	Habitat/Distribution/Threats	Species/ Habitat present?	Critical Habitat present?	Effects analysis needed?
Perognathus alticola inexpectatus Tehachapi white-eared pocket mouse	FSS	Habitat associations for the Tehachapi white-eared pocket mouse have not been well-defined. The species has been collected in arid annual grassland, desert scrub communities, Joshua and pinyon pine woodland, sagebrush/rabbitbrush scrub, a grain field, and in open desert-side pine forests at elevations of 3,500 to 6,000 feet (1,070 to 1,830 meters). The upper slopes of the San Gabriel Mountain Range has areas likely to support this species. This species is not known to occur within the Monument boundary.	Yes	N/A	Yes
Anniella pulchra California legless lizard	FSS	The California legless lizard is a burrowing species associated with sandy or loose loamy soils under the sparse vegetation of beaches, chaparral, or pine-oak woodland; or under sycamores, cottonwoods, or oaks growing along streams. The species is also found under surface material such as logs, rocks, and leaf litter. The legless lizard can be found within the Monument planning area up to an elevational limit of approximately 4,900 feet (1,500 meters).	Yes	N/A	Yes
Diadophis punctatus modestus San Bernardino ringneck snake	FSS	San Bernardino ringneck snakes are found in a wide variety of habitats from sea level to 6,400 feet (1,950 meters). Distribution information is spotty, but it appears that these snakes are more common at low-elevation sites that is, below 3,000 feet [915 meters]). The apparent importance of tree frogs and slender salamanders in their diet suggest they may seek out and require moist microclimates. This species and its habitat occurs within the Monument boundary.	Yes	N/A	Yes
Lampropeltis zonata parvirubra San Bernardino mountain kingsnake	FSS	The San Bernardino mountain kingsnake is typically found in sunlit canyons with rocky outcrops. At lower elevations, it is associated with chaparral species and bigcone spruce; at higher elevations it is associated with black oak, incense cedar, Jeffrey pine, and ponderosa pine. Partially shaded rock outcrops for refugia and basking sites appear to be an important microhabitat element. Down logs may also be important. Suitable habitat for this subspecies occurs within the Monument boundary. This species has been observed in various locations within the Monument.	Yes	N/A	Yes

Scientific Name Common Name	Status*	Habitat/Distribution/Threats	Species/ Habitat present?	Critical Habitat present?	Effects analysis needed?
Lichanura orcutti Coastal rosy boa	FSS	The coastal rosy boa inhabits coastal sage scrub and chaparral-dominated communities that contain large rocks and boulders for cover and refuge. Vegetation types associated with these habitats include California sage, buckwheat, chamise chaparral, and Ceanothus/manzanita chaparral. This species is often found near permanent or intermittent streams. Suitable habitat for this species occurs within the Monument boundary. This species has been observed in various locations within the Monument.	Yes	N/A	Yes
Plebejus saepiolus aureolus San Gabriel Mountains blue butterfly	FSS	The San Gabriel Mountains blue butterfly is associated with the clover *Trifolium wormskioldii*. This clover grows primarily in moist to marshy meadows. This species has been collected in the immediate vicinity of Big Pines within the Monument boundary.	Yes	N/A	Yes
Callophrys mossii hidakupa San Gabriel Mountains elfin	FSS	The San Gabriel Mountain elfin butterfly appears to occur primarily on steep north-facing slopes. The larval host plan is a stonecrop (*Sedum spathulifolium*) with a concentrated distribution that is limited in extent within these mountains. Over its entire range, *Sedium spathulifolium* occurs on rock outcrops, often in shade from 170 to 8,200 feet (50 to 2,500 meters) in elevation. Reported locations within the Monument boundary are in the San Antonino Canyon watershed and the Big Tujunga watershed near Hidden Springs.	Yes	N/A	Yes
Plebulina emigdionis San Emigdio blue butterfly	FSS	The San Emigdio blue butterfly is closely associated with the widespread saltbush *Atriplex canescens* in alkali sink areas. However, the species distribution is much more localized that that of the host plant, suggesting that other factors may determine habitat suitability. The general habitat is dry rivercourses, intermittent streamsides, and adjacent flats. This species is not known to occur within the Monument boundary.	Yes	N/A	Yes
American peregrine falcon *Falco peregrinus anatum*	**	The range of the American peregrine falcon includes most of California during migrations and in winter. Nesting sites are typically on ledges of large cliff faces. Nesting and wintering habitats are varied, including wetlands, woodlands, and other forested habitats. This species has been found within the Monument near San Gabriel Reservoir and Williamson Rock.	Yes	N/A	Yes
Song sparrow *Melospiza melodia*	**	A common resident of most of California and within the Monument boundary. At all seasons, prefers riparian, fresh or saline emergent wetland, and wet meadow habitats. Breeds in riparian thickets of willows, other shrubs, vines, tall herbs, and in fresh or saline emergent vegetation. Usually avoids densely wooded habitats, except along forest edges.	Yes	N/A	Yes

Scientific Name Common Name	Status*	Habitat/Distribution/Threats	Species/ Habitat present?	Critical Habitat present?	Effects analysis needed?
Mule deer *Odocoileus hemionus*	**	Common to abundant, yearlong resident or elevational migrant with a widespread distribution throughout most of California and within the Monument boundary. Occur in early to intermediate successional stages of most forest, woodland and brush habitats. Prefer a mosaic of various-aged vegetation that provides woody cover, meadow and shrubby openings, and free water.	Yes	N/A	Yes
Mountain lion *Puma concolor*	**	Widespread, uncommon permanent resident, ranging from sea level to alpine meadows. Found in nearly all habitats, most abundant in riparian areas, and brushy stages of most habitats.	Yes	N/A	Yes
Migratory birds	**	The Monument is located along the Pacific Flyway and, with its diverse ecosystems, provides habitat to many resident and migratory birds.	Yes	N/A	Yes
Pollinators	**	Multiple pollinators are present within the Monument.	Yes	N/A	Yes

* FE = federally endangered; FT = federally threatened; FSS= Forest Service sensitive.

** These species were specifically identified in the San Gabriel Mountains National Monument Proclamation, no Federal protection is provided to these species, but they are protected under components of the ANF LMP and this plan.

Environmental Consequences

Alternative 1

Current management would continue in accordance with the 2005 ANF LMP, relevant amendments, and interim management direction. In addition, the minimization measures and conservation measures in the Ongoing Activities Biological Opinion (USDI Fish and Wildlife Service 2013) would continue to be followed.

Alternative 2

Indirect Effects

Transportation

Long linear features on the landscape, such as roads and trails, have impacts on wildlife and wildlife habitat. Vehicular traffic is a source of noise and other stimuli with the potential for disturbing wildlife along any type of roads or trails. Although sounds of vehicles are not the loudest human-caused sounds, in wildlife habitats they are emitted more frequently than other high-intensity sounds (Brattstrom and Bondello 1983). Noise, lights, and other disturbances associated with vehicles also have the potential for eliciting stress responses from a broad spectrum of wildlife taxa. Studies have shown that ungulates, birds, and reptiles experience accelerated heart rates and metabolic function during disturbance events; in turn, animals may be displaced and experience reproductive failure and reduced survivorship. Roads are sources of direct mortality that threaten wildlife populations. Indirect effects on wildlife include reduced access to habitat due to road avoidance. Transportation infrastructure also undermines ecological processes through the fragmentation of wildlife populations, restriction of wildlife movements, and the disruption of gene flow and meta-population dynamics.

Several planning components in alternative 2 would likely have impacts on wildlife resources. Most impacts are expected to be beneficial or result in less negative impacts than the current management (no action). Under this alternative, road density would remain stable or be reduced and the number of vehicles over time would decrease. Specifically, Desired Condition #2 calls for stabilized or reduced road density within the Monument and could lead to a reduced impacts to wildlife by reducing road infrastructure and lowering the number of vehicles.

An overall reduction in the number of vehicles over time would also reduce the impacts to wildlife described above. Management Approaches #3 and #4 could result in decommissioning roads and fewer unauthorized roads and trails within the Monument, which would also reduce noise disturbance and displacement related to road use. Alternative 2, when compared to alternative 1, would emphasize reducing the number of vehicles and associated congestion, and decommissioning high-risk roads.

Sustainable Recreation

Recreation can affect wildlife in a variety of ways, including direct and indirect mortality, lowered productivity, reduced use of habitat/preferred habitat, and aberrant behavior or stress that, in turn, results in reduced reproductive or survival rates. The type of impact depends on the frequency, intensity, location, timing, predictability, and type of use. While there is wide recognition of the impacts on wildlife from extractive uses (such as hunting and trapping) and high-impact recreation (such as OHV use), there is increasing evidence that even the quieter, non-consumptive forms of recreation (such as day-hiking, bird watching) may impact species to a greater extent than previously understood.

Desired Conditions 1 through 6 highlight an increased focus on conservation education within the Monument, which is expected to decrease impacts on wildlife species. Visitor capacity limits could reduce visitor use in or near sensitive habitats, with a corresponding reduction in negative effects. Implementation

of site and visitor use oriented conservation education strategies should be monitored for their effectiveness in maintaining or improving the visitor experience as well as habitat and species condition.

Heritage Resources

No impacts to terrestrial wildlife are anticipated from the heritage resources plan components.

Biological Resources

Monitoring in accordance with the 2012 Planning Rule should indicate how habitat conditions are changing over time. This should help managers adjust land management decisions to improve conditions for wildlife species over time. In addition, preservation and protection of the wildlife species are included in this alternative, and will allow managers to prioritize the protection of these species during plan implementation. Overall, these plan components should have a net benefit to wildlife resources within the Monument, compared to the no-action alternative.

Mineral Resources

Beneficial effects from the withdrawal of Monument lands from Federal mining laws (with the exception of existing rights) can be considered to have already taken effect when the Monument was established. Valid mining activities with existing rights may continue to operate, but no new oil, gas, or locatable mineral resource exploration and development is allowed. This has removed the threat of new legal mining activities negatively affecting special status wildlife species or habitats.

Designated Areas

No impacts to wildlife resources are anticipated from the Designated Areas plan components.

Suitability of Lands

The Monument Plan establishes or expands three Critical Biological Land Use Zones (CBLUZs): Aliso Canyon (approximately 523 acres), and East and North Forks San Gabriel River (approximately 400 acres in combination). See analysis in the aquatics wildlife section.

Cumulative Effects

There are no additive cumulative effects anticipated as a result of the plan components included in alternative 2.

Alternative 3

The indirect effects as identified in the alternative 2 would apply to alternative 3 and are not repeated here. Addition of the new components for cultural resources and designated areas would not impact terrestrial wildlife species or their habitat.

Indirect Effects

Transportation

The impacts of this alternative are expected to be very similar to alternative 2 with the exception that the Transportation Desired Condition #8 emphasizes the reduction of unauthorized roads and trails. By selecting environmentally optimized roads and trails for recreation, both environmental harm and potential conflict between motorized and non-motorized recreation can be minimized (Shilling et al. 2012). This should help minimize the impact of unauthorized OHV use on wildlife habitats within the Monument.

Visitor Experience, Information, and Environmental Education

Alternative 3 emphasizes visitor experience, information, and education. No adverse impacts to terrestrial wildlife are anticipated from the visitor experience, information, and environmental education plan components. In general, these efforts are anticipated to have a positive benefit for wildlife species.

Heritage Resources

No impacts to terrestrial wildlife are anticipated from the heritage resources plan components.

Biological Resources

Although there are a few differences, impacts from the plan components in alternative 3 are similar to alternative 2. Additionally, special status species are afforded an additional plan component that aims to protect and preserve their habitats.

This alternative also relies on the ANF LMP monitoring strategy to inform how habitat conditions are trending over time. However, it goes further than alternative 2 by stating that when monitoring indicates habitat conditions are degrading, managers would take corrective actions to improve habitat conditions. This would facilitate managers taking necessary action to improve or stabilize habitat conditions.

Mineral Resources

This alternative includes plan components that would focus on addressing unauthorized mining and collecting within the Monument. The emphasis and coordination to provide education on the impacts of resource damage from unauthorized mining could benefit wildlife habitats.

Designated Areas and Areas Recommended for Designation

Continued conservative management of designated wilderness and recommended designated wilderness within the Monument would provide benefits to wildlife habitat conditions. No impacts to terrestrial wildlife are anticipated from the designated areas and areas recommended for designation plan component.

Suitability of Lands

Alternative 3 changes the size and spatial extent of CBLUZs as compared to alternative 2. Table 19 in the aquatics section has the details with acreage.

Changes in management associated with CBLUZ designation or expansion are expected to benefit special status species and wildlife species within or near the areas. This should result in a net increase in protection and preservation for wildlife species found in or near these CBLUZs when compared to alternative 1.

Cumulative Effects

There are no additive cumulative effects anticipated as a result of the plan components included in alternative 3.

Threatened, Endangered, Proposed, and Candidate Species Determination

This Monument Plan as the Land Management Plan amendment is consistent with the Ongoing Activities Biological Opinion (USDI Fish and Wildlife Service 2013) and the Biological Assessment (and related Biological Opinion) for the Revised Management Plans (USDA Forest Service 2012). The Monument Monument Plan does not change the determinations, or constitute new information that results in effects beyond what was considered in the previous consultations.

Alternatives 2 and 3 are expected to be a net positive for federally listed species within the Monument. The plan components would not directly affect any designated critical habitat or any federally listed species. The indirect effects are expected to be positive over the long term and consistent with the following Biological

Assessment (and related Biological Opinion) from 2012: "Forest Service Ongoing Activities Associated with Recreation, Roads/Trails, and Administrative Sites on the Angeles National Forest" (USDA Forest Service 2012). An amendment/addendum to the existing Land Management Plan Biological Assessment/Opinion is being produced for this plan with additional corresponding consultation with the Fish and Wildlife Service.

The following determination applies to all federally listed species present within the planning area and their critical habitat (where applicable): "**May affect, not likely to adversely affect**."

Table 22. Summary of effects determination (alternatives 2 and 3)

Scientific Name Common Name	Status	Determination	Species-specific Rationale
Gymnogypus californianus California condor	Endangered	May affect, not likely to adversely affect	California condors are wide-ranging species and the entire Monument boundary is within the range of the species. Condors are known to use areas within the Monument boundary and the planning area is considered suitable habitat. Planning activities will not directly affect the California condor. Long-term benefits are expected due to increased emphasis on species or habitat maintenance and improvement, including addition or expansion of CBLUZs.
Vireo bellii pusillus Least Bell's vireo	Endangered	May affect, not likely to adversely affect	Least Bell's vireos have been observed nesting at Little Rock Creek, just below the dam. Suitable habitat also occurs within the planning area, and populations are known to use areas adjacent to the Monument boundary. Planning activities will not directly affect the least Bell's vireo. Long-term benefits are expected due to increased emphasis on species or habitat maintenance and improvement, including addition or expansion of CBLUZs
Empidonax traillii extimus Southwestern willow flycatcher	Endangered	May affect, not likely to adversely affect	There are no verified records of nesting southwestern willow flycatchers on the ANF. However, suitable nesting habitat is present at various locations throughout the ANF. Approximately 12.5 acres of designated critical habitat for this species occurs in the southern portion of the planning area at the mouth of San Gabriel Canyon. Planning activities will not directly affect the southwestern willow flycatcher or its designated critical habitat. Long-term benefits are expected due to increased emphasis on species or habitat maintenance and improvement, including addition or expansion of CBLUZs.
Polioptila californica californica Coastal California gnatcatcher	Threatened	May affect, not likely to adversely affect	Although no coastal California gnatcatchers have been observed within the Monument boundary, suitable habitat does exist within the planning area. Planning activities will not directly affect the species. Long-term benefits are expected due to increased emphasis on species or habitat maintenance and improvement, including addition or expansion of CBLUZs.
Coccyzus americanus occidentalis Western yellow-billed cuckoo	Threatened	May affect, not likely to adversely affect	Although no western yellow-billed cuckoos have been observed within the Monument boundary, suitable habitat does exist within the planning area. Planning activities will not directly affect the species. Long-term benefits are expected due to increased emphasis on species or habitat maintenance and improvement, including addition or expansion of CBLUZs.

Scientific Name Common Name	Status	Determination	Species-specific Rationale
Gopherus agassizii Desert tortoise	Threatened	No Effect	Although no desert tortoises have been observed within the Monument boundary, suitable habitat does exist within the northern end of the planning area. Future planning activities are not anticipated to impact species or existing suitable habitat characteristics.

Overall Rationale for Determinations

- This decision is programmatic, and does not authorize any new activities.
- Even with measures taken to minimize effects, future proposed activities at project-level planning under the direction of the new Monument Plan could impact habitat characteristics, species or their designated critical habitat.
- The plan components under this alternative are expected to be incrementally beneficial when compared to alternative 1.
- The existing ANF LMP and the proposed Monument Plan both encourage and emphasize maintenance or improvement of TEPCS habitat.
- Continuing management in alignment with the unchanged programmatic design features in the ANF LMP would likely prevent or minimize impacts to these species.
- This Monument Plan is consistent with the Ongoing Activities Biological Opinion (USDI Fish and Wildlife Service 2013) and the Biological Assessment (and related Biological Opinion) for the Revised Management Plans (USDA Forest Service 2012). The Monument Monument Plan and does not change the determinations, or constitute new information that results in effects beyond what was considered in the previous consultations.

Forest Service Region 5 Sensitive Species (Alternatives 2 and 3)

All references for this section are from the ANF LMP (USDA Forest Service 2005a). IThis monument plan is a programmatic-level environmental assessment with no proposed ground-disturbing activities, and therefore, there are no direct impacts to any Forest Service Region 5 Sensitive Species (table 21) as a result of implementing the proposed action. However, it is anticipated that the plan direction provided in alternatives 2 and 3 would provide more protection and preservation of wildlife species than alternative 1. Any potential direct effects would be due to any future proposed activities under the direction of the new Monument Plan. The impacts of these future activities at project-level planning and their effects would be analyzed in a separate NEPA analysis process.

Although planning activities would not directly affect any of the Forest Service Region 5 Sensitive Species outlined in table 21, future proposed activities under the direction of the new Monument Plan could impact individuals and suitable habitat characteristics. However, sensitive species within the project will result in a determination of "**May affect individuals, but not likely to result in a trend toward Federal listing or loss of viability**."

Migratory Birds

Under the National Forest Management Act, the Forest Service is directed to "provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives" (P.L. 94-588, Sec 6 (g) (3) (B)). The January 2000 United States

Department of Agriculture Forest Service Landbird Conservation Strategic Plan (USDA Forest Service 2000), followed by Executive Order 13186 in 2001, in addition to the Partners in Flight (PIF) specific Habitat Conservation Plans for birds, and the January 2004 PIF North American Landbird Conservation Plan (Rich 2004), all reference goals and objectives for integrating bird conservation into forest management and planning.

In late 2008, a *Memorandum of Understanding (MOU) between the USDA Forest Service and the U.S. Fish and Wildlife Service) to Promote the Conservation of Migratory Birds* (USDA Forest Service and USDI Fish and Wildlife Service 2008) was signed. The intent of the MOU is to strengthen migratory bird conservation through enhanced collaboration and cooperation between the Forest Service and the Fish and Wildlife Service as well as other Federal, State, Tribal, and local governments. Within the national forests, conservation of migratory birds focuses on providing a diversity of habitat conditions at multiple spatial scales and ensuring that bird conservation is addressed when planning for land management activities. In early 2016, both the Forest Service and Fish and Wildlife Service agreed to extend the MOU as currently written.

As part of the planning process, the Monument Plan will adhere to all of the laws, regulations, and strategies regarding the management of migratory birds. As this planning effort is a programmatic-level environmental assessment with no proposed ground-disturbing activities, there are no direct impacts to any migratory bird species as a result of implementing the proposed action (see above regarding the effect of a programmatic-level environmental assessment for planning purposes).

Botanical Resources

Affected Environment

A wide variety of plant communities are present in the Monument. The largest percentage is chaparral and scrub communities.

There are 17 types of chaparral communities, 8 types of scrub communities and 10 forest communities in the Monument. The following 17 types of chaparral are found in the Monument: chamise chaparral, chamise-white sage chaparral, chamise-black sage chaparral, Eastwood's manzanita chaparral, bigberry manzanita chaparral, green leaf manzanita chaparral, hoary leaf ceonothus chaparral, buckbrush chaparral, deer brush chaparral, chaparral whitethorn, scrub oak chaparral, scrub oak chamise chaparral, canyon live oak chaparral, San Gabriel leather oak chaparral, birch leaf mountain mahogany chaparral, Tucker oak chaparral, interior live oak chaparral, and sugarbush chaparral.

The following eight types of sage scrub are found in the Monument: California sagebrush scrub, California sagebrush-California buckwheat scrub, California sagebrush-black sage scrub, California buckwheat white sage scrub, white sage scrub, purple sage scrub, creosote bush scrub, creosote bush brittle bush scrub, and black sage scrub.

The following 10 forest communities (including riparian) communities are found in the Monument: Jeffrey Pine Forest, mixed conifer forest, sugar pine forest, limber pine woodland, coast live oak woodland, canyon live oak forest, Joshua Tree woodland, sycamore woodlands, white alder groves, and pinyon juniper woodland.

The Monument includes some of California's major centers of plant diversity. With the Monument being near a major urban area, riparian areas receive heavy recreational use in the summer. Designated OHV areas also receive heavy use. Numerous past activities and events have taken place in the Monument that have affected listed plant habitats, and those disturbances have resulted in the current distribution and abundance of these species on the landscape.

Also, many noxious weeds are known to occur on the Monument. The ANF noxious weed program actively implements control treatments within the limits of available funding. The spread of noxious weed species has been and continues to be exacerbated by ground-disturbing activities, vehicle traffic, recreational uses, and other means.

Existing Condition

Threatened, Endangered, Proposed, Candidate and Sensitive Species Considered in the Analysis

The Threatened, Endangered, Proposed, Candidate, and Forest Service Sensitive (TEPCS) list of plants and animals with potential to occur on the ANF (USDA Forest Service 2014a) was used to identify the species that may occur in the Monument. The ANF manages a small portion of the San Bernardino National Forest that is included in the Monument and is near the ANF boundary. The species that could occur in that area are already represented on the ANF list. Detailed species accounts can be found in the Monument Plan's Biological Evaluation and Biological Assessment for plants.

The Forest Service conducted a review of the threatened, endangered, proposed, candidate, and Forest Service sensitive plants that may occur in the planning area or be affected by activities associated with the proposed action. The Forest Service evaluated the plants in table 23 for potential presence in the planning area. Species that are not known or suspected to occur in the Monument are not carried forward into the effects analysis.

Table 23. Species and critical habitat considered

Scientific Name Common Name	Habitat/ Distribution	Species present?	Habitat present?	Effects analysis needed?
Endangered Plants				
Astragalus brauntonii Braunton's milkvetch	Limestone outcrops, closed cone coniferous forest, coastal scrub, and chaparral. Recent burns or disturbed areas. Less than 2,300 feet elevation. Los Angeles, Orange, and Ventura Counties.	Unknown	Yes	Yes
Berberis nevinii Nevin's barberry	Sandy to gravelly soils. Washes, chaparral, cismontane woodland, and coastal scrub. Generally found in lowlands or drainages. Less than 2,200 feet elevation. Imperial, Los Angeles, Marin, Riverside, Santa Barbara, San Bernardino, and San Diego Counties.	Unknown	Yes	Yes
Dodecahema leptoceras Slender-horned spineflower	Sandy alluvial fans, benches, and terraces in coastal scrub, chaparral and cismontane woodland areas. 700 to 3,000 feet elevation.	Unknown	Yes	Yes
Threatened Plants				
Brodiaea filifolia Thread-leaved brodiaea	Grasslands and vernal pools. 100 to 4,000 feet elevation. Chaparral (openings), cismontane woodland, coastal scrub, playas. Often found in clay. Known occurrences: southern base of San Gabriel Mountains. At Glendora and San Dimas and San Bernardino at Arrowhead Springs.	Unknown	Yes	Yes

Scientific Name Common Name	Habitat/ Distribution	Species present?	Habitat present?	Effects analysis needed?
Thread-leaved brodiaea Designated critical habitat	A portion of one critical habitat polygon is within the Monument near San Dimas.	Yes	Yes	No because it is a small section and no activities are likely
Sensitive Plants				
Acanthoscyphus parishii var. *abramsii* Abrams' flowery puncturebract	Chaparral communities on soils derived from sandy or shale substrates and open or gravelly slopes at 3,773 to 7,405 feet elevation. Several historic records/collections in Monument.	Yes	Yes	Yes
Arctostaphylos glandulosa ssp. *gabrielensis* San Gabriel manzanita	Rocky outcroppings, chaparral around 4,920 feet elevation. A local endemic, only known from the area near Mill Creek Summit. Often associated with gneiss outcroppings.	Yes	Yes	Yes
Arctostaphylos parryana ssp. *tumescens* Interior manzanita	Chaparral plant communities. Known only from a few occurrences. San Gabriel Mountains, San Bernardino Mountains. 2,890 to 7,546 feet elevation. California Native Plant Society (CNPS) Inventory shows presence in the Monument.	Yes	Yes	Yes
Astragalus bicristatus Crested milk-vetch	Open, rocky areas in pine forests. 5,500 to 8,250 feet elevation. South Coast, San Gabriel Mountains, San Bernardino Mountains, Peninsular Ranges (Los Angeles, Riverside and San Bernardino Counties). CNPS Inventory shows presence in the Monument.	Yes	Yes	Yes
Astragalus lentiginosus var. *antonius* San Antonio milk-vetch	Pine forest, 5,000 to 8,500 feet elevation, San Gabriel Mountains.	Yes	Yes	Yes
Botrychium crenulatum Scalloped moonwort	Bogs and fens, lower montane coniferous forest, meadows and seeps, and marshes and swamps (freshwater). 4,920 to 10,827 feet elevation. In southern California, it is only known from the San Gabriel and San Bernardino Mountains.	Yes	Yes	Yes
Calochortus clavatus var. *clavatus* Club-haired mariposa lily	Sometimes associated with serpentine soils and inhabits chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland at 246 to 4,265 feet elevation.	Yes	Yes	Yes
Calochortus clavatus var. *gracilis* Slender mariposa lily	Chaparral on slopes or in canyons below 6,562 feet elevation, south base of San Gabriel and Sierra Pelona Mountains.	Yes	Yes	Yes

Scientific Name Common Name	Habitat/ Distribution	Species present?	Habitat present?	Effects analysis needed?
Calochortus fimbriatus Late-flowered mariposa lily	Open areas on ridges, hillsides, roadcuts, near rock outcrops, or burn areas. The surrounding vegetation is chaparral, coastal sage scrub, cismontane woodland, or sometimes riparian woodland. 902 to 6,250 feet elevation. Monterey County to western Los Angeles County. The nearest sites are 13 miles west of the Monument.	No	No	No. No Effect. This species is not suspected to occur on the Monument.
Calochortus palmeri var. *palmeri* Palmer's mariposa lily	Meadows, vernally moist places in pine forest or chaparral, or occasionally dry areas in yellow pine forest. 3,609 feet elevation.	Yes	Yes	Yes
Calochortus striatus Alkali mariposa lily	Alkaline meadows and seeps, moist creosote bush scrub, and chenopod scrub. 197 to 4,593 feet elevation.	Yes	Yes	Yes
Canbya candida Pygmy poppy	Sandy places, 2,000 to 4,000 feet elevation. Joshua tree woodland, Mojavean scrub, and pinyon/juniper woodland. Mojave desert adjacent to Sierra Nevada.	Yes	Yes	Yes
Castilleja gleasonii Mt. Gleason's paintbrush	Granitic, coniferous forest, pinyon/juniper woodland. 3,800 to 7,100 feet elevation.	Yes	Yes	Yes
Castilleja plagiotoma Mojave paintbrush	Dry flats and ridges, sagebrush scrub, Joshua tree woodland, pinyon/juniper woodland, yellow pine forest. North base of mountains, 1,000 to 8,200 feet elevation.	Yes	Yes	Yes
Chorizanthe parryi var. *fernandina* San Fernando Valley spineflower	Sandy places, generally in coastal scrub. 650 to 4,000 feet elevation, most likely to be found near Elizabeth Lake in Liebre Mountains. The nearest occurrence is 5 miles from the Monument.	No	Unlikely	No. No Effect. This species is not suspected to occur on the Monument.
Chorizanthe parryi var. *parryi* Parry's spineflower	Dry slopes in chaparral coastal sage scrub, or alluvial scrub, often in ecotones. Dry, sandy areas, less than 5,500 feet elevation. Occurrences are present in surrounding areas and within a few miles of the southern Monument boundary.	No	Possible	Yes
Cladium californicum California saw-grass	Alkaline marshes and swamps in the southwestern United States and northern Mexico. The two sites in the vicinity of the Monument are presumed extirpated.	No	Unlikely	No. No Effect. This species is not suspected to occur on the Monument.
Claytonia lanceolata var. *peirsonii* Peirson's spring beauty	Gravelly woodlands, scree slopes, meadows. 5,000 to 8,500 feet elevation. This perennial herb is known to occur at the eastern edge of the Monument.	Yes	Yes	Yes

Scientific Name Common Name	Habitat/ Distribution	Species present?	Habitat present?	Effects analysis needed?
Deinandra mohavensis Mojave tarplant	Washes, seasonal creeks/seeps, openings in chaparral, disturbed areas. Nearest occurrence is about 20 miles from the Monument. 2,953 to 5,249 feet elevation.	No	Unlikely	No. No Effect. This species is not suspected to occur on the Monument.
Drymocallis cuneifolia var. *ewanii* Ewan's cinquefoil	Seeps in yellow pine forest, 6,300 to 7,500 feet elevation. Only known from Mt. Islip area.	Yes	Yes	Yes
Dudleya cymosa ssp. *crebrifolia* San Gabriel River Dudleya	On exposed granite outcroppings in CSS or chaparral areas. Fish Canyon, possibly Lytle Creek area. 984 to 3,609 feet elevation.	Yes	Yes	Yes
Dudleya densiflora San Gabriel Mountains Dudleya	Steep granitic canyon walls adjacent to chaparral, coastal scrub, and coniferous forest. Southeastern San Gabriel Mountains. 902 to 1,722 feet elevation.	Yes	Yes	Yes
Dudleya multicaulis Many-stemmed Dudleya	Heavy soils, often clayey, coastal plain. Chaparral, coastal scrub, and valley & foothill grassland. Less than 1,969 feet elevation. Occurrences are present close to the southern Monument boundary.	Unknown	Possible	Yes
Eremogone macradenia var. *arcuifolia* Forest Camp sandwort	Chaparral (openings, granitic, usually oak-dominated). 3,937 to 5,577 feet elevation. Forest Camp, San Bernardino County; Liebre Mountain, Los Angeles County.	Yes	Yes	Yes
Eriogonum kennedyi var. alpigenum Southern alpine buckwheat	Alpine boulder and rock fields, subalpine, granitic gravel, found on high peaks and ridgetops. 8,530 to 11,483 feet elevation.	Yes	Yes	Yes
Eriogonum microthecum var. *johnstonii* Johnston's buckwheat	Rocky, subalpine coniferous forest and upper montane coniferous forest. 6,069 to 9,514 feet elevation.	Yes	Yes	Yes
Galium grande San Gabriel bedstraw	Open, broad-leafed forest, open chaparral, cismontane woodland, and lower forest. Rocky slopes. 1,493 to 5,003 feet elevation. San Gabriel Mountains.	Yes	Yes	Yes
Heuchera abramsii Abram's alumroot	Upper Montane Coniferous Forest, 8,858 to 11,483 feet elevation. High peaks of eastern San Gabriel Mountains. CNPS Inventory shows presence in the Monument.	Yes	Yes	Yes
Heuchera caespitosa Urn-flowered alumroot	Rocky areas in coniferous forest, 3,937 to 8,530 feet elevation, San Gabriel and San Bernardino Mountains.	Yes	Yes	Yes

Scientific Name Common Name	Habitat/ Distribution	Species present?	Habitat present?	Effects analysis needed?
Horkelia cuneata var. puberula Mesa horkelia	Chaparral, cismontane woodland, coastal scrub. Sandy/gravelly sites at 246 to 2,625 feet elevation. Many records occur outside the southern monument boundary, but are often presumed extirpated. No sites are documented within the Monument.	No	Possible	Yes
Hulsea vestita ssp. gabrielensis San Gabriel Mountains sunflower	Rocky sites in montane coniferous forest, 3,937 to 9,186 feet elevation. San Gabriel Mountains, Mt. Pinos.	Yes	Yes	Yes
Hulsea vestita ssp. pygmaea Pygmy hulsea	Gravelly sites of granitic substrate alpine areas or subalpine forest, 9,186 to 12,795 feet elevation. Nearest occurrences are in the San Gorgonio Wilderness over 40 miles from the Monument.	No	No	No. No Effect. This species is not suspected to occur on the Monument.
Imperata brevifolia California satintail	Calcareous seeps, hot springs, disturbed wet areas. Generally 984 to 4,921 feet elevation.	Yes	Yes	Yes
Lepechinia fragrans Fragrant pitcher sage	Chaparral areas, including those recovering from recent fire. Mt. Lukens, western Santa Monica Mountains. 66 to 4,429 feet elevation.	Yes	Yes	Yes
Lepechinia rossii Ross' pitcher sage	Rocky outcrops of reddish sedimentary rock, on north to northeast facing slopes; between 1,001 to 2,592 feet elevation. The only known sites are over 10 miles west of the monument at Ruby Canyon and Tar Creek. The Monument is likely outside the distributional range for this species.	No	Unlikely	No. No Effect. This species is not suspected to occur on the Monument.
Lewisia brachycalyx Short-sepaled lewisia	Preferred habitat is wet meadows, open forest. 4,495 to 7,546 feet elevation. This plant occurs in the eastern end of the monument and in the San Bernardino Mountains.	Yes	Yes	Yes
Lilium parryi Lemon lily	Meadows, streams in montane coniferous forest, riparian scrub, mesic. 4,200 to 8,600 feet elevation.	Yes	Yes	Yes
Linanthus concinnus San Gabriel linanthus	Dry, rocky slopes, coniferous forest. 5,003 to 9,186 feet elevation. San Gabriel Mountains.	Yes	Yes	Yes
Lupinus peirsonii Peirson's lupine	Loose slopes of rock or gravel, Joshua Tree or Pinyon-Juniper Woodland, Yellow Pine Forest. 3,937 to 7,874 feet elevation desert slopes of San Gabriel and Tehachapi Mountains.	Yes	Yes	Yes

Scientific Name Common Name	Habitat/ Distribution	Species present?	Habitat present?	Effects analysis needed?
Monardella australis ssp. *jokerstii* Jokerst's monardella	Chaparral; lower montane coniferous forest; steep scree or talus slopes between breccia, secondary alluvial benches along drainages and washes. Restricted to the eastern San Gabriel Mountains of Los Angeles County, outside the Monument boundary. 4,429 to 5,742 feet elevation.	No	Unlikely	No. No Effect. This species is not suspected to occur on the Monument.
Monardella macrantha ssp. *hallii* Hall's monardella	Chaparral, broadleaved upland woodland, cismontane woodland, coniferous forest, and valley & foothill grassland. 2,000 to 6,600 feet elevation. San Gabriel and San Bernardino Mountains.	Yes	Yes	Yes
Monardella saxicola Rock monardella	Broadleaved upland forest, montane chaparral, coniferous forest, and cismontane woodland. Usually in dry, rocky areas. 1,650 to 6,000 feet elevation. San Gabriel Mountains.	Yes	Yes	Yes
Navarretia peninsularis Baja navarretia	Wet areas in open forest or chaparral. 4,950 to 7,600 feet elevation. Tehachapi Mountain Area, Transverse Ranges, Peninsular Ranges. Populations are not near or suspected to occur in the San Gabriel Mountains.	No	No	No. No Effect. This species is not suspected to occur on the Monument.
Nemacladus secundifloris var. robbinsii Robbins' nemacladus	Openings in chaparral, valley grasslands, and foothill grasslands, often grows on dry gravelly or sandy slopes. Occurs in southern High Sierra Nevada, Inner South Coast Ranges, and Western Transverse Ranges. 1,148 to 5,577 feet elevation. The identification of a 1929 collection at Big Rock Creek in the San Gabriel Mountains is uncertain. Other occurrences in southern California are farther to the west.	No	No	No. No Effect. This species is not suspected to occur on the Monument.
Opuntia basilaris var. brachyclada Short-joint beavertail	Chaparral, Joshua tree woodland, pinyon/juniper woodland, and Mojavean desert scrub. 1,225-2,300 m. Northern regions, San Gabriel and San Bernardino Mtns.	Yes	Yes	Yes
Oreonana vestita Woolly mountain-parsley	Loose rock, upper montane and subalpine coniferous forest. High ridges of San Gabriel Mountains. 8,000 to 11,500 feet elevation.	Yes	Yes	Yes
Orobanche valida ssp. *valida* Rock Creek broomrape	Chaparral, pinyon/juniper, decomposed granite. 4,101 to 6,562 feet elevation. Topatopa Mountains and San Gabriel Mountains.	Yes	Yes	Yes
Oxytropis oreophila var. oreophila Rock-loving oxytrope	Loose rock, upper montane and subalpine coniferous forest. High ridges of San Bernardino Mountains. 8,858 to 12,467 feet elevation.	Unknown	Yes	Yes

Scientific Name Common Name	Habitat/ Distribution	Species present?	Habitat present?	Effects analysis needed?
Parnassia cirrata var. *cirrata* San Bernardino grass-of-Parnassus	Lower and upper montane coniferous forests, meadow and seep, and wetlands. San Gabriel Mountains, San Bernardino Mountains. 2,297 to 8,202 feet elevation.	Yes	Yes	Yes
Scutellaria bolanderi ssp. *austromontana* Southern skullcap	Gravelly soils, stream banks, oak or pine woodland. San Bernardino Mts., Peninsular Ranges, s Mojave Desert. 1,394 to 6,562 feet elevation.	Unknown	Yes	Yes
Sidalcea hickmanii ssp. *parishii* Parish's checkerbloom	Chaparral, cismontane woodland, and open coniferous forest. Outer South Coast Ranges, Western Transverse Ranges (Santa Barbara Co.), San Bernardino Mountains. 3,300 to 8,250 feet elevation.	No	Unlikely	No. No Effect. This species is not suspected to occur on the Monument.
Sidalcea neomexicana Salt Spring checkerbloom	Alkaline springs, marshes, bogs, swamps, or playas; hillsides, on roadcuts and roadsides, in pastures and fields, and in meadows, generally Less than 4.921 feet elevation. South Coast, Western Transverse Ranges, San Bernardino Mountains, Peninsular Ranges, sw Mojave Desert. Surrounding, but so far not found in San Gabriel Mountains	Unknown	Yes	Yes
Sidotheca caryophylloides Chickweed starry puncturebract	Sandy or gravelly flats, washes, and slopes, chaparral, montane conifer woodlands; 4,265 to 8,530 feet elevation.	Yes	Yes	Yes
Streptanthus campestris Southern jewelflower	Rocky openings in chaparral, conifer forest, oak woodland, 1,969 to 9,154 feet elevation. High variation in habitat and elevation of species. San Diego, Riverside, San Bernardino Counties.	No	Unlikely	No. No Effect. This species is not suspected to occur on the Monument.
Stylocline masonii Mason's neststraw	Dry washes, flats, plains, canyon bottoms, or flats along rivers or streams. Areas are generally flat to gently sloped, and open, often barren. 330 to 3,940 feet elevation. Mostly farther to the northwest, one occurrence is about a mile outside the Monument boundary in Soledad Canyon.	Unknown	Yes	Yes
Symphyotrichum defoliatum San Bernardino aster	Coastal scrub and lower montane coniferous forest. San Gabriel Mountains, San Bernardino Mountains, Peninsular Ranges, less than 6,726 feet elevation.	Yes	Yes	Yes
Thelypteris puberula var. *sonorensis* Sonoran maiden fern	Streams, meadows, and seeps below 1,805 feet elevation. South Coast, Western Transverse Ranges, San Gabriel Mountains, San Jacinto Mountains.	Yes	Yes	Yes

Scientific Name Common Name	Habitat/ Distribution	Species present?	Habitat present?	Effects analysis needed?
Thysanocarpus rigidus Rigid fringepod	Although there is little habitat information, rigid fringepod seems to prefer dry rocky slopes or ridges, or generally open areas. It grows between 1,970 to 7,200 feet elevation. Peninsular Ranges, sw Desert (Riverside, San Bernardino, San Diego Counties). The site of a 1923 collection near the Monument is possibly extirpated from development. Other sites are not near the Monument.	No	No	No. No Effect. This species is not suspected to occur on the Monument.

Species that are not present, have no suitable habitat, and/or do not need effect analysis are not carried any further in this analysis.

Noxious Weeds

Noxious weeds are a problem for public land managers in part because they spread across the landscape and can achieve higher ground cover in native plant communities with or without additional disturbances.

It is difficult to have a complete list of invasive species on the ANF. Typically, surveys coincide with specific projects, so some of the remote areas of the ANF have not been surveyed. From known information, there are over 50 noxious weed species reported, with a total of approximately 7,250 infested acres in the Monument. Areas with the highest levels of past and ongoing localized and landscape-scale disturbances have the highest concentrations of invasive plant species. Recreation areas, dams, and areas with roads open to the public are also areas where high concentrations of invasive plants occurrence. This is likely due to high levels of disturbance, vehicle usage, recreational activities, and altered habitats.

Table 24 Known invasive plant infestations in the Monument

Scientific Name	Common Name	California Department of Food and Agriculture Rating	California Invasive Plant Council Rating	Acres in Monument
Ageratina adenophora	Eupatory/sticky snakeroot	Q	Moderate	10
Ailanthus altissima	Tree of heaven	Listed	Moderate	0.2
Arundo donax	Arundo/giant reed	Listed	High	30
Avena fatua	Wild oat	Not Listed	Moderate	0.02
Bromus diandrus	Ripgut brome	Not Listed	Moderate	13
Bromus tectorum	Cheatgrass	Not Listed	High	8.2
Carduus pycnocephalus	Italian plumeless thistle	C	Moderate	109
Centaurea maculosa	Spotted knapweed	A	High	4.9
Centaurea melitensis	Maltese star-thistle	Listed	Moderate	241
Centaurea solstitialis	Yellow star-thistle	C	High	0.07
Cirsium vulgare	Bull thistle	Listed	Moderate	0.6
Cistus creticus	Cretan rockrose	Not Listed	Not Listed	1.7
Cistus ladanifer	Common gum cistus	Not Listed	Watch	1.2
Cnicus benedictus	Blessed thistle	Not Listed	Not Listed	0.03

Scientific Name	Common Name	California Department of Food and Agriculture Rating	California Invasive Plant Council Rating	Acres in Monument
Colutea arborescens	Bladder senna	Not Listed	Not Listed	0.8
Conium maculatum	Poison hemlock	Not Listed	Moderate	0.3
Cynodon dactylon	Bermudagrass	C	Moderate	0.4
Cytisus scoparius	Scotch broom	C	High	2,076
Descurainia sophia	Herb Sophia	Not Listed	Limited	0.003
Euphorbia esula	Leafy spurge	A	Moderate	0.003
Ficus carica	Edible fig	Not Listed	Moderate	0.1
Genista monspessulana	French broom	C	High	741
Hedera helix	English ivy	Not Listed	High	0.9
Hirschfeldia incana	Shortpod mustard	Not Listed	Moderate	0.7
Hordeum murinum	Mouse barley	Not Listed	Moderate	0.002
Lathyrus latifolius	Perennial pea	Not Listed	Not Listed	0.003
Lactuca serriola	Prickly lettuce	Not Listed	Watch	1.5
Linaria dalmatica ssp. dalmatica	Dalmatian toadflax	A	Moderate	0.04
Marrubium vulgare	Horehound	Not Listed	Limited	1.2
Melilotus alba	White sweetclover	Not Listed	Nominated, but not reviewed	68
Melilotus officinalis	Yellow sweetclover	Not Listed	Watch	411
Nerium oleander	Oleander	Not Listed	Watch	0.2
Nicotiana glauca	Tree tobacco	Not Listed	Moderate	4.2
Pennisetum setaceum	Crimson fountaingrass	Not Listed	Moderate	30
Piptatherum miliaceum	Smilograss	Not Listed	Limited	10
Poa bulbosa	Bulbous bluegrass	Not Listed	Not Listed	0.4
Polypogon monspeliensis	Annual rabbitsfoot grass	Not Listed	Limited	34
Raphanus sativus	Cultivated radish	Not Listed	Limited	0.002
Rosmarinus officinalis	Rosemary	Not Listed	Not Listed	0.6
Robinia pseudoacacia	Black locust	Not Listed	Limited	2.3
Rubus armeniacus	Himalayan blackberry	Not Listed	High	26.6
Salsola spp.	Russian thistle	C	Limited	0.04
Sisymbrium altissimum	Tall tumblemustard	Not Listed	Nominated, but not reviewed	1,782
Silybum marianum	Blessed milkthistle	Not Listed	Limited	0.4
Sonchus oleraceus	Common sowthistle	Not Listed	Not Listed	0.1
Spartium junceum	Spanish broom	Listed	High	1,124
Tamarix aphylla	Athel tamarisk	Not Listed	Limited	0.09
Tamarix ramosissima	Saltcedar	Listed	High	456
Tribulus terrestris	Puncturevine	C	Not Listed	0.08
Verbascum thapsus	Common mullein	Not Listed	Limited	0.004

Scientific Name	Common Name	California Department of Food and Agriculture Rating	California Invasive Plant Council Rating	Acres in Monument
Vinca major	Bigleaf periwinkle	Not Listed	Moderate	2.8
Washingtonia robusta	Washington fan palm	Not Listed	Moderate	0.005

Proclamation Species

The following plant species are specifically mentioned in the Proclamation and are protected from unauthorized damage by Forest Service policy (NFMA) and the Code of Federal Regulations (CFR). National Forest Management Act (NFMA) of 1976 states that "fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired nonnative vertebrate species in the planning area in order to meet multiple-use objectives." "Damaging any natural feature or other property of the United States" is prohibited under CFR Title 36, Part 261, Sec. 261.9.

Table 25. Proclamation plant species

Common Name	Scientific Name
White fir	*Abies concolor*
Chamise	*Adenostoma fasciculatum*
White alder	*Alnus rhombifolia*
Manzanita	*Arctostaphylos* spp.
Wild lilac	*Ceanothus* spp.
Western mountain-mahogany	*Cercocarpus betuloides*
San Gabriel bedstraw (addressed as a Sensitive species)	*Galium grande*
Peirson's lupine (addressed as a Sensitive species)	*Lupinus peirsonii*
Limber pine	*Pinus flexilis*
Jeffrey pine	*Pinus jeffreyi*
Sugar pine	*Pinus lambertiana*
Single-leaf pinyon pine	*Pinus monophylla*
Sycamore	*Platanus racemosa*
Bigcone Douglas-fir	*Pseudotsuga macrocarpa*
Scrub oak	*Quercus berberidifolia*
Joshua tree	*Yucca brevifolia*

Environmental Consequences

Alternative 1

Threatened, Endangered, Proposed, Candidate, and Sensitive Plants

Management of Monument lands would continue under the current ANF LMP, and Threatened, Endangered, Proposed, Candidate, and Sensitive (TEPCS) plant populations and habitats may be affected by the ongoing and expected recreational activities allowed on the ANF. Existing management direction concerning TEPCS plants in the current ANF LMP is considered adequate to avoid or minimize effects to these species at this planning level. No additional direct, indirect, or cumulative effects would result from alternative 1, beyond what was analyzed for the current ANF LMP FEIS (USDA Forest Service 2005a).

Beneficial effects from the withdrawal of Monument lands from Federal mining laws (with the exception of existing rights) can be considered to have already taken effect when the Monument was established. This removed the threat of new legal mining activities damaging rare plants or habitats.

Noxious Weeds

Due to existing noxious weed infestations, ongoing uses, continued disturbance, and climate change, weeds are likely to continue to increase within the Monument. Current plan components, as well as the Angeles National Forest and San Gabriel Mountains National Monument Plan for Invasive Plants (2015) support noxious weed control. Prevention and control actions are routinely implemented during project activities and some infestations are treated and controlled, but noxious weeds are still expected to spread. There is a low to moderate risk of introducing or spreading noxious weeds under current management.

Alternative 2

Indirect Effects

Transportation

Threatened, Endangered, Proposed, Candidate, and Sensitive Plants

Although transportation systems have negative effects to native plant communities, some management approaches for transportation (Transportation #3, 4, and 5) could improve native vegetation (including TEPCS plant habitat) by decommissioning and rehabilitating high-risk, low-value roads, reducing unauthorized uses, and coordinating with State OHV programs, including restoration projects.

TEPCS plants and their habitats may be negatively affected by the transportation component of the Monument Plan, alternative 2, due to disturbances from maintenance and improvement activities and the ongoing risk of noxious weed infestations.

Noxious Weeds

The use of transportation systems has an innate potential to spread noxious weeds. Each vehicle and visitor to an area is a potential vector for moving weed seeds into the Monument. Limiting vehicles to designated roads and trails outside the two identified OHV areas would reduce the risk of weed introductions in inaccessible areas. Management approaches #1 through 4 would also help lessen weed risk by reducing the number of unauthorized roads and trails and improving maintenance on system routes.

Sustainable Recreation

Threatened, Endangered, Proposed, Candidate, and Sensitive Plants

Sustainable Recreation Desired Conditions #1 through 6 highlight an increased focus on conservation education within the Monument, which is expected to decrease impacts on TEPCS. Impacts may include foot traffic from continued and increased use through direct damage resulting from trampling of vegetation and soil compaction. Although the proposed plan components do not contribute to this, an increased number of visitors would increase the potential for trampling, flower collecting, and other damage from recreational use, including soil erosion and spread of invasive plant species.

It is likely that much of the potential increased recreation use would occur in areas that are already popular, and impacts to TEPCS plants in these areas could be a concern and may require site-specific evaluation and protection measures. Occurrences and habitats that are in more remote areas would receive proportionately (and considerably) fewer effects from increased visitation.

Noxious Weeds

Conservation education is supported by the proposed desired conditions, guidelines, and management approaches for sustainable recreation. Shared information about noxious weed impacts and prevention could reduce the number of new infestations caused by recreational uses.

Heritage Resources

None of the standards, guidelines, or management approaches concerning heritage resources would affect TEPCS plants or noxious weeds.

Biological Resources

Threatened, Endangered, Proposed, Candidate, and Sensitive Plants

Desired Condition #2 says to "Maintain and improve habitat for fish, wildlife, and plants, including those with the following designations: game species, harvest species, and focal species." This statement specifically includes more taxa than just the TEPCS species analyzed here.

Management Approach #1 says to "Monitor at-risk species according to the 2012 Planning Rule direction on monitoring." This action would have no known direct or indirect effects to TEPCS plants.

Noxious Weeds

The plan components proposed in this alternative for biological resources would not affect noxious weeds.

Designated Areas and Areas Recommended for Designation

The one desired condition statement included in this alternative for designated areas would not affect TEPCS plants or noxious weeds.

Suitability of Lands

Exploration and development of minerals and oil and gas would be declared not suitable in all areas of the Monument (excluding valid existing rights). Because mining activities are already restricted to those with existing rights, this planning direction in the Monument would provide additional plan guidance, but would not in itself result in fewer impacts to TEPCS plants or noxious weeds.

Three new CBLUZs are designated with one or more primary species for protection, none of which are plant species. Beneficial effects to TEPCS plant species that are present would likely result from the disturbance restrictions and considerations to be implemented in these new zones. The threat or risk of management actions in the three new CBLUZs affecting TEPCS plants would be reduced.

Establishing disturbance restrictions within CBLUZ would also reduce the risk of new noxious weed infestations becoming established. Existing infestations could receive a higher priority for control treatments within CBLUZs to protect the primary species.

Table 26. Botanical resources in Critical Biological Land Use Zones

CBLUZ	Threatened, Endangered, Proposed, Candidate, and Sensitive Plants Present	Noxious Weeds Present
Aliso Canyon Creek (new)	Short-joint beavertail (*Opuntia basilaris* var. *brachyclada*)	Giant reed, sweetclover, and annual rabbitsfoot grass
East Fork San Gabriel River (new)	Palmer's mariposa lily (*Calochortus palmeri* var. *palmeri*)	Sticky snakeroot, tree of heaven, giant reed, Maltese star-thistle, bull thistle, edible fig, English ivy, oleander, tree tobacco, smilograss, sowthistle, Spanish broom, Athel tamarisk, and saltcedar
North Fork San Gabriel River (new)	None reported	Spanish broom
West Fork San Gabriel River (expansion of existing)	Slender mariposa lily (*Calochortus clavatus* var. *gracilis)* Palmer's mariposa lily (*Calochortus palmeri* var. *palmeri*)	Giant reed, Italian plumeless thistle, Maltese star-thistle, yellow star-thistle, spotted knapweed, bull thistle, edible fig, English ivy, shortpod mustard, prickly lettuce, tree tobacco, smilograss, black locust, Himalayan blackberry, tall tumblemustard, Spanish broom, saltcedar, puncturevine, common mullein, bigleaf periwinkle, and Washington palm

Cumulative Effects

Because the proposed action is programmatic and does not identify specific locations, timing, or intensity of any particular activity, site-specific cumulative effects analysis for individual threatened, endangered, and sensitive plant species is not possible. Site-specific cumulative effects analysis will be conducted when site-specific activities are proposed.

Numerous past and ongoing activities have altered rare plant habitats, resulting in the existing distribution and abundance of these species on the landscape. Fire suppression, fuel reductions, recreational uses, and other activities have occurred and have affected some listed plants and habitats.

Future project proposals would be analyzed according to NEPA guidelines.

Threatened, Endangered, Proposed, Candidate, and Sensitive Plants Determination

Determination of Effects

Overall rationale for TEPCS plant determinations:

- Sensitive plants are known to occur on the Monument, and suitable habitats for many other sensitive plants also exist.
- The proposed Management Plan is programmatic, and does not authorize any new activities, but it is anticipated that recreation will increase as a result of the Monument status.
- Any of the TEPCS plants with potential to be present in the Monument may be affected, with the possibility of generally minor impacts from ongoing activities and uses.
- Transportation system maintenance, repairs, and improvements could adversely affect TEPCS plants, but would not cause a downward trend for any species.
- Transportation plan could benefit TEPCS species by decommissioning unneeded roads.
- Even with measures taken to minimize effects, future proposed activities under the direction of the new Monument Plan could negatively impact habitat characteristics or undiscovered occurrences.

- The existing ANF LMP and the proposed Monument Plan both encourage and emphasize maintenance or improvement of TEPCS habitat.
- Continuing management in alignment with the unchanged programmatic design features in the ANF LMP would likely prevent or minimize impacts to these species.

Considering the programmatic nature of the proposed action, and the protections that currently and would continue to be provided for federally listed plants, it is determined that alternative 2 "**may affect, but is not likely to adversely affect**" *Dodecahema leptoceras* (slender-horned spineflower). Because they are not known to exist within the Monument, alternative 2 would have "no effect" on *Astragalus brauntonii* (Braunton's milkvetch), *Berberis nevinii* (Nevin's barberry), or *Brodiaea filifolia* (thread-leaved brodiaea).

Considering the programmatic nature of alternative 2, and the protections that currently and would continue to be provided for sensitive plants, it is determined that alternative 2 "**may affect individuals, but is not likely to result in a trend toward Federal listing or loss of viability"** for the 46 sensitive plants analyzed in this document.

Noxious Weeds

The factors that substantially increase the risk of spreading invasive plants include the presence of numerous invasive plants widespread across the Monument, native habitats moderately vulnerable to infestation, and high volumes of vehicle traffic and public recreational use. The programmatic nature of the proposed action results in no direct weed responses, but the programs and future projects that would be carried out under this direction could result in invasive plant spread due to disturbance and habitat alteration. Factors that decrease the invasive plant risk include no expected increase in weed vectors, application of standard design features and future site-specific prevention and control measures, and the minimal response of invasive plants to the proposed action. A focus on conservation education and improving habitat could improve public awareness of noxious weed issues, and may help to reduce the number of new infestations. Taking these factors into consideration, the overall risk of introducing or spreading invasive plants from implementing alternative 2 of the Monument Plan is moderate.

Alternative 3

As with all alternatives, alternative 3 assumes the continuation of many services, programs, and activities. The effects for this alternative would be the same as those described for alternative 2, with the following minor differences.

Indirect Effects

Transportation

The impacts of this alternative are expected to be very similar to alternative 2 with the exception that the Transportation Desired Condition #8 emphasizes the reduction of unauthorized roads and trails. By selecting environmentally optimized roads and trails for recreation, both environmental harm and potential conflict between motorized and non-motorized recreation can be minimized (Shilling et al. 2012).

In alternative 3, Management Approaches 2 and 3 could improve native vegetation (including TEPCS plant habitat) by decommissioning roads "likely not needed" and coordinating with State OHV programs, including maintenance and restoration projects.

Sustainable Recreation

Recreation impacts to botanical resources would be the same as described for alternative 2.

Visitor Experience, Information, and Education

Environmental education is included in this plan component, with an identified objective to develop and implement a Visitor Reception, Interpretation and Education Plan with an emphasis on youth within 3 years. Management Approach #2 would seek to elevate public awareness of environmental and conservation issues. A benefit to TEPCS plants would be an increased community awareness of conservation issues in the Monument and perhaps prevention of damage to these resources in the future.

As with TEPCS plants, developing and delivering environmental education programs and materials regarding the problems with noxious weeds would help move the resource toward its desired condition by raising community awareness and promoting ecosystem-friendly behaviors.

Biological Resources

Desired Condition #2 in this alternative says that "habitats of special status species (Threatened and Endangered and Forest Service Sensitive) in the Monument managed to preserve and protect these species." This desired condition supports the protection of TEPCS plants.

Goal #1 in this alternative states that corrective actions would be taken if LMP monitoring indicates that habitat conditions are degrading or destabilizing. Establishment of this goal may highlight that this process is in place, but such corrective actions can take place at any time, regardless of whether this goal exists. Therefore, this goal would not likely affect TEPCS plants or noxious weeds.

Suitability of Lands

CBLUZs, with minor adjustments in this alternative for various adjacent area boundaries and features, would reduce the risk or threat management actions in those areas.

Cumulative Effects

Because the effects from all alternatives are nearly the same, the cumulative effects discussion for alternative 2 is also valid for alternative 3.

Threatened, Endangered, Proposed, Candidate, and Sensitive Plants Determination

Determination of Effects

The alternative 3 effects determinations for TEPCS plants and risk assessment for noxious weeds are the same as for alternative 2.

Transportation

Affected Environment

Within the Monument there are over 519 total miles of existing roads under various jurisdictions. Of these, over 276 miles are open to motor vehicle use. While there are a number of public transportation options available in municipalities surrounding the Monument, there are currently no options for taking public transportation to and within the Monument.

The primary access routes into the Monument are State and county roads. California Highway 2, also known as the Angeles Crest Highway, crosses through the Monument from east to west. There are numerous facilities in the Monument, including trailheads, picnic sites, campgrounds, vista points, interpretive centers, as well as snow play and ski areas along Highway 2 (figure 17 and figure 18). California Highway 39, also known as San Gabriel Canyon Road, crosses through the Monument, connecting the area south of the Monument with California Highway 2. Since 1978, a 4.4-mile segment just south of the Highway 2 intersection has been closed to motor vehicles (administrative and emergency vehicles excepted) due to a

washout, along with geologic and safety concerns (figure 15). In addition, after storms in January 2016, the closure was temporarily extended south to the West Fork of the San Gabriel River due to additional erosion damage and safety concerns. This new closure prevented access to the popular Crystal Lake area. This section of highway was repaired in May 2016, and now the public can again access Crystal Lake. Caltrans spends approximately $1.5 million per year to manage Highway 39.

Figure 15. Closed portion of Highway 39 south of Highway 2, just west of Mt. Islip

There are two OHV areas within the Monument: Little Rock and San Gabriel Canyon. These areas provide designated acreage for OHV riding and play. San Gabriel Canyon offers over 160 acres and is open weekends and major holidays (figure 16). Little Rock is open weekends outside the rainy season and includes the 0.8-mile Little Rock Canyon OHV trail. Outside of these areas, no separate OHV trails are designated for public motor vehicle use within the Monument. Mixed use analyses are completed on all roads open to OHV motorcycles and ATVs.

Transportation planning for the entire ANF, including the Monument area, is largely done through the travel management process as required by Forest Service Travel Management Regulations (36 CFR 212). The travel management process aims to provide a sustainable system of roads, trails and areas for motor vehicle use on NFS lands by analyzing the current transportation network and making recommendations for what is needed (Subpart A), as well as implementing designations of roads, trails, and areas for motor vehicle use (Subpart B). All national forests that have snow conditions that allow over-snow motor vehicle use must also eventually go through the over-snow vehicle designation process as required by Subpart C. Some pioneering national forests in northern Region 5 have already started this process and all applicable units will eventually participate following regional priorities.

The ANF recently revised and repackaged their forestwide travel analysis in accordance with Forest Service direction and Subpart A of the travel management regulations. Of the nearly 520 miles of existing road within the Monument, approximately 469 miles were identified as “likely needed,” and the other 51 miles were identified as “likely not needed.” These general categories represent the basic opportunities for future roads investments in maintenance, improvements, decommissioning, and rehabilitation activities. A map and complete list of roads within the Monument, including the Subpart A recommendation (likely needed or likely not needed) is released on ANF website.

Transportation-related management challenges identified include: congestion, overuse, limited capacity, long-term operation and maintenance costs exceeding annual funding, issues associated with jurisdiction over roads and associated maintenance responsibilities, and associated resource impacts. Numerous partnership opportunities are being explored with various partners in surrounding cities and communities adjacent to the Monument and beyond.

Figure 16. San Gabriel Canyon OHV area

Figure 17. Jarvi Memorial Vista, along Highway 2

Figure 18. Chilao visitor center

Environmental Consequences

Alternative 1

Current management would continue in accordance with the 2005 ANF LMP. Continuing current management under alternative 1 would include the use of standard operating procedures and best management practices for managing the transportation system within the Monument.

Modest negative effects to infrastructure associated with population growth and increased authorized and unauthorized uses are expected to occur under all alternatives. A slow increase of use without a specific attempt to provide alternative transportation, additional parking, and reducing resource damage in sensitive areas would result in slowly deteriorating and/or inadequate infrastructure, and would likely adversely impact Monument resources. Management in accordance with the existing ANF LMP would help offset these effects, including restoration and removal of unneeded facilities providing positive effects, though at a decreased level compared to alternatives 2 and 3.

Alternative 2

Indirect Effects

Public Safety

Alternative 2 is expected to have more positive effects than alternative 1, provided improvements to traffic flow and congestion occur. Alternative 2 would eventually result in new desired conditions and management approaches being implemented—less congestion, more efficient traffic flows, alternative means of transportation, including shuttle bus service connecting surrounding communities and public transportation hubs, and additional parking could improve driver, passenger, and pedestrian safety.

Forest Transportation System

Positive changes to the system could involve removing unnecessary roads, along with responsible investments and improvements in roads needed for long-term access and use. These changes would be informed by the new Angeles Roads Analysis and Subpart A (Travel Analysis Process). Other minor positive effects would be associated with the economics of eliminating unnecessary roads, and therefore, unnecessary road costs. Minor to moderate positive resource effects could be associated with the removal of unnecessary roads as well as with the improvement of needed system roads.

Other Developed Facilities

No direct changes to other developed facilities are expected prior to subsequent environmental analysis. Moderate positive effects are expected over time with facility changes associated with alternative transportation, additional parking, and reducing resource damage in sensitive areas, such as riparian areas. Under alternative 2, expansions in recreation infrastructure would be balanced by restoring and removing unneeded facilities that do not meet user needs or are in conflict with resource protection needs.

Cumulative Effects

Modest positive cumulative effects are expected over time with facility changes associated with alternative transportation, additional parking, and reducing resource damage in sensitive areas, such as riparian areas. These positive effects associated with alternative 2 are expected to offset negative effects associated with population growth and increased authorized and unauthorized uses.

Alternative 3

Indirect Effects

Alternative 3 effects are similar to those associated with alternative 2. Enhanced input from partnerships and coordination with State, county, local, and regional government entities, municipalities, Tribal governments, other agencies, and the public would provide more opportunities for improvements and collaboration compared to alternative 2.

Moderate improvements in visitor and driver sign interpretation are also anticipated after standard signing symbology that is recognized internationally is installed.

Cumulative Effects

Under alternative 3, enhancements to recreation infrastructure would be balanced by consideration of restoration and removal of unneeded facilities that do not meet user needs or are in conflict with resource protection needs. Alternative 3 also incorporates additional valuable stakeholder and partner input about transportation and facilities, building upon the proposed direction of alternative 2. Therefore, a slightly more beneficial cumulative effect is anticipated compared to alternative 2.

Designated Areas and Areas Recommended for Designation

Affected Environment

Wilderness Areas

The importance of wilderness within the Monument is captured in the Proclamation. The “region has untrammeled wilderness lands of the highest quality” and provides “invaluable backcountry opportunities” for nearby communities.

Four designated wilderness areas total about 117,959 acres within the Monument.About 39,039 acres in two wilderness areas legislatively designated (through the Omnibus Public Land Management Act of 2009) since the ANF LMP was adopted in 2005. Table 27 lists the designated wilderness areas within the Monument.

Table 27. Angeles National Forest wilderness areas designated within the Monument

Resource Element	Total Acres* (Acres within Monument)	Percentage of Monument
Sheep Mountain	43,182	12
San Gabriel	35,738	10
Pleasant View Ridge	26,757	8
Magic Mountain	12,282	3
Total	**117,959**	**33**

*Acres are approximate, as referenced from designating legislation

The Monument also includes recommended wilderness–an area adjacent to the Sheep Mountain Wilderness (about 14,890 acres). Areas allocated to recommended wilderness are managed to protect and maintain their wilderness characteristics. The ANF manages recommended wilderness land use zones in a manner similar to designated wilderness until either Congress designates them as wilderness or the area is released from consideration (USDA Forest Service 2013b, page 241).

Detailed descriptions of the Sheep Mountain and San Gabriel Wilderness Areas and Sheep Mountain recommended wilderness can be found in ANF LMP, Part 2: Appendix A – Special Designation Overlays (USDA Forest Service 2005a page 81-83).

Figure 19. Sheep Mountain Wilderness and recommended wilderness viewed from East Fork Trailhead

The ANF LMP plan components for wilderness areas include wilderness goals (Part 1), wilderness standards in forest-specific design criteria (Part 2), and wilderness program strategies and tactics (Part 2, Appendix B). Additional direction for wilderness is specified in law, regulation, agency policy, and area-specific management implementation schedules. Management activities in designated wilderness are limited to those that support wilderness values. The Forest Service generally allows natural processes to occur with few restrictions or restraints, consistent with the Wilderness Act's direction that such areas be untrammeled by man. When management actions are taken, the most common type of wilderness management is the control of visitation and recreation.

Recreation use within the ANF wilderness areas has varied since 2001 according to National Visitor Use Monitoring (NVUM) reports. According to the analysis for the 2014 ANF LMP Amendment, wilderness

values and resources, naturalness, wildness and solitude may be affected by recreation use (USDA Forest Service 2013b, page 97). Recreation use in designated wilderness was higher in 2011 than in previous years of monitoring on the ANF. Table 28 displays designated wilderness visits.

Table 28. Designated wilderness visits across the Angeles National Forest (USDA Forest Service 2006c, USDA Forest Service 2011a and USDA Forest Service 2013b)

Fiscal Year	Visitation	90% Confidence Level (%)
2001	100,000	unknown
2006	34,000	±34.2
2011	167,000	±41.7

Figure 20. San Gabriel Wilderness viewed from San Gabriel Canyon Road, California Highway 39

Inventoried Roadless Areas

The importance of the inventoried roadless areas within the Monument is captured in the Proclamation, which states that these areas provide important habitat for wide-ranging species.

About 84,142 acres of Inventoried Roadless Areas are located within the Monument. Congress designated portions of the Magic Mountain and Pleasant View Inventoried Roadless Areas as wilderness in 2009. The remaining inventoried roadless areas are incorporated into land use zones in the ANF LMP. Additional direction for Inventoried Roadless Areas management is specified in regulation and agency policy.

Wild and Scenic Rivers

The Proclamation captures the importance of rivers and streams within the Monument. The San Gabriel River, Little Rock Creek, and San Antonio Creek are discussed in the Proclamation as well as the magnificent 75-foot San Antonio Falls.

A wild and scenic river eligibility study was completed for the ANF in 2005, as part of the land management plan revision. This is an inventory and evaluation of whether a river is free-flowing and possesses one or more outstandingly remarkable values including scenery, recreation, geology, fish and wildlife, history, cultural (prehistoric), or similar values. The ANF LMP provides direction to manage eligible rivers for their potential inclusion into the National Wild and Scenic River System, to protect free-flowing character, water quality, outstandingly remarkable values, and recommended classification. The ANF LMP plan components for wild and scenic rivers include wild and scenic rivers program strategies and tactics (Part 2, Appendix B) and wild and scenic river standards (Part 3). Additional direction for eligible wild and scenic rivers is specified in law, regulation, and agency policy.

Rivers identified as potentially eligible for designation as wild and scenic rivers within the Monument include:

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

Detailed descriptions of these eligible wild and scenic rivers can be found in ANF LMP, Part 2: Appendix A – Special Designation Overlays (USDA Forest Service 2005a, pages 83-85).

Figure 21. East Fork San Gabriel River at East Fork Trailhead

Figure 22. North Fork San Gabriel River at West Fork Trailhead

Nationally Designated Roads and Trails

The Proclamation captures the importance of nationally designated roads and trails within the Monument, stating that the area offers "hundreds of miles of hiking, motorized, and equestrian trails, including several National Recreational Trails and 87 miles of the Pacific Crest National Scenic Trail...."

The ANF LMP plan components specific for the PCT include place-specific standards in forest-specific design criteria (Part 2) and transportation program strategies and tactics (Part 2, Appendix B). Management of other nationally designated roads and trails occurs through integration with other resource direction, such

as, but not limited, to transportation program strategies and tactics and landscape aesthetics program strategies and standards.

Nationally designated roads and trails within the Monument include:

- Angeles Crest Scenic Byway (California State Highway 2) – This is a National Forest Scenic Byway and has been described "the most scenic and picturesque mountain road in the state." (http://angelescrestscenichighway.com/)
- Pacific Crest National Scenic Trail – This 2,650-mile hiking and equestrian trail stretches from Mexico to Canada. About 87 miles are in the Monument with terrain varying from high desert to subalpine. (USDA Forest Service 2015)
- Silver Moccasin National Recreation Trail – This 53-mile route snakes across the heart of the San Gabriel Mountains. Beginning at Chantry Flats near Sierra Madre, the trail follows numerous steep canyons and pine-studded ridges then climbs to lofty Mt. Baden Powell before making its final descent to Vincent Gap on the Angeles Crest Highway near Wrightwood. (USDA Forest Service 2015)
- Gabrielino National Recreation Trail – This 28-mile adventure begins at the mouth of Arroyo Seco Canyon, travels northeast to Redbox and curves down to Chantry Flats north of Sierra Madre. The Gabrielino Trail is classified as moderate to strenuous, with an elevation change of 4,800 feet. (USDA Forest Service 2015)
- West Fork National Recreation Trail (National Scenic Bikeway) is 7.4 miles long. It begins at West Fork Parking and ends at Cogswell Dam. The trail is open for mountain biking (USDA Forest Service 2016a).

Research Natural Areas

Research natural areas include relatively undisturbed areas of the national forest that form a long-term network of ecological reserves designated for research, education, and the maintenance of biodiversity. This designation applies to both established and proposed research natural areas (USDA Forest Service 2005a. page 14). Research natural areas are selected to preserve a spectrum of relatively pristine areas that represent a wide range of natural variability within important natural ecosystems and environments, and areas that have unique characteristics of scientific importance (USDA Forest Service 2005a, page 14).

The ANF LMP plan components for research natural areas include research natural areas program strategies and tactics (Part 2, Appendix B). Additional direction for research natural areas is specified in agency policy or may be found in establishment reports and implementation plans. Established research natural areas within the Monument include: Falls Canyon and Fern Canyon. Detailed descriptions of these research natural areas can be found in ANF LMP, Part 2: Appendix A – Special Designation Overlays (USDA Forest Service 2005a, pages 85-86).

Special Interest Areas

Special interest areas protect and, where appropriate, foster public use and enjoyment of areas with scenic, historical, geological, botanical, zoological, paleontological, or other special characteristics. Uses that are compatible with maintaining the target of the area's designation are appropriate (USDA Forest Service 2005a, page 14).

Special interest areas within the Monument include:

- Devil's Punchbowl (Botanical, Geological)
- Mt. Baden-Powell (Botanical)

- Mt. San Antonio (Alpine and subalpine vegetation)
- Aliso-Arrastre Middle and North (Cultural)

The ANF LMP plan components for special interest areas include special interest areas program strategies and tactics (Part 2, Appendix B). Management of special interest areas may also be integrated with other resource direction such as fish and wildlife or area-specific management plans. Detailed descriptions of these special interest areas can be found in ANF LMP, Part 2: Appendix A – Special Designation Overlays (USDA Forest Service 2005a, page 86-88).

Environmental Consequences

Alternative 1

Under alternative 1, current management would continue in accordance with the 2005 ANF LMP, as amended. The ANF LMP has plan components for designated areas in the Monument as described in the affected environment section above. The existing vision, strategy, and design criteria for designated areas are in place and provide a solid framework for addressing management of these designated areas within the Monument. The current ANF LMP does not include descriptions of the wilderness areas designated by Congress in 2009.

Alternative 2

Indirect Effects

Wilderness

Management of designated wilderness is governed by the 1964 Wilderness Act, subsequent wilderness-specific legislation, agency policy, and direction in the ANF LMP. The ANF also manages recommended wilderness land use zones in a manner similar to designated wilderness until either Congress designates them as wilderness or they are removed from recommended wilderness status.

Alternative 2 adds descriptions for the Magic Mountain Wilderness and Pleasant View Ridge Wilderness to the Monument Plan as the Forest Plan Amendment. It also makes updates to the land use zones within the Monument so that these areas, which were designated since the 2005 ANF LMP, are zoned Existing Wilderness. There are no changes to the ANF LMP management direction that applies to this zone.

Alternative 2 includes a desired condition for all designated wilderness areas to maintain a naturally evolving and natural-appearing landscape that provides for primitive and unconfined recreation use and maintain sense of remoteness and solitude in these areas. Heritage resources plan components address historic properties within designated wilderness and promoting heritage and wilderness values. These plan components provide additional direction for wilderness areas compared to the current ANF LMP.

Because direction for wilderness is already specified in law, regulation, agency policy, current ANF LMP plan components, and area-specific management implementation schedules, management of existing designated wilderness would not vary by alternative (USDA Forest Service 2013b, page 241).

Effects to designated wilderness from unplanned natural occurrences and types of management activities (such as vegetation management, fuels management, recreation use) that may occur as the amended ANF LMP is implemented are covered in the ANF LMP FEIS (USDA Forest Service 2005b, pages 517-520) and ANF LMP amendment FSEIS (USDA Forest Service 2013b, pages 242-244). The effects described in these documents apply in this analysis, since these types of occurrences and activities would continue under this alternative.

Inventoried Roadless Areas

Updates for special designation overlays to land use zones are from less restrictive to more restrictive. The boundary changes in this alternative reflect the 2009 designation of two wilderness areas, which results in stricter land use zone management for these areas. The land use zones in this alternative align with current management for the wilderness areas.

The suitability of lands determinations in this alternative would result in maintaining and enhancing the roadless character within the Inventoried Roadless Areas.

Wild and Scenic Rivers

This alternative proposes no changes to the plan components associated with the eligible wild and scenic rivers. No effects are anticipated on eligible wild and scenic rivers as a result of this alternative. The ANF LMP provides direction to manage eligible rivers for their potential inclusion into the National Wild and Scenic River System, to protect free-flowing character, water quality, outstandingly remarkable values and recommended classification. No agency management changes are anticipated in any eligible river segment due to proposed plan components.

Nationally Designated Roads and Trails

This alternative includes new plan components for the PCT and identifies the scenery foreground of the trail as not suitable for special-use authorizations for new communication sites and wind generation sites. The plan components provide guidance so that other uses do not substantially interfere with the nature and purposes for which the PCT was designated. There are no changes to the plan components associated with the other nationally designated roads and trails.

The plan components for transportation and recreation may indirectly affect recreation use and maintenance of these routes. The management approaches for roads and trails in the transportation section may lead to improved roads and trails. As the plan components are implemented, recreation use levels may increase and be sustainably managed by working with partners and capacity concerns may be addressed if parking capacity limits are evaluated.

Research Natural Areas

This alternative proposes no changes to the plan components or land use zones that differs from that in the ANF LMP for research natural areas.

Special Interest Areas

This alternative proposes a Heritage Resources management approach to evaluate heritage sites for eligibility under the National Register of Historic Places and nominate eligible sites as appropriate, including the Aliso-Arrastre Special Interest Area. This is addressed in the Heritage Resources section above.

This alternative proposes no other changes to the plan components or land use zones that differs from that in the ANF LMP for special interest areas.

Cumulative Effects

The potential for cumulative effects outside of the planning area on adjacent NFS lands remains the same as described in the ANF LMP FEIS (USDA Forest Service 2005b, pages 520-521). Cumulative effects for designated areas from other land management plan types of projects and types of management activities that may occur as the ANF LMP is implemented are covered in the ANF LMP FEIS (USDA Forest Service 2005b, pages 520-521) and ANF LMP amendment FSEIS (USDA Forest Service 2013b, pages 295-300). The cumulative effects described in these documents for any other designated area apply in this analysis, since these types of occurrences and activities would continue under this alternative.

Alternative 3

Indirect Effects

Wilderness

Environmental consequences for wilderness are the same as those described for alternative 2. Because direction for wilderness is already specified in law, regulation, agency policy, current ANF LMP plan components, and area-specific management implementation schedules, management of existing designated wilderness would not vary by alternative. Alternative 3 includes a desired condition for both designated wilderness and recommended wilderness to maintain a naturally evolving and natural-appearing landscape that provides for primitive and unconfined recreation use and maintain the sense of remoteness and solitude in these areas. Under alternative 3, this desired condition applies to more lands, because it includes recommended wilderness.

Inventoried Roadless Areas

All other environmental consequences for inventoried roadless areas are the same as those described for alternative 2.

Wild and Scenic Rivers

The management approaches for mineral resources would have the potential to have a positive influence on eligible wild and scenic rivers' water quality, free-flowing character, and many of the outstandingly remarkable values. All other environmental consequences for wild and scenic rivers are the same as those described for alternative 2.

Nationally Designated Roads and Trails

The desired condition for the PCT emphasizes the nature and purposes for which the trail was designated. All other environmental consequences for nationally designated roads and trails are the same as those described for alternative 2.

Research Natural Areas

All environmental consequences for research natural areas are the same as those described for alternative 2.

Special Interest Areas

The management approaches for mineral resources would have the potential to positively influence special interest areas to protect and manage them for the values and features for which they are established. All other environmental consequences for special interest areas are the same as those described for alternative 2.

Cumulative Effects

Cumulative effects for alternative 3 are the same as those described for alternative 2.

Chapter 4. Agencies and Persons Consulted

The Forest Service consulted the following groups; Tribes; and Federal, State, and local agencies during the development of this environmental assessment:

Federal, State, and Local Agencies

- U.S. Department of Interior –National Park Service/Bureau of Land Management/Fish and Wildlife Service
- Federal Highway Administration
- Caltrans
- California Highway Patrol
- Los Angeles Center for Urban Natural Resources Sustainability
- San Gabriel Valley Council of Governments
- Southern California Association of Governments (SCAG)
- San Gabriel & Lower Los Angeles Rivers and Mountains Conservancy
- Watershed Conservation Authority
- Los Angeles County Metropolitan Transportation Authority
- Los Angeles County Dept. Public Works
- Los Angeles County Fire
- Los Angeles County Sheriff's Office
- City of Arcadia
- City of Azusa
- City of Duarte
- City of Glendora
- City of Monrovia
- City of Rosemead
- City of Santa Clarita
- City of Sierra Madre
- Monrovia Canyon Park

Tribes

- San Manuel Band of Serrano Mission Indians
- Santa Ynez Band of Mission Indians
- Tejon Indian Tribe
- Gabrieleño Tribe

Groups

- Adams Pack Station
- Asian Pacific Policy and Planning Council (A3PCON)
- Bike SGV
- Cal Poly Pomona
- Chico State University
- The City Project
- The Concerned Off Road Bicyclists Association (CORBA)

- Foothill Transit
- Friends of The Angeles
- Modern Hiker
- Mt. Wilson MTB Adventure
- REI
- San Gabriel Mountains Community Collaborative
- San Gabriel Mountains Forever
- The Trust For Public Land
- The Wilderness Society

Acronyms

BAER – Burned Area Emergency Response

CBLUZ – Critical biological land use zone

CFR – Code of Federal Regulations

EA – Environmental assessment

EUI – Ecological unit inventory

FLTP – Federal Lands Transportation Program

IRA – Inventoried Roadless Area

LMP – Land Management Plan

MVUM – Motor Vehicle Use Map

NEPA – National Environmental Policy Act

NFS – National Forest System

NVUM – National Visitor Use Monitoring

OHV – Off-highway vehicle

PCT – Pacific Crest National Scenic Trail

RNA – Research Natural Area

ROS – Recreation Opportunity Spectrum

SAC – Scenic attractiveness class

SDEF – San Dimas Experimental Forest

SIA – Special Interest Area

WSR – Wild and Scenic River

Glossary

Burned Area Emergency Response (BAER) process. Some fires create situations that require special efforts to prevent further problems after the fire. Loss of vegetation exposes soil to erosion; runoff may increase and cause flooding, sediments may move downstream and damage houses or fill reservoirs, and put endangered species and community water supplies at risk. The Forest Service Burned Area Emergency Response (BAER) program addresses these situations with the goal of protecting life, property, water quality, and deteriorated ecosystems from further damage after the fire is out.

Closure. Restriction of motor vehicle use on a travelway by means of elimination or prohibition. Closures may be permanent or temporary depending on management objectives.

Critical Biological Land Use Zone. This zone includes the most important areas to manage for the protection of species-at-risk. Facilities are minimal. Activities and modification to existing infrastructure are allowed if they are beneficial or neutral to the species for which the zone was primarily designated.

Decommissioning. Activities that result in the stabilization and restoration of unneeded roads or trails to a more natural state.

Designated road, trail, or area. An NFS road, an NFS trail, or an area on NFS lands that is designated for motor vehicle use pursuant to 36 CFR 212.51 on a motor vehicle use map.

Forest road or trail. A road or trail wholly or partly within or adjacent to and serving the NFS lands that the Forest Service determines is necessary for the protection, administration, and utilization of the NFS and the use and development of its resources.

Forest transportation atlas. A display of the system of roads, trails, and airfields of an administrative unit.

Forest transportation system. The system of NFS roads, NFS trails, and airfields on NFS lands.

Historic Property. Any prehistoric or historic district (i.e., 50 years or older), site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.

Hydrogeologic. (Hydro- meaning water, and -geologic meaning the study of the Earth) is the area of geology that deals with the distribution and movement of groundwater in the soil and rocks of the Earth's crust (commonly in aquifers). The term geohydrology is often used interchangeably.

Interstitial. Occurring within the pores of a rock.

(Road) Maintenance. The upkeep of the entire forest transportation facility including surface and shoulders, parking and side areas, structures, and such traffic-control devices as are necessary for its safe and efficient utilization.

(Road) Maintenance Levels. Defines the level of service provided by, and maintenance required for, a specific road, consistent with road management objectives and maintenance criteria. There are five levels of maintenance including:

LEVEL 1. These roads have been placed in storage between intermittent uses. The period of storage must exceed 1 year. Basic custodial maintenance is performed to prevent damage to adjacent resources and to perpetuate the road for future resource management needs. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level. Appropriate traffic management strategies are "prohibit" and "eliminate" all traffic. These roads are not shown on motor vehicle use maps.

Roads receiving level 1 maintenance may be of any type, class, or construction standard, and may be managed at any other maintenance level during the time they are open for traffic. However, while being maintained at level 1, they are closed to vehicular traffic, but may be available and suitable for non-motorized uses.

LEVEL 2. Assigned to roads open for use by high clearance vehicles. Passenger car traffic, user comfort, and user convenience are not considerations. Warning signs and traffic control devices are not provided with the exception that some signing, such as (standard sign #) W-18-1 "No Traffic Signs," may be posted at intersections. Motorists should have no expectations of being alerted to potential hazards while driving these roads. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level. Appropriate traffic management strategies are either to:

a. Discourage or prohibit passenger cars, or

b. Accept or discourage high clearance vehicles.

LEVEL 3. Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. The Manual on Uniform Traffic Control Devices is applicable. Warning signs and traffic control devices are provided to alert motorists of situations that may violate expectations.

Roads in this maintenance level are typically low speed with single lanes and turnouts. Appropriate traffic management strategies are either "encourage" or "accept." "Discourage" or "prohibit" strategies may be used for certain classes of vehicles or users.

LEVEL 4. Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate-surfaced. However, some roads may be single lane. Some roads may be paved and/or dust-abated. Manual on Uniform Traffic Control Devices is applicable. The most appropriate traffic management strategy is "encourage." However, the "prohibit" strategy may apply to specific classes of vehicles or users at certain times.

LEVEL 5. Assigned to roads that provide a high degree of user comfort and convenience. These roads are normally double lane, paved facilities. Some may be aggregate-surfaced and dust-abated. Manual on Uniform Traffic Control Devices is applicable. The appropriate traffic management strategy is "encourage."

Motor vehicle. Any self-propelled vehicle, other than: (1) A vehicle operated on rails; and (2) Any wheelchair or mobility device, including one that is battery-powered, that is designed solely for use by a mobility-impaired person for locomotion, and that is suitable for use in an indoor pedestrian area.

Motor vehicle use map. A map reflecting designated roads, trails, and areas on an administrative unit or a ranger district of the National Forest System.

National Forest System road. A forest road other than a road that has been authorized by a legally documented right-of-way held by a State, county, or other local public road authority.

National Forest System trail. A forest trail other than a trail that has been authorized by a legally documented right-of-way held by a State, county, or other local public road authority.

Objective Maintenance Level. The maintenance level to be assigned at a future date considering future road management objectives, traffic needs, budget constraints, and environmental concerns. The objective maintenance level may be the same as, or higher or lower than, the operational maintenance level. The transition from operational maintenance level to objective maintenance level may depend on reconstruction or disinvestment.

Operational Maintenance Level. The maintenance level currently assigned to a road considering current needs, road condition, budget constraints, and environmental concerns. It defines the level to which the road is currently being maintained.

Realignment. Activity that results in a new location of an existing road or portions of an existing road and treatment of the old roadway.

Reconstruction (road or trail). Improvement and/or realignment of a travelway.

Road. A motor vehicle route more than 50 inches wide, unless identified and managed as a trail.

Road improvement. Activity that results in an increase of an existing road's traffic service level, expands its capacity, or changes its original design function.

Storage. Used to describe an intermittent use road during the time it is closed to vehicular use. When referring to an NFS road, storage is synonymous with a Maintenance Level 1.

Traffic Management Strategies. Measures used to achieve road management objectives and to provide for acceptance and understanding by road users. The five strategies are:

a. Encourage use. Encourage use consistent with the condition of the road and its road management objectives s.

b. Accept use. Accept, but do not encourage, use by vehicles that are suitable for the road.

c. Discourage use. Discourage some or all types of motor vehicle use.

d. Eliminate use. Eliminate use by blocking access to the road by motor vehicles.

e. Prohibit use. Prohibit motor vehicle use.

Trail. A route 50 inches or less in width or a route more than 50 inches wide that is identified and managed as a trail.

Unauthorized Road or Trail. A road or trail that is not an NFS road or trail or a temporary road or trail, and that is not included in a forest transportation atlas.