Cleveland National Forest
Motorized Travel Management Environmental Assessment

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Abstract: This environmental assessment describes the potential effects of a proposal by the Cleveland National Forest (Cleveland NF) to make changes to its existing transportation system. Proposed changes, which are detailed in Chapter 2, include: adding roads for highway-legal vehicles only; adding trails for all types of vehicles (i.e., four-wheel drive vehicles, trail-class vehicles, and motorcycles); adding trails for trail-class vehicles; adding trails for motorcycles only; and revising the total number of acres of OHV open-use areas. These actions are proposed, in part, to implement the 2005 Travel Management Rule while providing for a diversity of motor vehicle recreation opportunities and for motorized access to dispersed recreation opportunities. This environmental assessment discloses environmental impacts associated with a no action alternative, the proposed action, and an alternative to the proposed action that was developed as a result of public scoping.

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Cleveland National Forest
USDA-Forest Service, Pacific Southwest Region
Riverside and San Diego Counties, CA

Chapter 1
Purpose and Need

1.1 INTRODUCTION

The Cleveland National Forest (Cleveland NF) has prepared this environmental assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. This document—which discloses the direct, indirect, and cumulative impacts that would result from alternatives to the initial proposed action—is organized into three chapters:

Chapter 1 – Purpose and Need. This chapter briefly describes the proposed action, the need for action and other purposes to be achieved by the proposal. This section also details how the Cleveland NF informed the public of the initial proposed action and how the public responded.

Chapter 2 – Alternatives. This chapter provides a detailed description of the no action alternative (Alternative 1) as well as two action alternatives considered in detail (alternatives 2 and 3). The chapter includes a summary table that compares alternatives with respect to environmental impacts, as well as a discussion of alternatives that were considered but eliminated from detailed study.

Chapter 3 – Affected Environment and Environmental Consequences. This chapter describes the site-specific, environmental impacts of the two action alternatives and the no action alternative as they pertain to individual resources.

Additional documentation, including more detailed analyses of project-area resources, is found in the project record on file at the Cleveland NF supervisor's office.

1.1.1 Background

The use of off-highway vehicles (OHV) and all-terrain vehicles (ATV) has increased significantly over the past few decades. California has the highest level of OHV use of any state in the nation. Approximately 800,000 ATVs and OHVs were registered in the state in 2004, a 330-percent increase from 1980. Annual sales of ATVs and OHVs in California were the highest in the U.S. for the past five years. Sales of four-wheel-drive vehicles in California increased by 1500 percent between 1989 and 2002.

Unmanaged OHV use can result in unplanned roads and trails, erosion, watershed and habitat degradation, and impacts to cultural resources. Compaction and erosion are the primary impacts of OHV use on soils. Riparian areas and aquatic-dependent species are particularly vulnerable to damage from OHV use. Former Forest Service Chief Dale Bosworth identified unmanaged recreation, including impacts from OHVs, as one of the four key threats facing the nation's forests and grasslands.

In 1986 the Cleveland NF completed a land management plan that established roads, trails, and areas that were open to OHV travel, and which designated two areas—Corral Canyon and Wildomar—that were open to cross-country OHV travel. These OHV route designations and designated areas were analyzed under NEPA and were implemented through a long-term forest order that has been in effect since 1988. A

minimum "backbone" system of approximately 418 miles of roads on the Cleveland NF was also identified at this time.

In June 1988, to ensure compliance with the 1986 LMP, Cleveland NF Supervisor Michael Rogers signed Forest Order No. 88-02-1, which remains in effect pending the outcome of this environmental analysis. Forest Order No. 88-02-1 prohibits the following acts, with exemptions for persons with a valid permit and for firefighting personnel performing official duties, on Cleveland NF land and national forest development roads:

1. Using a green sticker vehicle (i.e., any "off highway motor vehicle subject to identification" as defined in California Vehicle Code Section 38012) on any forest road except on those roads identified for such use by the Forest Off Road Vehicle Plan and Map of the Cleveland NF Management Plan dated February 1986 (36 CFR 261.54(a) and (b)).
2. Using motor vehicles on any forest development trail except on those trails identified for such use by the Forest Off Road Vehicle Plan and Map of the Cleveland NF Management Plan dated February 1986 (36 CFR 261.55(b)).
3. Possessing or using a vehicle off forest development roads or trails, except on areas identified for such use by the Forest Off Road Vehicle Plan and Map of the Cleveland NF Management Plan dated February 1986 (36 CFR 261.56).

On August 11, 2003, the Pacific Southwest Region of the Forest Service entered into a memorandum of intent (MOI) with the California Off-Highway Motor Vehicle Recreation Commission, and the Off-Highway Motor Vehicle Recreation Division of the California Department of Parks and Recreation. The MOI was a starting point for a region-wide effort to designate OHV roads, trails, and any specifically defined open areas for motor vehicles on maps of California's national forests.

On November 9, 2005, the Forest Service published final travel management regulations in the *Federal Register* (Vol. 70, No. 216-Nov. 9, 2005, pp. 68264-68291). Subpart B of the Travel Management Rule requires designation of roads, trails, and areas open to motor vehicle use on national forests. Only roads that are part of a national forest transportation system may be designated for motorized use. Designations are made by class of vehicle and, if appropriate, by time of year.

The Travel Management Rule prohibits the use of motor vehicles off designated National Forest System roads, trails and areas, as well as use of motor vehicles on roads and trails that are not specifically designated for public use. The Cleveland NF was in compliance with the MOI and the Travel Management Rule at their inceptions because of prior transportation analysis contained in the land management plan, because the prohibitions contained in Forest Order No. 88-02-1 were already in effect, and because of the roads analysis process that was performed in association with the forest plan revision process.

In 2006 a final record of decision was signed for the Cleveland NF Forest Plan Revision Final Environmental Impact Statement and Land Management Plan (LMP). This record of decision, as well as the revised LMP, provides management direction that guides future travel management decisions through suitable uses tied to specific land use zones and an updated recreation opportunity spectrum map.

On some National Forest System lands repeated use has resulted in roads and trails that are unplanned and unauthorized. These routes generally developed without environmental analysis or public involvement, and do not have the same status as National Forest System roads and trails included in the national forest transportation system. However, some unauthorized routes provide opportunities for outdoor recreation by motorized and non-motorized users, and would enhance the national forest transportation system.

Other unauthorized routes are poorly located and cause unacceptable impacts. Only National Forest System roads and trails can be designated for motor vehicle use. In order for an unauthorized route to be designated, it must first be added to the national forest transportation system.

In 2005, the Cleveland NF completed an inventory of unauthorized routes on National Forest System lands as described in the MOI and identified approximately 220 miles of unauthorized routes. The Cleveland NF then used an interdisciplinary process to conduct travel analysis that included public involvement to identify proposals for changes to the existing transportation system. Roads, trails and areas that are currently part of the Cleveland NF transportation system and are open to motor vehicle travel would remain designated for such use except as described below under the analyzed alternatives. This proposal makes needed changes—including vehicle restrictions, additional motorized trails, and reduced open riding areas—to National Forest System roads, trails, and areas in accordance with the Travel Management Rule (36 CFR Part 212).

In accordance with the Travel Management Rule, following a decision on this proposal the Cleveland NF will publish a motor vehicle use map identifying all Cleveland NFS roads, NFS trails, and areas that are designated for public motor vehicle use. The motor vehicle use map will specify the classes of vehicles and, if appropriate, the times of year for which use is designated.

Unauthorized routes not included in this proposal are not precluded from eventual consideration for addition to the transportation system and inclusion in a motor vehicle use map, pending future environmental analysis, public involvement, and documentation. The record of decision for the Cleveland NF Forest Plan Revision Final Environmental Impact Statement and Land Management Plan allows for the consideration of such routes gradually over time.

1.1.2 Travel Management on the Cleveland NF

This proposal is just one project among many in the long-term goal of managing the Cleveland NF transportation system in a sustainable and cost-effective manner. Previous administrative decisions have substantially reduced the number of miles of National Forest System roads available for motorized use. Past and ongoing travel management activities on the Cleveland NF include:

1. Current NEPA analysis is either underway or has been recently completed for proposed rehabilitation of approximately 29 miles of unauthorized routes that burned in the Harris, Witch, Poomacha, and Santiago fires in October 2007. All these routes evaluated for rehabilitation are currently in non-motorized land use zones as per the LMP.
2. Proposed analysis for using green sticker funds to decommission routes in the vicinity of Long and Bear valleys on the Descanso Ranger District and in the vicinity of North Main Divide Road on the Trabuco Ranger District.
3. Decommissioning of routes in the Wildomar OHV area that are not part of the Cleveland NF transportation system.
4. Past NEPA decisions that decommissioned 67 segments of unauthorized routes totaling approximately 14.3 miles on the Descanso Ranger District. These routes intersected the designated OHV system and were all rehabilitated using green sticker funds or via Horse fire burned-area emergency response funds. Included in this total are routes that intruded into the Hauser Wilderness Area.
5. Decommissioning of 37 miles of unauthorized routes that were burned by the Cedar fire in 2003. Routes were removed from the inventory based on 2005 satellite imagery and subsequent ground verification in areas that were accessible.

Ongoing efforts include: (1) Forest Order No. 88-02-1, which prohibits motor vehicle use off designated routes; (2) efforts to reduce the impacts associated with non-system routes; and (3) efforts to address impacts associated with the current transportation system through road maintenance and monitoring of best management practices. Implementation of this proposal and subsequent designation of motorized routes through publication of the motor vehicle use map are only one step in the overall management of the Cleveland NF transportation system.

1.1.3 Scope of this Action

This proposal does not revisit previous decisions that resulted in the current transportation system. This proposal is focused only on implementing the Travel Management Rule. Previous decisions concerning road construction, reconstruction, closures, decommissioning, trail construction, type of use, and seasonal restrictions are outside of the scope of this proposal. The responsible official is limited with regard to staff and funding and, by necessity, must limit the scope of any project to that which is within the means to be accomplished. Through travel analysis, the Cleveland NF identifies discrete projects, prioritizes them, and builds them into the future program of work. Only those projects within the capability of the Cleveland NF are brought forward by the responsible official and carried forward in accordance with the purpose and need for action.

The route designation process is not a "one time" event. The infrastructure of the Cleveland NF will always have room for improvement. During public meetings and the scoping period, routes were identified by the public that had not yet been entered into the Cleveland NF GIS database. Even though these routes were not brought forward into the current analysis, they may be analyzed in the future for potential inclusion into the transportation system or potential rehabilitation.

The Cleveland NF welcomes suggestions for improving the current transportation system and restoring the environment. Such suggestions are considered within the context of the overall mission of the Cleveland NF and will be considered as availability of staff and funding allows. Scoping for this project resulted in many suggestions for improving the transportation system through reconstruction, decommissioning, road and trail closures, restoration projects. These ideas and suggestions may be considered in future travel management analyses.

Project Location
For maps of the project area, please see the appendices or visit the Cleveland NF website at **http://www.fs.fed.us/r5/cleveland/projects**.

1.2 PURPOSE AND NEED

The Cleveland NF undertook this travel management action in accordance with the Travel Management Rule. Specific areas were identified in which there is a need for change. The following needs have been identified for this proposal:

1. There is a need for prevention of resource damage by motor vehicles in the Corral Canyon and Wildomar OHV areas. The Corral Canyon and Wildomar OHV areas were first designated as open areas in the 1986 LMP and carried forward into the 2005 revised LMP. Currently, public motor vehicle travel is open to cross-country travel in these two areas. After years of open riding conditions, the number of trails has grown, and some of the new routes have environmental impacts and safety concerns that have not been addressed. Recent wildfires removed much of the vegetation that limited

motor vehicle travel in the Corral Canyon OHV area. Under these circumstances, continued open riding in these areas will lead to further trends in route proliferation and resource damage. Subpart B of the Travel Management Rule provides guidance for ending these trends and managing motorized recreation in a sustainable manner.

2. There is a need for limited changes and additions to the Cleveland NF transportation system in order to maintain motorized access for dispersed recreation activities, such as camping, hunting, hiking, and horseback riding. A portion of known dispersed recreation activities are not located directly adjacent to an existing NFS road or NFS motorized trail. Some dispersed recreation depends on access by foot or horseback, and some depends on motor vehicle access. Motorized access to such activities often consists of short spurs that have been created and maintained primarily by the passage of motor vehicles. An inventory of these "user-created" routes found that many dispersed recreation activities are accessed by routes that are not currently part of the national forest transportation system. Under the 2005 Travel Management Rule, only roads and trails that are part of the transportation system can be designated for motor vehicle use. If these routes are not added to the transportation system, the regulatory changes brought about by the 2005 Travel Management Rule would make continued use of such routes illegal. Continuation of dispersed recreation activities in specified land use zones is a desired condition of the revised LMP.

In meeting these needs, the Forest Service must also achieve the following purposes:

A. Avoid impacts to cultural resources.
B. Provide for public safety.
C. Provide access to public and private lands.
D. Administer and maintain roads, trails, and areas based on availability of resources.
E. Minimize damage to soil, vegetation and other forest resources.
F. Minimize harassment of wildlife and significant disruption of wildlife habitat.
G. Minimize conflicts between motor vehicles and existing or proposed recreational uses of NFS lands.
H. Minimize conflicts among different classes of motor vehicle uses of NFS lands or neighboring federal lands.
I. Assure compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, etc.
J. Maintain valid existing rights of use and access (rights-of-way).
K. Constrain the proposal to that which is within the capability of the Cleveland NF to analyze given: (1) the national schedule for regions to publish their motor vehicle use maps (for the Cleveland NF the publication deadline is December 31, 2008); (2) available funding (road and trail management budgets); and (3) available resources, including resource data and staff time.

1.3 PROPOSED ACTION

To meet the purpose and need as described above, the Cleveland NF proposes to implement Alternative 2, which is described in detail in section 2.1.2.2 of Chapter 2:

1. Prohibit cross-country motor vehicle travel by the public off designated National Forest System roads, trails, and areas, except as allowed by permit or other authorization in the Corral Canyon and Wildomar OHV areas.
2. Add segments of user-created trails and new trails to the Cleveland NF transportation system to maintain a diversity of motorized recreation opportunities in the conversion of the Corral Canyon

OHV area from one in which cross-country motorized travel is legal to one in which all motorized travel must occur on designated routes or in smaller designated open areas. Install mitigation measures to prevent access to adjacent unauthorized routes.

3. Add segments of routes for highway-legal vehicles to the Cleveland NF transportation system to access dispersed recreation opportunities. Install mitigation measures to prevent access to adjacent unauthorized routes.
4. Establish an open riding area adjacent to Corral Canyon OHV campground and an open riding area adjacent to the Wildomar OHV trailhead where young riders can learn safe vehicle operation. All other OHV use in the Corral Canyon and Wildomar OHV areas would be restricted to designated routes.
5. Amend the LMP to adjust land use zones and recreational opportunity spectrum designations to reflect existing on-the-ground conditions where mapping of land use zones was inaccurate.

1.4 PRINCIPAL LAWS AND REGULATIONS

Federal legislation. The National Environmental Policy Act of 1969 (NEPA) requires analysis of all major federal actions significantly affecting the human environment to determine the magnitude and intensity of potential impacts and that the results be shared with the public and the public given opportunity to comment. The regulations implementing NEPA require that, to the fullest extent possible, agencies prepare environmental analyses and related surveys and studies required by the Endangered Species Act of 1973, the National Historic Preservation Act of 1966, and other environmental laws and executive orders. Principle among these are the Multiple Use and Sustained Yield Act of 1960, the National Forest Management Act of 1976 as expressed through the Cleveland NF Land Management Plan, the Clean Air Act of 1955, the Clean Water Act of 1948, and the Forest and Rangeland Renewable Resources Planning Act of 1974.

Travel Management Rule (36 CFR parts 212, 251, 261, and 295). This Cleveland NF travel management environmental assessment is designed to implement the requirements of the November 5, 2005 rule for travel management.

Cleveland NF Land Management Plan (LMP). Part 3 of the LMP contains various resource-specific standards that must be considered when undertaking any environmental analysis. These standards are summarized in Chapter 2 as "Features Incorporated into Project Design."

Record of Decision and the LMP Final Environmental Impact Statement. The record of decision and the final environmental impact statement contain the rationale and direction for the Cleveland NF progressing toward a designated route system.

1.5 DECISION FRAMEWORK

The forest supervisor for the Cleveland NF will be the responsible official and will sign the decision notice. The responsible official will decide whether to adopt and implement the proposed action, an alternative to the proposed action, or take no action at this time.

1.6 PUBLIC INVOLVEMENT

The interdisciplinary team (ID team) relied on public involvement to ensure that an adequate range of alternatives would be considered. Public involvement for this project included meetings held during the summer of 2007, meetings held during early 2008, and a scoping letter mailed to interested persons in January 2008. Public involvement is summarized below.

- After completing an inventory of unauthorized roads, trails, and off-route use areas, maps were posted to the Cleveland NF website for public review and comment. Suggested adjustments to the maps were accepted until October 31, 2006.
- Route designation has been discussed at quarterly meetings between Cleveland NF personnel and members of local off-highway vehicle user groups.
- Press releases were posted on the Forest Service regional office travel management website (http://www.fs.fed.us/r5/routedesignation/) as well as on the Cleveland NF website. In addition, the press releases were sent to elected officials and to local media in the San Diego, Riverside, and Orange county areas.
- On January 18, 2008, Cleveland NF Supervisor Will Metz mailed a letter to interested parties summarizing the proposal and requesting comments. A legal notice appeared in the San Diego *Union-Tribune* outlining the proposal and requesting comments.
- Public open houses to discuss the proposal were held in San Diego County at the Cleveland NF supervisor's office on January 19, at the Palomar Ranger District on January 23, and at the Descanso Ranger District on February 6, and in Riverside County at the Trabuco Ranger District on February 7, 2008. Cleveland NF personnel were present at all meetings to answer any questions and to provide further information on the proposal.
- The project has been listed continually in the Cleveland NF schedule of proposed actions since July 2006 (http://www.fs.fed.us/sopa/forest-level.php?110502).

1.7 ISSUES

Comments from the public were used to formulate issues concerning the proposed action. An "issue" in the NEPA process is defined as a matter of public concern regarding the proposed action and its environmental impacts. The Forest Service separated the issues into two groups: significant and non-significant. Significant issues were defined as those directly or indirectly caused by implementing the proposed action. Non-significant issues were identified as those: 1) outside the scope of the proposed action; 2) already decided by law, regulation, LMP, or other higher level decision; 3) irrelevant to the decision to be made; or 4) conjectural and not supported by scientific or factual evidence. The Council on Environmental Quality (CEQ) NEPA regulations explain this delineation in Sec. 1501.7, and instruct federal agencies to "identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)."

1.7.1 Significant Issues

Issue 1: Many motorized routes proposed for addition to the transportation system are poorly located and will cause adverse impacts to plants, wildlife, water quality, soils and other natural resources.

Discussion: Alternative 3 (see section 2.2.1.3) was developed in part to address the areas where routes proposed for designation under Alternative 2 intersected habitat for threatened and endangered species, or where they intersected riparian conservation areas. All such routes were dropped when developing Alternative 3.

Issue 2: The transportation system is already too large to provide adequate maintenance and administration. Current maintenance backlogs should be addressed before proposing the addition of new routes to an already overburdened system.

Discussion: Concerns were expressed about how the types of use allowed on roads, trails, and areas would impact the need for maintenance and administration. Commenters noted that some uses, specifically motorcycles, ATVs, and 4-wheel drives, result in higher maintenance costs due to greater levels of resource damage. In addition, commenters felt that increasing the opportunities for such uses by designating additional routes would result in an increased need for Forest Service administration of these roads, trails, and areas to prevent unauthorized uses, resolve user conflicts, and provide for public safety. Commenters also noted that certain mixes of use, if allowed in the same area, would increase the need for maintenance and administration of these areas.

Actions proposed under Alternative 3 would retain the opportunity to camp or park a street-legal vehicle at most dispersed recreation locations reviewed, but would not entail maintaining the full proposed road segment.

Issue 3: NEPA documents for the proposed action should include measures such as vehicle barriers and obliteration to block use and rehabilitate existing unauthorized routes from the Corral Canyon OHV area into the Hauser Wilderness.

Discussion: As part of the rehabilitation efforts subsequent to the Horse fire, which burned through the Corral Canyon OHV area and other locations on the Descanso Ranger District in 2006, unauthorized routes that led into the Hauser Wilderness Area have already been closed and barricaded. Mitigation

measures to deter use of unauthorized routes has been included in previous NEPA decisions and has been incorporated into Alternative 3 of this analysis.

Issue 4: The Cleveland NF should be more responsive to the members of the OHV community who wish to see more recreational opportunities available on Forest Service lands.

Discussion: In response to public input and subsequent scoping comments from members of the OHV community, the Cleveland NF proposed a new, motorcycle-only route under both alternatives 2 and 3. In addition, the Cleveland NF removed two user-created trail segments that were proposed for addition to the transportation system as designated routes in Alternative 2. Members of the OHV community commented that they preferred to have a number of open areas adjacent to proposed or existing trails to enhance their recreational experience on challenging terrain. Alternative 3 would close approximately 12.8 fewer acres in the Corral Canyon OHV area. Current use of these areas for trial riding would be allowed to continue.

1.7.2 Non-Significant Issues

Issue A: The Forest Service should conduct a forest-level roads analysis.

Discussion: A forest-level road analysis was already completed by the Cleveland NF in conjunction with the land management plan revision process. Conducting the same analysis now is beyond the scope of the project and would not address the purpose and need, as stated above. The roads analysis process (RAP) conducted during the 2005 Land Management Plan can be found at:

http://www.fs.fed.us/r5/scfpr/projects/lmp/docs/rap.pdf

RAP maps can be found at:

http://www.fs.fed.us/r5/scfpr/projects/lmp/maps.htm

Chapter 2
Alternatives

2.1 INTRODUCTION AND ALTERNATIVE DESCRIPTION

This chapter describes and compares the alternatives considered for the Cleveland NF travel management environmental assessment. Alternatives considered in detail and alternatives eliminated from detailed study are described. Alternatives are compared in tabular form so environmental impacts can be easily compared. Based on the issues identified through public comment during scoping, and based on further interdisciplinary team review, the Cleveland NF developed one alternative in addition to the proposed action that was carried forward into detailed analysis. In addition to the two action alternatives, the Cleveland NF analyzed a no action alternative that serves as a baseline for comparing the effects of the action alternatives.

2.1.1 How Alternatives Were Developed

During the summer of 2007, members of the public contributed their knowledge and input concerning the inventory of unauthorized routes on the Cleveland NF. In addition, Forest Service personnel examined GIS data and aerial imagery to determine potential routes for addition to the Cleveland NF transportation system and made field visits to determine the suitability of those routes. Based on this internal and external input, Alternative 2 was developed to meet the purpose and need and was sent to the public for comment in January 2008. Based on comments received from public review, and from further field review by Cleveland NF personnel, Alternative 3 was developed to respond to specific issues.

2.1.2 Alternatives Considered in Detail

Three alternatives are analyzed in detail. Alternative 1, which is the no action alternative, represents the continuation of cross country travel in the Corral Canyon and Wildomar OHV areas. The planning area for the alternatives includes National Forest System lands on the Cleveland NF. It does not include any private, state, or other federal lands. During the environmental analysis, the Cleveland NF assumed that adjacent federal lands, such as those administered by the Bureau of Land Management, will be managed according to existing management plans and applicable federal laws, and that private lands will meet applicable state and federal land use regulations. For features common to the action alternatives and features incorporated into project design, see sections 2.4 and 2.5.

Monitoring

Monitoring is critical for evaluating the effectiveness of management decisions and the accuracy of analysis assumptions and conclusions. Monitoring of road and trail conditions is required, must meet regional and/or national standards, and will continue under any of the alternatives. If monitoring determines additional resource damage is occurring, steps to prevent further damage may be taken. If the mitigations are not effective or are not possible, additional road or trail closures may be required, which may require additional NEPA analysis.

Implementation and effectiveness monitoring for Part 3 of the LMP are conducted at the project level. All project activities are documented in reporting systems. Annually, a randomly selected sample of at

least 10 percent of projects and on-going activities will be reviewed. An interdisciplinary team will visit the selected projects to review the effectiveness of applying LMP design criteria. If problems in implementation are detected, or if the design criteria are determined to be ineffective, the team will recommend corrective actions. Roads added to the transportation system would be included in the sampling pool for both LMP monitoring and best management practices monitoring.

The California Off-Highway Motor Vehicle Recreation Division grants and agreements program requires that all applicants for funding prepare and submit a soil condition table that lists the current condition and prior year condition of roads, trails, and other areas maintained, conserved, or otherwise operated or supported with division funds. The soil condition table must include roads, trails, and other areas proposed for funding. If the applicant identifies a new project area, and the applicant does not have data for the current or prior year, a "not applicable" designation shall be used in OHV Form G. Roads, trails, and areas shall be rated green, yellow, or red. Green means the soil standards are being met, yellow means maintenance is needed, and red means the soil standards are not being met. Trails added to the national forest transportation system for motorized use would be monitored for trail condition as required by agreement with the California State Park Off-Highway Motor Vehicle Recreation Division Grant Program using the green, yellow, red trail condition class protocol.

In an effort to maintain current data regarding the status of documented heritage or cultural sites in the vicinity of the project area, avoid inadvertent effects to any unrecorded heritage resources that may exist in the project area, and support the general goals and objectives of the LMP and the Motorized Recreation Programmatic Agreement, a monitoring plan focused on identifying at-risk historic properties would be developed and implemented within one year of the implementation of a travel management alternative. Monitoring would be conducted annually for a three-year period, after which the Cleveland NF may revise the monitoring plan if results indicate that certain types of properties, routes, or specifically defined areas no longer require prescribed monitoring. If monitoring indicates that effects to historic properties are occurring in association with the OHV use within the implemented alternative, appropriate resource protection or treatment measures would be implemented to minimize or eliminate such effects.

2.1.2.1 Alternative 1: No Action

This alternative provides a baseline for comparing other alternatives. Under this alternative current management plans would continue to guide management of the area. No changes would be made to the current transportation system and no cross-country travel prohibition in the Corral Canyon and Wildomar OHV areas would be instituted. Subpart B of the Travel Management Rule would not be implemented, and no motor vehicle use map would be produced. Motor vehicle travel by the public would continue to be limited to designated routes and areas. Unauthorized routes would continue to have no status or authorization as part of the transportation system.

Alternative 1 would result in the Cleveland NF having a transportation system that consists of 201.4 miles of roads for highway-legal-only vehicles, 37.8 miles of routes for highway legal and non-highway legal vehicles, 11.2 miles of trail for all vehicles (that is, four-wheel drive, vehicles 50 inches or less in width, and motorcycles), 23.2 miles of trail for vehicles 50 inches or less in width, 1.8 miles of trail for motorcycles, and 2,160 total acres of open areas (Table 2.9).

2.1.2.2 Alternative 2: Proposed Action

Alternative 2, the proposed action, was developed initially from information gathered at public meetings during the summer of 2007 and from preliminary analysis by the interdisciplinary team. After subsequent field review by Cleveland NF personnel, this alternative was refined to exclude route segments that were inaccurately mapped and to update route segment lengths based on better GIS data. Therefore,

Alternative 2 as described below is slightly different than the proposed action that was sent to the public for scoping on January 18, 2008. Alternative 2 would:

1. Prohibit cross-country motor vehicle travel by the public off designated National Forest System roads, trails, and areas, except as allowed by permit or other authorization in the Corral Canyon and Wildomar OHV areas.
2. Add approximately 7.7 miles of trail to the Cleveland NF transportation system within the Corral Canyon OHV area. Approximately 2.5 miles of existing, user-created trails and 5.2 miles of new trail construction would be added to the Cleveland NF transportation system to maintain a diversity of motorized recreation opportunities in the conversion of the Corral Canyon OHV area to a system of designated routes (see Table 2.1).
3. Add approximately 4.87 miles of roads for highway-legal vehicles to the Cleveland NF transportation system to maintain dispersed recreation motorized access (see Table 2.3).
4. Establish a 2.0-acre open riding area adjacent to Corral Canyon OHV campground and establish a 0.2-acre open riding area adjacent to the Wildomar OHV trailhead where young riders can learn safe vehicle operation (see Table 2.2). All other OHV use in the Corral Canyon and Wildomar OHV areas would be restricted to designated routes.
5. Amend the LMP to adjust land use zones and recreational opportunity spectrum designations on approximately 10 acres of land to reflect existing on-the-ground conditions. As per Forest Service policy and regulations, this amendment would be non-significant.

Alternative 2 would result in the Cleveland NF having a transportation system that consists of 206.3 miles of roads for highway-legal-only vehicles, 37.8 miles of routes for highway legal and non-highway legal vehicles, 13.1 miles of trail for all vehicles (that is, four-wheel drive, vehicles 50 inches or less in width, and motorcycles), 25.3 miles of trail for vehicles 50 inches or less in width, 5.3 miles of trail for motorcycles, and 2.2 total acres of open areas (Table 2.9). Implementation of this alternative would lead to publication of a motor vehicle use map reflecting the changes in the transportation system described above.

Table 2.1: Motorized trail additions within Corral Canyon OHV Area in Alternative 2.

Name	Approx. mileage	Type	Permitted vehicle class	Season of use
SDTR-1	1.00	User-created	ATV and motorcycle	Yearlong
SDTR-2	0.50			
901a OHV Skye Valley alternate	0.64		ATV and motorcycle	
903b Bronco Peak loops	0.36		All vehicles	
Corral motorcycle	3.64	New construction	Motorcycle only	
911a Gunslinger loops	1.55	New construction	All vehicles	
Total	**7.69**	--	--	--

Table 2.2: Open area additions in Alternative 2.

Name	Approx. acreage	Permitted vehicle class	Season of use
Corral Camp	2.0	ATV and motorcycle. No other classes permitted.	Yearlong
Wildomar	0.2		
Total	**2.2**	--	--

Table 2.3: Road additions for access to dispersed recreation locations in Alternative 2.

Name	Approx. mileage	Permitted vehicle class	Season of use
Buckman North	0.28	All highway legal vehicles	Yearlong
Buckman South	0.35		
Corte Madera	0.06		
Cottonwood	0.50		
Deer Flats/Knob Hill	0.10		
Deer Park	0.02		
High Point	0.14		
Kitchen Creek 1	0.33		
Kitchen Creek 2	0.09		
Laguna Rec.	0.18		
Miners Road	0.04		
Old Horse Meadow	0.12		
Pine Creek 1	0.03		
Pine Creek 2	0.21		
The Narrows	0.55		
Timbers Edge	1.80		
Upper Santa Ysabel	0.03		
Yellow Rose Spring	0.04		
Total	**4.87**	--	--

2.1.2.3 Alternative 3

Alternative 3 is a version of Alternative 2 that was modified based on field review and public comments to scoping and during the comment period on the environmental assessment. Major differences between this alternative and Alternative 2 include removal of all proposed routes that intersect threatened or endangered species habitat and removal of all proposed routes that intersect riparian conservation areas, as well as retaining 12.8 acres of rock outcrops as open for continuation of current motor vehicle use in the Corral Canyon OHV area. Alternative 3 would:

1. Prohibit cross-country motor vehicle travel by the public off designated National Forest System roads, trails, and areas, except as allowed by permit or other authorization in the Corral Canyon and Wildomar OHV areas.
2. Add approximately 6.2 miles of trail to the Cleveland NF transportation system. Approximately 1.0 mile of existing, user-created trails and 5.2 miles of new trail construction would be added to the Cleveland NF transportation system to maintain a diversity of motorized recreation opportunities in the conversion of the Corral Canyon OHV area from one in which cross-country motorized travel is legal to one in which all motorized travel must occur on designated routes or in smaller designated open areas (see Table 2.4). Inspect and improve mitigation measures to prevent access to adjacent unauthorized routes (see Table 2.5).
3. Add approximately 1.27 miles of routes for highway-legal vehicles to the Cleveland NF transportation system to access dispersed recreation opportunities (see Table 2.7). Install mitigation measures to prevent access to adjacent unauthorized routes (see Table 2.8).
4. Establish a 2.0-acre open riding area adjacent to Corral Canyon OHV campground; allow several areas totaling 12.8 acres adjacent to existing and proposed trails in the Corral Canyon OHV area to remain open for continued use as locations for motorcycle and bike trial riding; and establish a 0.2-acre open riding area adjacent to the Wildomar OHV trailhead where young riders can learn safe vehicle operation (see Table 2.6). All other OHV use in the Corral Canyon and Wildomar OHV areas would be restricted to designated routes.
5. Amend the LMP to adjust land use zones and recreational opportunity spectrum designations on approximately 10 acres of land to reflect existing on-the-ground conditions. As per Forest Service policy and regulations, this amendment would be non-significant.

Alternative 3 would result in the Cleveland NF having a transportation system that consists of 202.7 miles of roads for highway-legal-only vehicles, 37.8 miles of routes for highway legal and non-highway legal vehicles, 13.1 miles of trail for all vehicles (that is, four-wheel drive, vehicles 50 inches or less in width, and motorcycles), 23.8 miles of trail for vehicles 50 inches or less in width, 5.4 miles of trail for motorcycles, and 15.0 total acres of open areas (Table 2.9). Implementation of this alternative would lead to publication of a motor vehicle use map reflecting the changes in the transportation system described above.

Many routes that were listed in Alternative 2 were dropped from consideration in Alternative 3. Buckman North, Buckman South, Cottonwood, Deer Park, Miners Road, the Narrows, Upper Santa Ysabel, and Yellow Rose Spring were dropped from consideration because they either would have intersected habitat for the arroyo toad and/or they would have intersected riparian conservation areas (see Table 2.12). Proposed motorized trail additions SDTR-1 and SDTR-2 were removed for this alternative and replaced with 12.8 acres of open area in the Corral Canyon OHV area.

Table 2.4: Motorized trail additions within Corral Canyon OHV Area in Alternative 3.

Name	Approx. mileage	Type	Permitted vehicle class	Season of use
901a OHV Skye Valley alternate	0.64	User created	ATV and motorcycle.	Yearlong
903b Bronco Peak loops	0.36		All vehicles	
Corral motorcycle	3.64	New construction	Motorcycle only	
911a Gunslinger loops	1.55	New construction	All vehicles	
Total	**6.19**	--	--	--

Public scoping comments identified a number of locations at which past mitigation measures designed to limit motorized access on approximately 11.50 miles of unauthorized routes have proven insufficient to ensure resource protection. As part of Alternative 3, barriers that are already in place will be inspected and improved to increase effectiveness (Table 2.5).

Table 2.5: Trail mitigation to prevent unauthorized use of adjacent routes in Alternative 3.

Name	Approximate mileage protected from unauthorized vehicle use
901a Sky Valley Alternate	0.30
902DE	0.60
903DE	0.60
Bronco Flats	0.60
Goat exclosure	1.50
Salazar Canyon	1.60
Sky Valley 1	0.90
Sky Valley 2	0.40
Stokes Valley 1	0.50
Stokes Valley 2	2.60
Wildomar OHV	1.90
Total	**11.50**

Table 2.6: Open area additions in Alternative 3.

Name	Approx. Acreage	Permitted vehicle class	Season of use
Corral SDTR	12.8	Motorcycles and bikes	Yearlong
Corral Camp	2.0	ATV and motorcycle. No other classes permitted.	
Wildomar	0.2		
Total	**15.0**	--	--

Table 2.7: Road additions for access to dispersed recreation sites in Alternative 3.

Name	Approximate Mileage	Permitted vehicle class	Season of use
Corte Madera	0.06	All highway legal vehicles	Yearlong
Deer Flats/Knob Hill	0.10		
High Point site	0.14		
Kitchen Creek 1	0.08		
Pine Creek 1	0.03		
Timbers Edge	0.86		
Total	**1.27**	--	--

Barriers to prevent continued unauthorized use are proposed for approximately 2.50 miles of unauthorized adjacent routes that were not recommended for inclusion in the transportation system in Alternative 3. Methods proposed for these locations include installation of barricades and other obstacles, potentially including boulders and downed trees (Table 2.8).

Table 2.8: Proposed mitigation to prevent unauthorized use of adjacent routes in Alternative 3.

Name	Approx. mileage	Mitigation activity and location
Buckman South	0.30	Barricade before stream crossing
Cottonwood	0.30	Barricade for turnout
Horse Meadow	0.10	Barricade for turnout
Kitchen Creek 1	0.20	Barricade partial closure
Kitchen Creek 2	0.10	Barricade for turnout
Laguna Rec.	0.20	Close at road
Pine Creek 2	0.20	Barricade for turnout
The Narrows	0.20	Close at road
Timbers Edge	0.90	Barricade partial closure
Total	**2.50**	--

2.2 COMPARISON OF ALTERNATIVES

This section compares the alternatives by summarizing key differences between the alternatives and provides a summary for all alternatives (Table 2.9). Table 2.10 compares indicators for new trails proposed for designation in the Corral Canyon OHV area under each alternative. Table 2.11 compares indicators for existing and proposed designated open areas under each alternative. Finally, Table 2.12 compares indicators for roads under each alternative.

Table 2.9: Alternative comparison for Cleveland NF transportation system changes.

	Alternatives		
	1	2	3
Road, highway legal only (miles)	201.4	206.3	202.7
Road, highway legal and non-highway legal (miles)	37.8	37.8	37.8
Trail, all vehicles: 4WD, ATVs, and motorcycles (miles)	11.2	13.1	13.1
Trail, only ATV and motorcycle (miles)	23.2	25.3	23.8
Trail, only motorcycles (miles)	1.8	5.3	5.4
Open areas (acres)	2160	2.2	15.0

Table 2.10: Alternative comparison for new trails proposed for Corral Canyon OHV area.

Name	Approximate mileage			T&E habitat	In RCA?	< 100 ft. from stream?	Recreation opportunity	ROS
	Alt. 1	Alt. 2	Alt. 3					
SDTR-1	0	1.00	0	No	No	No	Motorcycle route across rock outcrops	SPM
SDTR-2	0	0.50	0					
901a OHV Skye Valley alternate	0	0.64	0.64	No	No	No	Vehicles 50" or less	SPM
903b Bronco Peak loops	0	0.36	0.36					
Corral motorcycle	0	3.64	3.64	No	No	No	Motorcycle Route	SPM
911a Gunslinger loops	0	1.55	1.55	No	No	No	Vehicles 50" or less	SPM
Total	**0**	**7.69**	**6.19**	--	--	--	--	--

Table 2.11: Alternative comparison for designated open areas.

Name	Approximate acres			T&E habitat	In RCA?	< 100 ft. from stream?	Recreation opportunity	ROS
	Alt. 1	Alt. 2	Alt. 3					
Corral Canyon SDTR	0	0	12.8	No	No	No	Trial riding	SPM
Corral Camp	0	2.0	2.0	No	Yes	No	Youth practice	
Corral Canyon OHV area	1800	0	0	Yes	Yes	Yes	X-country riding	
Wildomar trailhead	0	0.2	0.2	No	No	No	Youth practice	
Wildomar OHV area	360	0	0	Indirect	Yes	Yes	X-country riding	
Total	**2160**	**2.2**	**15**	--	--	--	--	--

Table 2.12: Alternative comparison for road additions for access to dispersed recreation sites.

Name	Approximate mileage			T&E habitat	In RCA?	< 100 ft. from stream?	Recreation opportunity	ROS
	Alt. 1	Alt. 2	Alt. 3					
Buckman North	0	0.28	0	Arroyo toad	Yes	No	Dispersed Rec.	SPM
Buckman South	0	0.35	0	Arroyo toad	Yes	Yes	Dispersed Rec.	SPM
Corte Madera	0	0.06	0.06	No	No	No	Dispersed Rec.	SPNM
Cottonwood	0	0.50	0	Arroyo toad	Yes	Yes	Dispersed Rec.	SPM
Deer Flats/Knob Hill sites	0	0.10	0.10	No	No	No	Dispersed Rec.	SPM
Deer Park	0	0.02	0	No	Yes	No	Dispersed Rec.	SPM
High Point site	0	0.14	0.14	No	No	No	Dispersed Rec.	SPM
Kitchen Creek 1	0	0.33	0.08	No	No	No	Dispersed Rec.	RN
Kitchen Creek 2	0	0.09	0	No	No	No	Dispersed Rec.	RN
Laguna Rec.	0	0.18	0	No	No	No	Dispersed Rec.	SPM
Miners Road	0	0.04	0	Arroyo toad	Yes	Yes	Dispersed Rec.	SPM
Old Horse Meadow	0	0.12	0	No	No	No	Dispersed Rec.	RN
Pine Creek 1	0	0.03	0.03	No	No	No	Dispersed Rec.	SPM
Pine Creek 2	0	0.21	0	No	No	No	Dispersed Rec.	SPM
The Narrows	0	0.55	0	Arroyo toad	Yes	Yes	Dispersed Rec.	RN & SPNM
Timbers Edge	0	1.80	0.86	No	No	No	Dispersed Rec.	RN
Upper Santa Ysabel	0	0.03	0	No	Yes	No	Dispersed Rec.	SPM
Yellow Rose Spring	0	0.04	0	Arroyo toad	Yes	Yes	Dispersed Rec.	SPM
Total	**0**	**4.87**	**1.27**	--	--	--	--	--

Table 2.13: Summary of effects

Affected resource	Alternative		
	1	2	3
Heritage	Unlikely to further affect possible NRHP values	No adverse effects to historic properties	No adverse effects to historic properties
Riparian habitat areas and sensitive wildlife species	Ongoing effects on 55 acres of riparian habitat and species in existing open areas, roads, and trails. Highest level of effects on RCAs and associated species. Ongoing effects on 5,498 acres of habitat. Existing open areas, roads, and trails – highest level of effects.	Adds 2.99 new miles of road in RCAs in addition to ongoing effects of existing roads and trails on additional 35 acres – medium level of effects on RCAs and associated species. Effects on 3,493 acres of habitat – medium level of effects.	Ongoing effects of existing roads and trails on 34 acres – lowest level of effects on RCAs and associated species. Effects on 3,428 acres of habitat – medium level of effects
Bald eagle, spotted owl, Townsend's big-eared bat, pallid bat, western red bat, leaf-nosed bat	No effect beyond baseline	None	None
Sensitive plant species	No effect beyond baseline	None	None
Threatened, endangered, proposed, candidate wildlife and plant species or habitat	No effect beyond baseline	Adds 1.07 miles of new roads in occupied arroyo toad habitat; would adversely affect the species.	None
Management indicator species	No effect beyond baseline	Contributes to decline in arroyo toad population, may alter forest- wide trends toward habitat improvement	None
Air quality	No effect beyond baseline	Would reduce criteria pollution emissions below baseline.	Would reduce criteria pollution emissions below baseline.
Hydrology	No effect beyond baseline	Minor decreases in peak runoff and sediment yield	Minor decreases in peak runoff and sediment yield
Landscape aesthetics	No effect beyond baseline	Reduces visual effects of the Corral Canyon and Wildomar OHV areas, thereby increasing acres that meet the high SIO. Increases areas with a roaded appearance by 60 acres	Reduces visual effects of the Corral Canyon and Wildomar OHV areas, thereby increasing acres that meet the high SIO. Increases areas with a roaded appearance by 9 acres

Affected resource	Alternative		
	1	2	3
Recreation	No effect beyond baseline	Reduces areas open to cross-country OHV use by 2158 acres. Increases motorcycle-only trails by 3.5 miles. Increases ATV and motorcycle-only trails by 2.1 miles. Increases trails open to all vehicles by 1.9 miles.	Reduces areas open to cross-country OHV use by 2145 acres. Increases motorcycle-only trails by 3.6 miles. Increases ATV and motorcycle-only trails by 0.6 miles. Increases trails open to all vehicles by 1.9 miles.

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM ANALYSIS

During the scoping process, commenters suggested additional alternatives that they suggested the Cleveland NF analyze as part of the travel management process. The following describes an alternative that was considered but eliminated from detailed study.

2.3.1 Public-generated additions and alterations

During the scoping period a number of individuals recommended additions to and alterations of the transportation system. These additions and alterations included construction and/or designating single track trails and loops on the Trabuco Ranger District, new trails in the Wildomar OHV area, separate parallel trails for motorcycles and vehicles less than 50 inches wide along Bear Valley Road on the Descanso Ranger District, and a parallel trail to create a one-way loop on the Kernan Cycle trail.

These suggestions do not meet the purpose and need for the project (section 1.2) and are beyond the scope of the action (section 1.1.3). However, the travel management process is not a "one time" event. Routes that are consistent with LMP direction will be added to the inventory and may be evaluated for potential addition to the transportation system at a future date, based on adequate funding and available resources.

2.4 FEATURES COMMON TO ACTION ALTERNATIVES

The Cleveland NF already has a designated system for OHV and other motor vehicle use. OHV travel off designated routes is prohibited except in the Corral Canyon and Wildomar OHV areas. The existing designated OHV system was reconfirmed, with public input, through the land management planning process and record of decision for the LMP final environmental impact statement in April 2006.

The LMP prohibits motor vehicle travel off designated National Forest System roads and trails and limited areas that are designated for vehicle use. Following a decision on this proposal, the Cleveland NF will is implement the Travel Management Rule, Subpart B, with publication of a motor vehicle use map that defines the transportation system and can be used as an enforcement tool.

2.5 FEATURES INCORPORATED INTO PROJECT DESIGN

These features, which apply to the action alternatives, would be incorporated into the project to reduce potential effects to resources in compliance with the LMP. The features include both *standards* and *strategies and tactics*, as described in the LMP, as well as additional guidelines for the project, and are organized by general resource category below.

STANDARDS (Part 3 of LMP)

Aesthetic Management (page 6)
S9. Design management activities to meet the scenic integrity objectives (SIO) shown on the Scenic Integrity Objective Map. (See http://www.fs.fed.us/r5/scfpr/projects/lmp/mapindex.htm)
S10. Scenic integrity objectives will be met with the following exceptions: (1) minor adjustments not to exceed a drop of one SIO level are allowed with the forest supervisor's approval; and (2) temporary drops of more than one SIO level may be made during and immediately following project implementation providing they do not exceed three years in duration.

Fish and Wildlife (pages 6 through 8)
S11. When occupied or suitable habitat for a threatened, endangered, proposed, candidate, or sensitive species is present on an ongoing or proposed project site, consider species guidance documents (see Appendix H of the LMP) to develop project-specific or activity-specific design criteria. This guidance is intended to provide a range of possible conservation measures that may be selectively applied during site-specific planning to avoid, minimize, or mitigate negative long-term effects on threatened, endangered, proposed, candidate, or sensitive species and habitat. Involve appropriate resource specialists in the identification of relevant design criteria.
S12. When implementing new projects in areas that provide for threatened, endangered, proposed, and candidate species, use design criteria and conservation practices (see Appendix H of the LMP) so that discretionary uses and facilities promote the conservation and recovery of these species and their habits. Accept short-term impacts where long-term effects would provide a net benefit for the species and its habitat where needed to achieve multiple-use objectives.
S31. Design new features or expansion of existing facilities to direct public use away from occupied habitat for threatened, endangered, proposed, and candidate species.
S34. Where a threatened, endangered, proposed, candidate, or sensitive species occurs in a recreation site or area, take steps to avoid or minimize negative impacts to the species and its habitat. Use the least restrictive action that will effectively mitigate adverse impacts to the species and its habitat.
S35. Manage dispersed recreation activities to ensure that environmental sustainability is maintained by utilizing the following measure: (1) Discourage camping within 100 feet of sensitive resources and habitats, including meadows and bodies of water, including streams, or within 0.25 miles of developed recreation facilities: (2) Discourage camping within 600 feet of any wildlife water source developments, such as guzzlers and water holes, in accordance with state laws; (3) Motorized and non-motorized vehicle travel is restricted to National Forest System roads, trails and limited areas that are designated for vehicle use.

Soil, Water, Riparian, and Heritage (page 11)
S47. When designing new projects in riparian areas, apply the Five-Step Screening Process for Riparian Conservation Areas as described in Appendix E of the LMP.
S50. Mitigate negative long-term impacts from recreation use to soil, watershed, riparian or heritage resources (refer to Appendix D – Adaptive Mitigation for Recreation Uses).

PROGRAM STRATEGIES AND TACTICS (Part 2 of LMP)

LM 1 – Landscape aesthetics (page 105). Manage landscapes and built elements in order to achieve scenic integrity objectives. Use the best environmental design practices to harmonize changes in the landscape and to advance environmentally sustainable design solutions.

LM2 – Landscape restoration (page 105). Restore landscapes to reduce visual effects of management activities and noncomforming features. Prioritize landscape restoration activities in key places (Aguanga, Elsinore, Laguna, Morena, Palomar Mountain, and Pine Creek). Integrate restoration activities with other resource restoration.

LM3 – Landscape character (page 105). Maintain the character of National Forest System lands in order to preserve their intact nature, valued attributes, and open space. Maintain the integrity of the expansive, unencumbered landscapes and traditional cultural features that provide the distinctive character of places. Plan, design, and improve infrastructure along scenic travel routes to meet scenic integrity objectives.

REC 1 – Recreation opportunity (page 103). Manage national forest land to achieve recreation opportunity spectrum classes.

Trans 3 – Improve trails (page 109). Develop an interconnected, shared-use trail network where compatible and support facilities complement local, regional, and national trails and open space, and also enhance day-use opportunities and access for the general public. Construct and maintain the trail network to levels commensurate with area objectives, sustainable resource conditions, user safety, and the type and level of use. Convert ecologically sustainable unauthorized roads and trails, and other roads that meet the need for trail-based recreation.

Trans 4 – Off-highway vehicle opportunities (page 109). Provide off-highway vehicle opportunities on designated routes within the Wildomar and Corral Canyon OHV areas, and on existing designated routes. Provide four-wheel drive opportunities in the easy, more, and most difficult route categories. Consider providing opportunities for non-highway licensed vehicles on low maintenance standard roads when traffic studies have been completed and potential for user conflict is minimal. Consider developing remote driving networks as opportunities to accommodate this experience are identified.

WAT1 – Watershed function (page 95). Protect, maintain and restore the natural watershed functions including slope processes, surface water, and groundwater flow and retention, and riparian area sustainability. Maintain or restore soil properties and productivity to ensure ecosystem health (soil microbiota and vegetation growth), soil hydrologic function, and biological buffering capacity. Manage Riparian Conservation Areas (RCA) to maintain or improve conditions for riparian dependent resources. Riparian Conservation Areas include aquatic and terrestrial ecosystems and lands adjacent to perennial, intermittent, and ephemeral streams, as well as around meadows, lakes, reservoirs, ponds, wetlands, vernal pools, seeps, springs and other water bodies. Riparian dependent resources are those natural resources that owe their existence to the area, such as fish, amphibians, reptiles, fairy shrimp, aquatic invertebrates, plants, birds, mammals, soil and water quality. Maintain natural stream channel conductivity, connectivity and function.

ADDITIONAL GUIDELINES DEVELOPED FOR PROJECT

Botanical resources

B-1. New construction will avoid effects to threatened, endangered and sensitive (TES) plant species. Prior to construction, coordination will occur with the forest botanist to ensure that route alignments are chosen that will not affect TES species.

Invasive plants

IP-1. For new construction, decommissioning and rehabilitation, all mechanized heavy equipment to be used off of system roads will be cleaned prior to entering the project area. This is to reduce the likelihood of introduction or spread of non-native invasive plants. In all project-related contracts, include provisions that require equipment cleaning before project implementation.

IP-2. Where available, any plant materials used for decommissioning and rehabilitation will be from on-site sources. All plant material from off-site sources must be certified weed-free (LMP standard S-6).

IP-3. A handout will be prepared for the project administrator to use to identify target weed species and to use to educate the permittee and contractors.

General wildlife

WG-1. For new construction, decommissioning and rehabilitation, known occurrences of Sensitive animals and/or habitat features that support sensitive animals will be flagged and avoided. These areas may be buffered to prevent indirect effects. A qualified biologist will work with the project administrator to avoid known occurrences.

WG-2. For new construction, decommissioning, and rehabilitation, no night work or use of artificial lighting during construction will be allowed. "Night" is defined as the period between sunset and sunrise

Monitoring

M-1. The project area will be monitored periodically for non-native invasive plants. If weeds are found, a plan for eradication/control will be developed as a component of the WHPP/HMP.

M-2. The Cleveland NF will continue to provide field staff, and well as continue to cultivate volunteers, to patrol, enforce and monitor uses of the OHV and street-legal motorized transportation system to the maximum extent possible.

Nesting birds

NB-1. For new construction, decommissioning and rehabilitation: To comply with the Migratory Bird Treaty Act, prior to project activities between March 1 and August 31, surveys will be conducted for nesting birds no more than two weeks prior. If nesting birds are found, the project administrator will work with the biologist to minimize effects and ensure consistency with the act.

Rare terrestrial reptiles and amphibians

HE-1. For new construction, decommissioning and rehabilitation: Protect rock outcrops, springs, seeps and riparian areas from mechanical disturbance where possible.

Riparian areas, water bodies, wetlands, seeps, springs, and meadows

R-1. The five-step project screening process will be used to identify riparian conservation areas wherever designations and/or transportation management actions intersect riparian areas (LMP standard S-47).

R-2. New construction will avoid identified riparian conservation areas to the maximum extent possible.
R-3. Decommissioning of roads and rehabilitation of unauthorized routes, wherever they are within identified riparian conservation areas, will be implemented with minimal effect to the RCA and associated botanical and wildlife resources. To the extent possible, snags and downed logs will be retained within the RCA.

Chapter 3
Affected Environment and Environmental Consequences

3.1 INTRODUCTION

This chapter summarizes the physical, biological, social, and economic environments that are affected by the proposed action and alternatives, as well as the effects on that environment that would result from implementation of any of the alternatives. This chapter also presents the basis for comparison of the alternatives presented in Chapter 2.

The affected environment discussion for each resource describes the existing, or baseline, condition against which environmental effects were evaluated and from which progress toward the desired condition can be measured. Environmental consequences form the scientific and analytical basis for comparison of alternatives, including the proposed action, through compliance with standards set forth in the Cleveland NF Land Management Plan (LMP) and a summary of monitoring required by National Environmental Policy Act (NEPA) and the National Forest Management Act (NFMA).

The environmental consequences discussion for each resource describes direct, indirect, and cumulative effects, as well as applicable mitigation measures. *Direct effects* are caused by the action and occur at the same time and place as the action. *Indirect effects* are caused by the action and occur later in time, or further removed in location, but are reasonably foreseeable. *Cumulative effects* result from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions. Effects can be beneficial, neutral, or adverse.

3.1.1 Analysis Process

The environmental consequences presented in Chapter 3 address the impacts of the actions proposed under each alternative for the Cleveland NF. This effects analysis was done at the forest scale. However, the effects findings in this chapter are based on site-specific analyses of each road, trail, and area proposed for addition to the transportation system and any changes in vehicle class and/or season of use for existing National Forest System roads, trails and areas. Readers seeking information concerning the environmental effects associated with a specific road, trail, or area are directed to the specialist reports in the project record, where details concerning any mitigation measures or any other findings are documented. Road segment lengths may vary slightly between various specialist reports due to mapping changes.

3.1.2 Cumulative Impacts/Effects

A *cumulative impact* is the impact on the environment which results from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions (40 CFR 1508.7).

The cumulative effects analysis area is described under each resource, but in most cases includes the entire Cleveland NF, including private and other public lands that lie within the national forest boundary, because activities associated with the proposed action are widely dispersed across the national forest. Past activities are considered part of the existing condition. To understand the contribution of past actions to the cumulative effects of the proposed action and alternatives, this analysis relies on current environmental conditions as a proxy for the impacts of past actions because existing conditions reflect the aggregate impact of all prior human actions and natural events that have affected the environment and might contribute to cumulative effects.

This cumulative effects analysis does not attempt to quantify the effects of past human actions by adding all prior activities on an action-by-action basis. This approach was not taken for several reasons. First, a catalog and analysis of all past actions would be impractical to compile and unduly costly to obtain. Current conditions have been impacted by innumerable actions over the last century (and beyond), and trying to isolate the individual actions that continue to have residual impacts would be nearly impossible.

Second, providing the details of past actions on an individual basis would not be useful to predict the cumulative effects of the proposed action or alternatives. Focusing on individual actions would be less accurate than looking at existing conditions, because there is limited information on the environmental impacts of individual past actions, and one cannot reasonably identify each and every action over the last century that has contributed to current conditions. Additionally, focusing on the impacts of past human actions may ignore important residual effects of past natural events, which may contribute to cumulative effects just as much as human actions. By looking at current conditions, we are sure to capture all the residual effects of past human actions and natural events, regardless of which particular action or event contributed those effects.

Third, public scoping for this project did not identify any public interest or need for detailed information on individual past actions. Finally, the Council on Environmental Quality issued an interpretive memorandum on June 24, 2005, regarding analysis of past actions, which states, "agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions."

For these reasons, the analysis of past actions in this section is based on current environmental conditions.

3.1.4 Assumptions and Limitations

The following assumptions and limitations were applied in the effects analysis in each section:

1. No NEPA decision is necessary to continue use of the national forest transportation system (i.e., OHV and transportation routes) as currently managed under the no action alternative. These decisions were made previously.
2. Unauthorized travel routes are not included in the national forest transportation system. Proposals to add these unauthorized routes to the transportation system would require a NEPA decision.
3. Temporary roads, trails and areas built to support emergency operations or temporarily authorized in association with contracts, permits or leases are not authorized for public use and are therefore not included in the transportation system. Proposals to add these temporary roads to the transportation system would require a NEPA decision.

4. Unauthorized routes not included in the proposed action are not precluded from consideration for addition to the transportation system in future travel management actions.
5. The Cleveland NF will continue to make changes to the transportation system as needed, and will also continue to make decisions about temporary roads or trails as needed in association with contract, permit, lease, or other written authorization.
6. Any activity associated with contract, permit, lease or other written authorization is exempt from designation under the travel management rule (36 CFR 212.51(a)(8)) and should not be part of the proposal. These activities, which include fuelwood permits, motorized SUP permits, and mining activities, are subject to separate NEPA analysis.
7. *Designation* is an administrative act that does not trigger NEPA. Designation technically occurs with printing of the motor vehicle use map. NEPA analysis is not required for printing a map.
8. For travel management, any change to current restrictions or prohibitions regarding motorized travel by the public is the federal action that triggers NEPA analysis. Examples include prohibiting cross-country travel, changing management, changing vehicle class or season of use, and any additions or deletions of roads, trails, or areas to the national forest transportation system.
9. Previous decisions on the transportation system do not need to be revisited to implement the travel management rule or the motor vehicle use map. The transportation system contains existing roads and trails that either underwent NEPA analysis, or that predate NEPA. Continued motorized use of roads and trails in the transportation system, in accordance with existing laws and regulations, does not require NEPA analysis.
10. Dispersed recreation activities—such as camping, hunting, fishing, and hiking—are not part of the scope of the proposed action. The analysis focuses on motor vehicle use.
11. Travel analysis is a pre-NEPA planning exercise for transportation planning which informs travel management. Until new directives are published, the agency continues to follow existing policy related to transportation planning and analysis. For example, some Roads Analysis Process requirements in FSM 7700 and 7710 are still applicable.
12. Setting road maintenance levels and changing maintenance levels are administrative and not subject to NEPA. However, changes in allowed vehicle class, season of use, access, and proposals to reconstruct facilities are subject to NEPA.
13. The system will be maintained to standard and all additions or changes to the transportation system will meet standards prior to availability for public use.
14. Cleveland NF employees and volunteers have responsibility, in part, to patrol and monitor the transportation system, street-legal motorized recreation, and OHV use. These employees, who provide information and education to the public, can cite motorists who violate prohibitions and/or who cause resource damage. Unauthorized routes are identified and remedied as quickly as possible. The Cleveland NF has a Wildlife Habitat Protection Program and Habitat Protection Program funded as part of the Green Sticker State funding. Annual monitoring and reporting are conducted based on this annually updated plan.

3.1.5 Resource Reports

Each section in this chapter provides a summary of the project-specific reports, assessments, and input prepared by Forest Service specialists, which are incorporated by reference in this environmental assessment. Reports incorporated by reference for this project include:

(1) "Biological Assessment/Evaluation and Management Indicator Species Report and Weed Risk Assessment" prepared by K.Winter, Cleveland NF wildlife biologist;
(2) "Heritage Resource Analysis" prepared by S. Harvey, Cleveland NF heritage program manager;

(3) "Hydrology Resource report" and "Air Resource report" prepared by Mike McCorison, Angeles NF wildland hydrologist and Southern California air resource specialist; and
(4) "Soil Resource report" prepared by Thomas White, Cleveland NF forest planner and Peter Fahnestock, National Resource Conservation Service resource soil scientist.

Additional resource sections of this environmental assessment, including the landscape aesthetics and recreation, were added directly into the body of this document without creation of separate, stand-alone reports.

Resource-specific design criteria are found in section 2.5 of the environmental assessment. Where potential slight discrepancies may be found between segment lengths of proposed transportation system additions as analyzed in this chapter, the lengths and acreages found in the alternative descriptions in Chapter 2 will be considered as final.

These documents are part of the project record on file at the Cleveland NF Supervisor's Office in San Diego, California. Copies of these reports are available upon request by contacting Pete Gomben, NEPA coordinator, at (858) 674-2901.

3.1.6 Law Enforcement

The following assumptions are associated with the proposed changes to the transportation system:

- Enforcement of laws and regulations related to travel management will be enforced equally in authority and weight as with all other federal laws and regulations.
- As with any change in a regulation on National Forest System lands, there is usually a transitional period for the public to become accustomed to the changes. A higher number of violations to the Travel Management Rule may occur during the first few years, but the number of violations will decline as the users become accustomed to and comply with the rules. Assumptions are that:
    - Users in communities adjacent to the Cleveland NF will comply within 1 to 2 years.
    - Frequent users who are a further distance from the Cleveland NF will comply within 2 to 3 years.
    - Infrequent users, regardless of distance, may take up to 5 years to comply.
- Law enforcement officers and agency personnel presence and enforcement actions will have a positive effect on the behavior and attitudes of OHV users.
- The Travel Management Rule and associated motor vehicle use map clearly define the designated routes, thereby making violations to the rule clear and unequivocal.
- After the motor vehicle use map is published, the implementation of the established dedicated network of roads, trails, and areas with signs, and user education programs, will reduce the number of violations.
- Forest protection officers spend a large percentage of time on travel management issues, ranging from 30 to 50 percent, depending on the national forest. Law enforcement officers spend approximately 10 to 20 percent of their time on enforcement of off-highway vehicle issues.
- The proposal to provide additional routes to the transportation system through action alternatives is anticipated to assist enforcing the shift from two "open to cross-country motor vehicle travel" areas to one in which such use is designated in much smaller areas. These actions provide opportunities and access where such use was occurring in key popular dispersed locations based on recreation analysis and public input. Providing opportunities for recreation in popular, key areas will help relieve pressure to travel off of designated routes.

3.1.7 Information on Other Resource Areas

The proposed action and alternatives do not propose actions affecting these resources. However, a brief summary on why they are not included in Chapter 3 is provided based on input received during scoping:

Wilderness
Actions proposed are in compliance with wilderness designations and with the Wilderness Act of 1964. These resources are not affected by any alternative. Motorized activity continues to be prohibited in wilderness under all the alternatives.

3.2 HERITAGE RESOURCES

The authorized use of motor vehicles on newly constructed trails and open areas, the continued use of unauthorized trails associated with dispersed recreation, and the construction and maintenance of new OHV roads, trails, and open areas on the Cleveland NF have the potential to affect heritage resources. This section discusses the potential for effects to heritage resources associated with the implementation of each alternative and satisfies the requirements found in Section 106 of the National Historic Preservation Act (NHPA) for the proposed undertaking, in accordance with the stipulations of the *Programmatic Agreement among the U.S.D.A. Forest Service, Pacific Southwest Region, U.S.D.A. Forest Service, Intermountain Region's Humboldt-Toiyabe National Forest, California State Historic Preservation Officer, and Advisory Council on Historic Preservation Regarding the Process for Compliance with Section 106 of the National Historic Preservation Act for Designating Motor Vehicle Routes and Managing Motorized Recreation on the National Forests in California* (2006) (Motorized Recreation PA).

Methodology used to determine the study area for effects to heritage resources for this project is based on the stipulations of the Motorized Recreation PA, in conjunction with Section 106 of the National Historic Preservation Act and its implementing regulations (36 CFR 800). Research methods include collection and review of Cleveland NF heritage records, including archaeological site records (ASRs) and archaeological reconnaissance reports (ARRs), GIS data, archival documents, and topographic site location quad maps. Fieldwork conducted in support of the undertaking included intensive site-specific pedestrian survey of previously unsurveyed portions of the area of potential effects (APE) for each alternative, and relocating previously recorded sites within or in the vicinity of the APE of each alternative.

During pre-field research, Cleveland NF files were examined in order to locate ASRs and ARRs documenting previously recorded sites and previously conducted surveys. Based on field data collected in support of the proposed undertaking, ASRs were to be updated if site conditions appeared to have changed substantially since the original or most recent site record or update was prepared.

Based on the stipulations contained in the Motorized Recreation PA, the study area for the proposed undertaking was determined to be a corridor 15 meters wide centered on existing or proposed linear features (i.e., roads, trails, or other OHV routes). If the study area for the existing or proposed linear feature had not been previously surveyed, a pedestrian survey was conducted to identify and record heritage resources. Newly discovered heritage resources were to be recorded on standard Department of Parks and Recreation ASR forms, which would be submitted to the South Coastal Information Center. Archival research and collection of site record and ARR data, survey, preparation of ASRs and updates,

and preparation of ARRs associated with the proposed undertaking was conducted by the Cleveland NF heritage resources program manager, or by directly supervised archaeological technicians.

3.2.1 Existing Condition

Alternative 1
Effects on heritage resources associated with the ongoing use and maintenance of authorized roads, trails, and open areas that would remain open as a result of the implementation of Alternative 1 were documented in the Final Environmental Impact Statement (FEIS) produced in support of the Revised Land Management Plans (LMP) for the Angeles, Cleveland, Los Padres, and San Bernardino national forests, in accordance with NEPA and a long-term Forest Service order. A final record of decision (ROD) was signed for the FEIS in 2006, and a review of the existing transportation system determined that it is consistent with the revised LMP, and that its continued use does not represent an adverse effect to heritage resources, in accord with the stipulations of the Motorized Recreation PA.

Alternative 2
The following sections document the results of archival and pre-field research, a summary of previous fieldwork, and a summary of field work (surveys) conducted in support of Alternative 2. For lengths of road and trail segments under this alternative, including unauthorized route additions, please refer to the section 2.1.2.2.

Unauthorized Motorized Trails
Alternative 2 would include the addition of some portions of existing, user-created motorized trails for vehicles 50 inches or less in width into the transportation system. The portions of these particular trails that would be added to the transportation system are all within the boundaries of the Corral Canyon OHV area. Portions of the area of potential effects (APE) of this component of Alternative 2 have been previously surveyed during the course of heritage survey conducted in support of the development of Corral Canyon as an OHV area.

Due to the moderately dense distribution of sites in the area and the fact that previous surveys were not conducted in heavily vegetated or sloped areas, the portions of motorized trails in Corral Canyon that would be added to the transportation system as part of Alternative 2 were subjected to intensive site-specific pedestrian survey. Pre-field research indicated that no heritage resources were previously identified in the APE of the proposed trail segments. No heritage resources were identified in the APE of this component of Alternative 2 as a result of site-specific pedestrian surveys of proposed trail segments completed in support of this alternative.

Construction of New Motorized Trails
Alternative 2 would include addition of new trails, some intended for motorcycle use only and some intended for use by all vehicles, to the transportation system within the boundaries of the existing Corral Canyon OHV area. Portions of the APE of this component of Alternative 2 may have been previously surveyed during the course of heritage survey conducted in support of the development of Corral Canyon as an open OHV area.

Due to the moderately dense distribution of sites in the area and the fact that previous surveys were not conducted in heavily vegetated or sloped areas, all alignments of the new motorized trails in Corral Canyon that would be constructed as part of Alternative 2 were subjected to intensive site-specific pedestrian surveys. Pre-field research indicated that no heritage resources were previously identified in the APE of the proposed new trails. No heritage resources were identified in the APE of this component

of Alternative 2 as a result of site-specific pedestrian survey of proposed new trail alignments completed in support of this alternative.

Open Motorized Use Areas
Alternative 2 would include the addition of two OHV open areas to the transportation system, including a 2.0-acre open motorized use area adjacent to Corral Canyon OHV campground and a 0.2-acre open motorized use area adjacent to the Wildomar OHV trailhead, both of which are within areas currently open to authorized OHV use. The proposed Corral Canyon open area may have been previously surveyed during the course of heritage survey conducted in support of the development of Corral Canyon as an open OHV area. The proposed Wildomar open area had not been previously subjected to archaeological survey. Both proposed open motorized use areas were subjected to intensive site-specific pedestrian surveys in support of this alternative. Pre-field archival research indicated that no previously recorded heritage resources are in the APE of either of these areas, and none were identified as a result of site-specific pedestrian surveys completed in support this alternative.

Unauthorized, Dispersed Recreation Roads
Alternative 2 would include the addition of portions of unauthorized, unpaved roads associated with dispersed recreation access to the transportation system as public motorized access for highway legal vehicles only. These roads are currently being used for access to dispersed recreation activities. Some of these existing, "user-created", unpaved roads were subjected to pedestrian surveys in support of previous projects over the course of the past 20 years. A review of the ARRs and ASRs for sites identified during the course of previous surveys indicated that the APEs of five of the proposed road additions intersect with the boundaries of five previously recorded, unevaluated, and therefore potentially eligible archaeological sites.

All portions of unauthorized, dispersed recreation access roads that would be added to the transportation system as part of this alternative that appeared to bisect heritage resources according to the Cleveland NF heritage site database, as well as previously unsurveyed roads, were subjected to intensive site-specific pedestrian survey in support of this alternative. In addition, the entirety of the previously mapped archaeological site boundaries that appeared to be intersected by existing user-created access roads that would be added to the transportation system as part of Alternative 2 were intensively surveyed, even if the mapped site boundary extended out of the APE for the road, or the site was found to be located entirely outside the APE of the proposed road addition.

No visible surface components or features that may contribute to potential eligibility of previously recorded archaeological sites were found to be within the proposed APE of any of the portions of existing, unauthorized dispersed recreation roads that would be added to the transportation system as part of this alternative. The apparent intersection of previously recorded site boundaries on the heritage site database appears to be the result of plotting error, map projection disparities, and/or incomplete or incorrectly recorded data regarding surface artifact and/or feature distribution. Four of these sites appeared to be located near, but not within, the APE of the various existing road segments, and one site contained features that are outside the APE of the proposed road addition.

The fact that cultural resources were not identified in the APE of these unauthorized road segments does not appear to be a result of site disturbance associated with the construction, use, or maintenance of these roads. These issues are clarified in the heritage resources survey report produced in support of this component of Alternative 2. Site record forms reflecting the updated site boundary and/or site location revisions were prepared and will be submitted to the South Coastal Information Center (SCIC) for official filing as necessary.

Alternative 3
Alternative 3 would include the addition of selected portions of some user-created, dispersed recreation access roads to the transportation system that are proposed under Alternative 2. In addition to the 2.2 acres of open OHV use area proposed as part of Alternative 2, several rock outcrops totaling 12.8 acres adjacent to designated trails in the existing Corral Canyon OHV area would be added to the transportation system for motorcycle and bike trail riding as part of Alternative 3, for a total of approximately 15 acres of areas proposed for open OHV use. For lengths of road and trail segments under this alternative, please refer to the tables in section 2.1.2.3.

Portions of some of the unauthorized, unpaved access roads that would be added to the transportation system as part of Alternative 3 had been subjected to some degree of pedestrian survey in support of previous projects over the course of the past 20 years. A review of the ARRs for previous surveys indicated that the APEs of some of these roads intersect with the boundaries of previously recorded, unevaluated, and therefore potentially eligible archaeological sites, and this information is also reflected in the heritage site database. As previously noted, all unauthorized, dispersed recreation access roads that would be added to the transportation system as part of Alternative 3 that appear to bisect heritage resources according to the heritage site database were surveyed in support of Alternative 2. Previously unsurveyed roads and the rock outcrops adjacent to designated trails in the existing Corral Canyon OHV area totaling 12.8 acres that would be designated for motorcycle and bike trail riding, were subjected to intensive site-specific pedestrian survey in support of this alternative.

The entirety of the previously mapped archaeological site boundaries that appeared to be intersected by existing unauthorized access roads that are proposed for designation as part of Alternative 3 were intensively surveyed in support of Alternative 2, even if the mapped location extended out of the APE for the road. As stated for Alternative 2, no visible surface components or features that may contribute to potential eligibility of previously recorded archaeological sites were found to be within the proposed APE of any of the unauthorized dispersed recreation roads that would be added to the transportation system as part of the proposed implementation of this alternative, and no archaeological sites were recorded within the 12.8 acres in the existing Corral Canyon OHV area that would be added to the transportation system for motorcycle and bicycle use as part of the proposed implementation of Alternative 3..

3.2.2 Determination of Effects

Alternative 1
As previously noted, the effects on heritage resources associated with the ongoing use and maintenance of existing roads, trails, and open areas were previously documented and analyzed in the FEIS produced in support of the revised Land Management Plans (LMP) for the Angeles, Cleveland, Los Padres, and San Bernardino national forests, in accordance with NEPA and a long-term Forest Service order. In accord with the stipulations of the Motorized Recreation PA (Evaluation of Historic Properties), the continued use and maintenance of existing roads, trails, and open areas does not represent an adverse effect to heritage resources.

The Motorized Recreation PA states that "existing roads, trails, and specifically defined areas that bisect or contain historic properties may be used 'as is' without NHPA evaluation if the heritage resources program manager determines that on-going use and maintenance are unlikely to further affect possible NHPA values." Based on this guidance, the Cleveland NF heritage resources program manager has determined that the continued use of the existing unpaved access roads that would remain open as a result of the implementation of Alternative 1 is unlikely to further affect possible NRHP values of heritage sites. As a result, there would be no adverse effect to historic properties associated with the proposed implementation of Alternative 1. The Section 106 compliance for Alternative 1 is considered to be

complete. No further heritage management analysis is required in association with the proposed implementation of this alternative.

Indirect effects associated with the implementation of this alternative include the potential for effects to heritage resources associated with the continued use and proliferation of unauthorized, "user-created" routes, and the retention of the Corral Canyon and Wildomar OHV areas. However, indirect effects would be expected to decrease over time, particularly with the development of an updated motor vehicle use map and the installation of informational signs related to the prohibition of the use of unauthorized OHV routes.

Alternative 2

Based on the analysis of the results of previously conducted heritage resources survey and/or survey conducted in support of the proposed implementation of Alternative 2, the Cleveland NF heritage resources program manager has determined that there would be no adverse effects to historic properties in the cumulative APE of Alternative 2. The Section 106 analysis for Alternative 2 is considered to be complete. No further heritage management analysis is required in association with the planning or implementation of this travel management alternative.

The potential for indirect effects associated with the implementation of this alternative resulting from the continued use and proliferation of unauthorized routes would be substantially reduced in comparison to the implementation of Alternative 1, but still higher than that for Alternative 3. This reduction in the potential for indirect effects would result primarily from the limiting of OHV use to designated routes and the reduction in the size of the open OHV areas within Corral Canyon and Wildomar from a total of 2,160 to 2.2 acres.

Alternative 3

Based on the determination of no potential for adverse effects to historic properties associated with the proposed implementation of Alternative 2 and the fact that Alternative 3 represents a modification of Alternative 2 that is comprised of the reduction or complete elimination of several of the existing or proposed new road and trail segments analyzed for Alternative 2, there is no potential for adverse effects to historic properties within the cumulative APE of Alternative 3. The closure (decommissioning) of several segments of existing unauthorized OHV roads and trails does not represent a potential adverse effect to historic properties, in accordance with the stipulations of the Motorized Recreation PA. The assessment of potential effects to heritage resources associated with the restoration of decommissioned road segments will be deferred until such time that specific restoration activities are proposed. As a result of this determination, there is no potential for adverse effects to historic properties associated with the proposed implementation of Alternative 3, including the decommissioning of portions of the existing unauthorized, dispersed recreation roads. The Section 106 compliance aspect of Alternative 3 is considered to be complete, and no further heritage management analysis is required in association with the planning or proposed implementation of Alternative 3.

The potential for indirect effects to heritage resources associated with the implementation of this alternative resulting from the continued use and proliferation of unauthorized routes would be reduced in comparison to the implementation of alternatives 1 and 2. This reduction in the potential for indirect effects would result primarily from the limiting of OHV use to an even smaller amount of designated routes and the 14.8 acres of open areas in the Corral Canyon OHV area, and the substantial reduction in size of the Wildomar open area to only 0.2 acre. The decommissioning of several dispersed recreation roads or road segments would also contribute to a reduction in the potential for indirect effects to heritage resources associated with implementation of this alternative in comparison to alternatives 1 and 2.

3.3 WILDIFE AND BOTANY

Data regarding biological and botanical resources on the project area were obtained through review of existing records and thorough site-specific field investigations. Only species with known occurrences or considered to have a high likelihood of occurrence in the project areas are discussed in depth in this analysis. Species accounts for the current Cleveland NF threatened, endangered, proposed, candidate, and sensitive lists are contained in the LMP. Pre-field reviews determined which threatened, endangered, proposed, candidate, or sensitive species are known from the project area or have suitable habitat present and may occur. Data regarding biological and botanical resources in and near the project areas were obtained through literature review, existing reports, and field investigations.

Sensitive biological and botanical resources that are present, or that may be present, were identified through a literature review using the California Natural Diversity Data Base (CNDDB), Forest Service records, and the California Native Plant Society (CNPS). Use of other literature pertinent to the project area, as well as consultation with local experts, is described below where applicable.

All resource discussions in section 3.3 are from the "Biological Assessment/Evaluation and Management Indicator Species Report and Weed Risk Assessment" prepared by K.Winter, Cleveland NF wildlife biologist. The report is available upon request.

3.3.1 Wildlife Surveys

Fish and wildlife surveys were focused on areas where ground-disturbing effects beyond those occurring under existing conditions would be expected. Field visits were generally limited to areas of proposed new construction, proposed additions of unauthorized routes to the Cleveland NF transportation system, and proposed OHV areas. Wildlife species detected during field surveys by sight, calls, tracks, scat, or other sign were recorded. In addition to species actually observed, expected wildlife usage of the site was determined according to the known habitat preferences of regional wildlife species and knowledge of their relative distributions in the area.

3.3.2 Wildlife Survey Methods

Wildlife surveys were conducted by the Cleveland NF biologist in April and May 2007, and in February and May 2008. Previous surveys of the Wildomar OHV area were completed by a consultant in 2002. No threatened, endangered, or sensitive plant or animal species were detected during these surveys. The main focus of the faunal species surveys was to identify habitat suitability for threatened, endangered, or sensitive wildlife in the project area to predict those species with a higher probability of occurrence. Because a species was not detected does not mean that the species does not occur in the project area. Surveys or wildlife species have the inherent limitation that absence is difficult or impossible to determine. This is especially true for wildlife species with a nocturnal pattern of activity or those that are otherwise difficult to detect.

3.3.3 Botanical Surveys

Botanical field studies for this project were focused on the relatively small fraction of the action alternatives where ground disturbing effects would be expected. All road and trail additions, new trail proposals, and open areas proposed for retention were surveyed.

3.3.4 Botanical Survey Methods

Field surveys were performed by the Cleveland NF biologist in April and May 2007, and in February and May 2008. Previous botanical surveys of the Wildomar OHV area were completed by a consultant in 2002. The botanical surveys were floristic in nature, and the 2007 surveys were performed during the times of year when target species would be most detectable. Because the 2007 rainfall year was below average, some focal plant species likely were undetected. The 2008 surveys of routes proposed for rehabilitation were performed during an average rainfall year, so no focal species likely went undetected. No specific vegetation mapping was done in association with this project.

3.3.5 Policy and Direction

In addition to laws, regulations, and LMP standards discussed in Chapter 1, applicable requirements and direction are found in the Endangered Species Act, the National Forest Management Act, Department of Agriculture 9500-4 Regulations, the Forest Service Manual, the LMP, the Southern California Conservation Strategy, and the Migratory Bird Treaty Act. The biological report for this project contains a full description of jurisdictions, legal requirements, and management direction that are applicable to this project.

3.3.6 General Wildlife and Botany

This section addresses effects and concerns that are not specifically related to management indicator species; threatened, endangered, proposed, candidate, or sensitive species; or noxious weeds. It addresses concerns regarding general wildlife and vegetation. The purpose of this section is to describe species and habitats in the project area as well as to document the types and degree of potential effects from the proposed project.

3.3.6.1 Existing Condition

The vegetation and wildlife of the Cleveland NF are generally described in the Place descriptions in the LMP, and are incorporated herein by reference. The scope of this project includes such a wide range of habitats and habitat conditions that they will not all be reiterated here.

3.3.6.2 Effects Common to General and Special Status Animals and Plants

Alternative 1

Under Alternative 1, habitat conditions within the project area would remain the same as under current conditions for the foreseeable future. Under this alternative, wildlife and plant species in the project area would continue to experience mortality, loss of habitat, and damage to habitat due to erosion related to the proliferation of roads and/or trails in open areas.

Under this alternative, the long-term adverse effects related to new trails and roads outside of open areas would not occur. However, the adverse effects to plants and animals that would be remedied under each of the action alternatives through reduction in open areas would not occur, and no progress would be made toward the desired conditions with regard to unauthorized routes, off-route vehicle travel, and unmanaged recreation in general.

Alternatives 2 and 3
This is a discussion of general types of direct and indirect effects that may result from this project for all animals and plants that are present in the project area. Native species in the project area would be affected in two general ways: through habitat loss/degradation and through direct and indirect effects to individual plants and animals. Species and habitats would also benefit from some elements of the action alternatives.

Because of the similarity of effects, this analysis will address effects on groups of similar species. Species groups will be: plants, upland wildlife, and riparian wildlife. The plants group will include all sensitive plant species. The upland wildlife group will include San Diego mountain kingsnake, coastal rosy boa, San Diego ring-necked snake, San Diego horned lizard, and large blotched salamander. The riparian wildlife group will include California legless lizard, southwestern pond turtle, and two-striped garter snake. The added routes and retained open areas do not overlap with habitat for California spotted owl or bald eagle so no effects on these species are expected. The added routes and retained open areas have minimal overlap with habitat used by sensitive bat species; no effects on sensitive bat species are expected.

3.3.6.3 General Effects to Plants and Wildlife by Action Category
General effects to plants and wildlife are discussed for each action category below.

Action Category 1: **Prohibit cross-country motor vehicle travel by the public off designated National Forest System roads, trails, and areas, except as allowed by permit or other authorization in the Corral Canyon and Wildomar OHV areas.**

Under Alternative 1, there would be no change in open areas. A total of 2160 acres would remain open to OHV use. This would result in continued degradation of these areas due to creation of new trails and play areas.

Under Alternative 2, a total of 2.2 acres of open areas would be retained (a reduction from the current 2160 acres of open areas). There is existing use of the areas that would remain open, so no change in conditions or effects is expected relative to effects that were already analyzed and addressed in the Forest Plan. There would be a net beneficial effect on the 2157.8 acres that would be closed to use; of this acreage about 1942 acres is chaparral and 215.8 acres is oak woodland and riparian areas.

Under Alternative 3, a total of 15 acres of open areas would be retained (a reduction from the current 2160 acres of open areas). There is existing use of the areas that would remain open, so no change in conditions or effects is expected relative to effects that were already analyzed and addressed in the Forest Plan. There would be a net beneficial effect on the 2145 acres that would be closed to use; of this acreage about 1930 acres is chaparral and 215 acres is oak woodland and riparian areas.

Action Category 2: **Add user-created trails and new trails**
This action category would open unauthorized routes to street legal or to both street-legal and OHV travel, depending on adjacent use. Uses on these routes would presumably increase relative to the existing levels of unauthorized travel as a result of a combination of signage, mapping, and maintenance.

This action category would also include new construction of trail segments within an existing open area, and classification of these routes as additions to the OHV system.

Under Alternative 1, no user-created trails or new trails would be added.

Under Alternative 2, 2.5 miles of user created trails would be added to the system and 5.2 miles of new trail would be established in an existing "open area". The habitat types where the new trail is located are rock outcrops or chaparral. Assuming a trail width of 4 feet, a maximum of 4 acres of chaparral habitat would be lost.

Under Alternative 3, 1 mile of user-created trails would be added to the system and 5.24 miles of new trail would be constructed. Assuming a trail width of 4 feet, a total of 3 acres of chaparral habitat would be lost.

Action Category 3: **Add new roads.**
Under Alternative 1, no user-created roads would be added to the system.

Under Alternative 2, a total of 4.87 miles of user-created roads would be incorporated into the road system. Assuming a road width of 20 feet, a total of 12 acres of habitat would be lost. Most of the proposed road additions are in coast live oak woodland.

Under Alternative 3, a total of 1.27 miles of user-created roads would be incorporated into the road system. Assuming a road width of 20 feet, a total of 3 acres of habitat would be lost. Most of the proposed road additions are in coast live oak woodland

This action category would open unauthorized routes to street legal travel. Uses on these routes would presumably increase relative to the existing levels of unauthorized travel as a result of a combination of signage, mapping, and maintenance.

Action Category 4: **Establish (retain) open areas within the existing Corral Canyon and Wildomar OHV areas**
Under Alternative 2, a total of 2.2 acres of open areas would be retained (a reduction from the current 2160 acres of open areas). The areas that would remain open are already heavily used and disturbed, and do not currently support vegetation. Due to the current heavy use, retaining them as open areas is not expected to result in any change in conditions or effects. There would be a net beneficial effect on the 2157.8 acres that would be closed to use; of this acreage about 1942 acres is chaparral and 215.8 acres is oak woodland and riparian areas.

Under Alternative 3, a total of 15 acres of open areas would be retained (a reduction from the current 2160 acres of open areas). For the 2 acre open area at Corral Canyon and the 0.2 acre open area at Wildomar, the areas that would remain open are already heavily used and disturbed, and do not currently support vegetation. Due to the current heavy use, retaining them as open areas is not expected to result in any change in conditions or effects. For the 12.8 acres (Corral Trail Rider area), there is existing use of the rock outcrops by trail riders. No change in conditions or effects is expected. There would be a net beneficial effect on the 2145 acres that would be closed to use; of this acreage about 1930 acres is chaparral and 215 acres is oak woodland and riparian areas.

3.3.7 Sensitive Species

This section contains descriptions of the methods/evaluation process, proposed action, alternatives, and habitat for this project, followed by discussions on general effects to plants and animals. Many of those general effects also apply to sensitive plants and animals. Species accounts for the sensitive species discussed in this section are contained in detail in the LMP.

3.3.7.1 Direct and Indirect Effects on Sensitive Wildlife Species Common to all Action Alternatives

Sensitive wildlife species that are known or expected to occur in the project area are listed in Table 3.1. Potential effects to sensitive species that are known to occur and those that have a high probability of occurring in and adjacent to the project area are discussed in detail. See the LMP for complete species accounts with citations. See the biological evaluation for further discussion of individual species.

In general the effects to sensitive wildlife species from motor vehicle use on roads, trails and cross country were described in the previous section on General Wildlife and Plants. Specific conflicts and benefits from aspects of the various alternatives with sensitive fish and wildlife species will be discussed as appropriate.

Table 3.1: Sensitive animal species that occur or that have potential habitat in the project area.

Species	Scientific name	Status in project area
Large-blotched ensatina	*Ensatina eschscholtzii klauberi*	Potential habitat
Southwestern pond turtle	*Actinemys marmorata pallida*	Occurs
California legless lizard	*Aniella pulchra*	Occurs
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	Occurs
Coastal rosy boa	*Lichanura trivirgata rosafusca*	Occurs
San Diego ringneck snake	*Diadophis punctatus similis*	Occurs
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	Occurs
Two-striped garter snake	*Thamnophis hammondii*	Occurs
Bald eagle	*Haliaeetus leucocephalus*	Occurs
California spotted owl	*Strix occidentalis occidentalis*	Occurs
California leaf-nosed bat	*Macrotus californicus*	Potential habitat
Townsend's big-eared bat	*Corynorhinus townsendii*	Occurs
Pallid bat	*Antrozous pallidus*	Occurs
Western red bat	*Lasiurus blossevillii*	Occurs

Effects, Upland Wildlife: Add user-created trails and construct new trails

Direct effects. Construction, use, and maintenance of trails may result in harassment, injury or mortality to ground-dwelling sensitive herptile species (San Diego mountain kingsnake, coastal rosy boa, San Diego ring-necked snake, San Diego horned lizard, large-blotched salamander) by accidentally crushing or unearthing individual animals or their nests or eggs due to motor vehicle use or construction or maintenance activities. These effects would reduce habitat quality near trails from high to low, and the effects would be chronic. The intensity of the effects would be variable, with the highest use (and most intense effects) usually occurring during the summer months. The extent of effects would be directly related to the number of miles of trail associated with each alternative (see tables 3.2 and 3.3). Alternative 1 would have the least effect since no new trails would be added or constructed. Alternative 2 would have the greatest effect due to the largest increase in trail mileage. Alternative 3 would have an intermediate level of effects due to a smaller increase in trail mileage.

Indirect Effects. Construction, use, and maintenance of trails may indirectly affect ground-dwelling sensitive herptile species (San Diego mountain kingsnake, coastal rosy boa, San Diego ring-necked snake, San Diego horned lizard, large-blotched salamander) due to noise and artificial lighting that may change behavior patterns or cause animals to avoid areas used by motor vehicles. Trails may also contribute to erosion which may damage or alter habitat. These effects would reduce habitat quality near trails from high to low, and the effects would be chronic. The intensity of the effects would be variable, with the highest use (and most intense effects) usually occurring during the summer months. The extent of effects would be directly related to the number of miles of road and trail and the acreage of open areas associated with each alternative (see tables 3.2 and 3.3). Alternative 1 would have the least effect since no new trails would be added or constructed. Alternative 2 would have the greatest effect due to the largest increase in trail mileage. Alternative 3 would have an intermediate level of effects due to a smaller increase in trail mileage.

Effects, Upland Wildlife: Add user created roads

Direct Effects. Construction, use, and maintenance of roads may result in harassment, injury or mortality to individuals of ground-dwelling sensitive herptile species (San Diego mountain kingsnake, coastal rosy boa, San Diego ring-necked snake, San Diego horned lizard, large-blotched salamander) by accidentally crushing them or unearthing them or their nests or eggs due to motor vehicle use or maintenance activities. These effects would reduce habitat quality near roads from high to low, and the effects would be chronic. The intensity of the effects would be variable, with the highest use (and most intense effects) usually occurring during the summer months. The extent of effects would be directly related to the number of miles of road associated with each alternative (see tables 3.2 and 3.3). Alternative 1 would have the least effect since no new roads would be added or constructed. Alternative 2 would have the greatest effect due to the largest increase in road mileage. Alternative 3 would have an intermediate level of effects due to a smaller increase in road mileage.

Indirect Effects. Construction, use, and maintenance of roads may indirectly affect ground-dwelling sensitive herptile species (San Diego mountain kingsnake, coastal rosy boa, San Diego ring-necked snake, San Diego horned lizard, large-blotched salamander) due to noise and artificial lighting that may change behavior patterns or cause animals to avoid areas used by motor vehicles. Roads may also contribute to erosion which may damage or alter habitat. These effects would reduce habitat quality near roads from high to low, and the effects would be chronic. The intensity of the effects would be variable, with the highest use (and most intense effects) usually occurring during the summer months. The extent of effects would be directly related to the number of miles of road associated with each alternative (see tables 3.2 and 3.3). Alternative 1 would have the least effect since no new roads would be added or constructed. Alternative 2 would have the greatest effect due to the largest increase in road mileage. Alternative 3 would have an intermediate level of effects due to a smaller increase in road mileage.

Effects, Upland Wildlife: Retain smaller open areas

Direct Effects. Use and maintenance of open areas may result in harassment, injury or mortality to individuals of ground-dwelling sensitive herptile species (two-striped garter snake, California legless lizard, southwestern pond turtle) by accidentally crushing them or unearthing them or their nests or eggs due to motorized vehicle use or maintenance activities. These effects would reduce habitat quality near open areas from high to low, and the effects would be chronic. The intensity of the effects would be variable, with the highest use (and most intense effects) usually occurring during the summer months. The extent of effects would be directly related to the acres of open area associated with each alternative (see tables 3.2 and 3.3). Alternative 1 would have the greatest effect since there would be no reduction in

open areas. Alternative 2 would have a very low level of effects due to a 99 percent reduction in open areas. Alternative 3 would have very low level of effects due to a 99 percent reduction in open areas; this alternative would have a slightly greater effect than Alternative 2 because approximately 12 additional acres of open areas are retained.

Indirect Effects. Use and maintenance of open areas may indirectly affect ground-dwelling sensitive herptile species (two-striped garter snake, California legless lizard, southwestern pond turtle) due to noise and artificial lighting that may change behavior patterns or cause animals to avoid areas used by motorized vehicles. Open areas may also contribute to erosion which may damage or alter habitat. These effects would reduce habitat quality near open areas from high to low, and the effects would be chronic. The intensity of the effects would be variable, with the highest use (and most intense effects) usually occurring during the summer months. The extent of effects would be directly related to the acres of open area associated with each alternative (see tables 3.2 and 3.3). Alternative 1 would have the greatest effect since there would be no reduction in open areas. Alternative 2 would have a very low level of effects due to a 99 percent reduction in open areas. Alternative 3 would have very low level of effects due to a 99 percent reduction in open areas; this alternative would have a slightly greater effect than Alternative 2 because approximately 12 additional acres of open areas are retained

Effects, Riparian Wildlife: Add user-created trails and construct new trails

Direct Effects. Construction, use, and maintenance of trails may result in harassment, injury or mortality to individuals of ground-dwelling sensitive herptile species (two-striped garter snake, California legless lizard, southwestern pond turtle) by accidentally crushing them or unearthing them or their nests or eggs due to motor vehicle use or maintenance activities. These effects would reduce habitat quality near trails from high to low, and the effects would be chronic. The intensity of the effects would be variable, with the highest use (and most intense effects) usually occurring during the summer months. The extent of effects would be directly related to the number of miles of trail associated with each alternative (see tables 3.2 and 3.3). Alternative 1 would have the least effect since no new trails would be added or constructed. Alternative 2 would have the greatest effect due to the largest increase in trail mileage. Alternative 3 would have an intermediate level of effects due to a smaller increase in trail mileage.

Indirect Effects. Construction, use, and maintenance of trails may indirectly affect ground-dwelling sensitive herptile species (two-striped garter snake, California legless lizard, southwestern pond turtle) due to noise and artificial lighting that may change behavior patterns or cause animals to avoid areas used by motor vehicles. Trails may also contribute to erosion which may damage or alter habitat. These effects would reduce habitat quality near trails from high to low, and the effects would be chronic. The intensity of the effects would be variable, with the highest use (and most intense effects) usually occurring during the summer months. The extent of effects would be directly related to the number of miles of road and trail and the acreage of open areas associated with each alternative (see tables 3.2 and 3.3). Alternative 1 would have the least effect since no new trails would be added or constructed. Alternative 2 would have the greatest effect due to the largest increase in trail mileage. Alternative 3 would have an intermediate level of effects due to a smaller increase in trail mileage.

Effects, Riparian Wildlife: Add user created roads

Direct Effects. Construction, use, and maintenance of roads may result in harassment, injury or mortality to individuals of ground-dwelling sensitive herptile species (two-striped garter snake, California legless lizard, southwestern pond turtle) by accidentally crushing them or unearthing them or their nests or eggs due to motor vehicle use or maintenance activities. These effects would reduce habitat quality near roads from high to low, and the effects would be chronic. The intensity of the effects would be variable, with

the highest use (and most intense effects) usually occurring during the summer months. The extent of effects would be directly related to the number of miles of road associated with each alternative (see tables 3.2 and 3.3). Alternative 1 would have the least effect since no new roads would be added or constructed. Alternative 2 would have the greatest effect due to the largest increase in road mileage. Alternative 3 would have an intermediate level of effects due to a smaller increase in road mileage.

Indirect Effects. Construction, use, and maintenance of roads may indirectly affect ground-dwelling sensitive herptile species (two-striped garter snake, California legless lizard, southwestern pond turtle) due to noise and artificial lighting that may change behavior patterns or cause animals to avoid areas used by motor vehicles. Roads may also contribute to erosion which may damage or alter habitat. These effects would reduce habitat quality near roads from high to low, and the effects would be chronic. The intensity of the effects would be variable, with the highest use (and most intense effects) usually occurring during the summer months. The extent of effects would be directly related to the number of miles of road associated with each alternative (see tables 3.2 and 3.3). Alternative 1 would have the least effect since no new roads would be added or constructed. Alternative 2 would have the greatest effect due to the largest increase in road mileage and due to the addition of routes in riparian conservation areas (see tables 2-10 through 2-12 in Chapter 2). Alternative 3 would have an intermediate level of effects due to a smaller increase in road mileage and because no new routes would be added in riparian conservation areas.

Effects, Riparian Wildlife: Retain smaller open areas

Direct Effects. Use and maintenance of open areas may result in harassment, injury or mortality to individuals of ground-dwelling sensitive herptile species (two-striped garter snake, California legless lizard, southwestern pond turtle) by accidentally crushing them or unearthing them or their nests or eggs due to motorized vehicle use or maintenance activities. These effects would reduce habitat quality near open areas from high to low, and the effects would be chronic. The intensity of the effects would be variable, with the highest use (and most intense effects) usually occurring during the summer months. The extent of effects would be directly related to the acres of open area associated with each alternative (see tables 3.2 and 3.3). Alternative 1 would have the greatest effect since there would be no reduction in open areas. Alternative 2 would have a very low level of effects due to a 99 percent reduction in open areas. Alternative 3 would have very low level of effects due to a 99 percent reduction in open areas; this alternative would have a slightly greater effect than Alternative 2 because approximately 12 additional acres of open areas are retained.

Indirect Effects. Use and maintenance of open areas may indirectly affect ground-dwelling sensitive herptile species (two-striped garter snake, California legless lizard, southwestern pond turtle) due to noise and artificial lighting that may change behavior patterns or cause animals to avoid areas used by motor vehicles. Open areas may also contribute to erosion which may damage or alter habitat. These effects would reduce habitat quality near open areas from high to low, and the effects would be chronic. The intensity of the effects would be variable, with the highest use (and most intense effects) usually occurring during the summer months. The extent of effects would be directly related to the acres of open area associated with each alternative (see tables 3.2 and 3.3). Alternative 1 would have the greatest effect since there would be no reduction in open areas. Alternative 2 would have a very low level of effects due to a 99 percent reduction in open areas. Alternative 3 would have very low level of effects due to a 99 percent reduction in open areas; this alternative would have a slightly greater effect than Alternative 2 because approximately 12 additional acres of open areas are retained.

Effects to reptiles and amphibians would occur under all alternatives. New roads and trails, adoption of unauthorized roads and trails, and retention of open areas would occur under alternatives 2 and 3.

Addition or adoption of all of these roads and trails and retention of open areas would adversely affect amphibian and reptile species as described above and as shown below in tables 3.2 and 3.3, which summarize the scope of the proposed alternatives and their relative direct, indirect, and cumulative effects on sensitive reptile and amphibian species. Existing roads, trails, and open areas affect all habitat types. On average, the habitat types present in the project area are approximately 90 percent chaparral, 9 percent pine/oak woodlands, and 1 percent riparian areas. For roads and trails, the affected acreage is calculated based on a 100-foot wide buffer:

Table 3.2: Comparison of alternatives.

	Alt. 1	Alt. 2	Alt. 3
Direct and Indirect Effects			
New road miles	0	4.87	1.27
New trail miles	0	7.7	6.2
New miles in riparian conservation areas	0	2.99	0
Acres of open areas (percent change)	2,160 (0)	2.2 (-99.9)	15 (-99.3)
Miles of road closure to be reinspected and reinforced	0	0	11.5
Cumulative Effects			
Total miles of road (percent change)	239.2 (0)	244.1 (2)	240 (1)
Total miles of trail (percent change)	36.2 (0)	43.9 (21)	41.6 (17)
Total acres affected (percent of forest)	5,498 (1.2)	3,493 (0.8)	3,428 (0.8)

Table 3.3: Summary of cumulative effects of alternatives on riparian conservation areas and sensitive species.

	Alt. 1	Alt. 2	Alt. 3
Riparian conservation areas, large-blotched salamander, California legless lizard, two-striped garter snake	Ongoing effects on 55 acres of riparian habitat and species in existing open areas, roads, and trails. Highest level of effects on RCAs and associated species	Adds 2.99 new miles of road in RCAs in addition to ongoing effects of existing roads and trails on additional 35 acres – medium level of effects on RCAs and associated species	Ongoing effects of existing roads and trails on 34 acres – lowest level of effects on RCAs and associated species.
Sensitive reptiles (San Diego mountain kingsnake, coastal rosy boa, San Diego ring-necked snake, San Diego horned lizard)	Ongoing effects on 5,498 acres of habitat. Existing open areas, roads, and trails – highest level of effects.	Effects on 3,493 acres of habitat – medium level of effects.	Effects on 3,428 acres of habitat – medium level of effects.

3.3.7.2 Direct and Indirect Effects on Sensitive Plant Species Common to All Action Alternatives

All species with potential habitat on the Cleveland NF were considered in this analysis (Table 3.4). Species whose status is not "known" for the Cleveland NF may nevertheless occur because they have yet to be detected. The LMP has complete species accounts with citations.

Table 3.4: Sensitive plant species that occur in the project area.

Species	Scientific name	Status on NF
Sand verbena	*Abronia villosa v. aurita*	Potential
Rainbow Manzanita	*Arctostaphylos rainbowensis*	Potential
San Bernardino aster	*Aster bernardinus*	Known
Dean's milkvetch	*Astragalus deanei*	Known
Jacumba milkvetch	*Astragalus douglasii v. perstrictus*	Known
San Diego milkvetch	*Astragalus oocarpus*	Known
Jaeger's milkvetch	*Astragalus pachypus v. jaegeri*	Known
Orcutt's brodiaea	*Brodiaea orcuttii*	Known
Dunn's mariposa lily	*Calochortus dunnii*	Known
Plummer's mariposa lily	*Calochortus plummerae*	Known
Intermediate mariposa lily	*Calochortus weedii v. intermedius*	Known
San Bernardino Mts. owls' clover	*Castilleja lasiorhyncha*	Potential
Payson's jewelflower	*Caulanthus simulans*	Known
Lakeside ceanothus	*Ceanothus cyaneus*	Known
Parry's spineflower	*Chorizanthe parryi v. parryi*	Potential
Long-spined spineflower	*Chorizanthe polygonoides v longispina*	Known
Delicate clarkia	*Clarkia delicata*	Known
Tecate cypress	*Cupressus forbesii*	Known
Cuyamaca cypress	*Cupressus stephensonii*	Known
Cuyamaca larkspur	*Delphinium hesperium spp cuyamacae*	Known
Many-stemmed dudleya	*Dudleya multicaulis*	Known
Sticky dudleya	*Dudleya viscida*	Known
Vanishing wild buckwheat	*Eriogonum evanidum*	Known
Mission Canyon bluecup	*Githopsis diffusa ssp filicaulis*	Potential
Tecate tarplant	*Hemizonia floribunda*	Potential
Mojave tarplant	*Hemizonia mohavensis*	Known
Star potentilla	*Horkelia cuneata puberula*	Potential
Ramona horkelia	*Horkelia truncata*	Known
Heart-leaved pitcher sage	*Lepechinia cardiophylla*	Known
Warner Springs lessingia	*Lessingia glandulifera v. tomentosa*	Known
Lemon lily	*Lilium parryi*	Known
Parish's meadowfoam	*Limnanthes gracilis v. parishii*	Known

Species	Scientific name	Status on NF
Orcutt's linanthus	*Linanthus orcuttii*	Known
Laguna Mountains aster	*Machaeranthera asteroides v. lagunensis*	Known
Felt-leaved monardella	*Monardella hypoleuca v. lanata*	Known
Hall's monardella	*Monardella macrantha v. hallii*	Known
San Felipe monardella	*Monardella nana v. leptosiphon*	Known
Baja navarretia	*Navarretia peninsularis*	Potential
Chaparral beargrass	*Nolina cismontane*	Known
California beardtongue	*Penstemon californicus*	Potential
Santiago Peak phacelia	*Phacelia suaveolens ssp keckii*	Known
Moreno currant	*Ribes canthariforme*	Known
San Miguel savory	*Satureja chandleri*	Known
Southern skullcap	*Scutellaria bolanderi ssp. austromontana*	Known
Gander's butterwort	*Senecio ganderi*	Known
Hammitt's claycress	*Sibaropsis hammittii*	Known
Laguna Mountain jewelflower	*Streptanthus bernardinus*	Known
Southern jewelflower	*Streptanthus campestris*	Known
Parry's tetracoccus	*Tetracoccus dioicus*	Potential
Velvety false-lupine	*Thermopsis californica v. semota*	Known

3.3.7.3 Direct and Indirect Effects to Sensitive Plants

Selection of Alternative 1 would continue effects at the baseline level, which was analyzed in the LMP. There would be ongoing direct and indirect effects associated with existing roads, trails, and open areas. No new sensitive plant occurrences were detected along user-created routes that are proposed for addition to the road system, new proposed trails, or in open areas proposed for retention. There should be no direct or indirect effects on sensitive plant species under alternatives 2 or 3.

3.3.7.4 Cumulative Effects to Sensitive Fish, Wildlife, and Plant Species

The timeframe for consideration of cumulative effects is the date of the LMP (2005) to 2013 (five years from the present), which is the period of time in which the direct effects of the project should occur and for which there is information on reasonably foreseeable future actions. The scale of the area used for cumulative effects analysis for sensitive species is the entire Cleveland NF.

Cumulative effects: Wildlife

Alternative 1, No action. This alternative would affect 1.2 percent of the Cleveland NF. The contribution of this alternative to cumulative impacts has been previously evaluated as part of the "baseline" effects of roads, trails, and open areas has been analyzed in the LMP. Due to the large acreage

of open areas associated with this alternative, it would contribute to cumulative effects more than alternatives 2 or 3.

Alternative 2. This alternative would affect 0.8 percent of the Cleveland NF. Selection of this alternative would contribute to cumulative effects on sensitive wildlife species due to addition of roads in riparian conservation areas, and the addition of trail miles and retention of open areas (see tables 2-10 through 2-12 in Chapter 2). The net contribution would be small because this alternative also includes a 99 percent reduction in the areas open to OHV activity (see Table 3.2). The reduction in open areas is expected to result in improvements in habitat quality and would reduce mortality of sensitive animal species in the project area. This alternative is similar to Alternative 3 except that it proposes routes in riparian conservation areas and retains fewer acres in open areas. Because of the addition of routes in riparian conservation areas, Alternative 2 would contribute more to cumulative effects than Alternative 3.

Alternative 3. This alternative would affect 0.8 percent of the Cleveland NF. Selection of this alternative would contribute to cumulative effects on sensitive wildlife species due to addition of road miles, addition of trail miles, and retention of open areas. The net contribution would be small because this alternative also includes a 99 percent reduction in the areas open to OHV activity (see Table 3.2), and the contribution of this alternative to cumulative effects would be less than that of Alternative 1 due to the reduction in open areas. The contribution of this alternative to cumulative effects would be less than that of Alternative 2 because no routes would be added in riparian conservation areas. The reduction in open areas is expected to result in improvements in habitat quality and would reduce mortality of sensitive animal species in the project area.

Cumulative effects - Plants

Alternative 1, No action. The contribution of this alternative to cumulative impacts has been previously evaluated as part of the "baseline" effects of roads, trails, and open areas has been analyzed in the LMP. It would contribute to cumulative effects on sensitive plant species.

Alternative 2. Alternative 2 is not expected to cause direct or indirect effects to sensitive plant species. Therefore, it would not contribute to cumulative effects on these species.

Alternative 3. Alternative 3 is not expected to cause direct or indirect effects to sensitive plant species. Therefore, it would not contribute to cumulative effects on these species.

3.3.7.5 Determinations for Sensitive Fish, Wildlife, and Plant Species

Sensitive Wildlife

Alternative 1, No Action
There should be no effects on any sensitive wildlife species beyond those analyzed for the baseline effects of roads, trails, and open areas in the Forest plan. It is my determination that the no action alternative, as described, may affect individuals, but is not likely to result in a trend toward Federal listing for any Sensitive wildlife species. The project would not interfere with maintaining viable and well-distributed populations for any of these Sensitive species (36 CFR 219.19). Tables 3.2 and 3.3 display the relative effects of the alternatives; because the No Action Alternative would retain large open areas it would have the largest and most adverse effects on wildlife species.

Alternative 2

Bald eagle, spotted owl, Townsend's big-eared bat, pallid bat, western red bat, and leaf-nosed bat

There should be no effects on bald eagle, spotted owl, Townsend's big-eared bat, pallid bat, western red bat, and leaf-nosed bat under this alternative. Selection of Alternative 2, as described, would have no effect on these sensitive wildlife species. The project would not interfere with maintaining viable and well-distributed populations for these sensitive species (36 CFR 219.19).

San Diego mountain kingsnake, Coastal rosy boa, San Diego ring-necked snake, San Diego horned lizard, large-blotched salamander, two-striped garter snake, California legless lizard, and southwestern pond turtle

Alternative 2 would have adverse effects due to the addition of new roads and trails and retention of open areas within occupied or potential habitat for San Diego mountain kingsnake, coastal rosy boa, San Diego ring-necked snake, San Diego horned lizard, large-blotched salamander, two-striped garter snake, California legless lizard, and southwestern pond turtle. Alternative 2 would also have beneficial effects due to the significant reduction in the acreage of open areas (see tables 3.2 and 3.3 for a comparison of alternatives). This alternative would have fewer effects than Alternative 1 and slightly greater adverse effects than Alternative 3 due to the addition of roads or trails in riparian conservation areas. Selection of Alternative 2, as described, may affect individuals, but is not likely to result in a trend toward federal listing for these sensitive wildlife species. The project would not interfere with maintaining viable and well-distributed populations for these sensitive species (36 CFR 219.19).

Alternative 3

Bald eagle, spotted owl, Townsend's big-eared bat, pallid bat, western red bat, and leaf-nosed bat

There should be no effects on bald eagle, spotted owl, Townsend's big-eared bat, pallid bat, western red bat, and leaf-nosed bat under this alternative. Selection of Alternative 3, as described, would not affect these sensitive wildlife species. The project would not interfere with maintaining viable and well-distributed populations for these sensitive species (36 CFR 219.19).

San Diego mountain kingsnake, coastal rosy boa, San Diego ring-necked snake, San Diego horned lizard, large-blotched salamander, two-striped garter snake, California legless lizard, and southwestern pond turtle

Alternative 3 would have adverse effects due to the addition of new roads and trails and the retention of open areas within occupied or potential habitat for San Diego mountain kingsnake, coastal rosy boa, San Diego ring-necked snake, San Diego horned lizard, large-blotched salamander, two-striped garter snake, California legless lizard, and southwestern pond turtle. It would also have beneficial effects due to the significant reduction in the acreage of open areas (see tables 3.2 and 3.3 for a comparison of alternatives). Alternative 3 would have fewer adverse effects than Alternative 1 due to the significant reduction in open areas, and fewer adverse effects than Alternative 2 because no routes would be added in riparian conservation areas. Selection of Alternative 3, as described, may affect individuals, but is not likely to result in a trend toward federal listing for these sensitive wildlife species. The project would not interfere with maintaining viable and well-distributed populations for these sensitive species (36 CFR 219.19).

Sensitive Plants

Alternative 1, No Action

There should be no effects beyond those analyzed for the baseline effects of roads, trails, and open areas in the LMP. Selection of this alternative, as described, may affect individuals, but is not likely to result in a trend toward federal listing for any sensitive plant species. The project would not interfere with maintaining viable and well-distributed populations for any of these sensitive species (36 CFR 219.19).

Alternative 2
There should be no effects on sensitive plant species under this alternative. Selection of Alternative 2, as described, would have no effect on any sensitive plant species. The project would not interfere with maintaining viable and well-distributed populations for any of these sensitive species (36 CFR 219.19).

Alternative 3
There should be no effects on sensitive plant species under this alternative. Selection of Alternative 3, as described, would have no effect on any sensitive plant species. The project would not interfere with maintaining viable and well-distributed populations for any of these sensitive species (36 CFR 219.19).

3.3.8 Threatened, Endangered, Proposed, and Candidate Species

The Endangered Species Act requires federal agencies to evaluate effects to federally listed species and consult with the U.S. Fish and Wildlife Service (USFWS) when considering federal actions. The most recent species list request was sent to USFWS on January 31, 2008. A letter of response was received from the USFWS on February 22, 2008. All species listed in the USFWS response letter are included in this evaluation.

The effects of Forest Service roads and trails and OHV open areas on threatened and endangered species were addressed under previous consultations with the USFWS, as described in the wildlife specialist report in the project record. Pursuant to those consultations, the USFWS issued terms and conditions that govern road management and maintenance when those things intersect with threatened and endangered species habitat. In addition, the USFWS provided take authorizations for selected species, including arroyo toads.

3.3.8.1 Threatened, Endangered, and Proposed Wildlife Species: Direct and Indirect Effects

The following discussions focus on threatened, endangered, and proposed wildlife species known to occur in the vicinity of project area, or those that have a high likelihood of occurrence based on proximity to the project area. The discussion also discusses critical habitat where activities overlap.

Laguna Mountains skipper
Existing Forest Service roads are in or adjacent to occupied or critical habitat for the Laguna Mountains skipper. No changes to designated routes are proposed in these areas, so there is no difference between alternatives 1, 2, and 3 in terms of effects on this species—there should be no change in conditions for this species under any alternative. Existing roads have been addressed in previous consulations and are not expected to affect the Laguna Mountains skipper or its critical habitat due to the distance between the existing roads and the suitable habitat.

Arroyo toad
Existing Forest Service roads are in or adjacent to occupied habitat for arroyo toads. These roads have been addressed in previous consultations with the USFWS, as described above. Under alternatives 1 and 3, no new trails or roads would be built or approved within occupied arroyo toad habitat. Table 3.5 shows the specific effects of route additions and open areas on the arroyo toad by alternative. If the alternative column shows an "N," the route or open area is not included in that alternative. If the column shows a "Y," the route or open area is included in that alternative.

Alternative 1, No Action
Alternative 1 does not add any roads or trails, and does not make any changes to existing open areas. It would have no effects beyond the baseline effects analyzed in the LMP.

Alternative 2
Add user created trails and construct new trail, retain smaller open areas
None of the new trails or retained open areas overlap arroyo toad habitat, so these two categories of activity would have no effect on arroyo toads.

Add user-created roads
Under Alternative 2, 1.07 miles of new roads would be added in occupied arroyo toad habitat. Alternative 2 would adversely affect arroyo toads by increasing the probability of road kill and damage to the species or its habitat resulting from motorized vehicle use. Effects on arroyo toads are connected with selected proposed road additions that are in riparian areas.

Direct effects would include a loss of individuals that are crushed by vehicle traffic crossing the stream; loss of arroyo toad eggs and larvae that are covered and asphyxiated by increased sediment from by vehicles disturbing pools at road crossings; and disruption or destruction of potential breeding sites by vehicular travel in occupied habitat. Added impacts from maintenance activities including grading and movement of bedload materials deposited during winter storm events, and placement of rock rip-rap and concrete structures within stream courses. The result of such road work would include the above mentioned loss of individuals from crushing, asphyxiation and disturbance of breeding pools.

Indirect effects include displacement of individuals due to noise, light, and human activities during presence of vehicular use. Excessive noise would disrupt the calling rate for male toads during the breeding season, potentially reducing the reproductive effort.

Alternative 3
Add user created trails and construct new trail, add user created roads, retain smaller open areas
None of the new trails, roads, or retained open areas over lap with arroyo toad habitat, so Alternative 3 would have no effect on arroyo toads.

Direct effects on arroyo toads are not expected to occur under this alternative.

Indirect effects on arroyo toads are not expected to occur under this alternative.

Table 3.5: Site-specific effects of possible route additions and open areas on the arroyo toad.

Route name	Alt 1.	Alt. 2	Alt. 3	Approx. length (mi)	Effect on arroyo toad
Miners Road	**N**	**Y**	**N**	**0.04**	**Adverse**
Upper Santa Ysabel	N	Y	N	0.03	None
Laguna Recreation	N	Y	N	0.18	None
Pine Creek 1	**N**	**Y**	**N**	**0.03**	**Adverse**
Pine Creek 2	N	Y	Y	0.21	None
Deer Flats	N	Y	Y	0.10	None
Deer Park	N	Y	N	0.02	None
Cottonwood	**N**	**Y**	**N**	**0.50**	**Adverse**
Buckman South	**N**	**Y**	**N**	**0.35**	**Adverse**
Buckman North	**N**	**Y**	**N**	**0.28**	**Adverse**
The Narrows	**N**	**Y**	**N**	**0.55**	**Adverse**
Timbers Edge	N	Y	Y	1.80	None
Kitchen Creek 1	N	Y	Y	0.33	None
Kitchen Creek 2	N	Y	Y	0.09	None
Old Horse Meadow	N	Y	N	0.12	None
Yellow Rose Spring	**N**	**Y**	**N**	**0.04**	**Adverse**
High Point Site	N	Y	Y	0.14	None
Corte Madera	N	Y	Y	0.06	None
SDTR-1	N	Y	N	1	None
SDTR-2	N	Y	N	0.5	None
901a OHV Sky Valley Alternative	N	Y	Y	0.9	None
903b Bronco Peak Loops	N	Y	Y	0.1	None
Corral Motorcycle	N	Y	Y	3.64	None
911a Gunslinger Loops	N	Y	Y	1.55	None
Corral Camp Open Area	N	Y	Y	2 acres	None
Wildomar	N	Y	Y	0.2 acres	None
Corral Trail Rider	N	Y	Y	12.8 acres	None

3.3.8.2 Threatened, Endangered, Proposed, and Candidate Plants: Affected Environment and Direct and Indirect Effects

All threatened and endangered plant species that are known or have the potential to occur on the Cleveland NF were considered in the biological evaluation and biological assessment. However, only San Diego thornmint, Munz's onion, thread-leaved brodiaea, oval-leaved dudleya, and San Bernardino bluegrass are known to occur in or have potential habitat near the project area. Critical habitat has been designated for San Diego thornmint, Munz's onion, thread-leaved brodiaea, and San Bernardino bluegrass. See the LMP for complete species accounts with citations. The earlier discussion also applies to threatened and endangered plants known to occur in the project area.

Direct and indirect effects to threatened and endangered plants and their designated or proposed critical habitat are as follows:

San Diego thornmint occurs on heavy clay soils in the foothills of the Laguna Mountains. There is a known occurrence near Anderson truck trail. There are no proposed additions to the road or trail system in the area, so there is no difference between any of the alternatives in terms of effects on this species. There should be no change in conditions for this species under alternatives 2 or 3.

Munz's onion occurs in clay soils in the Elsinore Mountain area. There is a known occurrence near South Main Divide truck trail. There are no proposed additions to the road or trail system in these areas, so there is no difference between any of the alternatives in terms of effects on this species. There should be no change in conditions for this species under alternatives 2 or 3.

Thread-leaved brodiaea occurs in clay soils in the southern part of the Trabuco Ranger District. There is a known occurrence near Forest Road 8S01. There are no proposed additions to the road or trail system in these areas, so there is no difference between any of the alternatives in terms of effects on this species. There should be no change in conditions for this species under alternatives 2 or 3.

Oval-leaved dudleya occurs on volcanic and sedimentary rock outcrops in the Santa Ana Mountains. There is a known occurrence near Main Divide Road. There are no proposed additions to the road or trail system in these areas, so there is no difference between any of the alternatives in terms of effects on this species. There should be no change in conditions for this species under alternatives 2 or 3.

San Bernardino bluegrass occurs in mountain meadows. There is a known occurrence of San Bernardino bluegrass and designated critical habitat in Bear Valley and there is potential habitat present near Kitchen Creek Road. There are no proposed additions to the road or trail system in these areas, so there is no difference between any of the alternatives in terms of effects on this species. There should be no change in conditions for this species under alternatives 2 or 3.

Direct Effects
No direct effects on San Diego thornmint, Munz's onion, thread-leaved brodiaea, oval-leaved dudleya, and San Bernardino bluegrass or their designated critical habitat are expected under alternatives 2 or 3.

Indirect Effects
No new indirect effects on San Diego thornmint, Munz's onion, thread-leaved brodiaea, oval-leaved dudleya, and San Bernardino bluegrass or their designated critical habitat are expected under alternatives 2 or 3.

3.3.8.3 Cumulative Effects to Threatened, Endangered, and Proposed Species (ESA Definition)

This section addresses two legal definitions for cumulative effects/effects analysis. Under NEPA, "cumulative effects" are those effects caused by past, present, and future federal, state, and private activities within or onto special status species and their habitats. Under the Endangered Species Act (ESA), "cumulative effects" only consider future non-federal activities. Future federal activities or activities permitted by federal agencies are not included under ESA "cumulative effects" because any proposed future federal activities or federally permitted activities must undergo Section 7 consultation with the USFWS. See "Biological Assessment/Evaluation and Management Indicator Species Report and Weed Risk Assessment," prepared by K.Winter, Cleveland NF wildlife biologist, in the project record for further discussion.

Cumulative Effects to Threatened and Endangered Animals.
Under Alternative 1, there are no adverse effects on listed species that have not been addressed under previous consultations. Alternative 1 does contribute to cumulative effects on federally listed species per prior analyses.

Under Alternative 2, there are adverse effects on arroyo toads, including physical disturbance of habitat, the potential for toads being run over and injured or killed by traffic, and potential noise and light disturbance which may disrupt breeding behavior. Therefore, this alternative would contribute to cumulative effects for this species.

Under Alternative 3, there are no direct or indirect effects on arroyo toads. Selection of this alternative would not contribute to cumulative effects for this species.

Cumulative Effects to Threatened and Endangered Plants
Under any of the alternatives, there are no direct or indirect effects on listed plants expected from this project. Therefore, none of the alternatives would contribute to cumulative effects to listed plants.

3.3.8.4 Determinations for Threatened, Endangered, and Proposed Species and Critical Habitat

Threatened and endangered animal species and designated critical habitat
Selection of Alternative 1 would have no effect on the Laguna Mountains skipper, or designated critical habitat for the Laguna Mountains skipper. Selection of Alternative 1 would have no effects on arroyo toads beyond those analyzed in the baseline for the LMP.

Selection of Alternative 2 would have no effect on the Laguna Mountains skipper or its designated critical habitat. Selection of Alternative 2 may adversely affect arroyo toads due to addition of new routes within occupied habitat.

Selection of Alternative 3 would have no effect on arroyo toad, the Laguna Mountains skipper, or designated critical habitat for the Laguna Mountains skipper.

Wildlife species proposed for federal listing or proposed critical habitat
There are no animals proposed for listing under the Endangered Species Act, nor proposed critical habitat, within the project area.

Threatened and endangered plant species and designated critical habitat:
Selection of Alternative 1 would have no effects on San Diego thornmint, Munz's onion, thread-leaved brodiaea, oval-leaved dudleya, and San Bernardino bluegrass or their designated critical habitat beyond those analyzed in the baseline for the LMP.

Selection of alternatives 2 or 3 would have no effect on San Diego thornmint, Munz's onion, thread-leaved brodiaea, oval-leaved dudleya, and San Bernardino bluegrass or their designated critical habitat.

Plant species proposed for federal listing or proposed critical habitat
There are no plants proposed for listing under the Endangered Species Act, and no proposed critical habitat, within the project area.

3.3.9 Management Indicator Species

Management indicator species (MIS) are animal or plant species identified in the Cleveland NF LMP, which was developed under the 1982 National Forest System Land and Resource Management Planning Rule (1982 Planning Rule) (36 CFR 219). Guidance regarding MIS set forth in the LMP directs Forest Service resource managers to (1) at the project scale, analyze the effects of proposed projects on the habitats of each MIS affected by such projects, and (2) at the national forest scale, monitor populations and/or habitat trends of forest MIS, as identified by the LMP.

3.3.9.1 Direction Regarding the Analysis of Project-Level Effects on MIS

Project-level effects on MIS are analyzed and disclosed as part of environmental analysis under the National Environmental Policy Act (NEPA). This involves examining the effects of the proposed project alternatives on MIS habitat by discussing how direct, indirect, and cumulative effects would change the quantity and/or quality of habitat in the analysis area. These project-level effects to habitat are then related to broader scale population and/or habitat trends. The appropriate approach for relating project-level effects to broader scale trends depends on the terms in the LMP. For certain MIS, the LMP does not require population monitoring or surveys. For these MIS, project-level effects analysis can be informed by forest-scale habitat monitoring and analysis alone. Therefore, adequately analyzing project effects to MIS, including threatened, endangered, and sensitive (TES) species that are also MIS, involves five steps:

1. Identifying which MIS have habitat that would be either directly or indirectly affected by the project alternatives. These MIS are potentially affected by the project.
2. Identifying the LMP forest-level monitoring requirements for this subset of MIS.
3. Analyzing project-level effects on MIS habitats or habitat components for this subset of MIS.
4. Discussing forest scale habitat and/or population trends for this subset of MIS.
5. Relating project-level effects on MIS habitat to habitat and/or population trends for the affected MIS at the forest scale.

Direction Regarding Monitoring of MIS Population and Habitat Trends at the Forest Scale. Forest scale monitoring requirements for the Cleveland NF's MIS are found in the Monitoring Plan of the LMP. The monitoring question for MIS is: "Are trends in resource conditions indicating that habitat conditions for fish, wildlife, and rare plants are in a stable or upward trend?" The specified monitoring frequency is every five years.

Habitat Status and Trend. The LMP requires forest-scale monitoring of habitat status and trend for MIS. Habitat status is the current amount of habitat on the Cleveland NF. Habitat trend is the direction of change in the amount of habitat between the time the LMP was approved and the present. Habitats are the vegetation types (e.g., mixed conifer forest) and/or ecosystem components (e.g., cliffs or lakes) and any special habitat elements (e.g., snags) required by an MIS for breeding, cover, and/or feeding. Habitat relationships for plant MIS are identified individually. MIS habitat trend is monitored using ecological and vegetation data. These data include spatial ecological and vegetation layers created from remote-sensing imagery obtained at various points in time, which are verified using photo-imagery, on-the-ground measurements, and tracking of vegetation-changing actions or events.

Population Status and Trend. Population monitoring requirements for the MIS of the Cleveland NF are identified in the monitoring plan of the LMP. This document requires monitoring of population status and trend for select MIS. There are many types of population data, and this document also identifies the type of population monitoring data required for each MIS. All population monitoring data are collected

and/or compiled at the forest scale, consistent with the LMP. Population status is the current condition of the MIS related to the type of population monitoring data (population measure) required in the LMP for that MIS. Population trend is the direction of change in that population measure over time.

Population data for MIS are collected and consolidated in cooperation with state and federal agency partners (e.g, the California Department of Fish and Game, U.S. Geological Survey, and USDI Fish and Wildlife Service) or conservation partners (e.g., Partners in Flight and various avian joint ventures). Population data includes presence data, which is collected using a number of direct and indirect methods, including population surveys, bird point counts, tracking number of hunter kills, and counts of species sign, such as deer pellets.

3.3.9.2 Selection of Project level MIS

Management indicator species are identified in the LMP (Part 1, page 45). The MIS analyzed for the project were selected from this list of MIS identified in the LMP, as indicated in Table 3.6.

Table 3.6: Management indicator species (MIS) found in the project area

Species	Status	Habitat Indicator
Mountain lion	MIS	Fragmentation
Mule deer	MIS	Healthy diverse habitats
Arroyo toad	Federally-listed endangered and MIS	Aquatic
Song sparrow	MIS	Riparian
Engelmann oak	MIS	Oak regeneration
Coulter pine	MIS	Coulter pine forest
California spotted owl	Regional forester sensitive list and MIS	Montane conifer forest
California black oak	MIS	California black oak forest
White fir	MIS	Montane conifer forest

Valley and blue oaks also appear on the MIS list for the province. However these species do not occur on the Cleveland NF so they will not be addressed. Engelmann oak is the species selected to monitor the health of oak woodlands on the Cleveland NF. MIS whose habitat would be either directly or indirectly affected by the transportation management project are carried forward in this analysis, which will evaluate the direct, indirect, and cumulative effects of the proposed action and alternatives on the habitat of these MIS.

3.3.9.3 Affected Environment and Effects of Proposed Project on Selected MIS

Detailed background information and trend information on MIS is documented in the Cleveland NF MIS Report, which is hereby incorporated by reference.

Species: Mountain lion
Key Habitat Factor(s) for the Analysis: Mountain lion was designated as an MIS to provide an index for habitat fragmentation.

Analysis Area for Project-level Effects Analysis: The project area includes parts of the Descanso and Palomar ranger districts, excluding wilderness areas. The project analysis area will be the Palomar and Descanso ranger districts.

Current Condition of the Key Habitat Factor(s) in the Analysis Area: All of the analysis area is suitable habitat. The current condition of lion habitat in the project area is a mixture of large blocks of undisturbed habitat separated by private inholdings and developments, and by Forest Service roads or facilities such as campgrounds and fire stations and the existing roads and trails. Overall, habitat fragmentation is at a low level on National Forest System lands in the analysis area.

Habitat Status and Trend. Mountain lion habitat condition on the Cleveland NF appears to be stable or improving. Deer herds have declined from historic times for many reasons. Current fuels management emphasis on the Cleveland NF should benefit the mountain lion through the creation of more edge and early successional habitat for deer. Recent large fires should benefit deer and mountain lion for some years to come.

Population Status and Trend. Mountain lion populations on the Cleveland NF appear to be declining. Populations of mountain lions in southern California are becoming fragmented at an increasing rate due to freeways and urbanization. Based on the review of studies and contacts with mountain lion experts, it appears that long-term viability of mountain lions in southern California may be at risk due to existing and planned developments and freeway construction on and off National Forest System land.

Alternative 1

Alternative 1 would not contribute to habitat fragmentation and would not reduce the amount of habitat available for this species.

Alternatives 2 and 3

Direct and Indirect Effects to Habitat. The action alternatives are not expected to contribute to habitat fragmentation. Alternatives 2 or 3 would add up to 12.34 miles or an increment of about four percent to the road and motorized trail system, and would reduce open areas by about 2150 acres, which is about a 99 percent reduction. Since deer are so important to mountain lions as their primary food source, the discussion of the effects of this project on deer largely describes the effect on lions.

Cumulative Effects to Habitat. The spatial scale for the cumulative effects of the project on mountain lion habitat is the analysis area identified above. The temporal scale for the analysis is the date of the LMP (2005) to 2013, which is the period of time the direct effects of the project should occur and for which there is information on reasonably foreseeable future actions in the analysis area.

Fuels treatment projects in the Cleveland NF have likely had some effect on mountain lion population. Because of the way these treatments have been and are planned to be spread spatially across the landscape, the effects of the projects cumulatively are not likely to result in long-term negative effects to the mountain lion population. In fact, by changing the vegetation to earlier successional stages in some of the project areas and creating openings, it is likely that there have been some short-term improvements in habitat for deer, and thus resulted in increases in the prey base for mountain lions in multiple project areas. None of the recently implemented projects or currently planned vegetation treatment projects are expected to adversely affect mountain lion corridors.

Influences to prey, such as hunting or diseases that affect mule deer populations, probably have the greatest influences on mountain lion numbers. Increasing urbanization and agricultural pressure outside the Cleveland NF boundary may reduce deer populations on surrounding lands. As a result, mountain lions may attack more pets and livestock or otherwise threaten local communities, leading to more depredation permits issued to kill lions.

Proposed and planned housing developments in and around the Cleveland NF would result in increased recreational uses in the project area, particularly in some of the more accessible riparian zones that are likely used as movement corridors by mountain lions. Hunting and poaching pressures in the area may also increase as human populations adjacent to the project area increase with development, affecting both deer and mountain lion populations. Additionally, associated increases in vehicle traffic would result in more injuries and deaths of deer and mountain lions and reduce the quality of movement corridors that are bisected by busier roadways.

Cumulative Effects Conclusion: Implementation of alternatives 2 or 3, in combination with these past, present, and reasonably foreseeable future actions, would not reduce the quality and quantity of mountain lion habitat in the analysis area. Vegetation management activities in the analysis area would provide short-term benefits to foraging habitat for deer with likely benefits to mountain lions, and grazing activities would continue to be managed to retain sufficient deer forage and other lion prey. Therefore, selection of either alternative 2 or 3 would not contribute to cumulative effects for this species.

Summary of Habitat and Population Status and Trend at the Forest Scale
The LMP requires forest-scale habitat and/or population monitoring for all MIS, so effects analysis for the project must be informed by habitat and population monitoring data. The sections below summarize the habitat status and trend data, and population trend data for mountain lion. This information is drawn from the detailed information on habitat and population trends in the Cleveland NF MIS Report, which is hereby incorporated by reference.

Relationship of Project-Level Effects to Forest-Scale Habitat and Population Trends for the species.
The proposed project is not expected to result in habitat fragmentation. The project-level habitat effects would not contribute to existing forest-wide declines for this species and its habitat.

Species: Mule deer
Key Habitat Factor(s) for the Analysis: Mule deer is an indicator of the presence of healthy, diverse habitats.
Analysis Area for Project-level Effects Analysis: The project area includes parts of the Descanso and Palomar ranger districts, excluding wilderness areas. The project analysis area will be the Palomar and Descanso ranger districts.
Current Condition of the Key Habitat Factor(s) in the Analysis Area: All of the analysis area is suitable habitat for mule deer. The current condition of deer habitat is a mixture of large blocks of undisturbed habitat separated by private inholdings and developments, and by Forest Service roads or facilities such as campgrounds and fire stations and the existing roads and trails. Overall, healthy diverse habitats are present on National Forest System lands in the analysis area.

Alternative 1
Alternative 1 would not contribute to habitat fragmentation and would not reduce the amount of habitat available for this species.

Alternatives 2 and 3
Direct and Indirect Effects to Habitat
Alternatives 2 and 3 are not expected to contribute to habitat fragmentation. Alternatives 2 or 3 would add up to 12.34 miles or an increment of about four percent to the Cleveland NF road and motorized trail system, and would reduce the acreage of open areas by about 99 percent. Adding OHV use to an existing road may increase the disturbance to mule deer. In general, off-road vehicles must comply with noise requirements similar to street legal vehicles. However, some of these vehicles are modified from the factory standards and can be louder. The increased volume of traffic by adding OHV use would have

some increased noise and disturbance effects.

Construction of new roads and trails can be damaging to mule deer habitat, especially true when done near riparian and fawning areas, winter concentration areas and areas with no current roads. It is less of a problem where there are already high road densities and deer are already avoiding the area due to disturbance. Of the action alternatives, Alternative 3 has the least mileage of new construction and Alternative 2 has the most. However, the new construction being planned is minor and is being done in rocky, brushy areas that are not key deer habitat.

Opening unauthorized routes would generally have a negative effect on deer due to the increased use a route would get when added to the transportation system and made known to users.

Cumulative Effects to Habitat. The spatial scale for the cumulative effects of the project on deer habitat is the analysis area identified above. The temporal scale for the analysis is the date of the LMP (2005) to 2013, which is the period of time the direct effects of the project should occur and for which there is information on reasonably foreseeable future actions in the analysis area. The biggest effects on deer in this area are due to development and disturbance by roads, people, and dogs. Several other non-habitat factors, such as hunting, poaching, traffic, and diseases affect mule deer population numbers. Fuels treatment projects on the Cleveland NF have likely had short-term negative effects and longer term beneficial effects on this deer population. Because of the way these treatments have been and would be spread spatially across the landscape, the effects of the projects cumulatively are not likely to result in long-term negative effects to the deer population. In fact, by changing the vegetation to earlier successional stages in some of the project areas and creating openings, it is likely that there have been some longer-term improvements in habitat for deer.

Riparian and meadow habitat within the Cleveland NF on federal and non-federal lands has been affected by development, water diversions, and grazing over the years, reducing the amount and quality of this habitat type. As such, effects to mule deer populations likely have occurred due to reduction in habitat quality and quantity for fawning, water sources, and movement corridors. Demands on water, and thus riparian/meadow habitat, would likely continue to increase with increasing human populations.

Proposed and planned housing developments in and adjacent to the Cleveland NF would result in increased recreational uses in the project area, particularly in some of the more accessible areas and along National Forest System roads, especially in riparian habitats. Hunting and poaching pressures in the area may also increase as human populations increase with development.

Additionally, associated increases in vehicle traffic on existing routes would likewise result in more injuries and deaths of deer and mountain lions while also reducing the quality of movement corridors that are bisected by busier roadways. This project would have some benefits where roads are decommissioned, designated for administrative use, have OHV use removed, or are rehabilitated. On the other hand, routes that have OHV use added, there is new construction, or unauthorized routes that become part of the transportation system would adversely affect deer to some extent.

Cumulative Effects Conclusion: Implementation of alternatives 2 or 3, in combination with these past, present, and reasonably foreseeable future actions, would not reduce the amount of mule deer habitat in the analysis area. No contributions to cumulative effects are expected under alternatives 2 or 3.

Summary of Habitat and Population Status and Trend at the Forest Scale
The LMP requires forest-scale habitat and/or population monitoring for all MIS, so effects analysis for the project must be informed by habitat and population monitoring data. The sections below summarize the

habitat status and trend data, and population trend data for mule deer. This information is drawn from the detailed information on habitat and population trends in the 2007 Cleveland NF Management Indicator Species Report, which is hereby incorporated by reference.

Habitat Status and Trend – Mule deer habitat condition on the Cleveland NF appears to be improving, in some cases due to increased acreage of wildfire in recent years and improved management of conflicting uses in critical areas such as riparian habitats and meadows. Grazing reductions have resulted in improved riparian habitat conditions. Threats include increased recreation in riparian areas, grazing, and too-frequent fire and resulting type conversion in chaparral and coastal sage scrub.

Population Status and Trend – Mule deer populations on the Cleveland NF appear to be increasing. Although mule deer herd size has declined from historic times, current management under the new LMP anticipates increasing herd size over the next four decades at which time it would stabilize.

Relationship of Project-Level Effects to Forest-Scale Habitat and Population Trends for the species. The proposed project is not expected to affect habitat diversity and mule deer populations. The project-level habitat effects are not expected to alter existing forest-wide trends.

Species: Arroyo toad
Key Habitat Factor(s) for the Analysis: Arroyo toad was selected as an MIS as an indicator of the condition of aquatic habitat.
Analysis Area for Project-level Effects Analysis: The project area includes parts of the Descanso and Palomar ranger districts, excluding wilderness areas. The project analysis area will be riparian areas within the Palomar and Descanso ranger districts
Current Condition of the Key Habitat Factor(s) in the Analysis Area: All stream segments below a two-percent gradient are suitable habitat for arroyo toad. The current condition of arroyo toad habitat in the project analysis area is good. Habitat exists as a series of short, separate stream segments on the Cleveland NF where suitable habitat is present, and longer stream sections on non-federal lands.

Alternative 1
Selection of Alternative 1 would not contribute to habitat degradation due to the retention of open areas within toad habitat. Alternative 1 would not contribute to cumulative effects for arroyo toads.

Alternatives 2 and 3
Direct and Indirect Effects to Habitat. Alternative 2 would add 1.07 miles of new roads within occupied toad habitat into the transportation system. This would adversely affect aquatic habitat in these areas. Alternative 3 avoids effects because it does not add any new routes in toad habitat.

Cumulative Effects to Habitat. The analysis area for the project is the Cleveland NF. The scale for the analysis is the date of the LMP (2005) to 2013, which is the period of time the direct effects of the project should occur and for which there is information on reasonably foreseeable future actions in the analysis area. Recent droughts, fires, and floods have probably adversely affected arroyo toad on the Cleveland NF. Some known occupied habitat has gone for several years with no surface water for breeding during the breeding season. In addition to the fires and floods, the areas that were affected have had considerable emergency repair work done to roads, railroads, and utilities.

Cumulative Effects Conclusion: Implementation of Alternative 2, in combination with past, present, and reasonably foreseeable future actions, would result in a reduction in the amount and quality of toad habitat in the analysis area.

Under Alternative 3, effects on arroyo toad habitat would be avoided. Implementation of Alternative 3, in combination with past, present, and reasonably foreseeable future actions, would not result in a reduction in the amount and quality of toad habitat in the analysis area. Cumulative effects on habitat are not expected under Alternative 3.

Summary of Habitat and Population Status and Trend at the Forest Scale
The LMP requires forest-scale habitat and/or population monitoring for all MIS, so effects analysis for the project must be informed by habitat and population monitoring data. The sections below summarize the habitat status and trend data, and population trend data for arroyo toads. This information is drawn from the detailed information on habitat and population trends in the 2007 Cleveland NF Management Indicator Species Report, which is hereby incorporated by reference.

Habitat Status and Trend. Arroyo toad habitat on the Cleveland NF is generally in good condition and the trend has been toward improvement in riparian habitat. Conservation of riparian areas has been a top priority for the Cleveland NF since at least the 1980s. The Cleveland NF has implemented measures to enhance and protect these areas, including reducing or excluding livestock grazing, re-routing roads and trails away from streams, and replanting streamside areas with willows. Because of the emphasis on protecting and enhancing riparian habitat, in general riparian habitat is in stable or improving condition.

Population Status and Trend. The population of arroyo toads on the Cleveland NF is small and the ability to detect their populations and their reproductive success in any given year is highly dependent on the timing and amount of rainfall. The population trend for arroyo toad appears to be stable.

Relationship of Project-Level Effects to Forest-Scale Habitat and Population Trends for the species. Alternative 2 is expected to affect aquatic habitat and arroyo toad populations. The project-level habitat effects may alter forest-wide trends for this species or its habitat. Alternative 3 is not expected to affect aquatic habitat and arroyo toad populations. The project-level habitat effects are not expected to alter or contribute to forest-wide trends for this species or its habitat.

Species: Song sparrow
Key Habitat Factor(s) for the Analysis: The song sparrow was selected as an MIS to track condition of riparian habitat.
Analysis Area for Project-level Effects Analysis: Song sparrows are a resident species and do not travel substantial distances from their territories. The project area includes parts of the Descanso and Palomar ranger districts, excluding wilderness areas. The project analysis area will be riparian areas within the Palomar and Descanso ranger districts.

Current Condition of the Key Habitat Factor(s) in the Analysis Area: Riparian habitat within the analysis is currently in good condition.

Alternative 1
Selection of Alternative 1 would not contribute to habitat degradation due to the retention of open areas within riparian habitat. Alternative 1 would not contribute to cumulative effects for song sparrows.

Alternatives 2 and 3
Direct and Indirect Effects to Habitat. Alternative 2 would add approximately 2.0 miles of new roads and trail in song sparrow habitat to the transportation system, with adverse effects on riparian habitat in these areas. Alternative 3 avoids effects on riparian habitat and would not affect the quality of habitat in the project area. Roads in or near riparian areas can negatively affect song sparrows, and other riparian-dependent species. The noise from road use and maintenance can cause birds to abandon nests or to not

attempt nesting at all. In addition, roads provide access for recreation use in streams and riparian habitats. Under all alternatives, new proposals for roads or incorporation of unauthorized roads in riparian areas are subject to standards and guidance for riparian conservation areas which should minimize future new effects on aquatic and riparian habitats.

Cumulative Effects to Habitat. The analysis area for the project will be the Cleveland NF. The temporal scale for the analysis is the date of the LMP (2005) to 2013, which is the period of time the direct effects of the project should occur and for which there is information on reasonably foreseeable future actions in the analysis area. Recent and planned vegetation treatments on the Cleveland NF have and will have the potential to affect song sparrows. However, each one of those projects also include measures to protect riparian habitat, riparian-dependent threatened and endangered, and water quality, thus effectively reducing the degree and duration of potential effects to song sparrows within those project areas.

Similar vegetation projects on private lands, however, do not generally carry the same levels of riparian protection as those on the Cleveland NF and likely have resulted in disturbance to song sparrows, in short-term and, potentially, in long-term alterations of habitat.

Riparian habitat on the Cleveland NF on federal and non-federal lands has been affected by water diversions and extractions that reduce the amount and quality of this habitat type. As such, effects on song sparrow populations likely have occurred due to reduction in habitat quality and quantity. Demands on water, and thus riparian habitat, are likely continue to increase.

Proposed and planned housing developments will result in increased recreational uses in the project area, particularly in some of the more accessible areas along National Forest System roads. The increasing population is southern California is putting more pressure on the few perennial streams for recreation. This can affect song sparrows and other riparian dependent birds when use gets so heavy that there is too much disturbance for nesting.

Cumulative Effects Conclusion. Implementation of Alternative 2, in combination with these past, present, and reasonably foreseeable future actions, would likely result in a slight reduction in the amount of song sparrow habitat in the analysis area. Cumulative effects are expected under the proposed action. Under Alternative 3, effects on song sparrow habitat would be avoided. Implementation of Alternative 3, in combination with these past, present, and reasonably foreseeable future actions, would likely not result in a reduction in the amount and quality of song sparrow habitat in the analysis area. Cumulative effects on habitat are not expected under the proposed action.

Summary of Habitat and Population Status and Trend at the Forest Scale
The LMP requires forest-scale habitat and/or population monitoring for all MIS, so effects analysis for the project must be informed by habitat and population monitoring data. The sections below summarize the habitat status and trend data, and population trend data for the song sparrow. This information is drawn from the detailed information on habitat and population trends in the 2007 Cleveland NF Management Indicator Species Report, which is hereby incorporated by reference.

Habitat Status and Trend – Song sparrow riparian habitat condition is stable or improving. Conservation of riparian areas has been a top priority for the Cleveland NF since at least the 1980s and the national forest has implemented measures to enhance and protect these areas, including reducing or excluding livestock grazing, re-routing roads and trails away from streams, and replanting streamside areas with willows. Because of the emphasis on protecting and enhancing riparian habitat, in general riparian habitat is in stable or improving condition.

Population Status and Trend – There appears to be a nationwide decline in the abundance of song sparrows, and a negative trend in song sparrow abundance was determined from monitoring on southern California national forests. Although not statistically significant, other surveys have shown that California populations declined 0.3 percent per year between 1966 and 2004, with a decline becoming more evident in the 1980 to 2004 sampling period.

Relationship of Project-Level Effects to Forest-Scale Habitat and Population Trends for the species. Alternative 2 is expected to have minimal effects on song sparrow habitat and populations. Alternative 2 is expected to have minimal effects on song sparrow habitat and populations. The project-level habitat effects are not expected to alter existing forest-wide trends toward habitat improvement, and would not contribute to existing population declines. Alternative 3 is expected to have no effect on song sparrow habitat and populations. The project level habitat effects would not contribute to existing forest-wide trends.

Species: Engelmann oak
Key Habitat Factor(s) for the Analysis: Engelmann oak was selected as an MIS to track oak regeneration.
Analysis Area for Project-level Effects Analysis: Engelmann oak is found throughout the Cleveland NF. The project area includes parts of the Descanso and Palomar ranger districts, excluding wilderness areas. The project analysis area will be the Palomar and Descanso ranger districts.
Current Condition of the Key Habitat Factor(s) in the Analysis Area: Engelmann oak regeneration is a problem in some parts of the Cleveland NF, usually in areas that are being grazed by deer or cattle.

Alternative 1
Selection of Alternative 1 would have no effect on the amount or quality of habitat available for this species. Alternative 1 would not contribute to cumulative effects on Engelmann oak.

Alternatives 2 and 3
Direct and Indirect Effects to Habitat. Alternatives 2 and 3 are expected to have minimal effects on Engelmann oak. One existing trail at Corral Canyon travels through an Engelmann oak woodland, and unauthorized use associated with this trail has caused some damage to habitat.

Cumulative Effects to Habitat. Because the proposed action is expected to have minimal effects on Engelmann oak, it would not contribute to cumulative effects on this species.

Cumulative Effects Conclusion. Implementation of alternatives 2 or 3 would result in no net change in the amount of Engelmann oak habitat in the analysis area. No cumulative effects on Engelmann oak are expected to occur under the proposed action.

Summary of Habitat and Population Status and Trend at the Forest Scale
The LMP requires forest-scale habitat and/or population monitoring for all MIS, so effects analysis for the project must be informed by habitat and population monitoring data. The discussion below summarizes the habitat status and trend data, and population trend data for the Engelmann oak This information is drawn from the detailed information on habitat and population trends in the 2007 Cleveland NF Management Indicator Species Report, which is hereby incorporated by reference.

Habitat Status and Trend. Approximately 1,749 acres of Engelmann oak woodland are found on the Cleveland NF. In general, the habitat for Engelmann oak is in good condition and the amount of habitat is stable.

Population Status and Trend. The Engelmann oak population on the Cleveland NF is generally healthy. Poor recruitment is a problem in some areas. Insufficient data exist to show a population trend.

Relationship of Project-Level Effects to Forest-Scale Habitat and Population Trends for the species. Alternatives 2 or 3 are not expected to affect Engelmann oak regeneration or habitat. The project-level habitat effects would not alter or contribute to existing forest-wide trends.

Species: California spotted owl
Key Habitat Factor(s) for the Analysis: The California spotted owl was selected as an MIS to track the condition of montane coniferous forest.
Analysis Area for Project-level Effects Analysis: The California spotted owl occupies distinct territories and is a year round resident. The project area includes parts of the Descanso and Palomar ranger districts, excluding wilderness areas. The project analysis area will be forested riparian areas within the Palomar and Descanso ranger districts.

Current Condition of the Key Habitat Factor(s) in the Analysis Area: Montane coniferous forest within the analysis area exists primarily as vegetation associated with streams or riparian areas at higher elevations. The montane coniferous forest within the analysis area is in good condition.

Alternative 1
Selection of Alternative 1 would have no effect on the amount or quality of montane coniferous forest available for this species. Alternative 1 would not contribute to cumulative effects on California spotted owl habitat.

Alternatives 2 and 3
Direct and Indirect Effects to Habitat. Alternatives 2 and 3 are expected to have no effect on montane coniferous forest. Alternatives 2 and 3 do not include routes in suitable California spotted owl habitat.

Cumulative Effects to Habitat. Because alternatives 2 and 3 are expected to have no effect on montane coniferous forest, they would not contribute to cumulative effects on this species.

Cumulative Effects Conclusion: Implementation of alternatives 2 or 3 would result in a no net change in the amount of montane coniferous forest in the analysis area.

Summary of Habitat and Population Status and Trend at the Forest Scale
The LMP requires forest-scale habitat and/or population monitoring for all MIS, so effects analysis for the project must be informed by habitat and population monitoring data. The discussions below summarize the habitat status and trend data, and population trend data for the California spotted owl. This information is drawn from the detailed information on habitat and population trends in the 2007 Cleveland NF Management Indicator Species Report, which is hereby incorporated by reference.

Habitat Status and Trend – California spotted owl habitat condition on the Cleveland NF appears to be deteriorating. The drought has caused noticeable tree mortality in many southern California mountain ranges including the Laguna Mountains and several California spotted owl territories in the adjacent Cuyamaca Rancho State Park were damaged or destroyed by the Cedar fire in 2003.

Population Status and Trend – Insufficient data exist to indicate population trends for spotted owls on the Cleveland NF. However, a combined total of 30 territories (20 on and 10 off the Cleveland NF) were monitored in 2005 and/or 2006. Of these, only 8 were occupied for an occupancy rate of 27 percent. This

occupancy rate is much lower than those detected in previous survey efforts (1987 to 1995), when occupancy rates were typically 55 to 60 percent.

Relationship of Project-Level Effects to Forest-Scale Habitat and Population Trends for the species. Alternatives 2 and 3 are not expected to affect the California spotted owl or its habitat. Project-level habitat effects would not alter or contribute to existing forest-wide trends.

Species: Coulter pine, black oak, and white fir
Key Habitat Factor(s) for the Analysis: Coulter pine, black oak, and white fir are all tree species that were selected as MIS. In every case they were chosen to monitor and guide vegetation treatments and habitat management to achieve desired conditions for the ecosystems and wildlife habitats on the Cleveland NF. See the MIS account in the LMP for these species for more detailed information regarding life history, habitat conditions, and population trends. In all cases, these species are measured and would be monitored at a much larger scale than that affected by this project. Most routes are already in existence and little new ground disturbance would occur. Effects on these species would have to be measured by the numbers of stems affected rather than as landscape effects (e.g., in acres) which was intended in their selection as MIS. The primary intention of their selection was to monitor and influence such things as forest health treatments, fuels treatments, prescribed fire, reforestation, wildfire suppression, air pollution, and climate change.

Alternatives 2 and 3
Alternatives 2 and 3 would not have measurable effects on these vegetation types. This project would not affect their distribution or abundance at the national forest or province level.

Cumulative Effects for MIS Tree Species
Since 2003 considerable acreage of forested habitat has been burned. The Cleveland NF has been conducting a substantial amount of fuels treatment in these forest types. Most of the work has been in mixed conifers to help protect nearby communities from wildfire. Some work has been done away from communities to provide diversity in the vegetation to help reduce the effects of wildfire and restore more natural conditions. The work has generally involved thinning from below. The actions proposed in all alternatives would not have measurable effects on these Coulter pine, black oak, or white fir. This project would not affect their distribution or abundance at the national forest or province level.

Table 3.7 summarizes the effects of alternatives 1, 2, and 3 on MIS habitat and population trends.

Table 3.7: Summary of effects on MIS habitat and population trends.

Management indicator species	Alt. 1	Alt. 2	Alt. 3
Arroyo toad	None	Contributes to decline in population, may alter forest- wide trends toward habitat improvement	None
Song sparrow, mountain lion, mule deer, Engelmann oak, California spotted owl, Coulter pine, black oak, and white fir	None	None	None

3.3.10 Noxious Weeds

The weed risk assessment for this project, which is summarized below, is hereby incorporated by reference. The assessment evaluates the effects of the project on California Department of Food and Agriculture (CDFA) listed noxious weeds and other invasive non-native plant species. The purpose of the assessment is to identify risks of weed invasion and spread in or along the project area and to recommend measures to offset these risks. The primary focus for noxious and other invasive plant management is on prevention of introduction, establishment, and spread. This assessment complies with the LMP and the Forest Service Manual (FSM) section 2080, Noxious Weed Management.

3.3.10.1 Inventory Results and Risk Assessment

An inventory for noxious and other invasive plant species was performed concurrently with focused rare plant surveys and floristic inventories. The surveys that were performed had a high likelihood of not detecting target species (including weeds) due to the exceptionally dry conditions. The majority of the project area was not surveyed. Weeds recorded in the surveyed area included wild oat (*Avena* sp.), red brome (*Bromus madritensis* v *rubens*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), cheatgrass (*Bromus tectorum*), and mustard (*Hirschfeldia incana*). Surveys were not sufficient to detect all noxious weeds likely present in the project area. Therefore, the risk associated with undetected weeds is considered high. All noxious weeds and invasive plants addressed in the EIS for the LMP (2006, Table 463) were considered in this analysis.

Risk Assessment for Soil Disturbance Effects. The weeds risk from soil disturbance associated with all action alternatives was determined to be high throughout the project area. Soil disturbance associated with constriction (in the case of new construction) and long-term maintenance of all routes added to the system would likely lead to a maintained or increased prevalence of cheatgrass and the other federal weeds, as well as a long-term risk of new introductions through the use and maintenance of roads and motorized trails.

Risk Assessment for Travel Routes. The risk from use and maintenance of travel routes is determined to be high overall, and increased by this project to the extent that new routes are added to the system.

Risk of Transporting New Infestations into Project Area. The risk of transporting new weed infestations into the project area was determined to be **high**.

Measures to Reduce Weed Risk. Alternatives include design features intended to reduce the potential for establishment and spread of invasive weeds during implementation of this project. Elements of decommissioning and rehabilitation under alternatives 2 and 3 pose a short-term risk of weed introduction and spread via heavy equipment use and ground disturbance, but are expected to result in a net long-term reduction of weed risk due to removal of vectors for introduction and dispersal from the landscape.

Application of design features and incorporation of decommissioning and rehabilitation elements of the action alternatives would reduce the risk of weed introduction and spread as a result of project implementation. These measures are all fully incorporated into the project description. The overall risk of weed introduction is considered **moderate** with the incorporation of the above measures.

Risk Determination. With the incorporation of design features and monitoring measures into the decision (see section 2.5), the risk of noxious weed introduction and spread of weeds would be reduced from a high level of risk to a moderate level of risk. Without design features and monitoring measures, the risk would remain high.

3.4 AIR QUALITY

The proposed action is intended to identify a forest-wide system of routes for public motor vehicle use for the Cleveland NF, as required by the Travel Management Rule, which requires that each national forest or ranger district specify the roads, trails, and areas on National Forest System lands that are open to motor vehicles, including off-highway vehicles (OHV). The format of this section on air quality is based on recent draft air quality regional travel management direction and a report for a similar project prepared for the San Bernardino National Forest.

This analysis contains an evaluation of how air resources would be affected by the proposed action and alternatives outlined in Chapter 2. The document contains policy and direction as well as a discussion of existing air quality conditions and the potential impacts of program implementation under the different alternatives.

3.4.1 Policy and Direction

Federal Clean Air Act. The federal Clean Air Act was passed in 1970 and last amended in 1990 (42 U.S.C. §7401 et seq.), and is the basis for federal control of air pollution. The Clean Air Act was designed to protect and enhance the quality of the nation's air resources. Basic elements of the act include national ambient air quality standards (NAAQS) for criteria air pollutants, technology based emission control standards for hazardous air pollutants (HAP), state implementation plans (SIP), a comprehensive approach to reducing motor vehicle emissions, control standards and permit requirements for stationary air pollution sources, acid rain control measures, stratospheric ozone protection, and enforcement provisions. The U.S. Environmental Protection Agency (EPA) is the agency responsible for establishing the NAAQS and for enforcement of the act.

The Clean Air Act requires that each state develop a SIP which describes the methods the state will use to ensure that air quality meets the NAAQS for criteria pollutants in non-attainment areas. Criteria air pollutants are defined as those pollutants for which the federal (and state) government has established air quality standards to protect public health, and for some pollutants also have established secondary standards designed to protect the environment (Table 3.8).

Table 3.8: National Ambient Air Quality Standards.

Pollutant	Averaging time	Standards
Ozone	8 hour	0.08 ppm
Respirable particulate matter (PM10)	24 hour	150 $\mu g/m^3$
Nitrogen dioxide (NO2)	Annual arithmetic mean	0.053 ppm
Fine particulate matter (PM2.5)	8 hour	35 ug/m^3
	Annual arithmetic mean	15 ug/m^3
Carbon monoxide (CO)	8 hour	9 ppm
	1 hour	35 ppm
Sulfur dioxide (SO2)	Annual arithmetic mean	0.030 ppm
	24 hour	0.14 ppm
Source: CARB. Accessed online 01/16/2008 at http://www.arb.ca.gov/research/aaqs/aaqs2.pdf		

Regional Haze Rule (1990 Clean Air Act Amendments). Fine particles affect visibility by absorbing and scattering light waves when the particles are suspended in the atmosphere, reducing the visual information reaching the eyes of a human observer. Particulate matter pollution, or haze, is the major cause of reduced visibility in parts of the United States, including many wilderness areas. In 1999, the EPA enacted the Regional Haze Rule, which calls for states to establish goals for improving visibility in mandatory Class I areas and to develop long-term strategies for reducing the emissions of air pollutants that cause visibility impairment.

The Regional Haze Rule requires states to demonstrate "reasonable progress" toward improving visibility in each Class I area over a sixty-year period (to 2064), during which visibility should be returned to natural conditions. Class I areas include wilderness areas or national parks greater than 5000 acres in size and which existed on August 7, 1977.

The Agua Tibia Wilderness Area, which is on the Palomar Ranger District of the Cleveland NF, is a Class I area. Because California is still developing its Regional Haze SIP, haze will not be considered further in this document.

General Conformity Rule (1990 Clean Air Act Amendments) (Section 176 (c) of the Clean Air Act (part 51, subpart W, and part 93, subpart B). In 1993 the EPA enacted the final General Conformity Rule which required federal agencies to work with state and local governments in non-attainment or maintenance areas to ensure that federal actions conform to the initiatives established in the applicable SIP. A project is non-conforming if it conflicts with or delays implementation of any applicable attainment or maintenance plan. The rule divides the conformity process into two phases: applicability and determination. Federal agencies must first determine if an action is subject to the Conformity Rule (applicability analysis) and then if the action conforms to an applicable implementation plan (conformity determination).

California Clean Air Act (H&S §§ 39660 et seq.). California adopted the California Clean Air Act in 1988. The act provides the basis for air quality planning and regulation in California independent of federal regulations and establishes ambient air quality standards for the same criteria pollutants as the federal clean air legislation. Under the federal Clean Air Act states can adopt air quality standards that are more stringent than the federal NAAQS (Table 3.9). California has chosen to adopt standards for criteria pollutants that are generally more restrictive than the counterpart federal standards. The California Air Resources Board (CARB) is the agency responsible for establishing California ambient air quality standards (CAAQS), setting vehicle emission standards and fuel specifications, and regulating emissions from certain types of mobile equipment and consumer products.

Table 3.9: California Ambient Air Quality Standards.

Pollutant	Averaging time	Standards
Ozone	1 hour	0.09 ppm
	8 hour	0.07 ppm
Respirable particulate matter (PM10)	24 hour	50 $\mu g/m^3$
	Annual arithmetic mean	20 $\mu g/m^3$
Nitrogen dioxide (NO2)	Annual arithmetic mean	013 ppm
	1 hour	0.08 ppm
Fine particulate matter (PM2.5)	Annual arithmetic mean	12 ug/m^3
Carbon monoxide (CO)	8 hour	9 ppm
	1 hour	20 ppm
Sulfur dioxide (SO2)	24 hour	0.04 ppm
	1 hour	0.25 ppm
Source: CARB. Accessed online 01/16/2008 at http://www.arb.ca.gov/research/aaqs/aaqs2.pdf		

CARB Off-Road Recreational Vehicle Emissions Standards. In 1994, CARB approved new OHV regulations (since amended in 1998). The rulemaking established emission standards for OHVs, including off-road motorcycles and ATVs. OHV registration became contingent on vehicle compliance to California emissions standards. Off-road motorcycles and ATVs that meet emission standards are eligible for OHV Green Sticker registration and have a year-round operating period, while noncompliant vehicles fall under the OHV Red Sticker program which has a limited operational season.

CARB Asbestos ATCM Regulation. In 2001, the Air Resources Board adopted a regulation order for Airborne Toxic Control Measures (ATCM) for asbestos. The order applies to disturbance of ultramafic rock, naturally occurring asbestos, or serpentinite. Each air district is required to implement and enforce this order and propose control measures for the district. Because no sources of asbestos are known to exist in the project area, no further discussion is provided.

Local Regulations. The project is located within the South Coast Air Quality Management District (SCAQMD) and the San Diego Air Quality Management District (SDAQMD). These air districts are the local authority and primary agency for managing pollutant emitting activities within their boundaries. The SCAQMD includes Orange County, most of Los Angeles County, and the western portions of San Bernardino and Riverside counties. The SDAQMD includes San Diego County.

SCAQMD Rules. *Rule 401* (Visible Emissions) prohibits discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is: (a) As dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or (b) of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection (a) of the rule.

Rule 403 (Fugitive Dust) is intended to reduce the amount of particulate matter entrained in the ambient air as a result of human-caused fugitive dust sources. It prohibits the emissions of fugitive dust such that the dust remains visible in the atmosphere beyond the property line of the emission source or that dust emissions exceed 20 percent opacity, if the dust emission is the result of movement of motor vehicles. It also requires that a person utilize the best available control measures to minimize fugitive dust emissions from each type of source that is part of the active operation.

Rule 1186 (PM_{10} Emissions from Paved and Unpaved Roads, and Livestock Operations) is designed to reduce the amount of particulate matter entrained in the ambient air as a result of vehicular travel on paved and unpaved public roads, and at livestock operations, and establishes the conditions under which such roads should be operated and maintained.

SDAQMD Rules. *Rule 50* (Visible Emissions) is the same as SCAQMD Rule 401 discussed above.

Air Quality Management District Significance Criteria. Both the SCAQMD and the SDAQMD have established air quality significance thresholds against which a project can judge its initial impacts to air quality against state requirements. A project is significant if it generates total emissions, either direct or indirect, in excess of the air district thresholds. Table 3.10 displays the significance criteria for both the SCAQMD and the SDAQMD.

Table 3.10: Air quality significance criteria in pounds per day.

	Reactive organic gases	CO	NO2/NOx	SO2/SOx	PM10	PM2.5
SCAQMD	55	550	55	150	150	55
SDAQMD	137	550	250	250	100	n/a

Cleveland LMP Direction. The LMP includes a program strategy to control and reduce smoke and fugitive dust to protect human health, improve safety, and/or reduce or eliminate environmental impacts. In addition, the LMP includes a program strategy to maintain and update the inventory for wildland fire emissions and other national forest resource management emissions with the current SIP. The SIP inventories establish levels of air pollution that meet the long-term federal air quality goals for bringing the non-attainment area to attainment of the NAAQSs.

3.4.2 Existing Condition

The population density, topography, and climate of the SCAQMD make it an area of high air pollution potential. The coastal area of the SCAQMD (known as the South Coast Air Basin) is characterized by a Mediterranean climate with dry summers, wet winter, and mild seasonal changes. The coastal region of the SCAQMD contains the densest urban area in the western U.S. Air quality in the coastal zone is driven almost entirely by local emissions, and air quality problems are exacerbated by high population density, topography, and local meteorological conditions. During late spring, summer and early fall, light winds, low mixing heights, and sunshine combine to produce conditions favorable for the production of ozone. In the winter, the greatest pollution problems are carbon monoxide and nitrogen oxides because of

extremely low level inversions and air stagnation during the night and early morning hours. Elevated PM_{10} and $PM_{2.5}$ concentrations can occur throughout the year, but are most common in the fall and winter months. Prevailing winds that travel west to east transport pollutants from the heavily populated coastal zone through the Banning pass into the Coachella Valley.

The climate of the SDAQMD is dominated by a semi-permanent high pressure cell located over the Pacific Ocean, which influences the direction of prevailing winds and maintains clear skies for much of the year. The high pressure cell also creates two types of temperature inversions that may act to degrade local air quality: subsidence inversions and radiation inversions. Both inversions can trap pollutants between layers of air. When the pollutants become more concentrated in the atmosphere, photochemical reactions can produce ozone, commonly known as smog.

A marked feature of the climate is the wide variation in temperature within short distances. In nearby valleys daytimes are much warmer in summer and nights noticeably cooler in winter, and freezing occurs much more frequently than in the city. Although records show unusually small daily temperature ranges, only about 15 degrees between the highest and lowest readings, a few miles inland these ranges increase to 30 degrees or more.

The seasonal rainfall is about 10 inches in the city, but increases with elevation and distance from the coast. In the mountains to the north and east the average is between 20 and 40 inches, depending on slope and elevation. Most of the precipitation falls in winter, except in the mountains where there is an occasional thunderstorm. Eighty-five percent of the rainfall occurs from November through March, but wide variations take place in monthly and seasonal totals. Infrequent measurable amounts of hail occur in San Diego, but snow is practically unknown at the Weather Service Office location. In each occurrence of snowfall only a trace was recorded officially, but in some locations amounts up to or slightly exceeding a half-inch fell, and remained on the ground for an hour or more.

As on the rest of the Pacific Coast, a dominant characteristic of spring and summer is the nighttime and early morning cloudiness. Low clouds form regularly and frequently extend inland over the coastal valleys and foothills, but they usually dissipate during the morning and the afternoons are generally clear.

Considerable fog occurs along the coast, but the amount decreases with distance inland. The fall and winter months are usually the foggiest. Thunderstorms are rare, averaging about three a year in the city. Visibilities are good as a rule. The sunshine is plentiful for a marine location, with a marked increase toward the interior (accessed 4/5/08 http://www.wrh.noaa.gov/sgx/climate/san-san.htm)

Emissions

Within the SCAQMD, a majority of the pollution is derived from the nearby urban areas. The largest source of carbon monoxide (CO), nitrogen oxides (NO_x) and reactive organics gases (ROG) in the South Coast Air Basin are on-road motor vehicles. Major sources of particulates (PM_{10} and $PM_{2.5}$) include miscellaneous processes that include activities such as construction, dust from paved and unpaved roads, fugitive dust, automobiles, waste burning, fuel combustion, cooking, industrial processes, and agricultural activities,. Emissions (daily annual average) for the major pollutants in the SCAQMD are listed below in Table 3.11.

SCAQMD emissions from recreational off-road vehicles range from 0.02 to 1.13 percent, a very small portion of total criteria pollutant emissions in the district. Travel on unpaved roads accounts for 3.7 percent of PM_{10} emissions, and 1 percent of $PM_{2.5}$ emissions respectively, while travel on paved roads accounts for 44 percent of PM_{10} and 18 percent of $PM_{2.5}$.

Table 3.11: Projected 2008 emissions for the SCAQMD in tons per day.

Source type	VOC	CO	NOx	SOx	PM10	PM2.5
Fuel combustion	7.2	53.4	29.6	2.4	6.3	6.3
Waste disposal	7.6	1.1	1.8	0.4	0.5	0.4
Cleaning and surface coatings	37.1	0.2	0.2	0.1	0.7	0.7
Petroleum production and marketing	31.6	8.8	0.4	1.1	0.9	0.7
Industrial processes	19.4	2.6	0.2	0.1	8.7	4.8
Solvent evaporation	127.1	n/a	n/a	n/a	0.0	0.0
Mobile sources-on road	210.4	2115.7	435.3	2.1	21.9	17.8
Mobile sources-other	145.7	964.8	331.4	22.1	20.7	18.5
Mobile sources-off road recreational	6.8	15.0	0.16	0.1	0.1	0.1
Miscellaneous processes	15.1	111.3	54.6	12.6	82.2	32.7
Miscellaneous unpaved road dust	n/a	n/a	n/a	n/a	1.0	1.0
Miscellaneous paved road dust	n/a	n/a	n/a	n/a	122.2	18.5
Total anthropogenic	607.9	3273.8	853.7	40.9	277.5	101.5

Recreational off-road vehicles in the San Diego Air Basin account for 1.3 percent of VOC and 0.7 percent of CO emissions (Table 3.12), while also producing 0.084 to 1.52 percent of NOx, SOx, PM10 and PM2.5. Travel on unpaved roads accounts for 31.3 percent of PM10 emissions, and 17.4 percent of PM2.5 emissions, while travel on paved roads accounts for 18.9 percent of PM10 and 6.6 percent of PM2.5.

Table 3.12: 2006 emissions for the SDAQMD in tons per day.

Source type	VOC	CO	NOx	SOx	PM10	PM2.5
Fuel combustion	3.4	25.9	8.7	0.4	2.0	1.9
Waste disposal	2.1	0.1	0.2	0.0	0.1	0.1
Cleaning and surface coatings	15.6	n/a	n/a	n/a	n/a	n/a
Petroleum production and marketing	8.2	0.0	0.0	n/a	n/a	n/a
Industrial processes	2.6	0.3	0.2	0.0	8.4	3.9
Solvent evaporation	30.7	n/a	n/a	n/a	0.0	0.0
Mobile sources-on road	58.7	613.5	113.9	1.0	5.8	4.2
Mobile sources-other	41.4	24.6	85.2	12.2	7.8	7.2
Mobile sources-off road recreational	2.3	5.96	0.1	0.0	0.0	0.0
Miscellaneous processes	5.1	28.1	2.7	0.2	94.5	16.1
Miscellaneous unpaved road dust	n/a	n/a	n/a	n/a	37.2	5.6
Miscellaneous paved road dust	n/a	n/a	n/a	n/a	22.4	2.2
Total anthropogenic	167.8	914.4	211.1	13.8	118.6	33.4

National and State Ambient Air Quality Standards

The project area is nonattainment for both state and federal ambient air quality standards for several criteria air pollutants. Pertinent air quality designations are shown in Table 3.13.

Table 3.13: Air quality designations for the South Coast and San Diego AQMDs.

District	County/Area	Criteria pollutant	Non-attainment status	
			Federal	State
SCAQMD	South Coast air basin	CO	Maintenance (serious)	Attainment
	Riverside/ San Bernardino	Ozone	Severe/serious (Coachella Valley)	Extreme
		PM10	Serious	Non-attainment (Coachella Valley unclassified)
		PM2.5	Non-attainment	Non-attainment
SDAQMD	San Diego	Ozone	Subpart 1	Non-attainment
		PM10	--	Non-attainment
		PM2.5	--	Non-attainment

3.4.3 Determination of Effects

For purposes of meeting federal requirements, impact significance is related to federal conformity with the EPA-approved SIP and with the NAAQS. Air quality impacts would be considered significant if they are expected to cause or contribute to an air quality violation in a non-attainment or maintenance area.

However, if total direct and indirect project emissions fall below designated applicability threshold levels established under the Conformity Rule (see Appendix A in the air quality specialist report), no adverse change in attainment status is expected. For purposes of meeting state requirements, air quality management district thresholds of significance for project emissions serve the same purpose as the federal applicability thresholds.

3.4.3.1 Effects Common to All Alternatives

OHVs emit criteria pollutants such as nitrogen oxides, sulfur oxides, carbon monoxide, and volatile organic compounds (VOCs). Both NOx and VOCs are the precursors for the non-attainment pollutant O_3. OHV exhaust and travel on unpaved roads and trails emits particulate matter. Inhalable coarse particles (PM10) are emitted directly from the source, such as soot from engine exhaust, windblown dusts from bare soil, and re-entrained dust from vehicle travel on unpaved roads. Fine particles (PM2.5) are associated with the products of engine exhaust including the reaction of NOx and SO2 with ammonia and diesel soot. Inhalable particulate matter poses a serious health hazard, since it can be deposited in the lungs and can cause permanent damage by interfering with the body's mechanism for clearing the respiratory tract or by acting as a carrier of a toxic substance. Dust from OHV can directly reduce plant photosynthesis near roads and trails by coating needles and leaves. PM2.5 is the major cause of reduced visibility in Southern California, including in National Forest Class I wilderness areas. The OHV travel routes lie to the south and east of the Cucamonga, San Gorgonio, San Jacinto and Agua Tibia Class I wilderness areas.

All alternatives would release $PM_{10}/PM_{2.5}$ into the environment from recreational vehicle travel on forest roads and trails, as well as road and trail system rehabilitation and maintenance projects. Tailpipe emissions from motorized equipment would produce criteria pollutants such as carbon monoxide, as well as the precursor gases for ozone and $PM_{2.5}$.

3.4.3.2 Alternatives

Direct and Indirect Effects

Under Alternative 1, no changes to the existing OHV road and trail system would occur and the use of currently designated routes would continue. A summary of how alternatives 2 and 3 would impact National Forest System roads and trails that are accessible to public use, as well as the acres of planned open areas are listed below in Table 3.14. Accessible road and trail miles would increase for both the South Coast and San Diego Air Districts under the action alternatives, the open ride areas would decrease for the action alternatives.

Table 3.14: Net change in user miles and open areas.

Location	Net change	Alternative 2	Alternative 3
SCAQMD	User miles	0.0	0.0
	Open acres	(358.0)	(358.0)
SDAQMD	User miles	12.2	8.4
	Open acres	(1,785)	(1,770)
Cleveland NF	**User miles**	**12.2**	**8.4**
	Open acres	**(2,145)**	**(2,130)**

The number of visits is assumed to generally remain the same for alternatives 2 and 3. The addition of more trails, however, is expected to result in additional miles traveled. The annual change in use by ATVs, motorcycles, and other green sticker vehicles would predominately occur on the southern end of the Cleveland NF in the SDAQMD. Both the increase in accessible road and trail miles would affect the number of vehicle miles traveled annually in the study area. Projected changes to the number of miles traveled for each air district are listed in Table 3.15.

Table 3.15: Vehicle miles traveled (VMT) per alternative.

Location	Annual open area visits*	Annual visits*	Alternative 2 VMT**	Alternative 3 VMT**
SCAQMD	3,000	0	0	0
SDAQMD	12,000	1,100	300,450	210,400

* Use rate is assumed not to change between alternatives 2 and 3.
** Each visit assumes that the whole trail system is visited.

Criteria pollutant emissions from recreational vehicle use (which includes both engine exhaust and fugitive dust) are expected to decrease for the action alternatives. The increase trail mileage is expected to be countered by the reduction in open area use. Total emissions for each alternative are in Table 3.16.

Table 3.16: Criteria pollutant emissions by alternative.

Alternative	Location	Tons per year*					
		CO	VOC	NOx	PM10	PM2.5	SOx
Alternative 1	SCAQMD	8.07	0.52	0.14	71.37	15.14	0.00
	SDAQMD	16.58	1.10	0.29	147.61	31.32	0.00
Alternative 2	SCAQMD	1.48	0.10	0.07	13.06	2.77	0.02
	SDAQMD	11.09	0.73	0.38	97.86	20.17	0.00
Alternative 3	SCAQMD	1.02	0.07	0.05	8.99	1.91	0.00
	SDAQMD	7.73	0.51	0.26	68.14	14.47	0.01
* Emission rates from Air Quality San Bernardino NF Travel Route Designation Project, 1/2008.							

Road decommissioning and unauthorized route rehabilitation activities are planned under alternatives 2 and 3. For the San Diego air quality management district, 14.6 miles are proposed for rehabilitation. For the South Coast air quality management district, 3.4 miles are proposed for rehabilitation. Closures in currently open areas are counted for 2.5 miles of rehabilitation. Rehabilitation activities would include road and trailbed "ripping" with heavy equipment, revegetation, and fencing or blocking of unauthorized roads and trails. An equivalent of approximately 18 miles would be rehabilitated. The use of heavy equipment and worker vehicles would produce exhaust emissions, while travel on unpaved roads would produce fugitive dust. Small increases in short term, localized emissions would occur under the actions for rehabilitation activities (Table 3.17). However, the permanent elimination of routes from the Forest road and trail system would result in an overall decrease in OHV traffic, and a long term concurrent decrease in emissions.

Table 3.17: Rehabilitation emissions by alternative

Alternative	Location	Tons*					
		CO	VOC	NOx	PM10	PM2.5	SOx
Alternative 2	SCAQMD	0.01	0.00	0.04	0.06	0.01	0.00
	SDAQMD	0.06	0.02	0.18	0.25	0.06	0.02
Alternative 3	SCAQMD	0.01	0.00	0.04	0.06	0.01	0.00
	SDAQMD	0.06	0.02	0.18	0.25	0.06	0.02
* Emission rates from Air Quality San Bernardino NF Travel Route Designation Project, 1/2008.							

3.4.3.3 Cumulative Effects

Actions analyzed for potential cumulative impacts include all proposed activities occurring to forest roads and trails considered under the Cleveland NF travel management project. The project is expected to have limited cumulative impacts to air quality. Route construction and rehabilitation would create localized, temporary increases in fugitive dust and emissions from motorized equipment. However, after rehabilitation and construction projects are complete, fugitive dust from vehicle travel on unauthorized routes and windblown dust would decrease, as would exhaust emissions due to reductions in VMT. Overall, the action alternatives would improve regional air quality by reducing future criteria pollutant emissions from recreational OHV use. The project also demonstrates conformity with the State Implementation Plan under the federal Clean Air Act, and does not exceed either the SCAQMD or the SDCAPCD daily project emissions significance thresholds for any alternative.

3.4.3.4 Conclusions

The number of vehicle miles traveled annually by forest users is expected to increase slightly under the action alternatives, but the reduction in open area riding would create a net air quality benefit for the selected project. Route decommissioning and rehabilitation work would create minor, temporary increases in local fugitive dust emissions and emissions from motorized equipment in both the San Diego Count Air Pollution Control District and the South Coast AQMD. However, once rehabilitation work is completed, emissions from windblown fugitive dust and dust from travel on unpaved roads and trails may be expected to decrease. No adverse change in attainment status is expected to occur as a result of this project.

3.4.3.5 General Conformity Applicability Analysis Conclusion

The proposed action has been analyzed as required under section 176(c) of the federal Clean Air Act, as amended, and 40 CFR 93.156 and has been determined to conform to the applicable State Implementation Plan for the purpose of attaining and maintaining all National Ambient Air Quality Standards. No further air quality analysis is required. For a full discussion of the general conformity applicability analysis, please see Appendix A in the air quality specialists report in the project record.

3.5 HYDROLOGY

Management activities on national forest lands must be planned and implemented to protect the hydrologic functions of forest watersheds, including the volume, timing, and quality of stream flows. The use of roads and trails on national forests for public operation of motor vehicles has potential to affect these hydrologic functions through interception of runoff, compaction of soils, and detachment of sediment. Management decisions to add new routes and areas to the national forest system and make changes to the existing national forest system must consider effects on watershed functions.

3.5.1 Policy and Direction

Clean Water Act of 1948, as amended. The Clean Water Act establishes as federal policy the control of point and non-point pollution and assigns states the primary responsibility for control of water pollution. Compliance with the Clean Water Act by national forests in California is achieved under state law. Non-point source pollution on national forests is managed through the Regional Water Quality Management Plan, which relies on implementation of prescribed best management practices. The management plan includes one best management practice for OHV use (4-7) and 28 best management practices related to road construction and maintenance (2-1 to 2-28). All National Forest System roads and trails open to OHV use are required to comply with these best management practices.

California Water Code. The state water code consists of a comprehensive body of law that incorporates all state laws related to water, including water rights, water developments, and water quality. The laws related to water quality (sections 13000 to 13485) apply to waters on the national forests and are directed at protecting the beneficial uses of water. Of particular relevance for the proposed action is section 13369, which deals with non-point source pollution and best management practices.

Porter-Cologne Water-Quality Act, as amended. This act is included in the California Water Code and provides for the protection of water quality by the State Water Resources Control Board and the Regional Water Quality Control Boards, which are authorized by the EPA to enforce the Clean Water Act in California.

3.5.2 Existing Condition

Annual precipitation in San Diego County varies from about 10 inches in the city of San Diego to between 20 and 40 inches in the mountains in the eastern part of the county. Most precipitation falls in winter, except in the mountains where thunderstorms can occur throughout the year. Eighty-five percent of the rainfall occurs from November through March, although wide variations take place in monthly and seasonal totals. Mediterranean climates, such as those found in San Diego County, support fire-adapted vegetation in which wildland fires are common. Annually nearly 12,000 acres of the Cleveland NF burn in uncontrolled wildfires. Most fires exceeding 20,000 acres burn between July and September during periods of high temperatures and low humidity.

Fire-related increases in runoff and sedimentation are well known and their impacts are managed and mitigated through infrastructure design and planning of flood control structures. Watershed peak flows and sediments yield rates can be greatly affected by wildfire. Immediately following a fire, sediment yields have been observed to increase by an order of magnitude (Table 3.18). This is most evident in the mountain range making up the Trabuco Ranger District where sediment yields can be anticipated to

increase by around 3,000 percent, from approximately 1,200 cubic yards per square mile to 35,000 cubic yards per square mile. Peak discharge can also be expected to change dramatically following a wildfire. In the San Juan range for example the 100-year runoff event is expected to average around 210 cubic feet per second for each square mile of contributing area in the absence of a recent wildfire. That value can be expected to approach 400 cubic feet per second per square mile following a wildfire, representing an increase of nearly 200 percent.

Table 3.18: Background sediment and runoff yield table

Mountain range	Annual precip. (inches)	Sediment yield (yd^3 per mi^2)	Fire sediment yield (yd^3 per mi^2)	100-year peak flow (ft^3 per second per mi^2)	Fire 100-year peak flow (ft^3 per second per mi^2)
San Juan	20.3	1,200	35,100	210	390
Santa Ysabel	22.9	2,130	29,300	190	300

Stream crossings are the source of most road and water concerns. Substantial attention has been paid by the Forest Service in designing environmentally sound and cost-efficient stream crossings. For this project, Alternative 3 avoids the intersection of streams with roads and trails. The road network on the Cleveland NF is largely controlled and maintained by the Forest Service itself (Table 3.19).

Table 3.19: Forest roads and streams

Road type or stream	Miles	Riparian acres
Forest road, level 1	10	50
Forest road, level 2	311	1,555
Forest road, level 3	18	126
Forest road, level 4	54	378
Forest road, level 5	25	175
Total, Levels 1 Through 5	**418**	**2,284**
Forest road, temporary	178	1,288
Unauthorized roads	166	504
Subtotal	**762**	**4,076**
State and county roads	225	6,096
Total, All Roads	***987***	***10,172***
Miles of streams	***348***	***2,980***

The proposed project would affect 24 watersheds on the Cleveland NF. These watersheds contain approximately 390 miles of existing roads and trails. Table 3.20 lists percent change for only those five watersheds in which alterations to the transportation system are proposed. No route additions are proposed at this time for the 19 other watersheds, including Aliso/Laguna, Dulzura, Headwaters of San Luis Rey, Lower Cottonwood, Lower San Diego River, Lower San Jacinto, Lower Santa Ana, Lower Sweetwater, Middle San Luis Rey, Murrieta Creek, Portrero, San Felipe, San Juan Creek, San Vicente, Santa Margarita, Temescal Wash, Upper San Diego, Upper Santa Ysabel, and Upper Sweetwater.

Table 3.20: Watershed motorized road and trail mileage by alternative

Watershed	Total existing motorized road and trail mileage	Percent change	
		Alternative 2	Alternative 3
Middle Santa Ysabel	30.0	0.10	0.10
Pine Valley	68.8	11.96	9.16
San Mateo Canyon	25.7	0.01	0.01
Upper Cottonwood	71.9	5.65	1.31
Upper Temecula	34.7	0.69	0.69
Other 19 watersheds	161.4	0	0
Total	392.5	--	--

Five areas of state impaired waters (Clean Water Act, section 303(d)) are found on the Cleveland NF: Santiago, Silverado, Aliso, Pine, and San Juan creeks. Salinity is the major impairment identified for Santiago Creek. The dominant impairment for the others is from bacteria.

Land-disturbing activities other than fire can cause changes in watershed sediment and runoff yields. Changes in surface erosion rates, described in the soils report, would ultimately affect watershed sediment yield rates. Slope processes, including deposition and storage, would moderate the effects of this project on watershed sediment yield. Water and sediment yield is directly related to many factors. Over the short term changes in vegetation are the most common and are to a great extent responsible for the changes described in Table 3.18. Ground cover, root density and strength are the most obvious measures of erosion and sediment production on the steep headwater watersheds being considered. Attempts have been made to establish minimum watershed disturbance levels at which changes can first be detected.

3.5.2 Affected Environment

Stream crossing are the source of most road and water concerns. Significant attention has been paid by the Forest Service in designing environmentally sound and cost effect stream crossings. For this project the action alternatives avoid the intersection of streams and roads and trails. Drawing a very broad generality, for each mile of stream on the forest approximately 8.56 acres of riparian occurs. Alternative 2 would impact about 1.96 acres of riparian habitat (Table 3.21). Action alternatives would impact watersheds that are rated as having poor to good hydrologic function (Table 3.22). Substantial portions of these watersheds fall within the Forest Service administrative boundary, making future unanticipated management-caused changes in water quantity and quality unlikely. In the headwaters area of these watersheds management-caused changes in runoff and sediment require Forest Service analysis and approval.

Table 3.21: Watershed action alternative impacts.

		Pine Valley	Cottonwood	Temecula	Santa Ysabel	San Mateo
Alt. 2	Number of stream crossings	0	0	0	0	0
	Riparian area impacted (acres)	0.24	1.72	0	0	0
	Change in road and trails (miles)	8.23	4.06	0.24	0.03	0.03
	Change in open areas (acres)	-1,798	0	0	0	-360
Alt. 3	Number of stream crossings	0	0	0	0	0
	Riparian area impacted (acres)	0	0	0	0	0
	Change in road and trails (miles)	6.27	0.94	0.24	0	0.03
	Change in open areas (acres)	-1,785	0	0	0	-360

Forest watersheds are periodically evaluated to determine their conditions. Generally this review focuses on water quality and flow regime. Watersheds rated for improvement are in part scaled on the percentage of the headwater and total watershed area under national forest management, as well as access and control of runoff (Table 3.22).

Table 3.22: General watershed condition of impacted HUCs

	Pine Valley	Cottonwood	Temecula	Santa Ysabel	San Mateo
Priority for improvement	Yes	Yes	No	Yes	No
Properly functioning rating	Good	Poor	Good	Poor	Good
State impaired	Yes	No	No	No	No

As discussed in the alternatives descriptions in Chapter 2, Alternative 2 proposes the highest number of additions to the transportation system, most of which are areas already being used by the public. Where access was available the sites were visited and an evaluation of their surface and runoff conditions made (see Table 3.23 below and Appendix A of the hydrological report in the project record). The present condition of the user-created trails in these areas is assumed to be an indicator of the potential surface and runoff conditions that can be expected following construction, reconstruction and modification of these and the addition of new roads and trails in their immediate vicinity. Except Upper Santa Ysabel, all areas under consideration in alternatives 2 and 3 were visited and existing conditions evaluated. A summary of conditions for trail segments is found in Table 3.23.

Table 3.23: Field review summary

Trail Segment Name	Forest Riparian Standard 47 [1]	Surface Impact Rating [2]
Corte Madera	n/a	High
Miners Road	Meets S-47	
Timbers Edge	n/a	
901a OHV Skye Valley	n/a	Moderate
Wildomar Trailhead	n/a	
Buckman North	Meets S-47	
Buckman South	Meets S-47	
Cottonwood	Meets S-47	
Deer Flats/Knob Hill	n/a	
Deer Park	Meets S-47	
High Point	n/a	
Kitchen Creek 1	n/a	
Kitchen Creek 2	n/a	
Laguna Rec.	n/a	
Old Horse Meadow	n/a	
Pine Creek 1	n/a	
Pine Creek 2	n/a	
The Narrows	Meets S-47	
Yellow Rose Spring	Meets S-47	

[1] Forest Riparian Screening Standard S-47 five step process evaluation. "Meets" for this resource means that soil and water effects can be mitigated. For a discussion of the riparian standard and effects to wildlife see section 3.3, and in particular Table 3.5.

[2] Soil surface rating are broken into three classes: Low, Moderate and High; Low generally good soil conditions and no immediate maintenance needed, Moderate requires maintenance within a year, and High, maintenance is recommend with in 6 months.

The improvements proposed for Corral Canyon would occur on similar terrain and conditions as those rated for 901a OHV Skye Valley trail. This trail has had limited to no maintenance over its lifetime and its present impact on the soils and watershed is minor in nature. Assuming that this more or less inadequately signed trail has held up so well on this terrain any newly designed trails incorporating best management practices and new equipment capabilities can be expected to fare even better. The new trails would be better designed and would not impact riparian areas. The Wildomar trailhead would require additional sediment collection areas and user control modifications because it is proposed as a practice area for new riders. It would reduce the present open ride area, thus limiting surface erosion and maintenance of the overall site. No riparian areas would be impacted. Except for Wildomar trailhead, trail mitigation and traffic control measures would dominantly be pipe barriers and would have little surface impact. Five watersheds are expected to be impacted to varying degrees by the action alternatives. No stream crossings are proposed in Alternative 3.

3.5.4 Determination of Effects

3.5.4.1 Direct and Indirect Effects

Under Alternative 1, no changes to the existing OHV road and trail system would occur and the use of currently designated routes would continue. A summary of alternatives is Table 3.24a. Accessible road and trail miles would increase for both action alternatives. The Cleveland NF currently has approximately 278 miles of road and trail identified for OHV use. The proposed changes to that system amount to only a small percentage (4 to 6) of the total mileage.

Table 3.24a: Change in roads, trail, and open areas.

Type	Alternative 1	Alternative 2	Alternative 3
Highway vehicle miles	244.4	249.3	245.7
Percent change	*n/a*	*2.0*	*0.5*
Trail OHV, 4WD miles	34.4	38.4	36.9
Percent change	*n/a*	*11.6*	*7.3*
Motorcycles miles	1.8	5.4	5.4
Percent change	*n/a*	*200*	*200*
Open area acres	2,160	2.2	15
Percent change	*n/a*	*-99.9*	*-99.3*

The number of visits is assumed to generally remain the same per year for the all alternatives. Changes to watershed hydrology can be expected when vegetation, surface and subsurface runoff patterns are disturbed, and the degree of change is directly related to the amount of disturbance. Changes in vegetation can increase or decrease the amount of water retained and used within the watershed. The amount and duration of runoff can also be changed by changing surface and subsurface drainage patterns. Increased runoff rates can lead to increase erosion rates.

Measures to mitigate adverse effects on runoff and erosion from roads and trails have been developed, documented and evaluated under best management practices, which have been certified by the State Water Resources Control Board and approved by the EPA to meet State Water Quality Objectives, and are common construction and maintenance practices on the forest.

Riparian areas and stream channels are particularly sensitive to the hydrologic regimes of the adjacent slopes and upstream and downstream channel dynamics. Road and trail stream crossings are designed to protect the integrity of floodplain and riparian areas at stream crossing. Protecting these values is of importance in protecting both an engineered stream crossing itself and the riparian ecosystem. There are no stream crossings proposed in either action alternative. Approximate two miles of road and trail are proposed for construction in Alternative 2, impacting approximately five acres of riparian conservation areas.

Table 3.24b lists the impacts of the alternatives on runoff, channel condition and changes in sediment production in affect HUCs. Ratings in the table represent the long-term conditions following rehabilitation and stabilization of new construction.

Table 3.24b: Hydrology alternative comparison table.

Alternative	Peak runoff[1]	Channel and floodplain[2]	Sediment yield[3]
1	n/a	n/a	n/a
2	Minor decrease	Stable, no change	Minor decrease
3	Minor decrease	Stable, no change	Minor decrease

[1] Peak flow rates are directly related to changes in watershed surface and channel conditions.
[2] Channel morphology can be impacted by changes in channel forming peak flows and bedload.
[3] LMP direction for new construction that may influence sensitive aquatic and riparian areas provides for improved protection of those areas (see Standard 47 and Appendix E of FEIS for details).

While some impacts are planned for areas adjacent to one or more streams in the Pine Valley, Cottonwood, San Mateo, Temecula, and Santa Ysabel watersheds, these impacts can be controlled and water quality standards maintained through the implementations of LMP standards and best management

practices. The small amount of riparian conservation area anticipated for impact in Alternative 2 is unlikely to substantially change the runoff timing or sediment yields beyond those experienced under natural variation. Best management practices should be used to control these changes, reducing them to acceptable levels.

The application of the five-step project screening process for riparian conservation areas would address unique habitat conditions in these segments and reduce the impacts to acceptable levels. The five-step process, which is discussed in detail in Appendix E of the LMP, is used to assist in ensuring that riparian conservation areas are recognized, emphasized, and managed appropriately during new project planning and implementation. The screening process is used in addition to the land allocation restrictions that apply to the project area.

Trail and road maintenance, rehabilitation and construction are expected to have minimal short term impacts on both water quality and water yield. The project's impact on sediment and runoff would be greatest during the recovery of the 2,000 plus acres of open area now exposed to surface erosion. Sediment production is expected to decrease dramatically following the 5 to 10 year recovery of these areas.

3.5.4.2 Cumulative Effects

Project watershed sediment and flow rates can be comparatively estimated by using the individual watershed data summarized in Table 3.18 and making a very simplistic assumption that open unvegetated land would create similar watershed sediment and runoff yields as wildfire in the same watershed. Tables 3.24c and 3.24d represent the results this assumption.

Table 3.24c: Estimated changes in sediment yield.

Watershed	Sq. mi. of watershed in Cleveland NF	Alt. 1: Annual sediment yield (cu. yd.)	Alt 2: Estimate sediment change (cu. yd.)	Alt 3: Estimate sediment change (cu. yd.)
Pine Valley	108	297,200	-34,300	-34,200
Cottonwood	118	741,000	500	100
Temecula	70	158,600	100	100
Santa Ysabel	60	120,000	<100	<100
San Mateo	74	93,100	-3,500	-3,400
For this analysis, only 50 percent of the open ride area is assumed to meet the first year wildfire-like conditions.				

For comparative proposes the values found in tables 3.24c and 3.24d were calculated using the same methodology and source as those cited in Table 3.18. The area proposed for improvement was estimated in acres for each watershed and that area was converted to sediment or peak discharge using the estimated values sediment and discharge yield for the first year following a wild fire in that watershed.

Table 3.24d: Estimated changes in peak flow.

Watershed	Sq. mi. of watershed in Cleveland NF	Alt. 1: Annual peak run off (ft^3/sec.)	Alt 2: Estimate change peak flow (ft^3/sec.)	Alt 3: Estimate change peak flow (ft^3/sec.)
Pine Valley	108	4,131	-132	-132
Cottonwood	118	5,275	2	0
Temecula	70	3,545	2	1
Santa Ysabel	60	2,709	2	2,710
San Mateo	74	1,935	-25	-25
For this analysis, only 50 percent of the open ride area is assumed to meet the first year wildfire-like conditions.				

Because of the limited amount of proposed earth disturbing and construction activity a detailed watershed analysis was not deemed necessary. The estimated changes in sediment and peak flows caused by the action alternatives were assumed to be a good surrogate for a more detailed watershed analysis.

Past watershed disturbing activities that may have increased watershed sediment and runoff characteristics in these watersheds occurred in the past and can be assumed to have been ameliorated. Because of the nature of these wildfire dominated ecosystems, sediment and runoff recovery to normal background rates is expected within a 5 to 10 year period after disturbance. All the major watershed runoff and sediment producing management actions in the impacted areas of the watersheds have occurred at least 10 years ago and therefore normal background sediment and runoff conditions can be assumed for the impacted watersheds.

All impacted watersheds are headwater watersheds and all management activities require national forest analysis and approval. Therefore, cumulative watershed effects caused by other landowners can be considered insignificant.

Only one of the watersheds, Pine Valley, has been identified as not meeting State Water Quality Standards. This 303d impairment is for bacteriological contamination and this project is not expected to add to that impairment in any manner. Wildfires are not directly considered as part of the proposed actions. However, prior to implementation of any ground-disturbing activities, consideration will be given to any ongoing fire recovery and burned area emergency response treatments.

Future sediment and runoff changing management activities in these impacted watersheds will required Forest Service approval and will be designed to mitigate and limit their impacts. It is expected that any major future management disturbance would take place following watershed recovery from the proposed action; wildfire or additional Forest Service approved action and would provided adequate mitigations to offset changes in watershed sediment and runoff characteristics. Future watershed sediment and runoff conditions of the impacted watersheds are expected to be somewhat improved and similar those found today. The current Cleveland NF schedule of proposed actions (SOPA) was reviewed to determine reasonably foreseeable actions. No planned activities on the SOPA are expected to affect this analysis.

The dominate change in runoff and sediment regimes is associated with land disturbing activities like wildland fire and to lesser degree mining and road construction. Wildland fires recur ever 60 to 70 years

on this landscape. In this environment, a change in watershed sediment yield and peak flow rates of less than one percent of the background can be considered an immeasurable and insignificant change. This value is the best professional estimate of the hydrologist because peer-reviewed scientific data of this nature for similar semiarid regions of the southwest were not readily found.

Table 3.25 summarizes the impacts of alternatives 2 and 3 on the five watersheds in which alterations to the Cleveland NF transportation system are proposed.

Table 3.25: Summary of watershed alternative threshold impacts

	Pine Valley	Cottonwood	Temecula	Santa Ysabel	San Mateo
Alternative 2					
Watershed hydrologic function rating	Good	Poor	Good	Poor	Good
Threshold sediment limit yd^3/mi^2	27.5	62.7	22.5	20.0	12.6
Estimated % change in sediment yd^3/mi^2	-11.55	0.07	0.02	0.01	-3.77
Change less than 1% of background?	**Yes[1]**	**Yes**	**Yes**	**Yes**	**Yes[1]**
Threshold annual peak limit $ft^3/sec/mi^2$	4.5	3.8	4.5	5.0	2.8
Estimated % change in peak $ft^3/sec/mi^2$	-3.19	0.03	0.06	0.08	-1.30
Change less than 1% of background?	**Yes[1]**	**Yes**	**Yes**	**Yes**	**Yes[1]**
Alternative 3					
Watershed hydrologic function rating	Good	Poor	Good	Poor	Good
Threshold sediment limit yd^3/mi^2	27.5	62.7	22.5	20.0	12.6
Estimated % change in sediment yd^3/mi^2	-11.51	0.02	0	0.02	-3.64
Change less than 1% of background?	**Yes[1]**	**Yes**	**Yes**	**Yes**	**Yes[1]**
Threshold annual peak limit $ft^3/sec/mi^2$	4.5	3.8	4.5	5.0	2.8
Estimated change in peak $ft^3/sec/mi^2$	-3.20%	0.01	0.01	0.02	-1.32
Change less than 1% of background?	**Yes[1]**	**Yes**	**Yes**	**Yes**	**Yes[1]**

[1] Estimated decrease in sediment greater the established 1% threshold is not considered as an exceedance.

Cumulative Effects

Watershed hydrologic function can be assumed to represent the overall hydrology network's ability to absorb changes in sediment and runoff with little impact. Two of the impacted watershed, Cottonwood and Santa Ysabel are rated poor for overall hydrologic function. The impacts proposed for these watershed are minor and below thresholds. No long term changes in hydrologic function are expected for these or the other impacted watersheds. Therefore, cumulative effects are not expected to be significant but would continue in the long term for alternatives 1, 2, and 3.

Compliance with the Forest Plan and Other Regulatory Direction.

Alternatives 2 and 3 are expected to meet all LMP requirements without amendment and satisfy all other federal and state Regional Water Quality Control Board requirements. Management activities on national forests must be planned and implemented to protect the hydrologic functions of forest watersheds, including the volume, timing, and quality of stream flows. The use of roads and trails on national forests for public operation of motor vehicles has potential to affect these hydrologic functions through interception of runoff, compaction of soils, and detachment of sediment. Management decisions to make changes to the national forest transportation system must consider effects on watershed functions.

3.6 LANDSCAPE AESTHETICS

This section examines the extent to which alternatives respond to management direction for landscape aesthetics as established in the LMP and the Travel Management Rule. The LMP landscape aesthetics direction was established under the implementing regulations of the National Forest Management Act.

In the development of the LMP, landscape aesthetics and visual resources on the Cleveland NF were inventoried to determine the landscape's scenic attractiveness and the public's visual expectations. Based on these inventories, scenic integrity objectives (SIOs) were established for all forest land areas. The SIOs establish minimum acceptable thresholds for landscape alterations from an otherwise natural-appearing forest landscape. For example, areas with a high SIO are expected to retain a natural appearance. Areas with a moderate SIO may have some alterations but they remain subordinate to the characteristic landscape. Finally, areas with a low SIO can have alterations that are not natural appearing.

In addition, the scenic attractiveness of an area can be determined, as per guidelines found in Agriculture Handbook 701, "Landscape Aesthetics: A Handbook for Scenery Management." The term "scenic attractiveness" used here refers to the scenic importance of a landscape based on human perceptions of the intrinsic beauty of landform, water characteristics, vegetation pattern, and cultural land use.

Linear alterations in landscapes caused by roads and trails can be mitigated by using good planning and design tactics. If these alterations are not mitigated, they may present uncharacteristic line qualities in forest landscapes. Areas with dense forest canopies have the capability of masking these alterations, while sparsely covered landscapes lack this capability. The proliferation of unauthorized routes, particularly in sparsely covered landscapes, can adversely affect landscape aesthetics on the Cleveland NF.

3.6.1 Policy and Direction

Direction relevant to the alternatives as they potentially affect landscape aesthetics is summarized below.

National Forest Management Act (NFMA). The NFMA and its implementing regulations require the inventory and evaluation of the Cleveland NF's visual resources to address the landscape's visual attractiveness and the public's visual expectations. Management prescriptions for definitive land areas of the Cleveland NF must include scenic integrity objectives.

Travel Management Rule (36 CFR parts 212, 251, 261, and 295). The Travel Management Rule does not cite aesthetics specifically. However, in the addition of trails or areas it requires the responsible official to consider effects on forest resources with the objective of minimizing the effects of motor vehicle use.

Cleveland NF Land Management Plan (LMP). The LMP contains management direction in the form of scenic integrity objectives and specific Place-based direction for visual resources, including identification of "key places" for visual management emphasis.

3.6.2 Existing Condition

The Cleveland NF provides a variety of outdoor recreation settings, ranging from the tall mixed conifer forest on Palomar Mountain and the Jeffery pine forest on Mt. Laguna to steep, boulder-covered slopes in chaparral. The most attractive landscapes are located where the highest combination of landform, water

form, rock form, and vegetation variety occur. These locations are classified as scenic attractiveness class A and make up approximately 16 percent of the Cleveland NF. The more common landscapes—those classified as scenic attractiveness class B—consist of steep, chaparral-covered mountains intermixed with foothill and valley areas consisting of oak woodlands and grassland. These areas make up approximately 78 percent of the Cleveland NF. The remaining 6 percent are classified as scenic attractiveness class C, or less distinctive landscapes.

"Key Places" in the planning area represent the most picturesque national forest locations. These Key Places possess their own distinctive landscape character and are particularly valued for their scenic quality. They generally serve as urban backdrops or recreation destinations, or they contain scenic routes and byways. Scenic integrity objectives were established in the LMP. Table 3.26 displays the SIOs for Key Places in which changes to the transportation system are proposed.

Table 3.26: Acres in Key Places and in each SIO category found in the project area.

Key Place	Acres		Acres in SIO category		
	Total	Roaded	Very high	High	Moderate
Aguanga	47,895	14,601	845	13,329	416
Morena	49,568	31,052	165	29,007	1,860
Laguna	30,183	19,478	0	18,419	1,048
Pine Creek	33,561	13,591	5,948	5,466	2,160

3.6.3 Determination of Effects

The effects analysis for visual resources was undertaken with two assumptions. First, based on review of the LMP, the basic measurement indicator for visual resources should be "compliance with the high and moderate SIOs." Second, no additions to the transportation system that would contribute to the continuity of motor touring are proposed. All proposed additions fall within landscapes that have greater than 0.5 miles of road per square mile, based on road density analysis.

3.6.3.1 Alternative 1

Direct and indirect effects. Both open areas fall in Key Places. Both Wildomar and Corral Canyon are visible from highly traveled Cleveland NF system roads. However, Wildomar can be seen from a location above the entire open OHV area, making the trail system itself highly visible. The existing trail system has a distinctly non-natural appearance with a high density of sharply intersecting lines and large patches of bare soil that contrast with the surrounding chaparral vegetation. Continued cross-country travel is expected to continue the slow development of new routes and increase the size of bare areas at trail intersections. No additions are proposed in this alternative and no barriers to impede use of existing unauthorized routes would be evident.

Cumulative effects. The LMP calls for resolution of the unauthorized route issue over time. A total of approximately 6,000 acres have a road density greater than 0.5 miles per square mile due to the presence of unauthorized roads. These acres also fall in areas with non-motorized recreation opportunity spectrum objectives within Key Places. In the long term, an 8 percent reduction in acres with a roaded appearance is expected.

3.6.3.2 Alternative 2

Direct and indirect effects. Prohibition of cross-country travel, installation of barriers, and restoration of vegetation are expected to reduce the visual effects of the Wildomar and Corral Canyon OHV areas,

thereby increasing the acres that meet the high SIO for these areas. All proposed additions fall within Key Places. Only 0.2 miles of road are located outside areas currently mapped as having a road density greater than 0.5 miles per square mile. This is expected to increase areas with a roaded appearance by 60 acres.

Cumulative effects. Cumulative effects for this alternative are the same as for Alternative 1.

3.6.3.3 Alternative 3

Direct and indirect effects. Prohibition of cross-country travel, installation of barriers, and restoration of vegetation are expected to reduce the visual effects of the Wildomar and Corral Canyon OHV areas, thereby increasing the acres that meet the high SIO for these areas. All proposed additions fall within Key Places. Only 0.03 miles of road are located outside areas currently mapped as having a road density greater than 0.5 miles per square mile. This is expected to increase areas with a roaded appearance by 9 acres.

This alternative would allow continued use of 12.8 acres in the Corral Canyon OHV area as "open area" for use by trial riders and other OHV recreationists. The scenic attractiveness classification for the area is rated as Class B, or "typical," as per Agriculture Handbook 701, which describes such areas as places where

> "landform, vegetation patterns, water characteristics, and cultural features combine to provide ordinary or common scenic quality.... Normally [these areas] would form the basic matrix within the ecological unit."

In addition, the Corral Canyon OHV area has a scenic integrity objective classification of "high."

Because the visual effects, consisting of potential tire marks on boulders, of continued use of the areas would not be permanent and would not affect areas that have been classified as having distinctive scenic attractiveness and would not result in a reduction in the high SIO classification of the area, this alternative would have no direct or indirect visual impacts beyond what has historically occurred for the 12.8 acres that would remain open to OHV use.

Cumulative effects. Cumulative effects for this alternative are the same as for Alternative 1.

3.7 RECREATION RESOURCES

This section examines the extent to which alternatives conform to recreation management direction established in the LMP and the Travel Management Rule. The LMP recreation direction was established under the implementing regulations of the National Forest Management Act (NFMA).

3.7.1 Policy and Direction

Direction relevant to the alternatives as they potentially affect visual resources is summarized below.

National Forest Management Act (NFMA). With regard to OHV use, the NFMA and its implementing regulations require such motor vehicle opportunities be planned and implemented to protect land and other resources, to promote public safety, and to minimize conflicts with other uses of national forest land.

Travel Management Rule (36 CFR parts 212, 251, 261, and 295). The Travel Management Rule requires that in designating National Forest System roads, trails, and areas, responsible officials consider the provision of recreational opportunities, public access needs, conflicts among uses of national forest land, and the compatibility of motor vehicle use with existing conditions in populated areas.

Cleveland NF Land Management Plan (LMP). Recreation resources on the Cleveland NF are classified using a "recreation opportunity spectrum" (ROS) system as a way of zoning recreation opportunities. The intent is to provide for recreation opportunities within zones to meet NFMA requirements for a broad spectrum of forest- and rangeland-related outdoor recreation that responds to current and anticipated use. The ROS system provides classes that range from "urban" to "primitive." Motorized use falls in the motorized ROS classes, which are urban, rural, roaded-modified, roaded-natural, and semi-primitive motorized. Non-motorized ROS classes include semi-primitive non-motorized and primitive. ROS maps for the Cleveland NF can be found online at: http://www.fs.fed.us/r5/scfpr/projects/lmp/images/maps/cnf_cmyk_pdfs_082405/

3.7.2 Existing Condition

The Cleveland NF has offered limited motorized recreational opportunities since the 1988 forest order, which restricted motorized use to designated routes and areas (see section 1.1.1). Within the 2,160 acres of open areas comprising the Wildomar and Corral Canyon OHV areas, there are approximately 24.9 miles of designated motorized trails. In the immediate vicinity of the Corral Canyon OHV area, but outside its actual boundary, are three additional motorized trails—the Espinoza Trail (2.75 miles), the Kernan Cycle Trail (5.56 miles), and the Spur Meadow Cycle Trail (3.0 miles). Currently, these 36.2 miles of motorized trails are maintained in partnership with the California State Park Off-Highway Motor Vehicle Recreation Division and with various user groups. All these designated routes and areas are within the semi-primitive motorized ROS. Table 3.27 shows the mix-use roads, trails and areas open for public motorized use for roaded natural, semi-primitive motorized, and semi-primitive non-motorized ROS classifications.

Table 3.27: Roads, trails, and open areas by ROS classification for each alternative.

Alternative	Route or area type	ROS classification		
		RN	SPM	SPNM
Alternative 1	Highway legal and non-highway legal (miles)		37.8	
	Trail, all vehicles** (miles)		11.2	
	Trail, only vehicles 50" or less in width (miles)		23.2	
	Trail only, motorcycles (miles)		1.8	
	Open areas (acres)		2,160	
	Additional dispersed recreation roads (miles)	0	0	0
Alternative 2	Highway legal and non-highway legal (miles)		37.8	
	Trail, all vehicles** (miles)		13.1	
	Trail, only vehicles 50" or less in width (miles)		25.4	
	Trail only, motorcycles (miles)		5.4	
	Open areas (acres)		2.2	
	Additional dispersed recreation roads (miles)	0.91	3.77	0.19
Alternative 3	Highway legal and non-highway legal (miles)		37.8	
	Trail, all vehicles** (miles)		13.1	
	Trail, only vehicles 50" or less in width (miles)		23.8	
	Trail only, motorcycles (miles)		5.4	
	Open areas (acres)		15.0	
	Additional dispersed recreation roads (miles)	0.09	1.17	0.06

* RN = Roaded natural; SPM = Semi-primitive motorized; SPNM = Semi-primitive non-motorized.
** Includes four-wheel drive vehicles, vehicles 50 inches or less in width, and motorcycles.

3.7.3 Determination of Effects

The effects analysis for recreation was undertaken with two assumptions. First, unless otherwise proposed as an LMP amendment, prohibition of motorized cross-country travel is not a change to ROS (e.g., semi-primitive motorized), it is simply a prohibition within that particular ROS zone to travel off of designated routes. The ability to add or remove routes in the future would still be guided by the NFMA—largely through ROS as found in the LMP—and is not affected by the action of prohibiting motorized cross-country travel and limiting travel to designated routes across the Cleveland NF. Second, proposed additions to the transportation system would have a beneficial effect on motor vehicle users by providing a variety of riding experiences—ranging from easy to difficult—and contributing to the continuity of the motor touring experience, including access to both motorized and non-motorized dispersed recreation activities.

3.7.3.1 Alternative 1

Direct and indirect effects. This alternative would continue to provide the current level of OHV recreational opportunities on designated routes and in designated areas, but would decrease opportunities for dispersed recreation because none of the unauthorized dispersed parking or camping areas that are more than one car length off a designated road would be available for use. This alternative would not increase recreational opportunities.

Cumulative effects. The use of OHVs has increased substantially over the past few decades. The 2006 California State Parks Fuel Tax Study indicated that over 25 percent of the registered non-street legal vehicles are within the three counties that surround the Cleveland NF. The historic increase in OHV use and possible continuation of this trend would lead to additional use of the 2160 acre open areas. By not providing additional designated OHV routes, there is a greater likelihood that users would create or re-open unauthorized routes outside the designed open areas to provide them with a broader diversity of riding opportunities. This would have negative impacts on soil, wildlife, endangered species and watershed.

3.7.3.2 Alternative 2

Direct and indirect effects. This alternative would increase the number of miles of OHV recreational opportunities on designated routes and would provide for challenge loops for all classes of vehicles. Alternative 2 includes a trial riders trail so that skilled riders can ride to different challenging areas, as well as increasing total motorcycle single track trail length from 1.8 to 5.4 miles. By adding trails within the Corral Canyon OHV area and designing the added trails for various challenge levels, users would experience a safer and more enjoyable riding atmosphere. This alternative would decrease total open areas from 2,160 to 2.2 acres. The 2.2 acres of open areas would be managed as "tot lots" where youths could learn safe operation of OHVs. 4.87 additional miles of road would be added to the system for dispersed recreation, authorizing street-legal vehicle access to 18 areas on which traditional dispersed recreation has occurred. This alternative adds many of the most popular dispersed recreation areas to the designated road system. All new roads and trails would be maintained in accordance with Cleveland NF standards to minimize resource impacts. Short segments of three new dispersed recreation roads totaling 0.19 miles are located within the ROS classification for semi-primitive non-motorized recreation. Adding these segments to the transportation system would require a non-significant forest plan amendment.

Cumulative effects. The cumulative effects on recreation would be an additional 7.7 miles of designated trails for motor vehicles that are managed to provide for a variety of riding experience for various types of motor vehicle users. This is a 21 percent increase in designated motorized trails for the Cleveland National Forest. Also 4.89 miles of roads would be added to the road system to provide dispersed recreation opportunities. This is a two percent increase in the road system. These increases would help to accommodate the OHV and dispersed recreation demand on the forest. This alternative reduces the open areas from 2160 acres to 2.2 acres which reduces environmental impacts. This is a 99 percent decrease in open area riding opportunity. These trails would be monitored on an annual basis and problems would be corrected or the trail would be closed. Additional opportunities would be analyzed in the future and could be added to the system in accordance with the direction of the Forest Plan.

3.7.3.3 Alternative 3

Direct and indirect effects. This alternative provides an increase in the number of miles of OHV recreational opportunities on designated routes, and it provides for challenge loops for all classes of vehicles. The 12.8 acres of open areas added to this alternative in comparison to Alternative 2 are a substitute for proposed trail additions SDTR-1 and SDTR-2. During scoping for the project, user groups indicated that they preferred to have access to rock outcrops adjacent to existing or proposed trails. These open areas would allow riders to practice their skills on challenging terrain. This alternative also increases motorcycle single-track trail from 1.8 to 5.4 miles. By adding trails within the Corral Canyon OHV area and designing the added trails for various challenge levels, users would experience a safer and more enjoyable riding atmosphere. This alternative would decrease total open areas from 2,160 to 15.0 acres. Approximately 2.2 acres of open areas would be managed as "tot lots" where youths could learn safe operation of OHVs, while the remaining 12.8 acres would be managed as challenge areas. These 12.8 acres of open areas are large rock outcroppings which are adjacent to existing or proposed trails.

Providing open areas that are made up of large granite outcrops would minimize environmental impacts. Appendix D – Adaptive Mitigation for Recreation Use from the Forest Plan would be used to monitor and maintain these open areas to the designated size. Approximately 1.27 additional miles of road would be added to the system for dispersed recreation, authorizing street-legal vehicle access to 6 areas on which traditional dispersed recreation has occurred. This alternative increases the number of recreational opportunities. All new roads and trails would be maintained in accordance with Cleveland NF standards to minimize resource impacts. The Corte Madera dispersed recreation segment, totaling 0.06 miles, is located within the ROS classification for semi-primitive non-motorized recreation. Adding this segment to the transportation system would require a non-significant forest plan amendment.

Cumulative effects. The cumulative effects on recreation would an additional 6.2 miles of designated motorized trails that are managed to provide for a variety of riding experience for various types of motor vehicle users. This is a 17 percent increase in designated motorized trails for the Cleveland National Forest. Also 1.27 miles of roads would be added to the road system to provide dispersed recreation opportunities. This is less than 1 percent increase in the road system. These increases would help to accommodate the OHV and dispersed recreation demand on the forest. This alternative reduces the open areas from 2160 acres to 15 acres. This is a 99 percent decrease in open area riding opportunity but 12.8 of the 15 acres are primarily rock outcroppings which would provide a variety of challenges to single track vehicles. Additional opportunities would be analyzed in the future and could be added to the system in accordance with the direction of the LMP.

3.8 SOIL RESOURCES

This section examines the extent to which alternatives affect the soil resource in the project area. The soil resource provides many essential functions for national forest lands, including sustaining the plant growth that provides forage, fiber, wildlife habitat, and watershed protection. Soil absorbs precipitation, stores water for plant growth, and gradually releases surplus water which attenuates runoff rates. It also sustains microorganisms that recycle nutrients for continued plant growth. The National Forest Management Act of 1976 and other acts recognized the fundamental need to protect and, where appropriate, improve the quality of soil. The proposed action could potentially impact soil productivity and its other ecosystem functions and is therefore addressed here.

3.8.1 Policy and Direction

Direction relevant to the alternatives as they potentially affect soil resources is summarized below.

National Forest Management Act (NFMA). Renewable Resource Program. "(C) recognize the fundamental need to protect and where appropriate, improve the quality of soil, water, and air resources."

National Soil Management Handbook (NSMH). The NSMH defines soil productivity and components of soil productivity, establishes guidance for measuring soil productivity, and establishes thresholds to assist in forest planning.

Region 5 Soil Management Handbook Supplement (R5 FSH Supplement 2509.18-95-1). The Region 5 Supplement establishes regional soil quality analysis standards. The analysis standards address three basic elements for soil: (1) soil productivity, including soil loss, porosity, and organic matter; (2) soil hydrologic function; and (3) soil buffering capacity. The analysis standards are to be used for areas dedicated to growing vegetation. They are not applied to lands with other dedicated uses, such as developed campgrounds, administrative facilities, or in this case the actual land surface authorized for travel by the public using various kinds of vehicles.

Regional Forester's Letter of February 5, 2007. This letter clarified the appropriate use of the R5 Soil Management Handbook Supplement. It states that:

> "Analysis or evaluation of soil condition is the intended use of the thresholds and indicators in R5 FSH Supplement 2509.18-95-1. They are not a set of mandatory standards or requirements. They should not be referred to as binding or mandatory requirements in NEPA documents. Standards and guidelines in Forest Land and Resource Management Plans provide the relevant substantive standards to comply with NFMA."

Thresholds and indicators represent desired conditions for the soil. Utilization of the thresholds and indicators provides a consistent method to analyze, describe and report on soil condition throughout Region 5.

3.8.2 Existing Condition

A land type association-level ecological unit inventory (EUI) for the Cleveland NF was completed in 2001. The EUI found that thermic soils cover 56 percent of the area and are the dominant soils temperature regime. On the Cleveland NF, warm air temperatures coupled with often-shallow soils result in low available moisture to support plant growth and thus lower levels of cover for soil erosion protection. The range of landscape soil units in the EUI demonstrates the complexity of parent materials that occur in the area, while the wide range of soil depths provides evidence of the steepness and high rates of erosion that can occur. Many soils are predominantly coarse-textured, shallow, and highly permeable and have little profile development. These soils are typically 20 inches or less in depth. Deeper, more productive soils are generally found on more stable slopes on gently rolling hills or are located in valley bottoms. They generally have medium or fine texture at the surface layer and fine-textured subsoil with high water-holding capacity.

3.8.3 Determination of Effects

3.8.3.1 Alternative 1

Direct and indirect effects: OHV areas

Cross country motor vehicle use on a total of 2,160 acres in the Corral Canyon and Wildomar OHV areas would continue under Alternative 1. Dense shrubs cover much of the OHV areas, preventing most disturbances, except after wildfires. Over time a larger percentage of the open areas have been opened through unauthorized trails. As concerns have been identified through monitoring, erosion control measures, such as rolling dips and settlement basins, have been implemented on many trails. Several areas of concentrated use have developed, thereby creating bare open areas, especially near trailheads or staging areas. Many of these have been restored over the years. This trend is expected to continue under Alternative 1 with a slow increase in the area disturbed and the potential for a surge in disturbance following fire. After the 2006 Horse fire, a portion of the Corral Canyon OHV area was closed by a special forest order to prevent such disturbances.

Both Corral Canyon and Wildomar OHV areas fall primarily in landscape soil group T9 (Thermic Granitic and Metamorphic Mountainside Soils, shallow to deep) and with a small portion of the Corral Canyon area in T11 (Thermic Gabbro Red Clayey Upland Soils, moderately deep to deep). Small inclusions of streamside alluvial soils are found on both areas. Site-specific review of the erosion hazards in each area are summarized has follows:

Corral Canyon OHV area

La Posta and soil portion of AcG (Rockland). Wind and water erodibility are issues on this soil. Of the two, water erodibility is much more severe and likely to be a problem especially if the soil is used for wheeled traffic. The soil has low strength and a high soil erodibility (K) factor. The potential for severe water erosion may necessitate consideration of water management structures at an undetermined number of sites along any roads that would receive substantial OHV use.

Streamside inclusions. Although the soil survey indicates these are within the LcE map unit, there is another alluvial soil which is mixed in with LcE. This soil is found along the small streams, on stream terraces and associated meadow areas. These low, flat areas would continue to collect sediment whether it is induced by vehicle traffic or as a result of fire. The soils on these low areas are dominated by silts and fine sands and would not stand up well to any sort of physical disturbance.

Wildomar OHV area

Ramona Soil Series. The main consideration in this soil would be the potential for soil erosion by water. This is primarily due to low soil strength. This is not as much a limitation on this soil as the slope angle is relatively low. Management measures have already been put in place at this site and appear to be working as designed. Dust may be a minor issue.

Vista Soil Series. The tendency of this soil to erode easily, rapidly and continuously in the presence of sufficient precipitation makes management of this area for OHV use critical. Every attempt should be made to keep vehicles on existing or approved trails to minimize damage from erosion either from direct disturbance or movement of detached sediment off disturbed areas.

Capistrano Soil Series. While not especially subject to erosion, they are, like the other soils discussed above, characterized by low soil strength and would still rut when used heavily. Protection of bare soil from raindrop impact is enhanced by the tree canopy which would help to alleviate any erosion likelihood.

The direct effect of this increase in disturbance by new trail development would be loss of soil productivity through accelerated erosion as vegetation is removed and unplanned trails or large open patches erode rapidly and ruts form. Indirect effects would be caused by sediment traveling to adjacent streams and moving downstream off site. Important aquatic habitat occurs downstream from both open areas (see discussions in section 3.3).

Direct and indirect effects: Addition of new roads and trails

No unauthorized roads or trails would be added to the existing system of designated routes under Alternative 1, so there is no change in the miles of roads and trails by erosion hazard class (Table 3.28).

Table 3.28: Miles of roads and trails by erosion hazard class for Alternative 1.

	Low	Moderate	High	Very high
Public motorized access roads, highway-legal vehicles	16.02	44.00	139.62	2.05
Public motorized access roads, with OHVs	1.66	11.66	24.23	0
Public motorized access trails	0.86	12.10	19.21	0
Unauthorized roads	13.88	84.27	162.31	1.02
Unauthorized trails	3.80	22.89	88.32	0.72

Direct effects. Generally for the existing transportation system and unauthorized routes, direct effects have already occurred. The direct effects were physical displacement of soil during construction of a transportation system road, trail, or area or caused by unauthorized motor vehicle traffic; loss of soil productivity from the displacement and loss of soil depth; loss in soil hydrologic function due to loss of soil and loss of soil cover.

Indirect effects. Indirect effects from unauthorized use are expected to continue. The removal of vegetation and exposure of soil from cross-country use would result in erosion. These unauthorized use areas were not designed and have no runoff water control to protect the soil resource. Further loss of productivity would occur and diminished soil hydrologic function

Cumulative effects. The record of decision for the LMP final environmental impact statement states that resolution of the unauthorized routes would occur over time. In the long run it is reasonable to assume that areas damaged by unauthorized routes in areas with a primitive or a semi-primitive non-motorized

recreation opportunity spectrum class would be rehabilitated (Table 3.29). Both the direct and indirect effects discussed above are expected to be reduced in the long term as these sites recover. Recovery can be expected to be rapid on forested sites and slow on chaparral sites. Fire in chaparral can accelerate recovery through germination of obligate seeding shrubs assuming the route has been stabilized to reduce excessive erosion.

Table 3.29: Miles of unauthorized trails and roads by erosion hazard class naturally rehabilitated under all three alternatives.

	Low	Moderate	High
Unauthorized trails	1.47	10.15	44.14
Unauthorized roads	4.84	39.53	82.50

3.8.3.2 Alternative 2

Direct and indirect effects: OHV areas

Motorized use off of designated roads or trails is currently prohibited except in the Corral Canyon and Wildomar OHV areas. Cross country motor vehicle use would be reduced from 2,160 acres to 2.2 acres of designated OHV open areas under Alternative 2. Installation of fencing and other control measures would reduce unauthorized use of the current open areas.

Site-specific assessment of the 2.0-acre proposed open area in the Corral Canyon OHV area is summarized as follows: Due to the fine nature of the sands at this site and the presence of silts, this site seems particularly prone to dust generation. The site's location, directly adjacent to the campground, might cause substantial dust issues for campers if local wind conditions would blow dust in that direction. Another concern for this particular site is the angle of the slope. Although the slope is not particularly steep (5 to 8 percent), the angle directly faces the campground. The area currently shows evidence of erosion and the angle and aspect of the slope would likely favor depositing sediment directly into the campground itself. Adding to this potential issue is the presence of a short but steep (15 to 30 percent) slope between the proposed open area and the upper part of the campground. This area would only erode more and would also accelerate any sediment flow into the campground proper. It is likely that erosion would substantially increase if this area is intensively used by OHVs.

The 0.2-acre open area recommended at the Wildomar OHV area is a small extension of a large dirt staging area and it is on a Ramona fine sandy loam soil with 2 to 9 percent slopes. The main consideration in this soil would be the potential for soil erosion by water, primarily due to low soil strength. This is not as much a limitation on this soil as the slope angle is relatively low. Management measures, such as waterbars and a sediment basin, have already been put in place at this site and appear to be working as designed. Dust may be a minor issue.

Direct and indirect effects: Addition of new roads and trails

Roads proposed for addition to the transportation system in Alternative 2 fall into two landscape soil groups. Group T9 (Thermic Granitic and Metamorphic Mountainside Soils, shallow to deep) includes the following roads: Buckman North, Buckman South, Corte Madera, Cottonwood, the Narrows, Upper Santa Ysabel, and Yellow Rose Spring, totaling 1.81 miles. Four trails are proposed for designation in the Corral Canyon OHV area, totaling 6.19 miles. Site-specific review of the soils erosion potential is as follows:

Mottsville soils. A concern is dust creation on these soils, which tend to blow if exposed. Dustiness remains a factor and would possibly be exacerbated by the relatively low soil strength. Low soil strength

would allow for more rapid rutting by vehicle tires. In spite of the relatively low strength, erosion by water should not be a major concern on this relatively low sloping unit.

La Posta soils. This soil is subject to rutting and the increased slope of this map unit, 2 to 9 percent, would increase the likelihood of erosion by water when the soil is used by OHVs. Several current erosion problems are visible on the road where erosion has already cut channels which flow into the adjacent creek. Using this area for OHVs would probably make this erosion worse.

Group M8 (Mesic Granitic and Metamorphic Mountainside Soils, moderately deep to deep) includes the following routes: Deer Flats/Knob Hill sites, Deer Park, High Point site, Kitchen Creek 1, Kitchen Creek 2, Laguna Rec., Miners Road, Old Horse Meadow, Pine Creek 1, Pine Creek 2, and Timbers Edge, totaling 4.98 miles. No trail additions are proposed for this soil group. Site specific analysis of these routes describes the erosion hazard as follows for the Crouch and Bancas Soils.

Each of these map units is characterized by low strength with the result that the potential for soil rutting is severe. These units rate as *severe* for erosion on roads and trails. This is directly associated with the low strength of the soil. A related interpretation suggests the likelihood of off-road/off-trail erosion. This is primarily a function of slope angle. The lower sloping units, even though they may rate as severe for on-trail erosion would be less likely to allow for the rate and volume of water needed to break out of the trail and flow overland thus earning a *moderate* or *slight* rating. Each of these map units has the potential to degrade when used intensively by vehicles. Only casual or low use would have little or no effect on the soils, especially if use is limited or monitored when soils are at or near their seasonal maximum wetness. One map unit, BbG, Bancas, suggests that the soil, if exposed, may have a dust problem as well. Table 3.30 summarizes miles of road and trails by erosion hazard class for this alternative that would occur in addition to the data in Table 3.28.

Table 3.30: Miles of trails and roads by erosion hazard class for Alternative 2.

	Low	Moderate	High
Trails	0	1.03	6.64
Roads	0.88	2.56	1.33

Cumulative effects. Cumulative effects for Alternative 2 are the same as for Alternative 1.

3.8.3.3 Alternative 3

Direct and indirect effects: OHV areas

Motorized use off designated roads or trails is currently prohibited except in the Corral Canyon and Wildomar OHV areas. Cross country motor vehicle use would be reduced from 2,160 acres to 15 acres of designated OHV open areas under Alternative 3. Installation of fences and other control measures would reduce unauthorized use of the current open areas. All but 2.2 acres of the 15 open acres proposed under this alternative are on large granite rock outcroppings with minimal potential for increased effects over Alternative 2.

Direct and indirect effects: Addition of new roads and trails

Roads proposed for addition to the transportation system in Alternative 3 fall into two landscape soil groups. Group T9 (Thermic Granitic and Metamorphic Mountainside Soils, shallow to deep) Corte Madera and Upper Santa Ysabel are proposed road additions for a total of 0.09 miles. Four trail additions are proposed for a total of 6.19 miles.

Group M8 (Mesic Granitic and Metamorphic Mountainside Soils, moderately deep to deep) includes the following routes: Deer Flats/Knob Hill sites, Deer Park, High Point site, Kitchen Creek 1, Pine Creek 1, and Timbers Edge. No new trails are proposed for this soil group.

The types of effects are the same as discussed under Alternative 2 for these routes. However, Alternative 3 affects 2.5 fewer miles. As shown on Table 2.8 in Chapter 2, the roads not added to the transportation system would be protected through installation of barriers to prevent unauthorized use. In addition, as shown on Table 2.5 in Chapter 2, 11.5 miles of unauthorized routes that intersect the OHV system would be protected through barrier maintenance and installation. In the long term these routes are expected to recover to native vegetation. The recovery is expected to be faster on Group 8 soils due to higher productivity and production of litter for ground cover from surrounding trees. Table 3.31 summarizes miles of road and trails by erosion hazard class for this alternative that would occur in addition to the data in Table 3.28.

Table 3.31: Miles of trails and roads by erosion hazard class for Alternative 2.

	Low	Moderate	High
Trails	0	1.03	5.17
Roads	0	1.06	0.34

Cumulative effects. Cumulative effects for Alternative 3 are the same as for Alternative 1.

3.8.4 Determination of Effects

Table 3.32 ranks effects to the soil resource for alternatives 1, 2, and 3.

Table 3.32: Ranking of effects across all alternatives.

Indicators—Soil Resource	Rankings of alternatives for each indicator*		
	Alt. 1	Alt. 2	Alt. 3
Miles of unauthorized routes displayed by miles in each of the R5 HER ratings	1	2	3
Miles of authorized roads and trails displayed by miles in each of the R5 HER ratings.	1	2	3
Average for soil resource	**1**	**2**	**3**
* A score of 3 indicates the alternative is the best for the soil resource related to the indicator. A score of 1 indicates the alternative is the worst for the soil resource related to the indicator.			

Compliance with the LMP and Other Direction
All alternatives are in compliance with LMP management direction related to soils. Alternative 2 is likely to incur the greatest long-term mitigation costs due to management or additional roads in the riparian conservation areas and implementation of Appendix D – Adaptive Mitigation for Recreation Use.

Appendix A

Motorized Travel Management Environmental Assessment

Personnel

The following personnel contributed to the analysis of the alternatives and the writing of the environmental assessment:

Anne Carey, recreation planner, Cleveland NF
Steve Eastwood, forest engineer, Cleveland NF
Peter Fahnestock, resource soil scientist, National Resource Conservation Service
Pete Gomben, NEPA coordinator, Cleveland NF
Steve Harvey, heritage program manager, Cleveland NF
Mike McCorison, wildland hydrologist and Southern California air resource specialist, Angeles NF
Liz Staudenmayer, GIS coordinator, Cleveland NF
Tom White, forest planner, Cleveland NF
Kirsten Winter, wildlife biologist, Cleveland NF