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United States Department of Agriculture

Forest Service

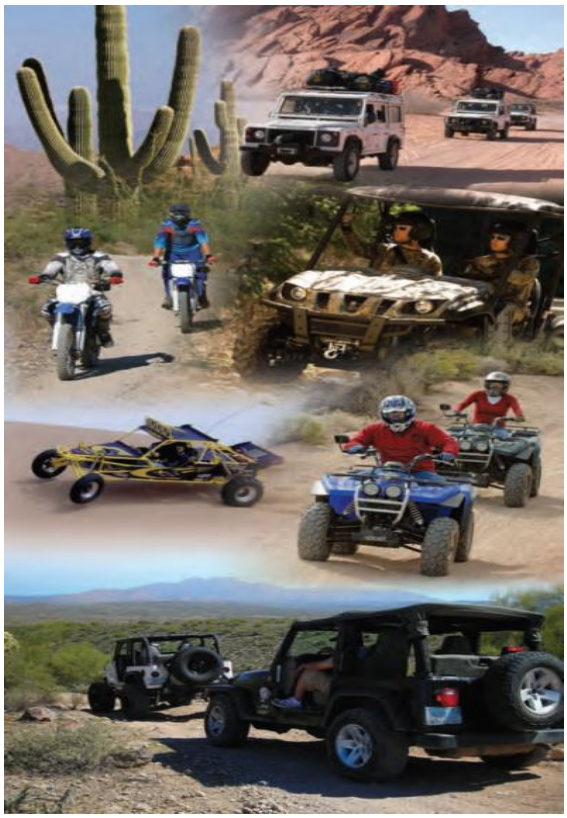
Southwestern Region

Environmental Assessment

PROPOSED CHANGES TO THE MOTORIZED TRAVEL SYSTEM

Santa Catalina Ranger District
Coronado National Forest
Pima, Pinal, and Cochise Counties, Arizona

June 2014



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Information Contact:

Joshua Taiz
District Travel Management Program Leader
Santa Catalina Ranger District
5700 N. Sabino Canyon Road
Tucson, Arizona 85750
(520) 749-8700
Email: jtaiz@fs.fed.us

CONTENTS

LIST OF TABLES

LIST OF FIGURES

Acronyms and Abbreviations

ACHP	Advisory Council on Historic Preservation
ADEQ	Arizona Department of Environmental Quality
AGFD	Arizona Game and Fish Department
ATV	all-terrain vehicle
BA	biological assessment
BMP	Best Management Practice
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	carbon monoxide
DCH	designated critical habitat
EA	environmental assessment
EO	Executive Order
e.g.	for example
EPA	U.S. Environmental Protection Agency
FR	Federal Register
FSH	Forest Service Handbook
FSM	Forest Service Manual
FSSS	Forest Service sensitive species
ft.	foot or feet
FWS	(U.S.) Fish and Wildlife Service
GES	general ecosystem survey
GPS	Global Positioning System
HSA	Highway Safety Act
IBA	Important Birding Area
i.e.	that is
LLNB	lesser long-nosed bat
LMP	limited maintenance plan
LN	legal notice
MA	Management Area
MIS	management indicator species
ML	maintenance level
MSO	Mexican spotted owl
MVM	mid-scale vegetation map
MUTCD	Manual of Uniform Traffic Control Devices
MVUM	Motor Vehicle Use Map
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NF	National Forest
NFMA	National Forest Management Act
NFS	National Forest System
NFSR	National Forest System road
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NRHP	National Register of Historic Places
NVUM	National Visitor Use Monitoring
O_3	ozone
OHV	off-highway vehicle
PA	Programmatic Agreement
PAC	protected activity center

PAG	Pima Association of Governments
Pb	chemical symbol for lead
PCE	primary constituent element
PM	particulate matter
P. L.	Public Law
RNA	Research Natural Area
ROS	recreation opportunity spectrum
SHPO	State Historic Preservation Office
SMS	Scenery Management System
SO_2	sulfur dioxide
TAP	transportation analysis plan (or process)
TAPA	Tucson Air Planning Area
THPO	Tribal Historic Preservation Office
TMR	travel management rule
USDA	U.S. Department of Agriculture
USDI	U.S. Department of the Interior
USFS	U.S. Forest Service
VQO	visual quality objective
VRMS	Visual Resource Management System
WSR	Wild and Scenic River

Chapter 1 – Introduction

The U.S. Department of Agriculture (USDA), Forest Service, Coronado National Forest (NF or Forest), prepared this environmental assessment (EA) to comply with the environmental review and disclosure requirements of the National Environmental Policy Act (NEPA) of 1969[1]. The subject of the EA is a proposal to implement changes to the motorized transportation system on the Santa Catalina Ranger District (SCRD, or District) in Pima, Pinal, and Cochise counties of the State of Arizona (see map, Figure 1-1). The system that is currently in place was originally established according to direction in the Coronado National Forest Land and Resource Management Plan (Forest Plan; 1986, as amended).

This specific NEPA review focuses *only* on proposed changes to the transportation system that is already in place on the SCRD. It does not consider potential impacts of other actions related to all remaining roads that comprise the current system. Instead, the analysis disclosed in this EA evaluates potential effects from proposed changes that are identified in Table 2-1 in Chapter 2, under the "Modified Proposed Action."

The proposed changes on the SCRD are responsive to the findings reported in a Transportation Analysis Plan[2] (TAP; April 4, 2011), which documents the adequacy of the current SCRD motorized transportation system to meet Forest administrative and user needs and the need for new or enhanced protection of natural resources and cultural resources. All changes will comply with the requirements of Subpart B of 36 CFR 212 (Travel Management Rule), regarding the designation of roads, trails, and areas for motor vehicle use on National Forests and Grasslands

As required by Forest Service Notice, Comment and Objection regulations at 36 CFR 218, the draft EA was made available to the public for a 30-day comment period. Only individuals or entities who submitted timely and specific written comments (as defined by 36 CFR 218.2) about this proposed project or activity during this or another public comment period established by the Responsible Official will be eligible to file an objection. Other requirements to be eligible to submit an objection are defined by 36 CFR 218.25 (a)(3) and include name, postal address, title of the project and signature or other verification of identity upon request and the identity of the individual or entity who authored the comments. Individual members of an entity must submit their own individual comments in order to have eligibility to object as an individual. A timely submission will be determined as outlined in 36 CFR 218.25 (a)(4).

The EA, all appendices, administrative record, and maps showing locations of the proposed changes are available at the Santa Catalina Ranger District Office, 5700 North Sabino Canyon Road, Tucson, Arizona, from Monday through Friday between the hours of 8:00 a.m. and 4:30 p.m., excluding Federal holidays.

[1] Public Law (P. L.) 91-190

[2] The Transportation Analysis Process is an integrated approach to transportation planning that evaluates both authorized open National Forest System Roads (NFSR) as well as unauthorized roads. The TAP is not a NEPA document; it is intended to complement or support, rather than replace or preempt NEPA reviews and decisions. The Santa Catalina TAP is available at the District Office.

Documents are available pursuant to the provisions of the Freedom of Information Act. The District office telephone number is (520) 749-8700. The EA and maps are also available on the Forest's public website, www.fs.fed.us/r3/coronado. A copy of the EA, maps, and administrative record will be provided on compact disk upon request from the District or from Mr. Joshua Taiz, District Travel Management Program Manager, on (520) 749-8700; jtaiz@fs.fed.us,

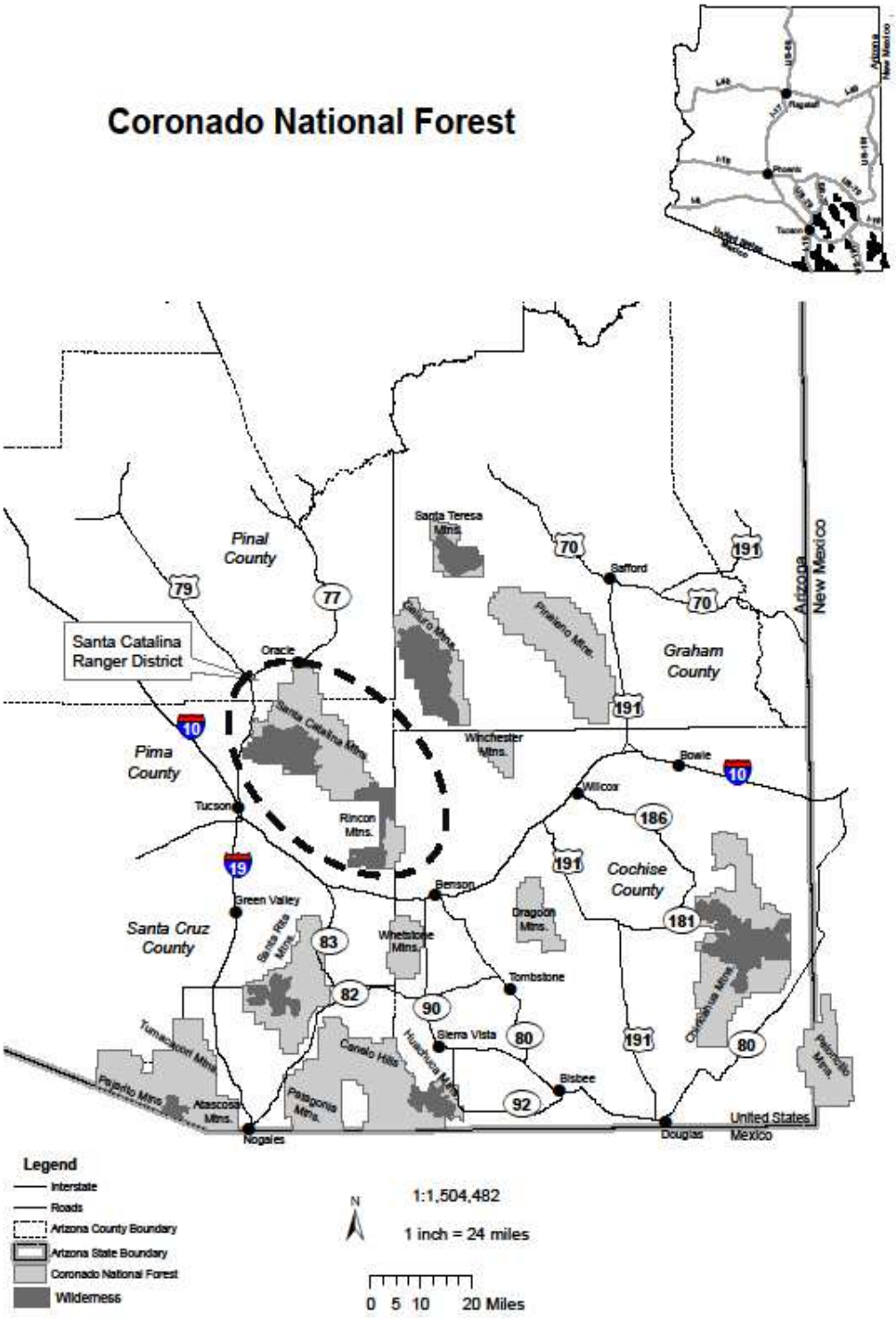

Figure 1-1. Location of Santa Catalina Ranger District in southeastern Arizona.

Background

To address concerns about the effects of unmanaged off-highway vehicles (OHVs), the Forest Service published final travel management regulations for motor vehicle use on national forests and grasslands on November 9, 2005. The Travel Management Rule "… *provides for a system of National Forest System roads, National Forest System trails, and areas on National Forest System lands that are designated by vehicle class and if appropriate, by time of year, for motor vehicle use. After these roads, trails, and areas are designated, motor vehicle use, not in accordance with these designations is prohibited...*"[3]

To comply with the Travel Management Rule (TMR), the Coronado National Forest, SCRD proposes to provide for a system of roads, trails, and areas designated for motorized use by making changes to the current travel system. The proposed changes would designate the places where people can drive on the Coronado National Forest, SCRD. The proposed changes would not restrict where people's non-motorized activities—such as hiking, camping, bicycling, hunting, and others—may take place.

When proposed changes to the SCRD motorized vehicle transportation system were first shared with the public in a Scoping Notice in March 2009, the Travel Management Rule (TMR) was in effect, but its requirements had not yet been fully implemented on the Forest. The first requirement of the TMR was that each Forest must define its designated motorized transportation system on a Motor Vehicle Use Map (MVUM). This requirement was satisfied in May 2011, when the SCRD published its first MVUM, which depicted the SCRD roads and their designated uses as they have evolved since direction for roads management was first established in the 1986 Forest Plan.

The proposed action was revised and a new Scoping Notice inviting public comments was sent to the public on May 1, 2012 (Administrative Record, Item #). The revised proposal is the subject of this Environmental Assessment (EA). Comments from the public on the previous proposed action have been retained but were not considered in the analysis of the proposed action.

Project Location

The SCRD is located in southeastern Arizona, a popular retirement and wintering area that includes the rapidly growing city of Tucson and surrounding communities of Benson, Oracle, Catalina, Marana, and Vail. The SCRD encompasses two mountain ranges, the Santa Catalina Mountains immediately to the east and northeast of Tucson, Arizona; and the Rincon Mountains to the southeast (see Figure 1-1). The area between the two mountain ranges is known as Redington Pass. Together, these ranges comprise approximately 259,674 acres of NFS land. Total acreage does not include land within the Forest boundary that is privately owned or managed by other agencies, and private roads or roads under the jurisdiction of a state, county or local authority.

Primary road access is from Interstate 10 and State Highways 76 and 77. Several roads in Pima, Pinal and Cochise Counties, such as 35 (Happy Valley Road), 38 (Control Road), 371 (Redington Road), 643 (Golder Ranch Road), 833 (General Hitchcock Hwy), and roads originating at San Pedro River Road, also provide access. These roads connect to arterial, collector, and local roads within and outside of the proclaimed Forest boundary, from which traffic disperses into the Forest

[3] 36 CFR 212, Subpart B, Designation of Roads, Trails, and Areas for Motor Vehicle Use

for access to a variety of uses. The Redington Pass area is very popular for four-wheel drive, all-terrain vehicle (ATV), and motorcycle recreation as well as dispersed motorized camping.

Existing Motorized System

On January 12, 2001, the Forest Service issued the final National Forest System Road Management Rule. This rule revised regulations concerning the management, use, and maintenance of the National Forest Transportation System. The final rule is intended to help ensure that additions to the National Forest System road network are essential for resource management and use; that construction, reconstruction, and maintenance of roads minimize adverse environmental impacts; that unneeded roads are decommissioned; and that restoration of ecological processes is initiated.

The Coronado National Forest developed a Transportation Analysis Plan (TAP) to address existing open National Forest System Roads (NFSR) as well as non-system roads located in the Santa Catalina Ecosystem Management Area (EMA). The TAP was not a NEPA document, but was intended to support NEPA planning. It is an integrated ecological, social, and economic approach to transportation planning, addressing both existing and future roads. 36 CFR 212.5 requires that the Forest identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands.

The SCRD currently manages 252.53miles of National Forest System Roads (NFSRs) as *open* for motor vehicle use as depicted on the MVUM published in May of 2011. Another 20.8 miles of NFSRs are *closed* to all motor vehicle use plus 10.8 miles of roads restricted to administrative use only for a total of 284.1 miles of NFSR on the SCRD.

Approximately 31.87 miles of *unauthorized routes*[4] were identified by the TAP. These unauthorized routes represent user-created routes that were not a part of the designated system. As shown on the 2011 MVUM, motor vehicles may travel up to 300 feet (ft.) along both sides of all designated NFSRs solely for the purpose of dispersed camping. Motor vehicle use off the designated system is not allowed except within 300 ft. on each side of the roadway as shown on the MVUM, and is not allowed on any unauthorized road.

The Forest Service uses five maintenance levels (ML) to classify roads, ranging from ML 1, indicating intermittent service roads closed to vehicular use, to ML 5, indicating roads that provide a high degree of user comfort and convenience (see Glossary). ML 3, 4, and 5 roads are those suitable for passenger cars. Some of these roads are dirt, some are gravel, and some are paved. ML 3, 4, and 5 roads are subject to the Highway Safety Act; therefore, they generally receive more maintenance than level 1-2 roads. This report will refer to passenger car roads (ML 3, 4, and 5 that a typical sedan could drive down) and high clearance roads (ML 2) that are maintained for high clearance vehicles.

Forest Plan and the Travel Management Rule (TMR)

The Travel Management Rule (36 CFR 212.50 (a))requires that each national forest and grassland "*provide for a system of National Forest System roads (NFSR), NFS trails, and areas on NFS lands that are designated for motor vehicle use. After these roads, trails, and areas are*

[4] An unauthorized road is defined in 36 CFR 212 as "a road that is not a forest road or a temporary road and that is not included in a forest transportation atlas". These are not designated NFSRs and are not maintained. Motor vehicle use on unauthorized roads not shown on the MVUM is prohibited .

designated, motor vehicle use, including the class of vehicle and time of year, not in accordance with these designations, is prohibited. Motor vehicle use off designated roads and trails and outside designated areas is prohibited by 36 CFR 261.13." Therefore, the Coronado National Forest, SCRD is presenting this proposal to meet the Travel Management Rule requirements.

The Coronado National Forest has had a designated motorized transportation system in place for about 20 years prior to the TMR becoming effective. Past decisions that served as a basis for the development of this system are not subject to retroactive transportation analyses and NEPA reviews according to the TMR. Because the SCRD had a designated motorized transportation system in place before the TMR was codified, a NEPA review of the original system was not required prior to publishing the first Santa Catalina MVUM) in May 2011.

The TMR directs that "*the responsible official may incorporate previous administrative decisions regarding travel management made under other authorities, including designations and prohibitions related to motor vehicle use, in designating NFS roads and trails*".[5] Alternatively, responsible officials may choose to reconsider past decisions, with public involvement, as necessary to achieve the purposes of the final rule (70 Federal Register 68269).

This means that all roads, trails, and areas that have been designated in the past for motor vehicle use do not have to be reevaluated in the current review of the proposed action described in this EA.

Consequently, this EA addresses only those proposed changes to the motorized transportation system that are needed to accommodate administrative and user needs, including resource protection.

The TMR prohibits motor vehicle use in areas off the system depicted on a MVUM, with exemptions for the following vehicles and/or uses: 1) aircraft; 2) watercraft; 3) limited administrative use by the Forest Service; 4) use of any fire, military, emergency, or law enforcement vehicle for emergency purposes; 5) authorized use of any combat or combat support vehicle for national defense purposes; 6) law enforcement response to violations of law, including pursuit; and 7) motor vehicle use that is specifically authorized under a written authorization issued under Federal law or regulations(36 CFR 212.51).

Motor vehicle use that is specifically authorized under a written authorization may include activities such as livestock operations, mining, special use permits, logging, firewood collection, forest products, private land access, and maintenance of pipeline and utility corridors (36 CFR 212.51(a)(8) and 261.13(h). Written authorizations allow for continued multiple-use management on the forest in a manner that does not result in unnecessary resource impacts, and that meets the intent and purpose of the Travel Management Rule.

Another requirement of the TMR is to prohibit the use of motor vehicles on NFS lands not designated for motorized travel. Such unauthorized use of a FS unit's designated travel system is generally referred to as "cross country" (or "off-road") travel. Cross country travel has been permitted on certain NFS lands for many years. On the Coronado, however, cross-country travel has been restricted since 1986 by direction in the Forest Plan (Forest Plan page 28), which prohibits all off-road travel except that which is needed for access to dispersed camping or parking. Relative to this exception, the Plan permits off-road travel across the Coronado up to a distance of 300 feet on each side of open authorized roads for these specific purposes.

[5] 36 CFR 212.50 (b)

Another form of cross country travel is motorized over-snow use (TMR Subpart C – Administrative Record #5). Since the Coronado National Forest is located in the arid southwestern United States with little annual snow accumulation and is comprised of steep, rugged mountains, motorized over-snow use does not occur on the SCRD.

Motorized travel off the designated system is specifically prohibited by the TMR. Currently, there are unauthorized roads on the SCRD and the TMR allows changes to the designated road system.

When the SCRD proposes to add or remove NFS roads to/from its motorized transportation system, change use designations, and/or make other related travel management actions decisions, a NEPA compliance review is required by the TMR (36 CFR Subpart B §212.52).

Purpose of and Need for Action

The purpose and need of this project is based on the need to change management to conform to the TMR and to move toward the desired conditions as stated in the Forest Plan.

The purpose of this project is to provide for a system of National Forest System roads, trails, and areas designated for motor vehicle use on the SCRD that will minimize impacts to natural and cultural resources while providing adequate access to the public as well as Forest staff and law enforcement and emergency response personnel.

The proposed actions are necessary to address unacceptable resource damage created by increased motorized use across the SCRD over the past 30 years. The magnitude and intensity of motor vehicle use has increased to the point that the intent of Executive Orders 11644[6] and 11989[7] both pertaining to the use of motorized vehicles on public land, cannot be met. In certain areas of the SCRD soil and water quality and wildlife habitat are being affected by motorized use and recreation, as is the ability of some SCRD visitors to have quality non-motorized experiences.

A need exists to reduce the number of open road miles on the SCRD and to address resource impacts associated with some motorized use. This need is based on the intent of the previously mentioned executive orders and the Travel Management Rule, which require that motor vehicle use of trails and areas on Federal lands be managed to address environmental and other impacts, but that motor vehicle use on Federal lands continue in appropriate locations.

There is a need to address impacts of cross-country travel for the purposes of dispersed camping in the vicinity of Ash Creek, Paige Creek, and along the Mount Lemmon Highway corridor.

Additionally, there is a need provide limited motorized use off of certain designated routes for the purposes of dispersed camping to facilitate traditional and common use patterns on the SCRD. This action responds to the final Travel Management Rule regulations under 36 CFR 212.

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[6] http://www.archives.gov/federal-register/codification/executive-order/11644.html

[7] http://www.presidency.ucsb.edu/ws/?pid=7576

Proposed Action

To respond to the purpose and need, the SCRD proposes the following changes to the system of roads, trails and areas designated for motor vehicle use on the SCRD:

1. **Add 5.78 miles of unauthorized roads (i.e., non-NFSRs) and designate them as "open to all vehicles".** In general, these roads are needed to provide access for hunting, camping, hiking, OHV travel and other public uses. An NFSR route number would be assigned to each newly designated road, and they would be classified as High clearance roads[8].

2. **Change the designation of 12.23 miles of NFSRs that are currently "open to all vehicles" to "restricted" for administrative or permitted use only.**

3. **Add 9.79 miles of unauthorized roads and designate them as "restricted" for administrative or permitted use only.**

4. **Decommission 0.83 miles of NFSRs that are currently "open to all vehicles".** Motorized access would be physically blocked (e.g., bollards, boulders, berms) and, if necessary, the road prism(s) would be restored to natural conditions to impede motorized use.

5. **Change the designation of 1.18 miles of NFSRs from "open to all vehicles" to "closed to all motor vehicles".**

6. **Identify 3.33 miles of corridors appropriate for by-pass routes around areas of resource damage.** If these routes are selected actual road construction would be dependent on the result of site-specific NEPA analysis at a future date.

7. **Decommission 14.37 miles of unauthorized roads (i.e. non-NFSR).**

8. **Disallow cross-country travel for the purposes of camping along a total of 25.32 miles of NFSRs.** This would have the effect of eliminating the 300 ft. camping corridor along all or part of the following NFSRs: 1, 1A, 1B, 1C, 5, 7, 9, 9A through 9H, 10, 11, 12, 14, 19, 21, 35, 607, 625, 750, 807, and 4307. Also, the 300-ft. camping corridor would be eliminated from a portion of 4408 beginning 0.1 mile north of the private boundary to the end of the road. Incidental parking up to a car-width or up to 30 ft. off these roads would continue to be permissible.

Details of the eight proposed changes are provided in Section 2.2.

Public Involvement

[5] In general, ML 2 roads are those suitable for high-clearance vehicles and not suitable for passenger vehicles, such as sedans.

Since 2006, the Forest's travel management planning process has included many opportunities for public involvement. Four open-houses (one each in Tucson, Safford, Sierra Vista and Douglas) gave citizens an opportunity to view maps showing current motor-vehicle-use direction in the Forest Plan and encouraged public input regarding unique recreation opportunities, specific vehicle-class opportunities, access to significant-use locations, dispersed camping opportunities, and environmental and/or safety concerns related to specific roads.

Concurrent with transportation analysis process meetings, many public meetings have been held to date as part of the Forest Plan Revision effort. Travel management was also discussed at these meetings, and public input regarding travel management was factored into the development of the proposed action addressed herein.

On March 13, 2009, a Scoping Notice was distributed to interested parties and stakeholders informing them about the proposed action and requesting public comments on the scope of the NEPA review. This was followed by a government-to-government scoping letter from the Forest Supervisor to 12 Native American tribes and a scoping open-house in Tucson on March 26, 2009. The NEPA review of the proposed travel management action was listed on a Schedule of Proposed Actions on the Forest's public website on April 1, 2009.

Internal review of the proposed project revealed the need for substantive changes to the proposed action. Consequently, the project was re-scoped to the public on May 1, 2012 (Administrative record, Item #6). The scoping notice was sent to a total of 470 individuals and/or organizations (Administrative record #7).

Additional opportunities for public involvement included a collaborative process to develop an alternative to the proposed action facilitated by the U.S. Institute for Conflict Resolution (Institute; Administrative Record Item #6). The Institute brought together a diverse array of stakeholders under a chartered agreement to review and provide input on the proposed action scoped on May 1st of 2012. The objective of the collaborative process was to reach consensus on changes to the designated road system and, if necessary, to develop an alternative to the proposed action of the Forest Service. Meetings were held on March 8th, March 13th, and April 18th of 2012. This process was completed on May 11, 2012 and an alternative was generated and given to the Forest Service for consideration in this EA.

Private landowners within and adjacent to the Forest Boundary as well as other agencies have been and will continue to be consulted during the ongoing travel management planning process.

Comments Received

Comments received during the Public Scoping period which began on May 1st 2012 until the completion of this EA were used to assist Forest resource specialists in defining their approach to impacts analysis. Comments were determined to be either within the scope of the proposed action or beyond the scope of the proposed action. The latter includes comments that relate to issues that have been previously decided by law, regulation, Forest Plan, or other higher-level decision; are irrelevant to the decision to be made; and/or are conjectural and not supported by scientific or factual evidence.

A total of seven comment letters were received as a result of the May 1st scoping process (Administrative record Items # 7, 10-16). These letters included a variety of comments, opinions, and position statements relative to the proposed action. The substantive comments are summarized in the table appended to this document (Appendix B). Comments were considered by

the members of the Travel Management Interdisciplinary Team while preparing their respective specialist reports and the EA.

The collaborative process chartered and facilitated by the U.S. Institute gathered comments on all of the 174 routes included in the proposed action. All three public meetings were held with The Collaborative Alternative Team (CAT) to discuss all of the routes. Consensus was reached on 67 of the routes. The remaining 107 routes were discussed in detail by the larger group and voted on by the core CAT members (Administrative Record, Item #). The resulting alternative was submitted to the Forest Service (FS) for consideration in this NEPA process and is identified as the CAT Alternative in this document. It presents the collaborative efforts of a wide array of stakeholders representing a broad spectrum of perspectives including representatives of organizations or interests that submitted comment letters during the scoping process.

A comment package was received from a consortium of environmental groups lead by the Center for Biological Diversity (CBD; Administrative Record Item # 12). This document included recommendations to close 99 road segments on the SCRD. A detailed review of the segment-by-segment recommendations revealed that 23 segments were not included in the proposed action and were therefore outside of the scope of the current analysis. There was agreement with the proposed action on 69 segments where the FS proposes to decommission. On the remaining six road segments the FS proposal is to add as "restricted access" which is not open to the general public whereas the CBD recommendation was to close these six segments. Restricted access will greatly reduce the amount of use on these segments as compared to an open to all vehicles status, so the potential environmental effects of the proposed action more closely approximate the potential effects of the CBD proposal.

Issues Identified

Issues serve to highlight effects or unintended consequences that may occur from the proposed action and alternatives, giving opportunities during the analysis to reduce adverse effects and compare trade-offs for the decision maker and public to understand (FSH 1909.15, 12.4 An issue is not an activity in itself; instead, it is the projected effects of the activity that create the issue. The NEPA analysis process focuses on several standard issues including the potential of a proposal to impact soils, water quality, air quality, vegetation, watershed, wildlife, and socio-economics. In addition to these issues the scoping process often reveals additional issues with a proposal.

The Forest Service reviewed 7 comment letters received with regard to the Proposed Action. Each comment received during scoping was considered and evaluated to determine whether the concern(s) were already resolved through land use designations, implementation of Forest Plan standards and guidelines and Best Management Practices (BMP's), project-specific design criteria or mitigation measures, through processes or analyses routinely conducted by the Interdisciplinary Team (IDT or ID Team), or beyond the scope of the project. All concerns that fell within these categories were considered resolved. Tribal concerns identified through the consultation process were resolved (See Chapter 4).

Concerns that would have to be addressed through spatial location of activities or concerns that would drive (or partially drive) an alternative were considered unresolved. These unresolved concerns were developed into key issues. Key issues are used to develop and compare alternatives, prescribe mitigation measures, and analyze the environmental effects.
Four key issues were identified and they are as follows:

- Reduction of vehicle-related recreation opportunities
- Reduction of opportunities for quiet recreation

- Habitat fragmentation
- Invasive Plants

Comment period on the pre-decisional EA
In June, the SCRD will publish legal notice of the availability of this pre-decisional EA for a 30-day comment period pursuant to 36 CFR 218. A document displaying consideration of the comments will be included in an appendix to the final EA

Decision Framework

Given the purpose of and need for action and based in part on the findings of the impacts analysis disclosed in this EA, and the consideration of the best available science, the SCRD Ranger will decide:

- Whether to approve implementation of the Preferred Alternative;
- What mitigation and/or monitoring measures will be required during implementation of the proposed action or any alternative selected.

The Ranger's decision will be documented in a Decision Notice that will be announced by a Legal Notice in the *Arizona Daily Star*.

Forest Plan Direction

The SCRD designated motorized transportation system depicted on most recent MVUM illustrates the existing system as of 2012, as it has evolved over the past 25 years in accordance with direction in the 1986 Coronado National Forest Land and Resource Management Plan (Plan). The Plan includes the following classifications:

Roads Open to Highway-Legal Vehicles Only: These are roads open only to motor vehicles licensed under state law for general operation on all public roads.

Roads Open to All Vehicles: These roads are open to all motor vehicles; including smaller off-highway vehicles that may not be licensed for highway use (but not to oversized or overweight vehicles under state traffic law).

Seasonal Designations: These apply to roads or trails that are open only during certain months of the year.

Dispersed Camping: Cross-country (off-road) motor vehicle travel is allowed within a specific distance (300 feet) from a road for the sole purpose of dispersed camping.

The Plan was amended in August 2010 to incorporate TMR direction prohibiting motorized vehicle use off the Forest's designated motorized transportation system. The amendment direction is as follows:

Motor vehicle use off the designated system of roads, trails, and areas is prohibited, except as identified on a Motor Vehicle Use Map (MVUM).

The decision document for the Preferred Alternative (if selected) would not require any project-specific amendments to the Plan. The MVUM would be updated to reflect the proposed changes to the designated system of roads and trails available for motorized use**.**

Chapter 2 – Proposed Action and Alternatives

This chapter describes the proposed action, the no-action, and the alternative developed by the Collaborative Alternative Team. Development of the proposed action was based on recommendations the Santa Catalina Travel Analysis Plan (TAP) approved on February 2, 2009.

The TAP reviewed the Coronado National Forest Transportation System as depicted in Forest Geographic Information System and contained within the National INFRA Database. This is the most accurate information available to Forest Service personnel for analyzing the road system.

This section concludes with a tabular comparison of the impacts of each alternative.
In this document the Forest proposed two action alternatives; the proposed action and the Collaborative Alternative Team Alternative (CAT). The CAT alternative became the Preferred Alternative in the course of the analysis process.

No Action

The no action alternative provides a baseline against which the impacts of the proposed action and alternative may be compared. If no action is taken, the Forest would not make the proposed changes to the motorized travel system on the SCRD or eliminate existing dispersed camping corridors in certain locations. Even if no action is taken, the current version of the MVUM would remain without any of the proposed changes listed in either action alternative.

Proposed Action

The Forest proposes to implement the following: as part of the proposed action:

1. **Add 5.78 miles of unauthorized roads (i.e., non-NFSRs) and designate them** as **"open to all vehicles".** In general, these roads are needed to provide access for hunting, camping, hiking, OHV travel and other public uses. An NFSR route number would be assigned to each newly designated road, and they would be classified as High clearance roads[9].

2. **Change the designation of 12.23 miles of NFSRs that are currently "open to all vehicles" to "restricted to administrative or permitted use only".**

3. **Add 9.79 miles of unauthorized roads and designate them as "restricted to administrative or permitted use only".**

4. **Decommission 0.83 miles of NFSRs that are currently "open to all vehicles ".** Motorized access would be physically blocked (e.g., bollards, boulders, berms) and, if necessary, the road prism(s) would be restored to natural conditions to impede motorized use..

[5] In general, ML 2 roads are those suitable for high-clearance vehicles and not suitable for passenger vehicles, such as sedans.

5. **Change the designation of 1.18 miles of NFSRs from "open to all vehicles" to "closed to all motor vehicles".**

6. **Construct 3.33 miles of new NF system roads and designate them as "open to all vehicles (High clearance vehicles).**

7. **Decommission 14.37 miles of unauthorized roads (i.e. non-NFSR).**

8. **Eliminate the 300-foot off-road travel corridor along a total of 25.32 miles of NFSRs.** These include all or part of the following NFSRs: 1, 1A, 1B, 1C, 5, 7, 9, 9A through 9H, 10, 11, 12, 14, 19, 21, 35, 607, 625, 750, 807, 4307. Also, the 300-ft camping corridor will be eliminated from a portion of 4408 beginning 0.1 mile north of the private boundary to the end of the road. Incidental parking up to a car-width or up to 30 ft. off these roads would continue to be permissible.

Road segments to be added, decommissioned , or otherwise changed are depicted in detail in Appendix A.

Monitoring of the newly designated routes as required by the Travel management Rule will be implemented. The unauthorized routes (UR) identified for addition and designation in the proposed action were a part of the 31.87 miles of UR's identified in the Transportation Analysis Plan (TAP). The TAP is a supporting document posted on the Coronado National Forest public website and used in the preparation of the EA. Travel on these routes has always been prohibited since the Forest Plan guidance limits travel to system roads only.

CAT Alternative (Preferred Alternative)

The CAT alternative was developed in a process facilitated by the U.S. Institute for Conflict Resolution (Institute, Administrative record #XX). As described above, the Institute facilitated three public meetings where a core team of voting members and other members of the public reviewed each road segment included in the proposed action. The meetings sought to arrive at consensus on the FS proposal. Consensus was reached on 67 of the routes described in the proposed action. The remaining routes in the alternative were determined based on the chartered team agreement which stated that any route for which consensus was not reached would be determined by the District Ranger. The results of the process were collected and it was determined that 11 routes differed from the proposed action of the Forest Service. The following table includes the routes in the CAT Alternative that differ from the proposed action. The Preferred Alternative is depicted graphically in Map1, Map 2, and Map 3 in Appendix C. These maps are also available on the Coronado National Forest Website (http://www.fs.usda.gov/coronado).

Segment number	Mileage	Status	FS Proposal	CAT proposal
371-16.10R1	0.08	Unauthorized	Add and Designate as NFSR	Do not Add as National Forest System Road.
736-3.25L-1	0.13	Unauthorized	Decommission	Recommend the FS consider designating as restricted for administrative use only, then open only if needed as a bypass.
807 A	1.18	NFSR	Change Designation to NFSR ML1	Recommend changing designation from "Open to all vehicles" ML2 to "Decommissioned". Old Prison Camp Road. Access blocked, only needed for fire or other emergency.
4487-extension	1.61	New Construction	Add and Designate as NFSR	Do not Add as National Forest System Road.
4487 foot trail	0.63	Unauthorized	Add and designate as NFSR restricted	Do not add as NFSR
4493-extension	0.75	New Construction	Add and Designate as NFSR	Do not Add as National Forest System Road.
4307-0.05R-1	0.32	Unauthorized	Decommission	Change to "Add as NFSR first 750 ft. of road to traditional camp area, Decommission the remainder of Unauthorized road. Maintain camping access at Miller Creek.
4431 reroute	1.	NFSR	Add and Designate as NFSR	Recommend extending 4431 approximately ¼ mile to the east
4431	0.23	Unauthorized	Decommission	Do not close the 4431 until the reroute is available.

4431-0.32R-1	0.77	Unauthorized	Add and Designate as NFSR	Do not Add as National Forest System Road.
4426-3.50L-1	0.16	Unauthorized	Add and Designate as NFSR	Do not Add as National Forest System Road.

Changes to the Preferred Alternative

A few changes were made to the preferred alternative as a result of the analysis described in chapter 3. The following table identifies the specific segments to be changed along with the justification.

Segment	**Preferred Alternative Proposal**	**Change from Preferred Alternative**	**Rationale**
4447.049R-1	Decommission	Retain, manage under mining Plan of Operations (POO) for Korn Kobb Mine	The Korn Kob Mine is, at the time of this writing developing a Plan of Operations that includes the use of these 4 road segments for the purposes of test drilling. Decommissioning of these roads would conflict with that POO.
4447.052R-1	Decommission	Retain, manage under mining Plan of Operations for Korn Kobb Mine	See above
4447.052R-2	Decommission	Retain, manage under mining Plan of Operations for Korn Kobb Mine	See above
4447.052R-3	Decommission	Retain, manage under mining Plan of Operations for Korn Kobb Mine	See above
4451	Decommission	Retain, manage under mining Plan of Operations for Oracle Ridge Mine	The Oracle Ridge mine has submitted a POO that includes the use of this NFSR key to their operation. Decommissioning of this road would conflict with that POO.
4431-reroute	Construct and add as NFSR	Identify a corridor for possible re-route development pending	Guidance in the Travel Management Rule provides for

		future site-specific NEPA	identification of potential corridors suitable for consideration for future construction. Such corridors will then be the subject of site-specific analysis under future NEPA.

Alternatives Dropped From Further Consideration

No Corridor Alternative

One additional alternative was considered but eliminated from detailed study. An alternative was proposed that would close more roads than those reflected in the preferred alternative it also would have eliminated the 300 ft. camping corridor District-wide (Administrative record, Items # X, Y). Most of the roads that were listed in the letter were already incorporated in the Proposed Action and the Preferred Alternative. However, some of the roads listed in the letter were not considered in detail for closure in these alternatives.

The proposal to eliminate the 300 ft. camping corridor District-wide would not meet the purpose and need of this analysis. Specifically, as stated in the Purpose and Need section above "…there is a need provide limited motorized use off of certain designated routes for the purposes of dispersed camping to facilitate traditional and common use patterns on the SCRD." District-wide elimination of the 300 ft. camping corridor would not provide for limited motorized use off designated routes for the purpose of dispersed camping.

The concern to close more roads for resource protections is reflected in standard NEPA issue of potential impacts to vegetation and watersheds; however, the analysis provided in Chapter 3 indicates that the single action which meets the purpose and need and provides the most benefit to Riparian areas and other resources is the elimination of cross-country travel along NFSR 35 and along the Mt. Lemmon Highway corridor as reflected in the collaboratively developed preferred alternative.

Quiet Recreation Alternative

Cyndi Tuell of the Center for Biological Diversity corresponded with the District Ranger to propose an alternative in the Happy Valley area. This alternative would limit the type of vehicles able to use NFSR's 35, 4409, and 4406 by closing them to "dirt bikes and ATV's" (Administrative Record 29). This alternative was dropped from further analysis because it did not address the purpose and need relative to minimizing resource damage while providing adequate access to the public as well as Forest staff and law enforcement and emergency response personnel. NFSR's 35, 4409, and 4406 not only access lands managed by the SCRD, but also provide access to private landholders in the area. NFSR 35 is under a maintenance agreement with Pima County. Additionally, these roads provide access to two grazing allotments.

The terms "dirt bike" and "ATV" are quite broad and not easily defined. Vehicles such as these and similar vehicles are used by private individuals to access their private lands and as part of

managing livestock in the area. These types of vehicles are also used by Forest Service, Pima County Sherriff's Office, Southern Arizona Rescue Association and local fire departments. Elimination of such types of vehicles would violate the purpose and need by not providing adequate access to the public as well as Forest Staff and Law enforcement, and emergency response.

So-called "quiet recreation" was identified as an unresolved conflict that generated the need to develop the CAT. CBD and others that represented quiet recreation stakeholders were invited to and participated in the collaborative process run by the US Institute for Environmental Conflict Resolution (Administrative Record #5). The quiet recreation position was adequately addressed in that process.

Proposed Action

The determination to drop the proposed action and identify the CAT Alternative as the Preferred Alternative was based direction contained in Forest Service Handbooks. The Forest Service Handbook (FSH 1909.15 Chapter 14) states that the intent of the alternative development process is to encourage collaboration throughout the analysis and decision-making process. Ongoing collaboration may often result in modification of a proposed action or alternative(s), resulting in a better proposal and ultimately a better decision. While both the proposed action and the CAT adequately addressed the Purpose and Need identified in an earlier section of this document there remained un-resolved conflicts among interested stakeholders. These unresolved conflicts lead to the development of the Collaborative Alternative Team. Therefore the CAT alternative is preferred over the Proposed Action precisely because it best addresses unresolved stakeholder conflicts through a collaborative process.

Mitigation and Monitoring

The following measures will be applied as part of the proposed action to avoid or minimize potential impacts:

- The SCRD will monitor the effects of motor vehicle use on designated roads and trails, consistent with the applicable land management plan, as appropriate and feasible, in accordance with 36 CFR 212.57.

- Newly designated NFSRs will have signs; physical barricades of rock or other natural material at their end point; and/or temporary man-made barriers, if necessary to prevent unauthorized extension of the road by vehicle users.

- Decommissioning activities, such as earthen berm construction or bollard installation, will be scheduled to occur outside the breeding season of these Federally listed species: Mexican spotted owl (*Strix occidentalis lucida*), the common black hawk (*buteogallus anthracinus*), other species known to be nesting in the area, and to avoid the Sonora desert tortoise (*Gopherus morafka*).

- Roads proposed for decommissioning will be surveyed prior to decommissioning for the presence of Forest Service sensitive plant species and cultural resources. Sensitive resources will be flagged and avoided.

Comparison of the Impacts of Alternatives

The potential impacts of the Proposed Action, the CAT Alternative (e.g. Preferred Alternative), and the no action alternative are compared in Table 2-3. Based on the specialist analysis it was determined that there were no differences in the effects of the proposed action and the CAT alternative. Therefore, the analysis in Chapter 3 compares the Preferred Alternative to the No Action. Table 2-3 below documents the similarity of the PA and the CAT alternative.

Resource	No Action Description	Proposed Action Description	CAT Alternative Description
Transportation System	No Changes to Existing Motorized Travel System: **263.3** open **20.8** closed All NFSRs open to motor vehicle use include a 300-foot-wide corridor for dispersed camping. Driving off the designated system displayed on the MVUM is prohibited.	Add **5.78** miles of unauthorized roads and designate "Open to all vehicles" Re-designate **12.23** miles of open NFSR's to "restricted for admin or permittee" Add **9.79** miles of unauthorized routes and designate as "Restricted" Decommission **0.83** miles of NFSR's Change designation of **1.18** miles of NFSR's from "closed to all vehicles" Construct **3.33** miles of bypass routes and add them as High clearance vehicles Decommission **14.37** miles of unauthorized routes Eliminate the 300 ft. camping corridor along **25.32** miles of roads.	Add **5.08** miles of unauthorized roads and designate "Open to all vehicles" Re-designate **12.23** miles of open NFSR's to "restricted for admin or permittee" Add **9.29** miles of unauthorized routes and designate as "Restricted" Decommission **2.01** miles of NFSR's Identify **0.97** miles of potentialbypass routes (construction would depend on future NEPA. Decommission **14.09** miles of unauthorized routes Eliminate the 300 ft. camping corridor along **25.32** miles of roads.
Air Quality	Retaining the 300 ft. camping allowance along the Happy Valley road and Roads accessed by the Mt Lemmon Highway would allow for potential growth of user created roads.	Adding 5.78 miles of unauthorized roads and designating them would have no additional effects to air quality since they are already being used. Elimination of the 300 ft.	Adding 5.08 miles of unauthorized roads would have no additional effects since they are already being used. While 0.7 miles less are being added compared to the proposed action, there would be no measurable difference. This alternative would also eliminate

	This in turn would make for a potential increase in fugitive dust. Continued use of unneeded roads would also potentially increase fugitive dust.	camping allowance along the Happy Valley road and Roads accessed by the Mt Lemmon Highway would reduce the potential for additional fugitive dust from additional unauthorized routes. Decommissioning of 1.27 miles of roads would incrementally reduce fugitive dust. Reductions would be observed locally, but not affect the Rillito PM-10 Nonattainment Area.	the 300 ft. camping allowance from the Happy Valley Road and roads accessed by the Mt Lemmon Highway. And would therefore reduce the potential for additional fugitive dust from the additional unauthorized routes. Decommissioning an additional 0.74 miles of system roads would have an incrementally greater reduction for fugitive dust. Reductions would be observed locally, but no effect the Rillito PM-10 Nonattainment Area.
Water Resources	The 2700 acres within the Happy Valley and Mt Lemmon Camping corridor would continue to receive some impacts on water quality and quantity. Lack of maintenance on 5.78 miles of Unauthorized routes would continue to contribute effects on water quality and quantity. 14.37 miles of unauthorized routes would continue to contribute effects to water quality and quantity.	With maintenance, erosion control and sediment runoff from newly designated NFSRs would decrease slightly. Erosion and runoff would decrease with the recovery of vegetation on 14.37 miles of unauthorized roads. Eliminating 36 miles of existing dispersed camping corridors would decrease potential for erosion on 2000 acres. Adding 9.75 miles of unauthorized roads would add 1863 acres of potential effects because of the 300 ft. camping corridor for a net decrease of 212 acres of potential effects. Designation of the spur roads in	Erosion control and sediment runoff would result from maintenance of newly designated NFSR's. Erosion and runoff would decrease with the recovery of vegetation on 0.26 fewer miles of decommissioned unauthorized routes as compared to the proposed action. This alternative would also benefit water quality and quantity by eliminating the 300 ft. camping corridor along 36 m miles of roads thus potentially affecting 2000 fewer acres of land. The alternative would add fewer miles of unauthorized routes and would therefore potentially affect a net 262 acres as compared to the 212 of the proposed action. Potential reduction of water diversion in the Happy Valley area would also occur in this alternative.

		the Happy Valley area wouldl make these roads subject to maintenance as funding allows. This would reduce the potential for water diversion by reducing the mileage of roads that carry water away from the riparian area. Construction of the 4493 extension would likely reduce the effects over time to the Cañadedel Oro stream channel from approximately 3 miles of the 736 road currently located within the channel.	This alternative would not reduce impacts to 3 miles of the Cañada del Oro drainage because the 4493 extension would not be constructed.
Soils	The effects on soil condition such as compaction and erosion from the lack of maintenance on 5.78 miles of unauthorized roads, continued use of the unneeded system roads, and continued use of the 300 ft. camping corridor in Happy Valley and the roads accessed off the Mount Lemmon Highway would continue. Erosion and compaction effects of the 4431 road in deep clay soils would continue.	Erosion control may improve with the application of Best Management Practices during future maintenance of these NFSRs. This is particularly true in the Happy Valley and Redington Pass where soils have a high erosion hazard. Soil compaction on decommissioned roads would decrease over time. Soils in areas where off-road motorized travel is restricted would recover from compaction and erosion over time.	This alternative would result in 0.70 fewer miles of unauthorized roads being added to the system, it would also include .70 fewer miles of unauthorized routes being added as restricted, and 1.18 additional miles of system roads decommissioned. This alternative would construct 2.36 fewer miles of new roads as bypass routes around heavily impacted areas and would change the designation of no roads from ML2 to ML1. This alternative would also decommission 0.28 fewer miles of unauthorized routes. From a soils perspective the difference between this alternative and the proposed action is minor. For example 0.7 miles of typical road on forest amounts to about 1.35 acres. It

			will decommission about 2.28 additional acres of system roads. It would disturb 4.6 fewer acres from bypass construction, but that would result in continued soil impacts on the areas in need of bypass. This alternative will decommission only 0.5 fewer acres of unauthorized routes as compared to the proposed action. Based on the above discussion, the CAT alternative would result in impacts to soils that are very similar to the proposed action. The primary difference would be that this alternative would not result in bypassing approximately 3 miles of road that is in the drainage bottom of Cañada del Oro creek. Therefore soil compaction and loss in the Cañada del Oro riparian area would continue
Vegetation	The 2700 acres within the Happy Valley and Mt Lemmon Camping corridor would continue to receive some impacts in the form of destruction of vegetation from vehicles driving on them and soil disturbance and compaction effecting seed germination.	There would be no change in the composition or condition of vegetation along newly designated roads. On decommissioned roads, less than an acre of mixed-conifer forest and 2 acres of evergreen woodland would eventually return to a natural state. With new restrictions on motorized travel in specific areas where it was previously allowed, documented	Without the 4493 extension, vehicles would continue travel on 3 miles of road within the Cañada del Oro stream channel. Without a bypass, travel on this section of the 736 road would contribute to continued riparian vegetation disturbance and soil erosion. Not constructing the 4487 extension would allow for the recovery and maintenance of the vegetation and soil

		adverse effects on vegetation, including riparian habitat, are expected to decline, and eventual recovery of vegetation across 2700 acres is possible. Invasive species would continue to be introduced by motor vehicles traveling on newly designated NFSRs. Construction of the 4493 extension would impact approximately 1 acre of vegetation, but would result in reduced impacts on 3 miles of riparian habitat in the Cañada del Oro Drainage.	resource. Decommissioning about 0.9 miles more road than the proposed action would incrementally increase soil and vegetation to recovery and reduce the vehicular spread of invasive species. Provide no change to the maintenance level of the 807A road; decommission instead. Effects similar to the proposed action. Extend the 4431 reroute one quarter mile east, allowing for the more successful decommission of 4431 and 4431-0.97R-1. Effects similar to the proposed action.
Climate Change	No change in the amount of vehicle use is expected under this alternative. Continued use of unneeded roads can result in more fugitive dust compared to other alternatives, but this difference is not measurable	Changes in forest system roads are not expected to change the amount of vehicle traffic on the SCRD, as users would most likely use an alternative route. There may be slight reductions in fugitive dust from closing some roads. However, this reduction would be difficult to measure and is expected to be negligible compared to background levels.	The differences between the proposed action and the CAT alternative are insignificant in terms of expected contributions to climate change. Therefore, the same effects as described above for the proposed action are expected for the CAT alternative.

Recreation	Undirected access to campsites along NFSR 35 would continue. Impacts on the vegetation and natural resources would continue in the 300 ft. corridor along this route. Enhanced access to recreational amenities, as recommended in the TAP, would not be provided if no action is taken. Demand for recreational use would continue to reflect increases in the area's population.	Most of the roads to be added to the system would offer controlled, well defined access to recreational amenities along NFSR 35. Recreational use would not be affected by the decommissioning of three roads because they are infrequently used or no longer accessible. Elimination of 36 miles of existing dispersed camping corridors would help mitigate user conflicts and preserve natural resources. Most popular campsites would continue to have motorized access from existing or proposed designated routes. Campsites that cannot be accessed by proposed or existing roads would remain accessible by foot or other means.	The CAT alternative would better address conflicting uses on the District by adding some user created roads to the system while not adding others. Recreational Opportunities would not be changed by this alternative as access to amenities would still be maintained at the current level. The CAT Alternative would eliminate potential user conflicts by not adding the proposed 4487 extension or the 807A route which occur along portions of the Arizona National Scenic Trail.
Inventoried Roadless Areas (IRAs)	The No Action alternative would not remove seven unauthorized road segments that currently exist within IRAs and thereby would result in adverse effects on the roadless character of the areas.	The proposed action would remove seven unauthorized road segments that occur within IRAs. Therefore implementation of this alternative would benefit IRAs on the SCRD by restoring their remote character.	The seven unauthorized segments that occur within Inventoried Roadless Areas would be decommissioned under the CAT Alternative. Therefore implementation of this alternative would benefit IRAs on the SCRD.
Wild, Scenic, and Recreational	The no action alternative would not designate or construct any	The proposed action would add one unauthorized road and	Potential effects of this alternative would be similar to the proposed

Rivers	new roads within the Cañada Del Oro (CDO) corridor. Existing roads within the Lower CDO eligible for designation as a recreation river would remain. Implementation would not affect the eligibility of the Lower CDO segment	construct the 4493 extension to that occurs within the eligible Recreational River segment of the Cañada del Oro corridor. This would be consistent with management direction for recreational rivers.	action in that the addition of one unauthorized road segment would not affect the eligibility of the Lower Cañada del Oro recreational river corridor.
Heritage Resources	Heritage sites near unauthorized roads used for motorized recreation and 2700 acres of areas in Happy Valley and on the top of Mt Lemmon within 300 ft. of roads would continue to be at risk of damage and/or destruction. Based on the analysis, there would be no effects on heritage sites from the continued motorized use of authorized roads.	Acreage removed from the 300 ft. camping corridor would assist in protection of Heritage Resources across 2700 acres of Forest System Lands. Five unauthorized road segments proposed for addition as NFSR's in the proposed action could result in increased human access to cultural sites. The heritage report recommends removing these roads from the decision. If these recommendations are followed, then the Forest Archaeologist determined that the proposed action would result in • no historic properties affected; and • no impacts to Native American and other cultural resources.	The CAT Alternative has similar potential effects on Heritage Resources as the Proposed Action. Acreage removed from the 300 ft. camping corridor would assist in protection of Heritage Resources across 2700 acres of Forest System Lands. Five unauthorized road segments proposed for addition as NFSR's in the PA could result in increased human access to cultural sites. The heritage report recommends removing these roads from the decision. If these recommendations are followed, then the Forest Archaeologist determined that the proposed action would result in • no historic properties affected; and • no impacts on Native American and other cultural resources.

Wildlife and Special-Status Species	Effects on wildlife and their habitat would remain the same along authorized roads used for motor-vehicle travel. Habitat that has been fragmented, damaged, and/or disturbed by unauthorized road use and off-road motorized travel in areas where the off-road restriction is proposed would continue to be affected; impacts may be exacerbated over time. In particular, the road segment 4405-10.34R-1 would continue to access occupied habitat for the lowland leopard frog and provide adverse direct and indirect effects to this species. Additionally, a portion of the NFSR 736 is located in the drainage bottom of the Canada del Oro Creek. Continued use of this road degrades sensitive riparian habitat.	The District Biologist determined that the various aspects of the proposed action • may affect, but are not likely to adversely affect the Federally endangered lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae),* • would have no effect on the Federally threatened Mexican spotted owl (*Strix occidentalis lucida*) (MSO) and MSO critical habitat. • may impact individuals of some Forest Service, Region 3, sensitive species, but would not cause a loss of viability or a trend toward Federal listing. • would not likely cause a detectable change in populations of management indicator species or a loss of occupied habitat. • would perpetuate habitat fragmentation on a net addition of 4.05 miles of NFSRs FWS concurrence on the determinations regarding Federally listed species and habitat is pending. Road segment 4405-10.34R-1	The District Biologist determined that the various aspects of the CAT Alternative: • may affect, but are not likely to adversely affect the Federally endangered lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae),* • would have no effect on the Federally threatened Mexican spotted owl (*Strix occidentalis lucida*) (MSO) and MSO critical habitat. • may impact individuals of some Forest Service, Region 3, sensitive species, but would not cause a loss of viability or a trend toward Federal listing. • would not likely cause a detectable change in populations of management indicator species or a loss of occupied habitat. • would perpetuate habitat fragmentation on a net addition of 4.05 miles of NFSRs FWS concurrence on the determinations regarding Federally listed species and habitat is pending. Road segment 4405-10.34R-1 would be decommissioned and direct and indirect effects to occupied habitat for the lowland leopard frog would cease.

		would be decommissioned and direct and indirect effects to occupied habitat for the lowland leopard frog would cease. Additionally, construction of the 4493 extension would provide a bypass for the 3 mile portion of NFSR 736 that is located in the drainage bottom of the Canada del Oro Creek. Over time flooding of the creek would reclaim the creek channel, while maintenance of the proposed by-pass would provide users with a better alternative.	In contrast to the Proposed Action, the CAT Alternative would not construct the 4493 extension and would therefore provide no alternative route for users along the 736 road. Therefore adverse impacts of the 736 road in the bottom of the CDO would continue. Continued use of the drainage bottom road would eliminate the potential for riparian vegetation to reclaim the creek.
Scenic resources	Degradation of scenic integrity from non-system roads and dispersed recreation areas (including loss of vegetation, bare and compacted soils, muddy rutted areas, and erosion) would continue until all non-system roads were obliterated and naturalized, which would likely take many years. Recovery of damaged soils and vegetation would take much longer.	Both the proposed action and CAT Alternatives would benefit scenic resources by: • Getting some roads out of drainages, which would improve riparian vegetation and benefit scenery. • Decommissioning some roads, which may result in short-term impacts to scenery, but once these areas were naturalized, scenic quality would be improved. • Adding roads to the National Forest road system. System roads would be properly designed and maintained, which would reduce scenic impacts such as rutting and	Proposed changes would benefit scenic resources by: • Getting some roads out of drainages, which would improve riparian vegetation and benefit scenery. • Decommissioning some roads, which may result in short-term impacts to scenery, but once these areas were naturalized, scenic quality would be improved. • Adding roads to the National Forest road system. System roads would be properly designed and maintained, which would reduce scenic impacts such as rutting and erosion. • Restricting the use of some roads to administrative and/or permittee

		erosion. • Restricting the use of some roads to administrative and/or permittee use only, which would limit vehicular use and associated damage (and would also provide more quiet, scenic settings for visitors who seek non-motorized settings). • Eliminating 300-foot camping corridors on Mt. Lemmon and in Happy Valley, which would reduce vegetation damage and compacted soils resulting from off-road vehicle use and dispersed camping. The proposed action would include 3 road changes in Visual Quality Objectives (VQO) of retention. Two changes would benefit by decommissioning, one would retain an existing road that is in Wilderness, but with restrict access to the Grazing permittee.	use only, which would limit vehicular use and associated damage (and would also provide more quiet, scenic settings for visitors who seek non-motorized settings). • Eliminating 300-foot camping corridors on Mt. Lemmon and in Happy Valley, which would reduce vegetation damage and compacted soils resulting from off-road vehicle use and dispersed camping. The CAT alternative would result in two fewer public roads in VQO Retention than the Proposed Action: The existing fuel break near Charouleau Gap (#736-3.25L-1) would be restricted (instead of Open Authorized) and Road #371-16.10R-1 in Redington Pass would be decommissioned, which would result in fewer impacts to scenery than the proposed action
Minerals	Continuation of the current road system would not remove legal access to any current or proposed claim or mining operation.	The proposed action would remove the 4451 road that would impact the Oracle Ridge Mine by removing access to the mine's settling pond. The forest Geologist recommends removing	The CAT alternative would also decommission the 4451 road and therefore affect mining operations for the Oracle Ridge Mine. The forest Geologist recommends removing the 4451 road segment from the CAT

		the 4451 road segment from the PA and adding it to the Mining permit that is currently in preparation.	Alternative and adding it to the Mining permit that is currently in preparation.
Socioeconomic Resources	The no action alternative would continue to support approximately 91 jobs and $3.1 million in labor income associated with motorized recreation on the Coronado NF. The majority of recreation-related employment (approximately 400 jobs) would continue to be supported by non-motorized recreation on the forest.	The proposed action would slightly reduce motorized opportunities on the SCRD. This change would not measurably affect employment; however, it may have a minor effect on labor income. Assuming a linear relationship between motorized recreationist spending and miles of road and trails, labor income may decrease by approximately $6,000 (approximately 0.2 percent of labor income resulting from motorized recreation on the forest). However, substitute behavior is likely to minimize the potential economic consequences.	The CAT alternative would reduce motorized opportunities on the SCRD by approximately 8 miles. This change would not measurably affect employment; however, it may have a minor effect on labor income. Assuming a linear relationship between motorized recreationist spending and miles of road and trails, labor income may decrease by approximately $11,500 (approximately 0.4 percent of labor income resulting from motorized recreation on the forest). However, substitute behavior is likely to minimize the potential economic consequences.
Range Management	Grazing permittee access to manage allotments is provided using a combination of NFSR's and other access needs identified in their Term Grazing Permits. Access needs other than the designated system, will be spelled out either as a special provision in Part 3 of the Term Grazing Permit, or	Proposed changes to the Road system will not impact grazing operations since specific access needs are addressed directly in the term grazing permit, or AMP, or the AOI. Implementation of the proposed action will not affect allotment management on the SCRD.	The CAT alternative to Proposed changes to the Road system will not impact grazing operations since specific access needs are addressed directly in the term grazing permit, or AMP, or AOI. Implementation of the CAT Alternative will not affect allotment management on the SCRD.

	within the Allotment Management Plan (AMP) itself, or within the Annual Operating Instructions (AOI).		

Chapter 3 – Environmental Consequences

This chapter describes the characteristics of natural and human resources on the Santa Catalina Ranger District (SCRD) potentially affected by the preferred alternative. It discloses the impacts that would result from either taking no action or implementing the preferred alternative. Following the description of the affected resource, the potential for direct, indirect, and cumulative impacts on are discussed.

Project areas that would not be affected by the alternatives are any Wilderness Study Area, National Recreation Area, or Research Natural Area. Thus, the preferred alternative has no potential to affect these resources, and they are not discussed further in this chapter.

For the cumulative effects analysis, the impacts of the alternatives were considered additively with the known or potential impacts of other past, present, and future actions on the SCRD, which are identified in Table 3-1.

Table 3-1. Past, present, and reasonably foreseeable actions considered in the cumulative effects analysis of proposed changes to the motorized travel system on the Santa Catalina Ranger District, Coronado National Forest.

PROJECT	YEAR	AFFECTED AREA	AFFECTED RESOURCES/ISSUES
Fuelwood harvest for mining	1880 to 1940	District-wide	Soils, vegetation, wildlife habitat/ decreased sustainability, loss of biodiversity, decreased soil fertility, deforestation
Forest regulated harvests: fuelwood and forest products (e.g., mushrooms, berries) (40% slope or less)	1940 through future	Up to 10,000 acres	Soils, vegetation, wildlife habitat/ decreased sustainability, loss of biodiversity, loss of soil fertility, deforestation
Grazing	1906 through future	187, 345 acres	Soils, water, vegetation, habitat/increased erosion and sedimentation; loss ofsoil fertility, decreased sustainability, loss of biodiversity
Oracle Hill wildland fire	2002	2396 acres	Air quality, vegetation, soils, water, habitat/loss of terrestrial habitat, aquatic habitat degradation, increased erosion and sedimentation, short-term degraded air quality, loss of wildlife

Table 3-1. Past, present, and reasonably foreseeable actions considered in the cumulative effects analysis of proposed changes to the motorized travel system on the Santa Catalina Ranger District, Coronado National Forest.

PROJECT	YEAR	AFFECTED AREA	AFFECTED RESOURCES/ISSUES
Aspen wildland fire	2003	84, 750 acres	Same as above
Bullock wildland fire	2002	30, 753 acres	Same as above
Vegetation management (thinning, prescribed fire)	1970s through future	about 50,000 acres	Vegetation, air quality, habitat/improved Forest health and vigor; improved wildlife habitat, short-term degraded air quality
Catalina Rincon Firescape – Fire Adapted Ecosystem Restoration Project	Future. 10 year decision targeted for 2015	265,000 acres	Vegetation, air quality, habitat/improved Forest health and vigor; improved wildlife habitat, short-term degraded air quality
OHV and other motorized recreation, including use of unauthorized roads	1960s through future	244 miles road and 5 miles motorized trails	Air quality, scenic resources, vegetation, heritage, water, soils, habitat/exhaust and fugitive dust emissions, noise, damage or loss of vegetation, damaged heritage resources, increased erosion and sedimentation, soil compaction and erosion, loss of habitat and scenic quality
Maintenance, NFS roads	1920 through future	244.3 miles	Air quality, ambiance/short-term dust and exhaust emissions, noise, and disruption of ambiance and use
Maintenance, developed recreation sites	1960 through future	10 acres	Same as above
Maintenance, hiking trails	Ongoing	30 miles/yr (262 miles total)	Air quality, recreation/short-term disruption of recreational use, short-term dust emissions
Mining (production) Including Oracle Ridge Mine and Korn Kobb Mine	1880 through present	District-wide	Air quality, scenic resources, vegetation, water, soils, habitat/fugitive dust, airborne contaminants, noise, loss of vegetation and habitat, increased erosion, wildlife displacement, contaminated runoff to streams and groundwater
Rosemont Copper Mine	Future	Saguaro National	Impacts to class 1 airshed in the Rincon

Table 3-1. Past, present, and reasonably foreseeable actions considered in the cumulative effects analysis of proposed changes to the motorized travel system on the Santa Catalina Ranger District, Coronado National Forest.			
PROJECT	**YEAR**	**AFFECTED AREA**	**AFFECTED RESOURCES/ISSUES**
		Rincon Mtn. Wilderness	Mountain Wilderness
Rural and urban development	1880 through future	Off-Forest	Soils, air quality, water, scenic quality, vegetation, habitat/decreased sustainability, loss of habitat, short-term air quality degradation, increase erosion and sedimentation, wildife displacement
Oracle Hill Restoration Project	Ongoing	19,000	Ecosystem restoration project designed to reduce fuels near the Town fo Oracle, restore wildlife habitat, and restore watershed funmctio n allowing for a more natural disturbance regime
Catalina-Rincon Firescape	Planned	District-wide	District ecological restoration project designed to restore more natural fire regimes, reduce fuels, and improve ecological resiliancy. Project will be implementd over a twenty year period as funding allows.
Occupancy and operation of facilties under special-use permits:	Ongoing	(acres)	
Communication Sites		10.98	Land use
Pima County Department of Transportation Easement		443.31	
		194.18	Land use, effects of road maintenance
Utility Company Right-of-Way		4.2	Land use
Historic Structure		39.2	
Organization Camps		15.02	None
Permanent Residences		45.57	Land use
Recreation Residences		30.	Land use
Ski Valley Recreation Area		10.	Land use

Table 3-1. Past, present, and reasonably foreseeable actions considered in the cumulative effects analysis of proposed changes to the motorized travel system on the Santa Catalina Ranger District, Coronado National Forest.			
PROJECT	**YEAR**	**AFFECTED AREA**	**AFFECTED RESOURCES/ISSUES**
Pima County Solid Waste Disposal Site Tramway Steward Observatory (University of Arizona) Warehouse and Storage Yard Water Systems Water Pipelines		 2. 50.26 8.34 4.09 4.51	Land use Land use, potential soil and water contamination, noise Land use, noise Scenic quality, land use Scenic quality, land use, noise Land use Land use

TRANSPORTATION SYSTEM

Affected Environment

The SCRD currently manages 252.53 miles of NFSRs as *open* for motor vehicle use as depicted on the MVUM. The TAP identified 10.8 miles of NFSRs as *restricted to administrative or permitted* use only, 20.8 miles of NFSRs as *closed* to all motor vehicle use for a total system mileage of 283.7. Additionally there are 5.0 miles of Motorized Trails (see table 3-1 and figure 3-1). As shown on the 2011 MVUM, motor vehicles may travel up to 300 feet along both sides of all designated NFSRs solely for the purpose of motorized dispersed camping. Motor vehicle use off the designated system is not allowed except as shown on the MVUM, and therefore, is not allowed on any unauthorized road.

Table 3-1. Changes to Santa Catalina Ranger District National Forest System roads (miles)			
Designation	**No Action: current**	**Changes proposed**	**Preferred alternative:**

	system		resulting system
Open to motor vehicle use	252.53	+5.08[10] -2.01 -12.23	243.37
Restricted to administrative use	10.8	+12.23	23.03
Closed to all motor vehicle use	20.8	+2.01	21.9
Total NFSRs	283.7	+.05	287.75
Motorized Trail	5.0	n/a	5.0
300-ft camping corridor on open NFSRs only	252.53	-36.0 -2.01	214.52

[10] No corridor proposed on these 5.32 miles.

Environmental Effects

No Action

If no action is taken, proposed road additions, decommissioning, and elimination of 25.32 miles of motorized dispersed camping corridor, would not occur. No changes would be made to the SCRD motorized travel system 2014. The MVUM would depict the SCRD's motorized travel system as it currently exists. If no action is taken, the SCRD would continue to have 252.53 miles of roads open to the public for motorized use. SCRD road maintenance costs would not change unless they are affected by other variables.

Preferred alternative

The total number of NSFRs on the SCRD that are open to the public for motorized travel would decrease by 5.14 miles, which is about 2% below the current SCRD road inventory. Because 12.23 miles of NFSR's would be decommissioned, and 5.08 would be added as "open to all vehicles" and 9.29 would be added as "restricted for administrative purposes only", the net change in the system would be to add 16.38 most of which would be for administrative use only. The total system, including open, closed, and administrative use only would be 300.51 miles, an increase of 5.7 percent consisting mostly of restricted use roads. The net change to open authorized use for high clearance and passenger vehicles would be a decrease of 5.14 miles or about 2%.

If the preferred alternative is implemented, the Forest routine maintenance cost would slightly decrease since there is a slight decrease in roads open to the public. Maintenance costs would further decrease since 12.23 miles would be changed to "restricted" or "permittee use only". In most cases, these roads would be maintained less frequently, on an as-needed basis and often the cost would be covered by the permittee.

There would be a decrease of 36 miles of existing camping corridors. This represents approximately 2,700 acres of land.

Cumulative Effects

The existing system was created by many past actions over many decades. For the purposes of this document, cumulative effects to the road system are considered those effects that have or will occur within the SCRD Boundary. Past activities listed in the table above such as mining, grazing, fuelwood harvest, and recreational developments have had the greatest effect on the road system by creating new routes to provide access for forest or rangeland management activities.

Similarly, special area designations on the SCRD such as Wilderness areas, roadless areas, and Research Natural Areas have affected the road system by identifying areas where new roads will not be constructed. As identified in the TAP, unauthorized user-created roads have also contributed cumulative effects to the road system by creating access points into sensitive areas that would be avoided by proper forest road planning and management. The forest plan amendment in August 2010 deleted language that was not consistent with TMR and resulted in the publication of the 2011 MVUM which displays the designated system where motor vehicle use may occur. The preferred alternative is consistent with the Forest Plan amendment and Travel Management rule and therefore will not contribute adversely to cumulative effects on the road system of the SCRD. Future travel management actions can be proposed as if the need is identified through ongoing monitoring of effects of these current changes.

Recreation

Introduction

This section focuses on the impact of changes to motorized use on the SCRD to those who depend on or prefer access and recreation in areas not accessible by main routes. In some instances, designation of motorized use or access would result in a positive impact on some forest users, while this same change may result in a negative impact to other forest users with different preferences (Albritton and Stein 2007). Since visitor satisfaction is largely perception-based, this analysis focuses on how changes in motorized use will affect two main elements that are integral to the experience of forest visitors: motorized recreation opportunities and user conflict.

Regulatory Framework

Forest Plan Direction

The current Coronado National Forest Land and Resource Management Plan (Forest Plan) states: “use of motorized vehicles is restricted to existing trails and roads. Some trails may be closed to motorized vehicles for safety, resource protection, and user conflict reasons.” (USDA Forest Service 1986) The Forest Plan does not specify any motorized “areas” as defined in the Travel Management Rule however; it does have three designations with associated guidelines pertaining to motorized travel with designations shown on the ORV map:

1) “Closed to all motorized travel.

- Guidelines: Closed to all motorized vehicles at all times, except those uses authorized by law, permits, and orders in connection with resource management and public safety.

2) Restricted. Generally closed to all cross-country motorized travel. Roads and trails open to travel are designated.

   - Guidelines: Closed to cross-country travel by all motorized vehicles except those uses authorized by law, permits, and orders in connection with resource management and public safety.

   - All roads and trails open to motorized travel are signed. Vehicles may pull off roads or trails up to 300 feet for parking or camping

3) Restricted. Generally closed to all cross-country motorized travel. Roads open to travel are designated. All trails are closed to motorized travel.

   - Guidelines: Closed to cross-country travel by all motorized vehicles except those uses authorized by laws, permits, and orders in connection with resource management and public safety.

   - All roads open to motorized travel are signed. Vehicles may pull off roads or trails up to 300 feet for parking or camping." (USDA Forest Service 1986) (Forest Plan p. 28)

The Forest Plan divides the forest into Management Areas with the proposed changes to the road system occurring primarily in Management Areas 1, 2,3, 4, and 7.

- "Management Area (MA) 1: Manage for visual resources and semi-primitive dispersed recreation opportunities including those related to wildlife (Forest Plan p 47)

- Management Area 2: Manage for dispersed recreation opportunities such as electronic sites and observatories and saw-timber and fuel wood harvest will be done to enhance recreation, visual quality, and wildlife values. Watershed conditions will be maintained or improved. (Forest Plan p 50)

- Management Area 3: Manage for a variety of dispersed recreation opportunities while protecting or maintaining the unique physical, biological and cultural resources (Forest Plan p55)

- Management Area 4: Manage for sustained harvest or livestock forage and fuelwood while maintaining and improving game animal habitat…..Dispersed recreation activities may occur except for those that adversely the productivity of the land or resources (Forest Plan p62)

- Management Area 7: Manage to perpetuate the unique wildlife or vegetative species…….Dispersed recreation activities and other uses may be allowed to the extent they do not degrade the unique values." (Forest Plan p67)

Recreation Opportunity Spectrum

The Forest manages for a multitude of recreational experiences by designating areas according to the recreation opportunity spectrum (ROS) within Management Areas. The recreation opportunity spectrum addresses the appropriateness, frequency and duration of human sounds and sights in discretely defined settings. ROS classifications are based on the magnitude and nature of this human influence. Within the ROS setting, there are several classifications that apply to the SCRD: primitive, semi-primitive non-motorized, semi-primitive motorized, roaded modified, roaded natural, rural, and urban and are described as follows:

Semi-Primitive Non-Motorized (SPNM) – Characterized by few and/or subtle modifications by people, and with a high probability of isolation from the sights and sounds of people.

Semi-Primitive Motorized (SPM) – Characterized by moderately dominant alterations by people, with strong evidence of primitive roads or trails.

Primitive (P) - Characterized by an unmodified natural environment with some evidence of trails. Motorized use is prohibited.

Roaded Natural (RN) – Characterized by a predominantly natural environment with evidence of moderate permanent resource use. Evidence of sights and sounds of people is moderate, but in harmony with the natural environment. Opportunity exists for both social interaction and moderate isolation from sights and sounds of people.

Roaded Modified (RM) – Characterized by substantially modified motorized settings in which the sights and sounds of humans are readily evident. Recreation experiences in these areas often depend on vehicular access off the primary routes via secondary roads.

Rural (R) - Characterized by a substantially modified natural environment to the point that developments are dominant to the sensitive observer.

Urban (U) – Characterized by areas of concentrated use and areas where facilities dominate the natural setting.

The purpose of the ROS is to identify different parts of the SCRD to facilitate different recreational experiences. Since non-motorized users may experience a decrease in recreational benefits due to the

sights and sounds of motorized users, road access is one of the driving factors that would result in conflict with providing a non-motorized recreation experience. The ROS represents management objectives and not actual user experience. Based on the increase in motorized use over the past several decades, the opportunity for semi-primitive non-motorized experiences has decreased, whereas the opportunities for semi-primitive motorized opportunities have increased at its expense.

Within the Forest Plan, ROS is designated by Management Area as indicated below:

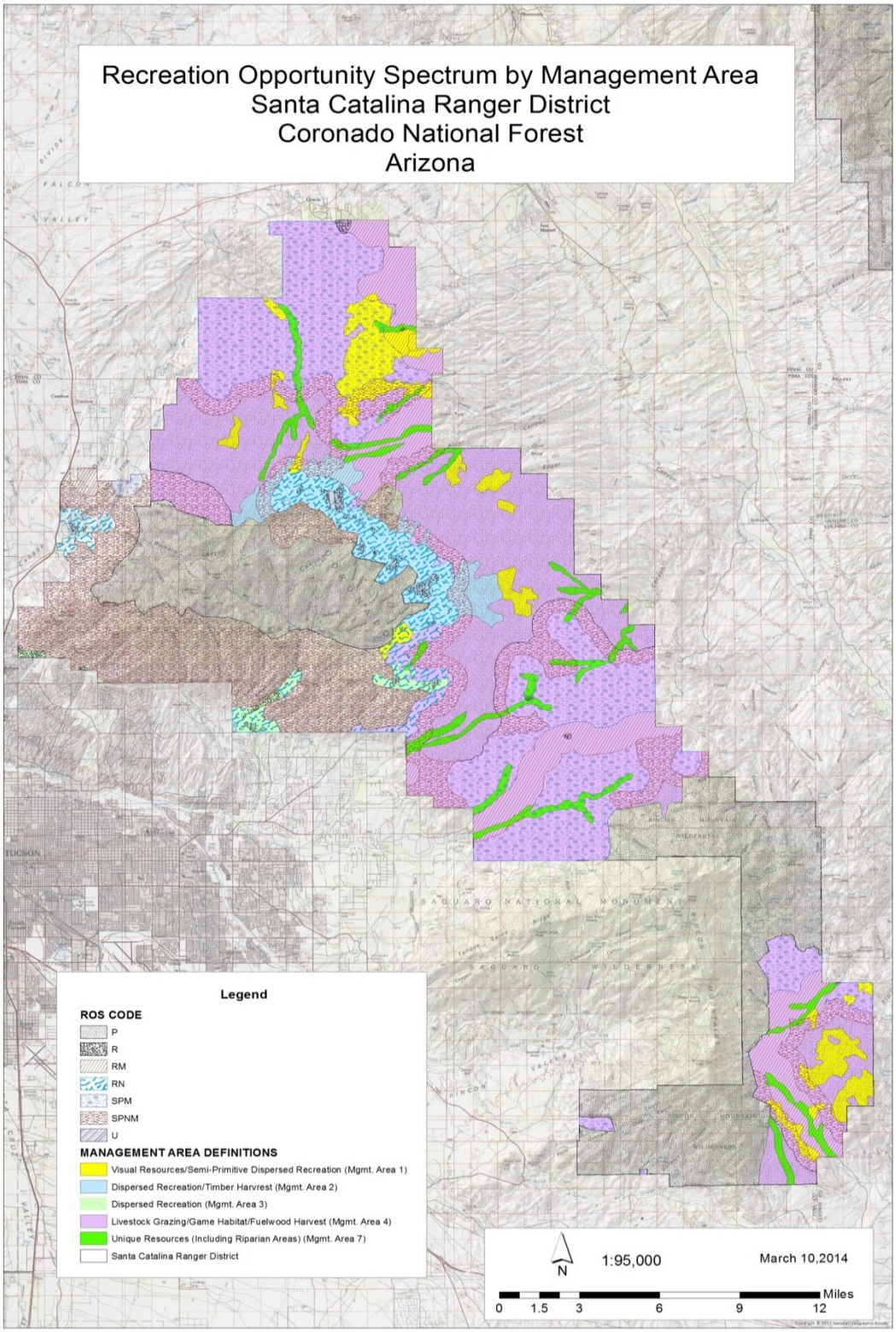
- "Management Area 1: Emphasize semi-primitive motorized and semi-primitive non-motorized recreation opportunities. When roads are no longer needed, close them in order to create more opportunities for semi-primitive non-motorized or primitive experiences. (Forest Plan p 47)

- Management Area 3: Maintain current Roaded Natural (RN) recreation opportunities while creating increased semi-primitive non-motorized opportunities when possible by closing roads which are determined to be unneeded. (Forest Plan p 55)

- Management Area 4: Maintain existing ROS class composition [Figure 3-1 below], except if any existing roads are determined to be unneeded, close them to create more opportunities for semi-primitive non-motorized or primitive experiences. (Forest Plan p 62)

- Management Area 7: Maintain current Roaded Natural (RN) recreation opportunities while creating increased semi-primitive non-motorized opportunities when possible by closing roads which are determined to be unneeded, and creating temporary roads only for resource utilization projects." (Forest Plan p 67) (USDA Forest Service 1986)

Figure 3-1. Current ROS designations for each management area associated with this analysis


Recreation Opportunity Spectrum by Management Area
Santa Catalina Ranger District
Coronado National Forest
Arizona
Legend
ROS CODE
P
R
RM
RN
SPM
SPNM
U
MANAGEMENT AREA DEFINITIONS
Visual Resources/Semi-Primitive Dispersed Recreation (Mgmt. Area 1)
Dispersed Recreation/Timber Harvrest (Mgmt. Area 2)
Dispersed Recreation (Mgmt. Area 3)
Livestock Grazing/Game Habitat/Fuelwood Harvest (Mgmt. Area 4)
Unique Resources (Including Riparian Areas) (Mgmt. Area 7)
Santa Catalina Ranger District
N
1:95,000
March 10,2014
Miles
0 1.5 3 6 9 12

F

Affected Environment

Nature, scenery , and accessibility are the primary attractions to recreationists of the SCRD which includes a system of designated roads and trails, developed campgrounds, picnic and day use sites, a small fishing lake, two visitor centers, recreational residences, and a ski area. Various electronic communication sites, astrophysical facilities, and administrative structures are also present. Recreation resources in the lower to mid-elevation are used year-round and offer an opportunity for a variety of outdoor activities including hiking, biking, equestrian use, hunting, scenic driving, dispersed camping, four-wheel driving, and motorcycle and ATV riding. The Catalina Highway provides access to higher elevations sites where visitors can camp, hike, and picnic away from the summer heat and enjoy winter sports and activities.

General Recreation Trends

Over the last several decades the number of people participating in outdoor activities has been increasing. Between 2000 and 2007, the number of people participating in outdoor activities throughout the nation increased by 4.4 percent (Cordell 2008).

Based on the *Arizona Trails 2010 Plan*, OHV users represent almost 22% of the Arizona population which includes residents who use motorized vehicles on trails for multiple purposes. Of that calculation, 11% of Arizona residents reported that motorized trail use accounted for the majority of their time and are considered 'core users' (Arizona State Parks 2013).

Recreation Trends on Forest and SCRD

Recreation use of the Forest has grown rapidly over the last two decades and commensurate with the growth of the population in the southwest region. Data collected from 2007 shows that the Forest receives almost 3 million visitors annually (USDA Forest Service 2007). Almost half of these visits are to developed parts of the Forest (such as campgrounds and highly developed day use areas). SCRD follows the Forest trends with a majority of visitation occurring in Sabino Canyon; Mt. Lemmon developed sites, and Rose Canyon Lake. Visitors to these sites depend on access via main roads and therefore would not be affected by changes made in the SCRD Travel Management EA decision and won't be discussed further.

Access to and within the district will likely define the location, experience, and opportunities for those who visit the district. Almost all activities one could pursue include driving on forest roads. Whether it is to access a trailhead or dispersed camp site, collect firewood, or just pleasure driving, motor vehicle use generally has a major influence on where and how the public uses public land. Different uses, however, vary in their dependence on forest roads and differ in the type of road being used.

As a result of the different types of uses on the Forest, demand for motor vehicle use can be categorized between those uses that almost entirely depend on main forest routes (maintenance level 3 and 4) and those activities that are more likely to depend on back-country (maintenance level 2). For purposes of this analysis, we assumed that activities including fishing, camping, hiking, viewing natural features and other common recreational activities would primarily depend on major forest roads for access to trailheads, campgrounds, campsites, and other developed recreational opportunities. We also assumed that OHV use primarily depends on less maintained roads and unauthorized roads but also uses main Forest roads to access these areas.

The 2007 National Visitor Use Monitoring survey for the Forest does not represent specific areas of the forest as the results are combined from survey points throughout the forest. It does, however, give a general idea of the recreation interests of forest visitors as a whole and is therefore applicable to use on the SCRD. The following are percentages of survey respondents who reported participating in particular recreation activities (USDA Forest Service 2007).

Activity Participation

Activity	**% Participation***	**%Main Activity‡**	**Avg. Hours Doing Main Activity**
Hiking / Walking	76.4	53.5	2.7
Viewing Natural Features	67.6	8.8	2.6
Viewing Wildlife	65.9	4.4	3.2
Relaxing	47.0	5.0	7.1
Driving for Pleasure	22.8	5.5	2.8
Nature Center Activities	16.9	0.7	1.8
Nature Study	15.9	0.8	2.1
Picnicking	13.2	3.3	3.9
Visiting Historic Sites	8.4	0.5	2.5
Developed Camping	7.3	4.4	30.7

Some Other Activity	7.1	4.5	2.9
OHV Use	4.3	1.0	3.8
Fishing	3.2	2.0	6.6
Hunting	3.1	2.9	12.6
Motorized Trail Activity	3.0	1.2	2.2
Primitive Camping	2.9	0.7	23.5
Gathering Forest Products	2.6	0.2	3.0
Bicycling	1.8	1.0	4.4
Backpacking	0.9	0.1	69.4
Other Non-motorized	0.8	0.2	12.0
Non-motorized Water	0.5	0.0	0.0
Resort Use	0.5	0.0	30.0
Other Motorized Activity	0.4	0.3	1.1
Horseback Riding	0.1	0.0	3.1
No Activity Reported	0.0	0.1	
Snowmobiling	0.0	0.0	0.0
Motorized Water Activities	0.0	0.0	0.0
Downhill Skiing	0.0	0.0	0.0
Cross-country Skiing	0.0	0.0	

* Survey respondents could select multiple activities so this column may total more than

100%.

‡ Survey respondents were asked to select just one of their activities as their main reason for the visit. Some respondents selected more than one, so this column may total more than 100%.

Activity Participation

Visitors to SCRD use motorized vehicles for many reasons including access to engage in various popular activities. The primary activities that account for most of the motorized use of the district are discussed below.

Non-Motorized Recreation Opportunities

Of the 260,000 acre SCRD, 96,523 acres are closed to all motorized travel. These areas include the Pusch Ridge and Rincon Mountain Wilderness areas, the Santa Catalina Research Natural Area (RNA) and the Butterfly Peak RNA. Additionally, Sabino Canyon Recreation area excludes private motor vehicles and accounts for an additional 1,422 acres. The remaining 157,112, acres encompass rough terrain, much of which is inaccessible by motor vehicles resulting in many places where roads do not exist and recreation is limited to non-motorized activities. Popular non-motorized activities include hiking, trail running, backpacking, and rock-climbing, mountain biking, viewing wildlife, and viewing natural features. The Arizona National Scenic Trail prominently traverses the SCRD. It is an 820 mile non-motorized trail that bisects Arizona from Mexico to Utah. The Arizona Trail is intended to be a primitive, long distance trail that highlights the state's topographic, biologic, historic and cultural diversity.

Wilderness

There are three roads that exist within the Rincon Mountain Wilderness and predate the wilderness designation. One is located in the Charles Dam area and access is restricted by a locked gate for the existing Range permittee to access his grazing improvements. The second road, called Hidden Spring, also allows for an existing Range permittee to access grazing improvements. The third road, 4307-0.05R-1, is an unauthorized route located in the Miller Creek area of Happy Valley which is a popular dispersed camping area. This route is currently blocked by fencing and large boulders with signage prohibiting all motorized access into the wilderness but is still clearly visible to forest users.

Through this analysis the preferred alternative would classify the unauthorized road to Hidden Spring as NFSR-Restricted. This would maintain access to the cattle allotment improvements, but prevent frequent public motorized travel that could interfere with the wilderness experience. The road to Charles Dam and a portion of route 4307-0.05R-1 that extends into the wilderness would be classified as decommissioned and removed from the current MVUM. The first 750 feet of the 4307-0.05R-1 route adjacent to the wilderness but not in the wilderness would be added as a NFSR to maintain accessibility for dispersed camping.

The 1967 Wilderness Act prohibits the use of motorized or mechanical transport or equipment in designated wilderness areas. As a result, the wilderness areas within the SCRD are outside the project analysis area and therefore will not be discussed further except as identified for the three roads above.

Hunting

Most hunting occurs in the fall when the majority of deer hunts are permitted. Generally, these hunts result in motorized use after Labor Day with regular hunter traffic increasing in the months of October, November, and December. The district lies within Arizona Game and Fish Department (AGFD) Game Management Unit 33 where approximately 1200-1400 deer (whitetail and mule) permits are available during the general hunt (Arizona Game and Fish, 2009/10). This does not include archery, muzzle-loader, junior or CHAMP hunts. While hunting has traditionally been a non-motorized activity, the reality today is that vehicles including OHV's play a larger part in the activity.

The annual influx of hunters in the fall creates a sudden increase in demand for motorized access, and for dispersed camping locations that are accessed by National Forest System (NFS) roads. The district's road system makes it possible for hunters to disperse away from the areas near Tucson that receive the heaviest recreation use. Although game retrieval is a potential source for the creation of unauthorized routes, the Forest Plan currently prohibits motorized use off designated routes (for more than 300 feet) and does not support populations of large game such as elk.

Dispersed Camping

Forests in the Southwestern Region receive some of the highest dispersed use in the nation (English 2009), likely due to the open vegetation and year-round sun. From simple car-camping with tents, to overnight camping with larger vehicles such as motor homes, or "RVs", camping outside of developed campgrounds in areas without amenities is desirable for many people, and the demand for this type of motor-based recreational use is approximately equal to those that prefer camping in developed campgrounds (USDA Forest Service 2009). This type of camping experience is sought in many places, including along roads in remote locations, near creeks, or in quiet and secluded parts of the forest.

Many dispersed campsites are located in prime camping areas with good views, near water, or in shaded riparian areas. Many of the sites have been used for a long time, since they were established generations ago and are used again and again by succeeding generations of campers. With overall increases in use, and with some sites losing their attractiveness due to overuse, lack of maintenance, loss of vegetation and cover, new sites are sought in other areas, with new roads established to reach the new camping areas. At the same time, older areas are expanded.

During hunting season and on certain holidays every available dispersed camping spot will be occupied along some forest roads, such as Happy Valley Road in the south Rincon Mountains. In much of the SCRD, locations where visitors can pull off the road to camp are limited by terrain, vegetation and rockiness. These natural features frequently keep resource damage at campsites from spreading. Frequently used motorized dispersed campsites, where evidence of camping such as fire rings can be seen, are usually readily identifiable. Existing sites are apparent to the casual Forest visitor and are likely to continue to be "found" and used by future campers. There are several of these frequently used sites along FS road 35 in Ash and Paige Creek of Happy Valley that are receiving unacceptable resource damage to culturally rich and riparian sensitive habitat. Other dispersed campsites, however, along more remote roads, are only occupied during hunting season and may not be obvious at other times of the year. The demand for opportunities for motorized dispersed camping continues to grow.

OHV Use

Today, many individuals and families come to the Forest with their trailers and trucks loaded with all-terrain vehicles (ATVs) for the sole purpose of riding in the forest, enjoying the challenge of riding rough trails and country, and seeing new areas; "relaxing" in the forest. Surveys show that the large majority of ATV users (over 81 percent) on the Forest prefer to ride on existing, well-defined roads; not off-road (USDA Forest Service 1999). These same surveys, however, show that most users are generally unfamiliar with ATV rules and requirements on the Forest (USDA Forest Service 1999). As a result, ATV use on the Forest often results in impacts such as rutting and loss of vegetation, noise affecting other users and property owners, or impacts to wildlife.

The SCRD contains 263 miles of road that are open to the public.**??** The majority of the district's motorized transportation system can be organized into several geographic areas: Redington Pass, Charouleau Gap, Happy Valley, Oracle, and routes accessing campgrounds and picnic sites predominately associated with Mt. Lemmon. Redington Road and Happy Valley Road are some of the more popular routes with traffic use counts at 90,000 and 7,000 respectively in 2008. The Redington area[11] is the most popular OHV area on the district and has a network of motorized trails which are limited to vehicles 50 inches wide or less (ATVs and motorcycles), and rugged (4WD, high ground clearance recommended) ML 2 dirt roads. Motorized recreation opportunity development has been supported by the district and by grants from the State of Arizona for installation of cattle guards, information boards, off-loading ramps, road improvements and publication of an OHV route brochure. FR 4403 which accesses Chimney Rock is located within this area and is a popular mud-bogging spot due to deep clay soil that holds water. Part of this analysis will assess re-routing the road out of this sensitive and rare soil type.

Charouleau Gap, also known as "The Gap", which lies toward the north end of the Santa Catalina Mountains, is another popular four-wheel drive area. The Gap has a history and reputation among four-wheel drive enthusiasts for providing challenging 4-wheel drive experiences. The Forest recently obtained a perpetual easement to secure public access to Charouleau Gap through Arizona State land. Happy

[11] *The use of the word "area", as used in this report, refers to the vicinity and is not used in the context of an "area", as defined by the Travel Management Rule, where off-road driving is permitted.*

Valley located on the southern end of the district is heavily used for dispersed camping. It has a limited road system with no motorized connectivity to the rest of the district.

Some of largest impacts and recreation conflict is observed adjacent to communities where landowners and their children frequently ride on the adjacent SCRD. For example, "hill climbs" exist in the Oracle area accessed off Control Road. These result in substantial and long-term impacts where ATV use causes erosion and loss of vegetation and are frequently associated with user created trails and "constructed features" such as jumps and banked turns that are very visible on the otherwise natural appearing landscape.

OHV recreation is one of the most extensive recreational activities taking place on public and state lands in Arizona and is forecasted to continue to grow at an increasingly rapid rate (Arizona State Parks, 2013).

Conflicts Between Motorized vs. Non-Motorized Recreation

The noise from motorized vehicles is the main source of conflict between motorized and non-motorized recreationists. Noise and dust generated by OHVs and other vehicles disturbs other visitors such as hikers, hunters, bird watchers and campers. Currently, most noise impacts are related to the high-speed use of OHVs, which detracts from the experiences of visitors who seek quiet places to enjoy nature and escape the noise and bustle of the city. Comments received during scoping indicate that people who use the Forest as a refuge from noise find the increasing presence of OHVs over the last decade or more have had a negative impact on their outdoor activities. Noise pollution may have an adverse psychological effect, especially for those visitors who seek remoteness (USDI 1971). Many factors can affect the range and duration of sound disturbance, including terrain, atmospheric conditions, and time of day, temperature and the intensity and frequency of the disturbance (Reed 2008).

The Pusch Ridge and Rincon Mountain Wilderness Areas provide approximately 93,000 acres of roadless areas free from vehicular use and in most cases have minimal noise disturbance. Noise disturbance is most evident in the Redington Pass area because of the co-occurrence of both types of recreation. Increases in ambient noise are most common on weekends and holidays. Roads in Redington Pass have been managed and improved for OHV use.

Except for approximately five miles that was specifically developed for motorized use, trails on the SCRD have been managed for non-motorized recreation only. There are few conflicts between motorized and non-motorized trail-users except where trails are situated near motorized routes and noise can be heard on the trails, where motorized and non-motorized users are using the same trailheads, or when motorized use occurs on hiking trails illegally.

Enforcement Issues

The Travel Analysis Plan documented 32 miles of unauthorized roads on the SCRD. The Forest Plan makes travel on these unauthorized routes illegal. Although the Forest enforces prohibitions with citations by Forest Protection Officers and Law Enforcement Officers and has physically blocked many of these user-created roads, many continue to be driven.

Implementation of the TMR on the SCRD poses several enforcement challenges. Its success depends on the need for the SCRD to provide adequate information to the public in the form of maps, signage, and public outreach, and in turn, for members of the public to take responsibility for their actions and become knowledgeable about the appropriate use of the motorized travel system. It will be the responsibility of Forest visitors to obtain an MVUM and be informed about roads that are open to the public for motorized use.

The SCRD MVUM is provided to the public free of charge and is available at various outlets in the area. Beyond education and information contacts, Forest Protection Officers and Law Enforcement Officers will continue to operate on the SCRD with assistance from local County Sheriffs and the Arizona Game and Fish Department.

Environmental Consequences

No Action

Direct and Indirect Effects

Under this alternative, Forest access would not change as there would be no new additions or restrictions on existing motor vehicle use and system routes. Travel on unauthorized routes, as stated in the Forest Plan, would continue to be illegal.

ROS and Wilderness Character

4.9 miles of unauthorized routes would continue to persist in the Primitive ROS classification (2.2 miles of these routes are proposed to be decommissioned, 2.7 miles are proposed to be added as restricted use). Additionally .65 miles of unauthorized routes would continue to persist in the Semi-Primitive Non-Motorized ROS (these are proposed to be added as restricted use only). Non-system routes in primitive and semi-primitive non-motorized ROS settings could diminish experiences of solitude sought by some user groups who are trying to avoid the sights and sounds of motorized recreation.

The roads to Charles Dam and unauthorized route 4307-0.05R-1 would not be decommissioned and would continue to extend into the Rincon Mountain Wilderness. Wilderness character, as designated in the 1964 Wilderness Act, is defined as a place that is untrammeled by man, undeveloped, natural, and gives opportunity for solitude or primitive and unconfined recreation. The very existence of a road in the wilderness does not lend to any of these wilderness characteristics.

The road to Hidden Spring, which also extends into the Rincon Mountain Wilderness, but predates the wilderness designation and provides access to an active range allotment, would not be added to the system as restricted access only. Access to the range allotment by the permittee would continue, but

general forest visitors may also try to access this route, if unmarked and bring unnecessary motorized use into the wilderness.

Access to Recreational Amenities and Motorized Recreation Sites

5.08 miles of routes identified for addition to the National Forest Road System would not be added and 2.01 miles of roads identified for decommissioning would not be removed from the system. The routes to be added include access routes to popular recreation sites, especially to popular dispersed camping sites that are already in use. Not adding these routes to the system would not allow the Forest Service the ability to maintain and manage them and prevent them from encroaching into potentially sensitive cultural and wildlife habitat. User conflict may also increase by overuse of existing system routes in these areas. Conversely, if several of these routes are not decommissioned, as proposed, damage to sensitive cultural and wildlife resources could occur and indirectly diminish the recreational value of the area. Hunting and OHV access would remain the same under the no action alternative.

Dispersed Camping

Under the no action alternative the 300 ft. camping corridor will continue to be available for 36.0 miles of SCRD roads or about 2700 acres. This could contribute to further damage to sensitive cultural sites and riparian habitat where overuse is occurring along NFSR 35 in Ash and Paige Creek and indirectly diminish visual recreational value.

Additionally, on certain roads at the higher elevations of the Santa Catalina Mountains, users could have a diminished experience for developed forest campground use if dispersed camping is allowed to continue there. Dispersed camping directly adjacent to developed campgrounds is inappropriate as overuse and overcrowding of these popular sites can lead to a negative experience for all. Dispersed motorized camping adjacent to the Arizona National Scenic Trail may also be incompatible to the intended primitive hiking experience it was created for.

Overall, an area of 2,700 acres could be continuously impacted by frequenting dispersed camping. In these areas off-road travel could still occur in portions of the sensitive riparian areas associated with both Ash and Paige Creek within the 300-ft. corridor of designated routes.

The no-action alternative would keep opportunities for motorized and non-motorized recreation constant. This alternative would not address current and future levels of user conflict or manage resources for increased recreational use.

Cumulative Effects

With increasing populations of surrounding communities, it is expected that demand for developed and dispersed recreation will continue to increase. Coupled with diminished private land nature-based recreational opportunities due to increased development and the increased potential for catastrophic wildfires on forest land that may displace forest recreationists into concentrated areas, it is expected that

many of our existing recreation areas will continue to be heavily used. Many surrounding land management districts are also undergoing travel management analysis that could further limit neighboring recreational opportunities displacing usage onto the SCRD. Subsequent resource damage from overuse can diminish the recreational value of forestland.

Preferred Alternative

Direct and Indirect Effects

The preferred alternative is supported by the Transportation Analysis Plan for the Santa Catalina Ecosystem Management Area, revised February 2009.

ROS and Wilderness Character

The 5.08 miles of existing unauthorized roads proposed for designation as NFSRs are currently being used by the Forest Service, other agencies, special-use permittees, and the public. These roads occur in the Roaded Modified, Roaded Natural, and Semi-Primitive Motorized ROS settings.

If these roads are added to the NFS, ROS classes would be maintained and existing recreational settings would not change. There would still be a broad spectrum of recreation opportunities available to the public and the action would be consistent with Forest Plan direction for managing for and allowing dispersed recreation uses and maintaining current Roaded Natural recreation opportunities. After designation as NSFRs, these roads would be added to the SCRD's road maintenance plan. Future maintenance would improve road quality and visitor access to recreational amenities. The proposed administrative restricted access NFSR to Hidden Spring is within both a primitive ROS setting and the Rincon Mountain Wilderness. This should not change the ROS class for this area, however, because this road has provided access to an administrative range allotment that predates the wilderness and ROS designation of the area. The proposed route addition extends approximately ¾ of a mile into the Rincon Mountain Wilderness.

The Rincon Mountain Wilderness was established in 1984 and regulations state that grazing that occurred prior to designation shall be administered in accordance with section 4(d)(4) of the Wilderness Act and section 108 of Public Law 96-560. Although this route's existence within the wilderness does not lend to any wilderness characteristics such as a place that is untrammeled by man, etc., it will be open to administrative (permitted) use only and used on rare occasions, thus minimizing impacts to wilderness visitors.

The proposed 2.01 miles of routes to be decommissioned should improve the ROS for the SCRD because several routes to be decommissioned are within primitive (roadless) settings. The route to Charles Dam

and spur # 4307-0.05R-1 both extend into the Rincon Mountain Wilderness and are within primitive ROS. Both are proposed decommissioned and this may improve the integrity of primitive recreation use and wilderness character of the area.

Access to Recreational Amenities and Motorized Recreation Sites

The proposed addition of 5.08 existing unauthorized roads to the NFRS, along with decommissioning of 2.01 miles of routes represents an overall net increase of total road miles available to the public as access to recreational amenities and motorized recreation sites. These routes were recommended to be designated NFSRs through interdisciplinary review (TAP) and community collaborative efforts because they provide Forest users with access needed for hunting, OHV travel, hiking and camping access; and provide the Forest Service with administrative and fire management access.

These additions may improve access and opportunities for both motorized and non-motorized recreation on the SCRD; a net positive impact for administrative and visitor users. The 2.01 miles of routes to be decommissioned represents about 0.008% of the total roads open to the public on the SCRD. They include .23 miles of NFSR 625 which hasn't been utilized for years as well as NFSR 4451 (.22 miles) which is located on private land boundary and does not provide recreational access. NFSR 4491 (.27 miles) is an occasionally utilized road that does not have high recreational value. 12.23 miles are proposed to be added NFSR as restricted administrative routes. Many of these routes specifically access range allotment improvements and are not frequently utilized by motorized recreationists with the exception of occasional access for hunters. There is a segment of the population that expressed interest in keeping these routes open to the general public, not just for permitted use. Due to the and sensitivity of resources at some of these sites and integrity of maintaining ROS, the SCRD prefers to limit access to occasional administrative and permitted use rather than potential frequent public use to prevent damage to the natural resources.

Dispersed Camping

The preferred alternative will restrict off-road motorized travel for parking or camping to a distance of 300 ft. on each side of roads in specific areas of the Forest. This will not affect where visitors can camp, but it will limit vehicular access to campsites. This will result in a decrease of approximately 36 miles or 2,700 acres of existing dispersed camping corridors. This action would support the management of recreation in places, such as developed campgrounds and areas along the Arizona National Scenic Trail (ANST), that are not appropriate for dispersed vehicle camping. Although this will impact the flexibility of current dispersed camping opportunities, there is 1.8 miles (a total of nineteen spur roads) that are proposed for addition as NFSRs specifically for dispersed motorized camping access in the area known as Happy Valley and Ash Creek at the south end of the district. These are pre-existing, short spur roads proposed for designation in order to provide vehicular access to dispersed campsites. The actual length and location of each spur road will be determined on the ground and will depend on factors such as the location and number of campsite entry points as well as existing resource impacts, presence of cultural resources, number of previously used dispersed campsites, distance from riparian area, etc. The outstanding scenery and plant life in these areas are valued by forest visitors and comprise an integral part of the area's high-quality recreation setting. Protecting the natural resources in this area by managing where people may drive vehicles to campsites off of NFSR 35, 4307, and 4408 and adding designated

camping spurs could sustain these qualities for the enjoyment of future generations and have a positive long-term effect on recreation values.

It is the SCRD's intent to remove dispersed camping from sensitive natural and cultural areas and designate areas where it is appropriate and can be better managed. Route 29-1.00L-1, near Rice Peak on the north side of the district is schedule to be decommissioned under the preferred alternative. This is also a scenic area that provides a unique dispersed camping opportunity and is fairly popular among climbers and will be a recreational opportunity lost.

Hunting

The preferred alternative is not expected to have a large impact on access to hunting since off route travel is not permitted under the current forest plans and the SCRD does not support big game such as elk. Where hunting may be affected is in access from dispersed camping. The preferred alternative may shift and/or limit dispersed camping opportunities in areas where hunters want to stage campsites.

OHV Use

OHV use may be affected by the preferred alternative in the same way that hunters may be. Some areas of lost or limited opportunity for dispersed camping may cause a concentration of visitation in other areas. Many OHV users utilize dispersed camping areas that may have additional limits in opportunity. Some OHV users may concentrate in developed OHV areas such as Redington Pass or Charouleau Gap, or move to adjacent BLM or state land.

Cumulative Effects

The cumulative effects area that was determined for the recreation analysis in this EA are areas within a 1-hour drive of the district boundaries. This includes the Tucson metro area and the outlying communities such as Oracle, Catalina, Vail, Benson, etc. Secondly, this analysis looked at user conflict resulting from diminishing amounts of motorized recreation opportunities and access for motorized and non-motorized users over the next 10 years.

Recreation of non-motorized and motorized use is expected to grow over the next 10 years as a function of population growth and due to the increasing trend of OHV use and nature-based recreation. This would increase recreation pressure and make it more likely for motorized and non-motorized users to be competing for the same areas.

In addition, recreation pressure may increase in certain areas due to the diminishing amount of private land open to public use and continuing development along National Forest boundaries. For example, the

2000 Renewable Resources Planning Act reported that "the proportion of privately owned forest land open to the public and free of charge has declined from 29 percent in 1979 to 23 percent in 1989 and 15 percent in 1996" (USDA Forest Service 2001). In Pima and Pinal County, residential land area grew by 21 percent and 35 percent respectively (US Census 2000). This would have the effect of adding recreation pressure from motorized and non-motorized uses on the SCRD, which are surrounded by recently developed areas. Additionally, it would also result in more landowners adjacent to or in close proximity to the SCRD that could be impacted by motor vehicle use.

Further compounding this is increased regulation on Arizona State Trust Lands[12] within Pima and Pinal Counties. In addition to the Arizona OHV Decal, a Recreational Permit issued by the Arizona State Land Department is also required for use on State Trust Lands; without a Recreational Permit, use is considered trespass (Arizona State Land 2014). Some users may switch to NFS lands on the SCRD as restrictions and penalties are more lenient (Only the Arizona OHV Decal is required for riding and fines are less if caught without it).

Adjacent ranger districts (Nogales and Sierra Vista) and Globe Ranger District (Tonto National Forest) are in the process of completing their travel management restrictions. Nogales and Sierra Vista Districts have been under the same Forest Plan direction restricting off-road travel. Even though each district will be decommissioning and/or restricting travel on some of their existing system roads, motorized users are not expected to be displaced from these areas to SCRD. Similarly, the Tonto National Forest is expected to complete travel management restrictions within the next 1-3 years. Since the SCRD is anticipated to complete travel management ahead of surrounding districts, some users may travel to other areas in Pinal County off of the SCRD for less restricted riding. This effect will likely be nominal as motorized users will have competing interests associated with further travel time compared to restricted riding.

Rosemont Mine is within the cumulative effects area and it is believed motorized use will be displaced to surrounding public lands areas. The BLM and other areas of the Nogales Ranger District will likely receive the majority of increased motorized use; however, dispersal to the SCRD is also a possibility. Some of that use is likely to disperse to Happy Valley area and Redington Pass especially for visitors originating their travel in the Tucson area. Redington is similar to Rosemont in that there is a high density of roads where long distances off road can be traveled, and the opportunity for loop rides exists. Happy Valley, although less of a motorized-only single use destination, offers comparable camping opportunities relative to shaded flat areas in a scenic setting. Motorized use data is unknown for the Rosemont area and therefore the possible increase in usage and associated effects once the mine develops cannot be quantified.

Large scale vegetation management treatments such as prescribed burning or mechanical treatments and wildfires would have the effect of restricting all recreational uses in some areas for up to 5 years. This

[12] Arizona State Trust Land is not public land (Arizona State Land 2014).

would likely displace motorized and non-motorized recreational activities to surrounding areas including the SCRD.

It is also expected that federal budgets will continue to decline in the next several years which could lead to decreased patrol and compliance, which could increase potential resource damage.

Overall, motorized and non-motorized use is expected to increase on the SCRD over the next 10 years. This may result in increased user conflict among motorized users due to overcrowding due to the cumulative restrictions throughout the geographic region. This overcrowding due to the cumulative effects of the aforementioned loss of access and restrictions, could affect those that are most restricted by this alternative: dispersed car campers and OHV users. During the next 10 year period, however, every national forest and surrounding public lands (including Bureau of Land Management) would have published maps that show where motorized use is allowed, and the likelihood of conflict between those seeking motorized recreation experiences and those seeking non-motorized recreation experiences could be minimized.

Mitigation

- Existing routes that are added to NFRS should be maintained to standard with sufficient erosion control features to prevent deterioration.
- Routes should be signed so they can be easily identified as legal to drive on.
- Spur roads designated for dispersed camping access may need physical barricades of rock or other natural material defining their boundary so they do not lead to expansion and degradation of dispersed sites.
- Where eliminating the 300-foot off-road travel for dispersed camping, signs and/or physical barriers may be necessary.

Inventoried Roadless Areas

Regulatory Framework

Inventoried Roadless Areas (IRA's) refer to those areas identified and mapped in accordance with the Roadless Area Conservation Final Rule (the '2001 Roadless Rule').[13] On the SCRD these areas comprise 175,690 acres and include Wilderness, eligible Wild and Scenic Rivers (WSR), and Roadless Areas.

[13] Reference 36 Code of Federal Regulations, Part 294 and 66 Federal Register 3244-3272 (Jan. 12, 2001).

The Roadless Area Conservation Final Environmental Impact Statement (USFS 2000) identified characteristics of these areas. They include high quality soil and water, diversity of plant and animal species, habitat for TEPS species, municipal watersheds, semi-primitive and primitive recreation opportunities, natural appearing landscapes, traditional cultural properties and sacred sites, and other unique or special features.

These characteristics are not necessarily confined to IRA's but may also occur outside of them. But some or all of these characteristics often are the elements that define a particular IRA's unique social or ecological value. The following table summarizes the Inventoried Roadless Areas for the SCRD. As defined by the on-going Forest Plan Revision.

NAME	**Acres**
Oracle Roadless	22,346.12
Lower Rincon Roadless	3,273.20
Middle Romero WSR	59.67
Butterfly Roadless Area	42,248.51
Upper Romero WSR	149.84
Middle Romero WSR	0.32
Upper Rincon Roadless	2,986.89
CDO WSA	1,953.59
Happy Valley Roadless	7,964.91
Pusch Ridge Wilderness	56,827.87
Catalina St. Pk. Roadless Area	950.81
Rincon Wilderness	36,919.47
Lower Romero WSR	9.64
Total:	175,690.84

These areas offer recreation opportunities in the "primitive and semi-primitive" (see "Recreation" section above). IRA's are managed to emphasize their wild, undeveloped character with their natural settings. The presence of unauthorized, user-created roads within IRA's can degrade their unique characteristics.

Affected Environment

There are currently seven unauthorized routes within IRA's. They are: 4447 – 0.49 R1, 4447 – 0.52-R1 through R3, 642-1.18L-1, 642-2.03L-1, 642-2.06L-1.

No Action

The No Action alternative would not decommission unauthorized road segments from within IRA's. Therefore current impacts to the wild and undeveloped character of the Butterfly IRA and the XXX IRA would continue.

Preferred Alternative

The Preferred Alternative would decommission unauthorized road segments listed above that occur within the Butterfly and XXX IRA's. Therefore implementation of this alternative would benefit these IRA's by reducing impacts to the wild and undeveloped character.

Eligible Wild, Scenic, and Recreational Rivers

Regulatory Framework

In 1968 the Wild and Scenic Rivers Act was signed into law. Section 5(d)(1) of the Act directs Federal agencies to consider and evaluate potential WSR's in their planning processes. Both 5(a) and 5(d)(1) studies require determinations to be made regarding the candidate river's eligibility, classification and suitability. Eligibility and classification represent an inventory of existing conditions. Eligibility is an evaluation of whether a candidate river is free-flowing and possesses one or more outstandingly remarkable values (ORVs). If found eligible, a candidate river is analyzed as to its current level of development (water resources projects, shoreline development, and accessibility) and a recommendation is made that it be placed into one or more of three classes—wild, scenic or recreational.

Affected Environment

There are no designated Wild, Scenic, or Recreational rivers on the SCRD. In 1993, all rivers on the Forest were evaluated to determine their eligibility as either "wild", "scenic", or "recreational". This evaluation resulted in six segments on the SCRD being eligible. The table below lists the segments and their eligibility classification.

Table 11: Eligible Wild, Scenic, and Recreational River Segments

Eligible River Segment	Classification	Outstandingly Remarkable Values (ORVs)	Length (miles)	Ecosystem Management Area
Lower Canada del Oro	Recreation	Scenic, wildlife, fish, and historic	3.4	Santa Catalina
Lower Romero Canyon	Recreation	Recreation, wildlife, fish, historic, and cultural	2.2	Santa Catalina
Lower Sabino Creek	Recreation	Scenic, recreation, wildlife, fish, historic, and cultural	3.2	Santa Catalina
Upper Cañada del Oro	Wild	Scenic, wildlife, and fish	6	Santa Catalina
Upper Romero Canyon	Wild	Scenic, recreation, wildlife, fish, and cultural	6.1	Santa Catalina
Upper Sabino Creek	Wild	Scenic, recreation, wildlife, historic, and cultural	8	Santa Catalina

The designation of "Wild" is reserved for river segments that are free of impoundments and the shoreline is essentially primitive. From a travel management perspective, "wild" rivers are inaccessible except by trail.

If a segment is determined to be "scenic" evidence of human activity diminishes over time. Roads may reach or bridge the river.

Recreational rivers are generally readily accessible by road or trail and the transportation system supports interpretation, recreation, and resource management activities.

Environmental Impacts

No action

The no action alternative would not designate or construct any roads within the CDO corridor. Existing NFSR's within the eligible segments of the Lower Canada Del Oro would remain in place. These NFSR's are consistent with management eligible WSR's and so the No Action alternative would not degrade the eligibility of WSR's on the district.

Preferred alternative

The Cat alternative would not construct the 4493 extension but would add the 736-11.03R-1 segment within the eligible Lower Canada del Oro WSR. There would be no potential adverse effects of this alternative since the 0.54 miles of 736-11.03R-1 would not affect the eligibility of the Lower Canada del Oro WSR since management direction states that eligible recreation rivers may include roads to access them.

Cumulative effects

Actions in Table 3-1 above that contribute incremental effects to WSR's in the SCRD include historic mining, historic and on-going grazing, past wildfires, and planned ecological restoration treatments associated with ORERP and Firescape. Of these, the largest effects were contributed by the Aspen fire in 2003. This wildfire greatly affected the watershed and resulted in debris flows, vegetative changes, and sedimentation that changed conditions along the majority of the eligible segments of the CDO. Implementation of either the preferred alternative or the No Action alternative are consistent with management of eligible recreational rivers, therefore neither are expected to contribute adversely to cumulative effects on WSR's on the SCRD so the eligible segments would remain eligible.

Wilderness

Wildlife and Special-Status Species

The following text is based, in part, on the District Biologist's report filed in the administrative record as Item 21.

Regulatory Framework

Federally Listed Species are those that are listed under the authority of the Endangered Species Act of 1973 (ESA)[14] by the U.S. Fish and Wildlife Service (FWS) as threatened and endangered (T and E); those proposed for listing as such, and land or waters that are designated by FWS as critical habitat in the

[14] P. L. 93-205, as amended

proposed area of effect. Section 7 of the ESA requires Federal agencies to ensure that any activities they authorize, fund, or carry out, do not jeopardize the continued existence of any species Federally listed or proposed by the FWS as T and E, or result in the adverse modification to such species' designated critical habitat. Forest Service Manual (FSM) 2670.31 directs each Forest to evaluate its programs and site-specific actions to determine their potential effect on Federally listed species.

Forest Service Sensitive Species (FSSS) are those that are listed by each Regional Forester as "sensitive" for each Region because there is concern for population viability across their range, and all occurrences contribute significantly to the conservation of the species. FSM 2670.32 directs that a biological evaluation be prepared for each preferred alternative to determine potential effects on FSSS. According to FSM 2670.12, the Forest Service is required to avoid actions that may cause a sensitive species to become threatened or endangered. And, FSM 2670.22 requires that populations of all FSSS wildlife, fish, and plants be maintained at viable levels in habitats distributed throughout their geographic range on NFS lands. The viability of populations of FSSS becomes a concern when downward trends in populations or habitat capability are predicted.

Forest Management Indicator Species (MIS) are monitored because they are representative of many other species. As such, they provide a basis for overall Forest management based, in part, on the effects on these species and their habitats.

MIS were identified in each Forest Plan developed under the *1982 Implementing Regulations of the National Forest Management Act (NFMA)*, in which they were used to (1) establish objectives that maintain and improve habitat for MIS, to the degree consistent with overall multiple use objectives, (2) estimate the effects of planning alternatives on fish and wildlife populations, and (3) monitor Forest Plan implementation by using population trends and determining relationships to habitat changes. FSM 2620.5 requires that Forest Plans identify certain vertebrate and/or invertebrate species as MIS and that these species be monitored during Forest Plan implementation "in order to assess the effects of management activities on their populations and the populations of other species with similar habitat needs that they may represent".

MIS selected during the development of each Forest Plan may fall into one or more of the following categories: *threatened or endangered*, *requiring of special habitat needs*, or in *high public demand*. Populations of MIS and their habitats are monitored to observe trends in resources, evaluate management actions, and provide a timely warning of problems or undesirable conditions affecting the resource. The analysis of impacts to MIS as part of the NEPA process contributes to the identification of trends, which may necessitate development of mitigation or new alternatives when a preferred alternative is under consideration.

Affected Environment

General Wildlife Habitat

The proposed changes to the travel management system would result in a minimal change in the total acreage of terrestrial habitat available on the SCRD. There are currently 244.3 miles of authorized roads open to public travel (see Section 1.4). The preferred alternative would to the NFS (see Table 2-1) and

decommission 0.83 miles of NFSRs. This would result in a net increase on the SCRD of 2.74 miles of NFSRs, which is a 1.1 % increase over the current miles of SCRD roads open to motorized travel. This net increase is equivalent to 36.8 acres of potential wildlife habitat[15], or 0.014 % of the total land on the SCRD, and a 0.21% increase in SCRD acreage occupied by roads. Because these unauthorized roads are already traveled by motor vehicles despite their being unauthorized for such, the acres of potential wildlife habitat that they displace have been and would continue to be unavailable. In addition, when these unauthorized roads were created, they fragmented any suitable contiguous terrestrial habitat that was once present.

As part of the preferred alternative, off-road motorized travel to a distance of 300 ft for parking or camping would be prohibited along both sides of 36 miles of roads in specific areas of the SCRD, and 0.83 miles of newly designated roads (see Section 2.2). Therefore, the total miles where off-road motorized travel would continue to be allowed on the SCRD would be 207 miles (244.3 miles total minus 36 miles minus 0.83 decommissioned miles). On 244.3 miles of open roads, there is a potential for 17,767 acres of Forest land (and potential wildlife habitat) to be affected by motorized travel[16] in a 300-ft travel corridor on each side of a road. With the proposed restriction on off-road motorized travel and decommissioning, 15,054 acres of potential habitat may be affected[5]. Thus, as a result of the proposed restriction on off-road motorized travel and decommissioning, 2713 acres of Forest land would no longer be vulnerable to adverse effects caused by off-road motorized travel.

Federally Listed Species

Table 3-4 lists Federally-listed threatened, endangered, and proposed species known to or having the potential to occur within the project area. Of these, the preferred alternative has the potential to only impact the Mexican spotted owl (MSO) and its designated critical habitat, and the lesser long-nosed bat (LLNB), for which critical habitat is not designated. The remaining species listed in the table are not addressed in this EA for one or more of the following reasons: (1) they or their habitat do not occur in or near the proposed project area; (2) potential impacts from the proposed project are totally discountable; and/or (3) information as to the species occurrence or habitat needs is not available.

Table 3-4. Federally listed species on the SCRD.

SPECIES NAME	ENDANGERED SPECIES ACT STATUS	DESIGNATED CRITICAL HABITAT
BIRDS		

[15] 4.05 miles × 75-ft width × 5280 ft/mile ÷ 43,560 sq/ft//acre

[16] 244.3 miles (or 207 miles) × 615-ft width × 5280 ft/mile ÷ 43,560 sq/ft//acre

Table 3-4. Federally listed species on the SCRD.				
Mexican spotted owl				
(*Strix occidentalis lucida*)	**Threatened (T)**	**YES**		
FISH				
Gila topminnow				
(*Poeciliposis occidentalis occidentalis*)	**Endangered (E)**		**NO**	
Gila chub (*Gila intermedia*)	**E**			**YES**
MAMMALS				
Jaguar (*Panthera onca)*	**E**	**NO**		
Jaguarundi				
(*Felis yagouaroundi tolteca*)	**E**	**NO**		
Lesser long-nosed bat				
(*Leptonycteris curasoae yerbabuenae*)	**E**	**NO**		

Environmental Impacts

No Action

The no action alternative would result in retention of the 300 ft camping corridor along NFSR 35 and roads at the top of the Santa Catalina Mountains amounting to about 2,700 acres of potential impacts from cross country travel. While not every acre of these areas could be impacted by cross country travel, certain accessible portions would continue to receive cross country travel. Cross country travel can result in destruction of vegetation and increased soil loss. In sensitive areas such as riparian areas and streams, these impacts can affect a large array of species since water resources are essential to virtually all species of wildlife that occur on the SCRD. Most Federally listed Threatened or Endangered species as well as species on the Forest Service Sensitive Species list and Management Indicator Species require riparian or aquatic habitat at some point in their life cycle. Under the No Action Alternative cross country travel for the purposes of camping would continue to occur along Ash Creek and Paige Creek both of which support riparian and aquatic habitat important to wildlife on the Southeastern portion of the Ranger District. These types of disturbance e could result in impacts to species such as Lowland leopard frog, Common Black Hawk, Northern Gray Hawk, and Least Bell's Vireo. Such continued cross country travel could potentially impact Forest Service Sensitive plant species as well through direct disturbance of individual plants.

Similarly, the Mt Lemmon Highway (MLH) roughly bisects the area of suitable habitat for the Federally listed Threatened Mexican Spotted Owl and its designated Critical Habitat on the SCRD. These higher elevation areas support many MSO Protected Activity Centers (PAC's) as well as recovery habitat necessary for the species to continue to inhabit the mountain range. Under the No Action alternative the 300 ft camping corridor would continue on roads adjacent to the MLH in areas of PAC's and recovery habitat. Potential for impacts to habitat as well as the potential to disturb breeding pairs during the spring and summer breeding season would continue under the no action alternative to such an extent that implementation of the No Action alternative may affect the MSO.

Preferred Alternative

Mexican Spotted Owl (MSO) – Threatened

Status in Project Area

There are 17 MSO Protected Activity Centers (PAC's) in the Santa Catalina Mountains. Only two elements of the preferred Alternative are within a PAC (Butterfly Peak PAC # 0505016). Road segment 625A of 0.32 miles in length is an existing road that is the main access to the Upper Soldier Camp summer homes. It is currently not listed on the system and so the preferred alternative proposes to add this existing road to the system. Conversely, the SCRD road system includes NFSR 625 (0.23 mi in length) is a disused segment not needed for access to these cabins. It is currently not drivable and has been mostly reclaimed by natural vegetation. The preferred alternative proposes to decommission the disused NFSR 625 and replace it with 625A that is the actual access to this summer home site. No on the ground disturbance will occur except to place an obstruction (likely boulders) across 625 outside of the breeding season. No change in human activity will result. Activity in this PAC was monitored from 2002 through 2007 as a part of the District-wide effort. It has been continuously occupied, and successful breeding activity has been documented over the period.

Direct and Indirect Effects on the MSO

Noise and human presence during vehicle travel could possibly disturb foraging and/or hunting owls along roads proposed for addition to the system. However in this case the proposed addition is currently being used by the summer home residence and has been for many decades. Potential effects to this species from the summer homes were previously assessed in 2005 under a separate decision relating to issuance of summer home permits. The addition of the currently used access road to the SCRD road system is essentially an administrative action and will have no effect on the Mexican Spotted Owl.

Decommissioning would likely be limited to placement of boulders outside of the breeding season therefore there will be no disturbance of breeding MSOs or those occupying the Butterfly Peak PAC.

The proposed restrictions on off-road motorized travel in certain areas and decommissioning of three roads would reduce the potential for noise disturbance from vehicles traveling off of certain roads along the Mt Lemmon Highway corridor which bisects the MSO habitat on the mountain. 0 acres of Forest

Indirect effects to the MSO could result from actions that decrease the potential of an area to develop into MSO habitat or its ability to support MSO prey species. The proposed road additions would not encourage the return of affected areas to MSO habitat, but would perpetuate the status quo. While decommissioning of three roads would ultimately restore vegetation in these locations, it will be many years before suitable MSO habitat is available to the species. Similarly, restrictions on off-road motorized travel within 300 ft of certain NFSRs would not encourage the restoration of MSO habitat in the short-term, but with continued restrictions, suitable habitat may be available in the long term.

ESA Determination of Effects: Implementation of the preferred alternative would have *no effect* on the MSO.

MSO Designated Critical Habitat

Status in Project Area

MSO designated critical habitat (DCH) occurs on most of the SCRD. Within the boundary, areas that meet the definition of protected and restricted habitat, as defined in the MSO Recovery Plan, are considered DCH. Following is an excerpt from the BA prepared for the preferred alternative:

"Critical habitat management primarily focuses on the maintenance of habitat features in mixed conifer and pine-oak habitat types that support Mexican spotted owls, and the maintenance of good montane riparian habitat conditions (USDI 2001). The primary constituent elements (PCEs) essential to the conservation of the Mexican spotted owl include those physical and biological features that support nesting, roosting and foraging. Within restricted areas, the PCEs necessary in mixed conifer, pine-oak and riparian forest types include:

1. High basal area of large-diameter trees;
2. Moderate to high canopy closure;
3. Wide range of tree sizes suggestive of uneven-age stands;
4. Multi-layered canopy with large over-story trees of various species;
5. High-snag basal area;
6. High volumes of fallen trees and other woody debris;
7. High plant species richness, including hardwoods; and
8. Adequate levels of residual plant cover to maintain fruits, seeds and regeneration to provide for the needs of Mexican spotted owl prey species."

Direct and Indirect Effects on MSO Critical Habitat

None of the proposed changes to the SCRD travel system would adversely affect MSO DCH because the affected areas are located at elevations that do not support the necessary PCEs of critical habitat.

ESA Determination of Effects: Based on the above discussion, implementation of the preferred alternative would have *no effect* on MSO DCH.

Lesser Long-nosed Bat – Endangered

Status in Project Area

The lesser long-nosed bat (LLNB) was listed as endangered, without critical habitat designation, on September 30, 1988 (53 Federal Register 38456). The species feeds on the nectar and pollen of paniculate agaves, primarily *Agave palmeri,* and the nectar, pollen and fruit of columnar cacti.

The LLNB roosts and forages in suitable habitat on the Forest between July and September each year. Two roost sites have been recently identified on the SCRD, including a fairly large one in the Pusch Ridge Wilderness near Finger Rock, where about 1400 individuals were observed in 2008. Another smaller roost was observed near the western edge of Redington Pass; it supported only 10 bats late in the season. Neither of these roosts is accessible by road. One is located in a designated Wilderness and the other in an isolated, steep canyon at least two miles from the nearest NFSR.

The LLNB has been observed using hummingbird feeders in the town of Summerhaven at the top of the mountain; however, no nearby roosts have been found. Two other roosts are known from outside the Forest boundary; one on National Park Service-managed lands in the Rincon Mountains and another on private lands east of Redington Pass. Potential roost sites occur in the throughout the SCRD in the form of unsurveyed mine adits and caves.

On the SCRD, Sonoran desertscrub supports large numbers of saguaro cacti, and paniculate agaves are distributed in patches throughout the desertscrub, grassland, and encinal communities. Because the LLNB readily flies long distances from roosts to forage, it has been postulated that such low-density, widely dispersed agave populations provide connectivity for bats between and within mountain ranges (USFS 2004). Ober et al (2000) reported commuting distances between LLNB roosts and foraging areas as ranging between 1.7 to 17.5 miles, with an average commute of 11.7 miles. Because agaves are found across the SCRD, all areas of desertscrub, grassland, and encinal communities are considered potential habitat for this plant.

Direct and Indirect Effects on the LLNB

Direct effects to the LLNB could result from the disturbance of known roost sites. Since the observed roosts on the SCRD are not accessible by road, there would be no direct effects from proposed road additions, decommissioning and restriction on off-road motorized travel.

Indirect effects to the species may result from damage to and/or loss of LLNB foraging resources, such as agave and saguaro. Construction of 3.3 miles of by-pass routes would require the use of heavy equipment on a total of approximately 7 acres of land. Best management practices would be implemented to reduce impacts to native vegetation including agaves. The number of agaves potentially disturbed through construction of 7 acres of by-pass routes is expected to be minimal relative to the amount of agaves available on the 265,000 acre district. Incidental disturbance of foraging habitat may occur, but this is not likely to adversely affect overall forage availability on the SCRD.

Restoration of vegetation and prohibited off-road motorized travel on decommissioned roads and limitations on off-road motorized travel in specific areas where sensitive resources and/or adverse effects on vegetation have been documented would encourage the growth of potential foraging resources for the LLNB about 2700 acres of Forest.

ESA Determination of Effects: Because most of the proposed changes occur in LLNB foraging habitat and may cause incidental affects to agaves and/or saguaros, the project *may affect, but is not likely to adversely affect* the lesser long-nosed bat.

Forest Service, Region 3, Sensitive Species

The sensitive species program is designed to assist the Forest Service to maintain biodiversity on forests and grasslands and to help maintain viable populations of existing native and desired non-native species (36 CFR 219.19). Analysis of potential impacts on sensitive species is important to identifying a trend toward their being listed as threatened or endangered by the FWS under the authority of the ESA.

After reviewing the species listed as "sensitive" by the Regional Forester[17] for Region 3, the District Biologist identified those listed in Table 3-5 as FSSS that may occur in the areas of the SCRD where transportation management changes are proposed. Following are species and habitat descriptions, followed by an assessment of potential impacts to each.

Table 3-5. Forest Service, Region 3, sensitive species that occur on the SCRD, Coronado National Forest.

COMMON NAME	SCIENTIFIC NAME
Lowland leopard frog	*Rana yavapaiensis*
Common black hawk	*Buteogallus anthracinus*

[17] Attachment to letter from Regional Forester Harv Forsgren to Region 3 Forest Supervisors and Staff Directors, September 7, 2007.

Northern gray hawk	*Asturina nitida maxima*
Bell's vireo	*Vireo bellii*
Sonoran desert tortoise	*Gopheris agassizii*
Chihuahuan sedge	*Carex chihuahuensis*
Bartram stonecrop	*Graptopetalum bartramii*
Lemmon's morning glory	*Ipomoea tenuiloba* var. *lemmonii*
Wiggin's milkweed vine	*Metastelma mexicanum*
Arizona manihot	*Manihot davisiae*
Sycamore Canyon muhly	*Muhlenbergia xerophila*
Nodding blue-eyed grass	*Sisyrinchium cernuum*
Lemmon's stevia	*Stevia lemmonii*

Lowland Leopard Frog

Status in Project Area

In Arizona, this amphibian typically occupies aquatic habitat in a variety of terrestrial communities, including desert, grassland, oak, and/or oak-pine woodlands, at elevations ranging from 800 to 5500 ft. While it normally prefers streams and springs, the frog may also occupy impounded waters, such as stock tanks. Riparian vegetation may or may not be present at occupied locations. During dry seasons, habitat is restricted to residual pools and wet areas; the frog often survives drought periods in cavities and/or moist vegetation.

This frog's diet consists of mostly small invertebrates and sometimes small vertebrates. Its larvae eat algae, plant tissue, and organic debris. Reproduction occurs in deep pools, generally from February through April, but may also occur during autumn. Major threats to the frog are exotic competitors and predators, such as bullfrogs, sunfish, bass, and crayfish.

In the project area, lowland leopard frogs are known to occur in Tanque Verde Creek drainage in the Redington Pass area. Populations occur in Bullock Canyon, Joaquin Canyon, and Tanque Verde Creek along with a few unnamed tributaries.

Effects on the Species

The primary sources of direct impacts on the lowland leopard frog from projects such as this are direct mortality and damage to aquatic habitat caused by off-road motorized travel in sensitive areas. During dry periods, frog-occupied pools are subject to adverse effects from bank destabilization and loss of hiding cover, and during the rainy season, occupied stream habitat may be affected. In such circumstances, removal of roads through occupied habitat is preferable to seasonal closure since impacts to habitat may occur or direct effects to frogs themselves that are riding out the drought in moist pockets in or near the streambed are possible.

The addition of new roads would not change the present degree of direct impacts to the frog because the proposed by-pass routes are not located within frog habitat. Unauthorized routes to be added are also not located in frog habitat. The preferred alternative would decommission one unauthorized route (4405-10.34R-1) that currently directly impacts occupied lowland leopard frog habitat. Decommissioning of this route would greatly benefit the species by removing direct impacts of vehicles in occupied habitat throughout the year. Roads to be decommissioned are located, for the most part, in steep terrain, which is not frog habitat. Therefore, effects, if any would either remain the same or decrease.

Sources of indirect effects to the frog include human activities that affect the existence of aquatic habitat, none of which are proposed as part of this action.

Restriction on off-road motorized travel in specific areas may reduce direct effects of injury and mortality in suitable frog habitat.

Determination: Overall, implementation of the preferred alternative *would have no impact on the lowland leopard frog and is not likely to lead to a trend toward Federal listing*.

Common Black Hawk

Status in Project Area

The common black hawk is an uncommon summer resident of the area that prefers riparian woodlands dominated by tall cottonwoods and sycamore. Common black hawks require relatively undisturbed habitat with permanent water and tall trees (75 ft or higher) for nesting. According to the Arizona Game and Fish Heritage Data Management System (AGFD 1999), this hawk is dependent on mature, relatively undisturbed habitat supported by a permanent flowing stream. Groves of trees are preferred over single trees. Preferred streams are those less than 1 ft deep, having a low- to moderate-gradient, and many riffles, runs, pools and scattered boulders or lapped with branches. The species eats aquatic organisms such as frogs, crayfish, garter snakes, and toads.

The common black hawk has been observed nesting on the SCRD and throughout the San Pedro watershed. Observations during the breeding season have been made in the Tanque Verde drainage. In the past, Cañada del Oro has offered potential habitat; however, its riparian canopy was reduced by the 2003 Aspen wildland fire, and it will be several years before suitable nesting structure returns.

Effects on the Species: Designation of NFSRs would have no direct or indirect effects on the hawk and its habitat because these roads already exist on the ground and are used by motor vehicles without any observed impacts on the species.

A source of direct effects from the preferred alternative on the common black hawk is the disturbance of nesting birds when human activities, such as barrier placement, occur during road decommissioning. Impacts would be avoided by scheduling such activities outside the hawk's breeding season. In any case, before human activities would begin, surveys would be conducted by a Forest biologist to ensure that no nesting birds are present. Therefore, direct adverse effects to the black hawk are unlikely to result.

A potential source of indirect adverse effects on the species would be a reduction in habitat and/or habitat quality if riparian vegetation is lost and/or pool and riffle habitat is reduced. Such effects have already been identified in the project area by the TAP and attributed to off-road motorized travel in drainage bottoms. Because the preferred alternative would restrict off-road motorized travel in riparian habitat, these indirect effects would be reduced in the project area and benefit the species.

Determination: Overall, implementation of the preferred alternative *would have no impact on the common black hawk and is not likely to lead to a trend toward Federal listing.*

Northern Gray Hawk

Status in Project Area

At the temperate northern extreme of their range, northern gray hawks occur mostly in stands of Sonoran Riparian Deciduous Forest and Woodland and, to a lesser extent, in Madrean Evergreen Woodland along the Arizona-Sonora border (Glinski 1998). They winter in Mexico and South America and begin breeding in southern Arizona in mid-March. Although cottonwood is the favored nesting tree, northern gray hawks have been observed using ash, willow, and oak. The species feeds mostly on reptiles, especially lizards, and also preys on garter snakes, birds, and mammals.

Individuals have been observed along Paige Creek on the east side of the Rincon Mountains. Hawks are also present in the San Pedro River mainstream riparian areas. Potential habitat exists within along portions of the Cañada del Oro, which comprises the southwestern boundary of the project area. There are no records of the species being observed at this location.

Effects on the Species

Designation of NFSRs would have no direct or indirect adverse effects on the gray hawk and its habitat because these roads already exist on the ground and are used by motor vehicles without any observed impacts on the species. The use of proposed NFSRs that provide access to dispersed campsites in the Happy Valley area would reduce the impacts of off-road motorized travel in gray hawk habitat along Paige Creek, where the species breeds, and would benefit the species in the long-term.

A potential source of direct adverse effects on this species would be the disturbance of nesting birds when human activities, such as barrier placement, occur during road decommissioning. Impacts would be avoided by scheduling such activities outside the hawk's breeding season. In any case, before human activities would begin, surveys would be conducted by a Forest biologist to ensure that no nesting birds are present. Therefore, direct adverse effects to the northern gray hawk are unlikely to result.

A source of indirect adverse effects on the northern gray hawk would be a reduction in habitat and/or habitat quality if riparian vegetation is lost and/or if populations of prey species decrease because of the preferred alternative. Such effects have already been identified by the TAP and attributed to off-road motorized travel in drainage bottoms. Because the preferred alternative would decommission roads and/or prohibit off-road motorized travel in riparian habitat, these indirect effects would be reduced in the project area to the benefit of the species.

Determination: Overall, implementation of the preferred alternative *would have no impact on the northern gray hawk and is not likely to lead to a trend toward Federal listing.*

Bell's Vireo

Status in Project Area: Bell's vireo is a common summer resident in dense shrubs and trees of lower canyons and large desert streams or washes with dense riparian shrubs. In Arizona, it is typically observed along watercourses lined by oak, cottonwood, salt cedar, elder berry, and hackberry. Alternatively, it is observed within xero-riparian habitat, a designation applied to ephemeral washes in which desertscrub vegetation is more prevalent that that in adjacent upland areas.

Bell's vireo feeds on insects and builds its nests in crevices of trees or small knot-holes. Its distinctive call can be heard throughout the spring along washes throughout the Sonoran desertscrub of southern Arizona. This species is common throughout the SCRD up to the top of the lower Sonoran Zone. According to the SCRD mid-scale vegetation map (MVM), there are 98,613 acres of vireo habitat on the SCRD.

Effects on the Species: Sources of direct effects on Bell's vireo could result from human disturbance and the loss of nests during breeding season. Potential indirect effects to the species could occur from the loss of suitable breeding habitat.

Addition of 5.08 miles of un-authorized routes to the system would have no additional effects to habitat because these roads have already been used for motorized travel, despite their being unauthorized. What may have once been suitable habitat has not been available for as long as they have existed. Thus, their designation and future use would have no indirect effect on vireo habitat.

Human activities, such as barrier placement, may occur during road decommissioning. If such activity is necessary, impacts would be avoided by scheduling it to occur outside of the breeding season. In any case, before human activities would begin, surveys would be conducted by a

Forest biologist to ensure that no nesting birds are present. Adverse effects on nesting Bell's vireo are unlikely to result. Because off-road travel would no longer be possible along decommissioned roads, direct effects on individuals and habitat would decline.

A source of indirect adverse effects on the species would be a reduction in available nesting habitat. Vegetation removal is not planned during decommissioning. Instead, activities would focus on increasing vegetative screening and placing hard obstacles, such as boulders, bollards, and other impediments to motor-vehicle travel. Nevertheless, some human activity may stray beyond the immediate road prism and adversely affect a small amount of vireo habitat.

The proposed restriction on off-road motorized travel would reduce the potential for direct effects on individuals and indirect effects on suitable vireo habitat in some areas across 2700 acres of Forest.

Determination: Because the species is common in the project area and there is a slight potential for human activity to affect habitat availability, implementation of the preferred alternative *may impact individual Bell's vireos, but is not likely to lead to a trend toward Federal listing.*

Sonoran Desert Tortoise

Status in Project Area: The range of the desert tortoise extends from southern Nevada and southwest Utah to Northern Sinaloa, Mexico, and from southeastern Arizona to the Mojave Desert. Two subspecies occur: a Federally-listed, threatened Mojave population, and the Sonoran population, which is not Federally listed, but which is a Candidate for listing as Threatened or Endangered. The species is also on the Region 3 list of Forest Service Sensitive species. In southeastern Arizona, the Sonoran population occupies Sonoran desertscrub, washes, and occasionally oak woodlands and grasslands below 4500 ft.

The tortoise generally frequents desert and foothill habitat, burrowing in firm soil, often in the shade of shrubs or the bank of a wash. It is an herbivore, feeding upon desert grasses and cactus fruit. It can live without water, but will drink if water is available. This tortoise is typically inactive from November 1 to March 1 (AIDTT 1996).

Desert tortoise occupies suitable Sonoran desertscrub habitat across the SCRD, where populations are at risk of injury and mortality caused by motorized travel. According to the SCRD Midscale Vegetation Map, there are 98,613 acres of tortoise habitat on the SCRD.

Effects on the Species

A source of direct effects on the tortoise would be injury or mortality that results from direct human disturbance of individuals and/or their burrows during activities related to road decommissioning. Potential indirect effects may result if forage species are removed during decommissioning and if newly designated roads significantly decrease available tortoise habitat.

Designation of NFSRs would result in a negligible increase in direct adverse effects on the tortoise and its habitat because these roads already exist on the ground and are used by motor vehicles. Vehicle-caused injury and mortality would continue to randomly occur.

Assuming that the 0.83 miles of new by-pass road comprises suitable tortoise habitat, construction and use for motorized travel would reduce total available habitat on the SCRD by less than 1.6 acres or 0.00002 %. This reduction of approximately 1.6 acres is a discountable indirect effect when compared to the 98,612 acres of potential desert tortoise habitat. Further, the addition of 5.78 miles of previously unauthorized roads to the system would not add to habitat loss because these roads have already been used for motorized travel, despite their being unauthorized. Previously existing suitable habitat has not been available for as long as they have existed. Thus, their designation and future use would have no additional indirect adverse effect on tortoise habitat.

Direct effects would be mitigated and/or avoided by requiring that field staff to complete educational awareness training about the tortoise and its habitat before decommissioning activities begin. Avoidance of burrows and individuals will be emphasized, and a protocol for safe management/handling of encounters with individuals will be established. In addition, direct mortality and injury of tortoises may decrease in areas of occupied habitat where a restriction on off-road motorized travel along specific roads will apply.

Where native seed is planted in decommissioned areas, forage species for the tortoise may actually increase, to the benefit of the species. Because off-road travel would no longer be possible along decommissioned roads, direct effects on individuals and habitat would decline.

The proposed restriction on off-road motorized travel would reduce the potential for direct effects on individuals and indirect effects on tortoise habitat across 2700 acres of Forest.

Determination: Because of the potential for human activity to directly affect tortoises, implementation of the preferred alternative *may impact individual desert tortoises, but is not likely to lead to a trend toward Federal listing.*

Chihuahuan Sedge

Sedges are grass-like perennial plants that are generally associated with moist habitat and wetlands. Chihuahuan sedge grows from April to August in wet soils along streambeds at elevations ranging from 1100 to 8000 ft, generally in north-trending drainages. The range of Chihuahuan sedge is known to include the Santa Catalina Mountains and most of the mountains of southeastern Arizona. Most records of this plant are known from National Park Service-managed lands, but suitable habitat exists on the SCRD near springs and along Tanque Verde Creek and its tributaries. There is approximately 1000 acres of suitable sedge habitat on the SCRD.

Effects on the Species

Designation of NFSRs would have no direct effect on the Chihuahuan sedge because these roads already exist on the ground and are used by motor vehicles. The likelihood of sedge occurring is very low, because the new roads are not located in moist areas and/or wetlands that comprise sedge habitat. Construction of 0.83 miles of by-pass routes would also not have direct effects on Chihuahuan sedge because they will be constructed in upland habitat areas away from wetlands.

Direct adverse effects could result from disturbance (trampling) of individual plants during road decommissioning activities. Adverse effects would be avoided because activities in springs or wet drainage bottoms would not be permitted as part of road closure. Because off-road travel would no longer be possible along decommissioned roads, direct effects on individuals and habitat would decline. In particular, decommissioning of road segment 4405-10.34R-1 would reduce vehicular effects in suitable habitat along a tributary of Tanque Verde Creek.

The proposed restriction on off-road motorized travel would reduce the potential for direct effects on individual plants and indirect effects on suitable sedge habitat in some areas across 2700 acres of Forest.

Determination: Because of the potential for plant disturbance during decommissioning, implementation of the preferred alternative *may impact individual Chihuahuan sedge plants, but is not likely to lead to a trend toward Federal listing*

Bartram Stonecrop

Bartram stonecrop occurs in the cracks of rocky outcrops that occur in shrub-live oak-grassland communities along meandering arroyos and on the sides of rugged canyons. It is a small succulent with a basal "rosette" of leaves and flower on top of a 12-inch stalk; the rosette is less than one inch high. This plant is found between 3900 and 6700 ft in elevation on northern and eastern exposures and is typically associated with is Madrean Evergreen Woodland that may include evergreen oaks, alligator juniper, skunkbush sumac, amole, yuccas, sotol, ocotillo, sideoats grama, and mountain mahogany.

This species has been observed on the SCRD, and suitable habitat exists within the project area. The nearest known individual was observed at Molino Basin on the south side of the Santa Catalina Mountains. According to the SCRD MVM, there are 105,976 acres of stonecrop habitat on the SCRD.

Effects on the Species

Designation of NFSRs would have no direct effect on Bartram stonecrop because these roads already exist on the ground and are used by motor vehicles. The likelihood of stonecrop occurring in these roads is very low.

Assuming all 0.83 miles of new roads comprise suitable stonecrop habitat, their designation and use for motorized travel would reduce total available habitat on the SCRD by less than 0.0002 %. This reduction is a discountable indirect effect. Further, the addition of 5.78 miles of unauthorized routes to the SCRD road system would not impact Bartram's stonecrop because these roads have already been used for motorized travel, despite their being unauthorized. What may have once been suitable habitat has not been available for as long as they have existed. Thus, their designation and future use would have no indirect adverse effect on stonecrop habitat.

Direct effects could result from the disturbance of individual plants during road decommissioning activities. Mitigation will include a requirement for a pre-activity field inspection of Madrean Evergreen Woodland habitat where boulders will be used as obstacles to identify potentially affected individuals, and measures will be taken to avoid plants. Because off-road travel would no longer be possible along decommissioned roads, direct effects on individuals and habitat would decline.

The proposed restriction on off-road motorized travel would reduce the potential for direct effects on individual plants and indirect effects on suitable stonecrop habitat across 2700 acres of Forest.

Determination: Because of the potential for plant disturbance during decommissioning, implementation of the preferred alternative *may impact individual Bartram stonecrop plants, but is not likely to lead to a trend toward Federal listing.*

Lemmon's Morning Glory

The plant begins to emerge in July. Flowers appear in late July or in August after heavy summer rains and continue through September. The species habitat includes shallow sandy or gravelly soil on bedrock terraces and rocky canyons or shaded mountains. The plant is associated with desert grassland, oak-woodland, and pine-oak woodland communities and occurs between elevations from 4020 to 7025 ft (AGFD 1999). The range of Lemmon's morning glory includes the Santa Catalina Mountains (Bear

Canyon and Finger Rock Canyon) and the Rincon Mountains (Miller Creek and Rincon Peak Trail). According to the SCRD MVM, there are 118,399 acres of morning glory habitat on the SCRD.

Effects on the Species

Designation of 5.78 miles of formerly unauthorized routes as NFSRs would have no direct or indirect adverse effects on Lemmon's morning glory because these roads already exist on the ground and are used by motor vehicles. The likelihood of Lemmon's morning glory occurring in these roads is very low.

Assuming all 0.83 miles of new by-pass roads comprise suitable morning glory habitat, their designation and use for motorized travel would reduce total available habitat on the SCRD by less than 0.0004 %. This reduction is a discountable indirect effect. Direct effects could result from disturbance of individual plants during road decommissioning activities. Mitigation will include the requirement for a pre-activity field inspection to identify individuals that may be affected by obstacle emplacement and ground-disturbing activity, and measures will be taken to avoid plants.

Because off-road travel would no longer be possible along decommissioned roads, direct effects on individuals and habitat would decline.

The proposed restriction on off-road motorized travel would reduce the potential for direct effects on individual plants and indirect effects on suitable morning glory habitat across 2700 acres of Forest.

Determination: Because of the potential for plant disturbance during decommissioning, implementation of the preferred alternative *may impact individual Lemmon's morning glory plants, but is not likely to lead to a trend toward Federal listing.*

Wiggin's Milkweed Vine

The range of Wiggin's milkweed vine is known to include the Santa Catalina Mountains (range extension into Sabino Canyon) at elevations ranging from 3500 to 5100 ft (AGFD 1999). The plant flowers with the summer rains of July and August on open slopes within open oak-woodland communities that occur on granitic soils over juniper flats and granite. This species may occur in drainage bottoms at appropriate elevations in the Redington Pass or Ash Creek area. According to the SCRD MVUM, there are 105,976 acres of milkweed vine habitat on the SCRD.

Effects on the Species

Designation of 5.78 miles of formerly unauthorized routes as NFSRs would have no direct or indirect adverse effects on Wiggin's milkweed vine because these roads already exist on the ground and are used by motor vehicles. The likelihood of Wiggin's milkweed occurring in these roads is very low.

Assuming all 0.83 miles of new roads comprise suitable milkweed vine habitat, their designation and use for motorized travel would reduce total available habitat on the SCRD by less than 0.005 %. This reduction is a discountable indirect effect. Further, because these roads have already been used for motorized travel, despite their being unauthorized, what may have been suitable habitat has not been available for as long as they have existed. Thus, their designation and future use would have no indirect adverse effect on milkweed vine habitat.

Direct effects could result from disturbance of individual plants during road decommissioning activities. Potential effects can be mitigated by field inspection of vegetated areas that could be affected by obstacle emplacement and ground-disturbing activity, and measures will be taken to avoid plants. Because off-road travel would no longer be possible along decommissioned roads, direct effects on individuals and habitat would decline.

The proposed restriction on off-road motorized travel would reduce the potential for direct effects on individual plants and indirect effects on suitable milkweed vine habitat across 2700 acres of Forest.

Determination: Because of the potential for individual plant disturbance, implementation of the preferred alternative *may impact individual Wiggin's milkweed vine plants, but is not likely to lead to a trend toward Federal listing.*

Arizona Manihot

Arizona manihot is a shrubby perennial with semi-woody stems that occurs in two different types of habitat. The most common in Arizona is dry, rocky slopes in foothills and mountains. It can also be found in Arizona in eco-tonal areas between Sonoran desert-scrub and canyon riparian vegetation types in mountain canyons. It is most often found in rocky slopes at elevations from 3100 to 4500 ft. This species has been collected in semi-desert grassland communities and in canyon bottoms within the Arizona upland subdivision of Sonoran desert-scrub communities, as defined by Brown (1964). Some associated species include *Fouquieria splendens, Mimosa dysocarpa, Janusia gracilis, Carnegia gigantea, Eriogonum wrightii, Quercus* spp., etc. The plant typically flowers from mid-July and August (AGFD 1999).

The range of this species is known to include the Santa Catalina Mountains in Molino Basin, Sabino Canyon, Bear Canyon and Soldier Canyon and the Rincon Mountains near Miller Creek and Rincon Peak Trail. The project area contains suitable habitat for this plant. According to the SCRD MVM, there are 101,287 acres of suitable manihot habitat on the SCRD.

Effects on the Species

Designation of 5.78 miles of formerly unauthorized routes as NFSRs would have no direct or indirect adverse effects on Arizona manihot because these roads already exist on the ground and are used by motor vehicles. The likelihood of Arizona manihot occurring in these roads is very low.

Assuming all 0.83 miles of new roads comprise suitable manihot habitat, their designation and use for motorized travel would reduce total available habitat on the SCRD by less than 0.0007 %.

This reduction is a discountable indirect effect. Further, because these roads have already been used for motorized travel, despite their being unauthorized, what may have been suitable habitat has not been available for as long as they have existed. Thus, their designation and future use would have no indirect adverse effect on manihot habitat.

Direct effects could result from disturbance of individual plants during road decommissioning activities. Pre-activity field inspection would identify vegetation that may be affected by obstacle emplacement and ground-disturbing activity, and measures will be taken to avoid plants. Because off-road travel would no longer be possible along decommissioned roads, direct effects on individuals and habitat would decline.

The proposed restriction on off-road motorized travel would reduce the potential for direct effects on individual plants and indirect effects on suitable manihot habitat across 2700 acres of Forest.

Determination: Because of the potential for disturbance during decommissioning, implementation of the preferred alternative *may impact individual Arizona manihot plants, but is not likely to lead to a trend toward Federal listing.*

Sycamore Canyon Muhly

This plant grows from August to November in rocky canyons near seeps, most often in crevices of cliffs, bedrock, and other rocks along canyon bottoms, but also known from rocky canyon slopes in oak, pine-oak, and riparian woodlands. The species has been collected in Madrean evergreen woodland communities, riparian woodland within Madrean evergreen woodland communities, and riparian woodland within the transition zone of the Arizona upland Sonoran desert-scrub and semi-desert grassland communities. Its elevation ranges from 3520 to 6000 ft within various slope exposures, but often southern (AGFD 1999).

The range of Sycamore Canyon muhly is known to include the Santa Catalina Mountains (Molino Canyon, Finger Rock) and in the Rincon Mountains (Rincon Creek). The species could occur in portions of the Tanque Verde Creek drainage. According to the MVM, there are 217,012 acres of suitable muhly habitat on the SCRD.

Effects on the Species

Designation of 5.08 miles of formerly unauthorized routes as NFSRs would have no direct or indirect adverse effects on Sycamore Canyon muhly because these roads already exist on the ground and are used by motor vehicles. The likelihood of muhly occurring in these roads is very low.

Assuming all 0.83 miles of new roads comprise suitable muhly habitat, their designation and use for motorized travel would reduce total available habitat on the SCRD by less than 0.0002 %. This reduction is a discountable indirect effect.

Direct effects could result from disturbance of individual plants during road decommissioning activities. Pre-activity field inspection would identify vegetation that may be adversely affected by obstacle emplacement and ground-disturbing activity, and measures will be taken to avoid plants. Because off-road travel would no longer be possible along decommissioned roads, direct effects on individuals and habitat would decline.

The proposed restriction on off-road motorized travel would reduce the potential for direct effects on individual plants and indirect effects on suitable muhly habitat across 2700 acres of Forest.

Determination: Because of the potential for disturbance, implementation of the preferred alternative *may impact individual Sycamore Canyon muhly plants but is not likely to lead to a trend toward Federal listing.*

Nodding Blue-Eyed Grass

Nodding blue-eyed grass grows from March through September along streams in partial shade and canyon bottoms. Wet soils near seeps, pools and springs in desertscrub are important. This plant is also found on sandy stream banks. It occurs equally in wetlands and non-wetlands in desert grassland and pine-oak woodland communities at elevations ranging from 3300 ft to about 8000 ft (AGFD 1999). The range of nodding blue-eyed grass is known to include the Rincon Mountains (Saguaro National Park, Rincon Peak, and along Happy Valley road). According to the MVM, there are 111,036 acres of suitable blue-eyed grass habitat on the SCRD.

Effects on the Species

Designation of new NFSRs would have no direct or indirect adverse effects on nodding blue-eyed grass because these roads already exist on the ground and are used by motor vehicles. The likelihood of nodding blue-eyed grass occurring in these roads is very low.

Assuming all 0.83 miles of new roads comprise suitable blue-eyed grass habitat, their designation and use for motorized travel would reduce total available habitat on the SCRD by less than 0.004 %. This reduction is a discountable indirect effect.

Direct effects could result from disturbance of individual plants during road decommissioning activities. Pre-activity field inspection would identify vegetation that may be affected by obstacle emplacement and ground-disturbing activity, and measures will be taken to avoid plants. Because off-road travel would no longer be possible along decommissioned roads, direct effects on individuals and habitat would decline.

The proposed restriction on off-road motorized travel would reduce the potential for direct effects on individual plants and indirect effects on suitable blue-eyed grass habitat across 2700 acres of Forest.

Determination: Because of the potential for disturbance, implementation of the preferred alternative *may impact individual nodding blue-eyed grass plants but is not likely to lead to a trend toward Federal listing.*

Lemmon's Stevia

Lemmon's stevia grows from March to June at elevations from 3000 to 4580 ft on north-facing slopes in rocky, canyon slopes, ravines and streambeds in pine-oak woodlands, upper Sonoran foothills, and desert grassland (AGFD1999). The range of Lemmon's stevia is known to include the Santa Catalina Mountains (Sabino Canyon, Ventana Canyon, and south of Bear Canyon) and in the Rincon Mountains (Rincon Creek and south of Sycamore Canyon). The project area may contain habitat for this plant. According to the MVM, there are 118,399 acres of suitable stevia habitat on the SCRD

Effects on the Species

Designation of new NFSRs would have no new direct or indirect adverse effects on Lemmon's stevia because these roads already exist on the ground and are used by motor vehicles. The likelihood of Lemmon's stevia occurring in these roads is very low.

Assuming all 0.83miles of new roads comprise suitable stevia habitat, their designation and use for motorized travel would reduce total available habitat on the SCRD by less than 0.0004 %. This reduction is a discountable indirect effect.

Direct effects could result from disturbance of individuals during road decommissioning activities. Pre-activity field inspection would identify vegetation that may be affected by obstacle emplacement and ground-disturbing activity, and measures will be taken to avoid plants. Because off-road travel would no longer be possible along decommissioned roads, direct effects on individuals and habitat would decline.

The proposed restriction on off-road motorized travel would reduce the potential for direct effects on individual plants and indirect effects on suitable blue-eyed grass habitat across 2700 acres of Forest.

Determination: Because of the potential for disturbance, implementation of the preferred alternative *may impact individual Lemmon's stevia plants but is not likely to lead to a trend toward Federal listing.*

Forest Management Indicator Species

Thirty-three individual management indicator species (MIS) and one group (primary and secondary cavity nesters) are included in eight indicator groups[18] identified in Appendix G of the Forest Plan. Of the 33 MIS species in the Forest Plan, 30 were eliminated from evaluation in this EA because their known distributions are well outside of the project area or the project area does not contain suitable habitat. Three species and one group of species (cavity nesters) were selected for further analysis based on their known occurrence within or near the project area or because of the presence of suitable habitat.

Since 1986 the Forest Plan became effective in 1986, all but seven of the 28 species originally listed in Group 8, T/E Species, no longer have Federal listing status. Those that are still Federally listed include the threatened Apache trout (*Oncorhynchus apache*); endangered Gila topminnow (*Poeciliopsis occidentalis*); endangered Gila chub (*Gila intermedia*); threatened Sonora chub (*Gila ditaenia*); endangered Sonora tiger salamander (*Ambystoma tigrinum stebbinsi*); threatened spikedace (*Meda fulgida*); and endangered Mount Graham red squirrel (*Tamiasciurus hudsonicus grahamensis*). None of the seven T and E species occur in the project area.

Additionally, the Merram's turkey was an introduced sub-species to the Santa Catalina Mountains. Over the course of time they forced out the native Gould's wild turkey. Since 2005, AGFD and USFS have cooperated to restore Gould's wild turkey to the mountain range. In this analysis, Gould's Turkey will be substituted for Merriam's turkey.

Table 3-6 lists MIS known to or suspected to occur in the project area. Following is a discussion of the potential impacts of the preferred alternative on these species.

[18] **Indicator Group** refers to those groups of MIS identified in the Forest Plan: Cavity Nesters (1), Riparian Species (2), Species Needing Diversity (3), Species Needing Herbaceous Cover (4), Species Needing Dense Canopy (5), Game Species (6), Special Interest Species (7), and Threatened and Endangered Species (8).

Table 3-6. Management indicator species (MIS) known to occur in the area affected by proposed changes to the motorized travel system on the SCRD, Coronado National Forest.	
MANAGEMENT INDICATOR GROUP	**SPECIES**
Cavity Nesters	Northern flicker (*Colaptes auratus*) Hairy woodpecker (*Picoides villosus*)
Riparian Species	Black bear (*Ursus americanus*)
Species Needing Diversity	White-tailed deer (*Odocoileus virginianus*) Black bear
Species Needing Herbaceous Cover	White-tailed deer
Species Needing Dense Canopy	None
Game Species	White-tailed deer Merriam's turkey (*Meleagris gallopavo merriami*) Black bear

Primary and Secondary Cavity Nesters

Northern Flicker

The northern flicker is the largest woodpecker in Arizona. It prefers to breed in large trees suitable for excavation, avoids hardwoods and favors transition conifer forest in the Santa Catalina Mountains. North American Breeding Bird Survey[19] data indicate that the population trend for this species in Arizona is stable. Although approximately 75 percent of the proposed project area was adversely affected by the recent Aspen and Oracle Hill wildland fires, suitable breeding habitat for the flicker remains.

No Action

[19] http://www.mbr-pwrc.usgs.gov/bbs

Implementation of the no action alternative would result in no change from the current road system on the SCRD. As a result of past large fires, snags are well-represented in all habitats on the SCRD providing abundant habitat for a large variety of cavity nesting birds. The current road system is not impacting this resource; hence the no action alternative will not result in a change in populations of cavity-nesting birds.

Preferred Alternative

No aspect of the preferred alternative would change the number and/or distribution of large trees on the SCRD. Therefore, the preferred alternative would result in no loss of occupied and/or potential flicker breeding habitat and no detectable change in population.

Hairy Woodpecker

This species is a resident of transition conifer forest in the mountains of southeastern Arizona. It tends to be found in "pine stringers" associated with canyons. Habitat on the SCRD is marginal, but it is possible for the species to occur in the upper elevations of drainages near the Rice and Apache Peaks areas.

This bird is able to excavate slightly smaller trees than the flicker. North American Breeding Bird Survey data show that the population trend for this species in Arizona is stable. No site-specific population data are available for the project area.

No Action

Implementation of the no action alternative would result in no change from the current road system on the SCRD. As a result of past large fires, snags are well-represented in all habitats on the SCRD providing abundant habitat for a large variety of cavity nesting birds. The current road system is not impacting this resource; hence the no-action alternative will not result in a change in populations of cavity-nesting birds.

Preferred alternative

No aspect of the preferred alternative would change the number and/or distribution of trees on the SCRD. Therefore, there would be no loss of occupied and/or potential woodpecker breeding habitat and no detectable change in population.

White-tailed Deer

Deer populations have been in a region-wide decline over the past several years (AGFD 2000). Causes of this decline are complex, reflecting changes in annual precipitation and pressure from predators.

No Action

Implementation of the no action alternative would result in no change from the current road system on the SCRD. As a result of past large fires white-tailed deer habitat has improved greatly on the Santa Catalina Ranger. This improvement in deer habitat has occurred in the presence of the existing road system; hence the no-action alternative will not result in a change in availability of deer habitat or impacts to populations of white-tailed deer.

Preferred alternative

Implementation of the preferred alternative would reduce human activity and vehicle use in specific areas of deer habitat on the SCRD, thereby decreasing the disturbance of this species and direct effects from vehicle travel in its habitat. No detectable change in deer population and no loss of occupied and/or potential deer habitat would be expected.

Gould's Turkey

This turkey is found in the western United States primarily on the Forest in ponderosa pine forests. Gould's wild turkeys can also be found in other vegetation types in elevations ranging from 3500 to 10,000 ft. The turkey's diet consists of green weeds, insects, juniper berries, acorns, grass seed, mast, and pine seeds. During winter turkey congregates in the pinyon pine-oak habitats at the interface with ponderosa pine. If weather permits, turkeys may even winter in the ponderosa pine. Deep snow forces them to move to lower elevations. During spring snow melt, they again move up slope following the snow line and breeding activity begins, extending from late April through May; young appear in June.

Preferred alternative

Implementation of the preferred alternative would reduce human activity and vehicle use in specific areas of turkey habitat on the SCRD, thereby decreasing the disturbance of this species and direct effects from vehicle travel in habitat. No detectable change in turkey population and no loss of occupied and/or potential turkey habitat would be expected.

Black Bear

Black bear are found in every mountain range of the Forest. This species uses a variety of habitat types ranging from spruce/fir forest, transition conifer, and evergreen woodland down through desert grassland. Occasionally this species is also found in desertscrub. It feeds on a large variety of items, including juniper berries, acorns, grapes, raspberries, manzanita berries, prickly-pear fruit and, incidentally, available carrion.

Population data are not available; however, the AGFD estimates, based on harvest data, that there is a population of 2500 black bears statewide. In unit 31, which includes the Coronado NF[20], the harvest increased in the mid-1990s when hunt dates were changed and hunting in more open areas at lower elevations. Harvest has ranged from about 100 animals to a maximum of 250 with most years in the 100 to 150 range. No population trend is possible to infer from these harvest data. In general, permit numbers are changed to reduce the potential for human-bear encounters.

In problem areas, AGFD increases the permit numbers to reduce the threat.

Because the bear is highly omnivorous, it depends on vegetative diversity and seasonal availability of food items. The preferred alternative would not change the relative distribution of the various vegetation types (e.g. transition conifer forest, oak woodland, or deciduous riparian, for example) occupied by the bear nor the availability of forage.

Preferred alternative

Implementation of the preferred alternative would reduce human activity and vehicle use in specific areas of bear habitat on the SCRD, thereby decreasing the disturbance of this species and direct effects from vehicle travel in habitat. No detectable change in bear population and no loss of occupied and/or potential bear habitat would be expected.

Migratory Bird Species

Executive Order 13186, of January 10, 2001, directs Federal agencies to support migratory bird conservation and to "ensure that environmental analyses of Federal actions required by the NEPA or other established environmental review processes evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of concern." Forest Service, Region 3, requires Forest biologists to analyze effects as follows: (1) effects to Species of Concern listed in the Arizona Partners in Flight Bird Conservation Plan; (2) effects to important bird areas (IBAs) identified by the National Audubon Society; and (3) effects to important overwintering areas.

Impacts to the following species of concern were evaluated for this preferred alternative:

Cassin's sparrow, rufous-winged sparrow, grasshopper sparrow, northern goshawk, Mexican spotted owl, cactus ferruginous pygmy owl, cordilleran flycatcher, Montezuma (Mearn's) quail, band-tailed pigeon, buff-breasted flycatcher, and azure bluebird.

[20] http://www.azgfd.gov/h_f/hunting_units_31.shtml

The District Biologist concluded that the preferred alternative would cause no adverse effects on migratory bird species. The designation of new NFSRs would not increase off-road motorized travel in sparrow or azure bluebird habitat. No occupied pygmy owl habitat would be affected by the preferred alternative. Restrictions on off-road motorized travel would reduce documented impacts in suitable habitat for the cordilleran flycatcher, quail, and pigeon. A biological assessment determined that there would be no effect to the Mexican spotted owl.

Because of the similarity of the CAT Alternative to the preferred alternative this alternative also would not cause adverse effects to migratory birds.

Cumulative Effects

The ESA requires that impacts of other past, present and future *non-Federal* actions be evaluated additively with it. Each NEPA review requires an assessment of the impacts of both *Federal* and *non-Federal* past, present and future actions within a project area.

The activity with the greatest potential to negatively affect wildlife and habitat is human recreation, which results in damage to vegetation, the spread of non-native invasive species, and wildland fire. Because the SCRD road system facilitates human recreational use of the SCRD, it follows that the proposed additions to the system, which represent a 2% decrease in SCRD roads available for human use, have the potential to incrementally decrease the adverse effects of recreation by 2%.

Cumulative effects to wildlife and habitat would, therefore, be those resulting from increased recreational use facilitated by the net addition of road. Few of the other past, present and future actions listed in Table 3-1 would have adverse impacts on wildlife that are directly or indirectly related to human recreation. Therefore, the potential for cumulative effects to wildlife, when considered with the impacts of the preferred alternative, is not likely to increase if the preferred alternative is implemented.

Soils

The following text is based on a Forest Watershed and Forestry Program Manager's report filed in the Project Record as Item 24.

Affected Environment

A General Ecosystem Survey (GES), which includes soil descriptions on a landscape scale, was completed by the Forest Service in 1991 and covers the entire Santa Catalina EMA (USDA, 1991) (Table 3-7). The majority of the area has shallow soils on steep slopes. Erosion hazard is generally moderate.

In the GES report, the soils are found to occur in three of the four possible GES climatic classes due to wide range in elevation and aspect. These classes are Low Sun Mild (LSM) in the low elevation grasslands, chaparral, or shrublands, High Sun Mild (HSM) in the mid elevation woodlands, and Low Sun Cold (LSC) in the high elevation coniferous forests. These classes describe when the majority of the mean annual precipitation occurs and whether or not the winters are mild or cold. Low Sun indicates the majority of the annual precipitation occurs between September 30 and April 1; High Sun indicates the majority occurs between April 1 and September 30.

TABLE 3-7. General Ecosystem Survey Unit descriptions for the Santa Catalina District.

GES UNIT	Average Gradient %	Surface Texture/ Modifier	Soil Depth	Parent Material	Climate Class (see text for description)	Erosion Hazard	% Santa Catalina District
235	15% to 40%	Very gravelly/ sandy loam	Deep	Alluvium	LSM	Slight	5.4%
303	40% to 80%	Extremely Cobbly / Sandy Loam	Shallow	Granite	LSM	Moderate	32.6%
452	40% to 80%	Extremely Cobbly / Sandy Loam	Deep	Granite	LSC	Moderate	1.4%
475	40% to 80%	Extremely Cobbly / Sandy Loam	Shallow	Granite, Rhyolite	HSM	Moderate	42.4%
476	60% to 100%	Extremely Cobbly / Sandy Loam	Deep	Granite	LSC	Moderate	8.7%
490	4% to 25%	Very Cobbly / Sandy Loam	Deep	Granite, Rhyolite	HSM	Moderate to Severe	9.5%

The GES inventory was completed at the landscape scale and does not provide site specific soils information. Roads being analyzed on the SCRD are composed of native soils that generally are shallow, cobbly and tend to be resistant to compaction and erosion. However, once established the road tracks allow for increased runoff and reducing infiltration. GES was not mapped at a scale that differentiates valley bottoms and riparian areas where the soil tends to have finer textures and be more susceptible to erosion and compaction.

Soil compaction is defined as an increase in soil density resulting from loads applied to the surface. Depending on the degree of compaction, this increase can cause a corresponding decrease in the ability of water to infiltrate and percolate through the soil. Compaction results in soil erosion and sediment runoff when precipitation occurs. Motor-vehicle use on roads and trails is a source of compaction.

Environmental Impacts

No Action

The no action alternative would continue to allow travel on all unauthorized roads and NFSRs. The primary difference between no action and preferred alternative, is that no action alternative would not eliminate the 300' camping corridor along any roads, no NFSRs would be decommissioned, and Road 4431 (Chimney Rock Road) would remain open in an area of sensitive soils. Potential benefits such as reduced soil compaction and erosion from preferred alternative would not be realized under the no-action alternative.

Preferred Alternative

Direct and Indirect Effects

Implementing the preferred alternative would add 5.08 miles (9.8 acres) of unauthorized roads to the system. These roads are currently being used, and adding them to the system would put them on a routine maintenance schedule, as funding allows. Maintenance is designed to improve drainage and reduce erosion, thus resulting in limited beneficial impacts to the soil resource.

Implementing the preferred alternative would result in 9.29 miles of unauthorized routes and 12.23 miles of NFSRs being re-designated as restricted access (41.7acres). While travel on restricted access roads would decrease, it is expected that overall traffic on the district would not necessarily decline as visitors would most likely opt to travel a different (authorized) route. Compaction from continued use of authorized roads would likely remain the same, as would the erosion and sediment runoff that result from compaction.

The preferred alternative would decommission 2.1 miles of NFSRs and 14.09 miles of unauthorized routes. In the long term, soil compaction and erosion would decrease along decommissioned roads and vegetation would recolonize the area resulting in beneficial effects to soils. These beneficial impacts would be realized on 31.4 acres.

Elimination of a 300 ft. camping corridor on both sides of the road for 25.32 miles of NFSRs to remain open and along 2.1 miles of NFSRs to be decommissioned would reduce potential adverse impacts from off road travel and dispersed recreation. This alternative would help maintain or improve vegetative cover and soil condition, and reduce soil compaction and erosion.

Approximately 1994 acres would potentially benefit from eliminating impacts in these areas.

The preferred alternative would allow for the rerouting of NFSR 4431 (Chimney Rock Road). This action would move 0.97 miles of road out of a heavy clay area and onto coarser textured soils better suited for road construction. This would result in improved soil conditions, infiltration and reduced erosion on approximately 1.99 acres of clay soils.

Summary

SCRD soils are shallow and composed of cobbly material and inherently somewhat resistant to compaction and erosion. However, road closures are expected to result in some beneficial impacts as roads re-vegetate and recover, and soil compaction and erosion is reduced. Appropriate road maintenance would result in limited beneficial impacts to the soil resource on 9.8 acres. Greater benefits to the soil resource are predicted from decommissioning NFSR and unauthorized routes (41.7 acres) , elimination of the 300' camping corridor along both sides of the road on some routes (potential benefits to 1994 acres), and rerouting of Chimney Rock Road (2 acres). Benefits may include: decreased compaction and soil erosion, increased infiltration, and improved plant cover on approximately 2079 acres. While beneficial impacts to soils are predicted, they are localized to approximately 0.01% of the area and dispersed across the 265,000 acres of the SCRD. Consequently, it is not possible to quantify these beneficial impacts across the SCRD.

Cumulative Effects

Cumulative effects are defined as the incremental impact of an action, when added to other past, present, and reasonably foreseeable future actions.

Past and present trends in the project area include continued population growth of the communities surrounding the project area (Tucson, Oro Valley, Oracle, etc.) and increasing use of National Forest lands as a result. Past and present actions on the SCRD have been described in Affected Environment section.

Reasonably foreseeable future actions in the project area that affect scenic resources include:

- Oracle Hill, Bullock, and Aspen Wildfires resulted in increased erosion and sedimentation. Recovery from these fires is on-going and soils have mostly stabilized.

- Catalina-Rincon Firescape and Loma Linda Hazardous Fuels Reduction would result in increased soil erosion in the short term. There would be long-term benefits to soils by improving forest health, restoring native plant communities and soil function, and reducing risks of catastrophic wildfire.

- Oracle Ridge Mine which would have minor negative impacts to soils from ground disturbances related to mining activities, power line, heliport, and other facilities.

- Redington Pass planning, cleanup, and other work, which would reduce improve soil condition by stabilizing and re-vegetating the site and eliminating off-road use.

- Marshall Gulch renovation would benefit soils by restoring the creek and improving soil function on the restored area.

- Sabino Scenic Trail would disturb soils in the areas of new trail construction. The trail would result in increased soil compaction and erosion in the long-term.

- Trico power line replacement near the Mt. Lemmon Fire Station, could impact soils during installation.

- Mineral exploration would have localized impacts on soils from ground disturbing activities.

- Other actions listed in the cumulative effects section are not predicted to have an impact on the soil resource.

Because past, present, and future actions, when combined with travel management decisions, would not substantially alter the soil resource on the SCRD (and some would provide benefits), no cumulative effects from this project are expected.

Air Quality

The following text is based on a Forest Watershed and Forestry Program Manager's report filed in the administrative record as Item 8.

Affected Environment

An air quality area that is found to be in violation of a primary NAAQS is labeled a non-attainment area; an area once in non-attainment but recently meeting NAAQS, and with appropriate planning documents approved by EPA, is an attainment area with a plan; and all other areas are attainment areas or unclassified.

There are two attainment areas with plans and one non-attainment area in the vicinity of the SCRD:

Tucson Carbon Monoxide Attainment Area with Maintenance Plan

The Tucson Carbon Monoxide Limited Maintenance Plan (LMP), developed by the Pima Association of Governments (PAG) for the Tucson Air Planning Area (TAPA), was submitted by the Arizona Department of Environmental Quality (ADEQ) to EPA in 1996 and updated in 1997. The TAPA was designated with a CO attainment status by EPA, effective July 10, 2000. EPA's option required a revision for the remaining ten-year period of the LMP, from 2010-2020. The *2008 Revision to the Carbon Monoxide Limited Maintenance Plan for the Tucson Air Planning Area*, developed by the PAG, was submitted by ADEQ to EPA, as required, by July 10, 2008.

San Manuel Sulfur Dioxide Attainment Area with Maintenance Plan

San Manuel Smelter permits were cancelled in March 2005. On June 7, 2007, ADEQ submitted an update to the *San Manuel Sulfur Dioxide Non-attainment Area State Implementation and Maintenance Plan*. The re-designation and maintenance plan was approved by EPA on January 18, 2008 (73 Federal Register 3396) and effective March 18, 2008. Part of the SCRD is within this attainment area with maintenance plan.

Rillito PM-10 Non-attainment Area

The major stationary source in the area is Arizona Portland Cement Company. Other sources include construction, unstable river banks, agriculture, unpaved roads and unstable road shoulders. On October 10, 2006, EPA determined that the Rillito Non-attainment Area had met the PM-10 standard and qualified for re-designation to attainment. On July 10, 2008, ADEQ submitted the *Rillito Moderate Area PM10 Limited Maintenance Plan and Request for Re-designation to Attainment*.

The project area is located in a *Class II* airshed. The nearest *Class I* areas are Saguaro National Park East, which is immediately adjacent to the eastern boundary of the SCRD; Saguaro National Park West, which is about 25 miles west of the SCRD; and the Gailuro Wilderness Area, on the Forest about 15 miles northeast of the project area.

Environmental Impacts

No Action

The No Action alternative would allow for continued use of unauthorized and/or unneeded roads and would result in slightly more dust than the preferred alternative that proposes road decommissioning, closing and restricting use. Because there would be no changes from existing conditions, there would not be any additional impacts to air quality from this alternative.

Preferred Alternative

No new roads would be constructed under this alternative; therefore no new sources of air quality degradation would be added on the SCRD. Adding 5.08 miles of unauthorized roads to the road system and adding 9.29 miles of unauthorized roads to restricted use will have little or no quantifiable effect on air quality as these roads already are sustaining motor vehicle traffic. Some dust from roads would be reduced by restricting use on 12.23 miles of road currently open to all vehicles, and decommissioning 2.1 miles of NFSRs. Proposed changes would have little impact on fugitive dust. Changes proposed for NFSRs are not expected to result in a net increase in the amount of vehicle traffic on the SCRD, especially since most users would likely use an alternative route if certain roads are restricted, or decommissioned. Therefore, there would be no change in air quality related to vehicle emissions. There may be a slight reduction in windblown dust from closing 16.19 miles of roads; however, this reduction would not be measurable.

Cumulative Effects

The preferred alternative would not result in measurable changes to ambient air quality; and thus has no direct or indirect effects. The preferred alternative would not contribute to cumulative adverse impacts when considered in combination with the impacts of any of the actions listed in Table 3-1, or other impacts within the air shed.

Water Resources

The following text is based on a Forest Watershed and Forestry Program Manager's report filed in the administrative record as Item 8.

Affected Environment

Surface Water

Nine fifth-code watersheds[21] are represented on the SCRD (Table 3-7). The watersheds where newly designated roads and roads to be decommissioned are located are marked with an asterisk (*). The ADEQ

[21] Watersheds in the U.S. are mapped according to Federal interagency standards. Regions are the largest unit. Regions are composed of sub-regions; sub-regions are composed of basins and so on. Every unit in the hierarchy has a Hydrologic Unit Code (HUC) built on a series of 2-digit segments that form the backbone of the numbering system. The Fifth Code, designated by five 2-digit segments for a total of 10 digits, are referred to as watersheds in this system.

assesses water quality for streams and natural channels throughout the state by comparing data collected in the field with standards established to conserve the values that are reflected in their use classifications[22]. Every two years, the ADEQ is required by the Clean Water Act to conduct a comprehensive analysis of water quality data associated with Arizona's surface waters. The objective of this study is to determine whether state water quality standards are being met and designated uses are being supported. The most recent status of ambient surface water quality in Arizona is reported by ADEQ in the report *Integrated Section 305(b), Assessment and Section 303(d) Listing*[23]. However, not all of Arizona's fifth-code watersheds were fully assessed, including those in the project area. None of the watershed in the project area has been identified as having impaired water quality.

Table 3-7. Fifth-code watersheds on the SCRD.

WATERSHED NAME	FIFTH CODE	ACRES	PERCENT (%) OF DISTRICT
Putnam Wash	1505020306	61	< 1
Cienega Creek	1505030201	3,708	1
Tucson Wash-Lower San Pedro River	1505020308	4,195	2
*Ash Creek-Upper San Pedro River	1505020209	11,008	4
*Paige Creek-Lower San Pedro River	1505020302	16,030	6
*Alder Wash-Lower San Pedro River	1505020305	22,791	9
*Redfield Canyon-Lower San Pedro River	1505020303	40,601	15
Cañada del Oro	1505030109	56,737	21
*Tanque Verde Creek-Rillito River	1505030203	96,330	36
Agua Verde Creek—Pantano Wash	1505030202	13,511	5

Numerous canyons or washes bisect the district. Lemmon Creek, Sabino Canyon, Cañada del Oro, and parts of Romero, Montrose, Tanque Verde and Bullock Canyons have perennial surface water. However, below the surface of the dry reaches, the water table may be shallow in spots or have subsurface flow that is close enough to the surface to sustain riparian vegetation at these locations.

[22] For the comprehensive list, use http://www.azdeq.gov/environ/water/assessment/download/2012/g1.pdf

[23] http://www.azdeq.gov/environ/water/assessment/assess.html (ADEQ 2012b)

Roads that are adjacent to and/or cross stream channels and surface water pools have the potential to increase soil compaction and erosion, increase runoff and add sediment to the stream. All roads within the watershed whether there is perennial, ephemeral or intermittent flow have the potential to contribute increased sediment and runoff into the stream system, particularly following precipitation events. Actions such as road decommissioning, reducing off-road travel, and reducing dispersed recreation have the potential to reduce soil erosion and compaction and help increase infiltration, resulting in reduced sediment delivery to streams and improved water quality.

Groundwater

There are wells within the project area. However, all roads proposed to be added to the NFSR are more than 1200 feet from wells, and none are known to be potable water supplies.

Water Resources

Environmental Impacts

No Action

No changes to road densities are proposed under the no-action alternative. Consequently, there would be no impacts to water quality, or to water quantity. Potential benefits from decommissioning roads and reducing off-road travel and dispersed recreation along specified routes would not be realized.

Preferred Alternative

Direct and Indirect Effects

Implementing the preferred alternative would not have any impacts on surface or ground water quantity. The potential for contamination of unconfined aquifers from leaks or spills of fuels or engine compounds would remain the same because the roads proposed for addition are already being used by motor vehicles, and the frequency of this use is not expected to change with implementation of the preferred alternative.

Adding 5.08 miles of unauthorized roads to NFSR, and re-designating 9.29 miles of unauthorized routes and 12.23 miles of NFSRs would not have an additional effect on surface water quality by adding additional sediment to stream channels as these roads are already in place and being used.

Decommissioning of 2.1 miles of NFSRs and 14.09 miles of unauthorized routes would result in reduced sediment in the long-term as the sites are re-vegetated and soil conditions improve on 31.4 acres. Elimination of a 300’ camping corridor on both sides of the road for 25.32 miles of NFSRs to remain open and along 2.1 miles of NFSRs to be decommissioned would reduce potential adverse impacts from off road travel and dispersed recreation. This alternative would help maintain or improve vegetative cover and soil conditions, and reduce sediment availability within the watershed. Approximately 1994 acres could potentially benefit from eliminating impacts in these areas.

The most direct benefit from the preferred alternative is to decommission unauthorized route 4405-10.34R-1 along Tanque Verde Creek and perennial pools that contain sensitive aquatic habitat. Closure of this road would eliminate vehicle traffic immediately adjacent to the creek and vehicle incursion into the pools. Approximately 1.15 miles of road would be decommissioned (2.2 acres).

Summary

Decommissioning roads on 31.4 acres, eliminating off-road travel and dispersed recreation on up to 1994 acres, and decommissioning the unauthorized Tanque Verde Road would benefit surface water quality by reducing available sediment within the watershed. These benefits would be localized and dispersed across the district. Acres that would potentially be improved (2028 acres) account for approximately 0.01% of the SCRD. Because the area improved is small in comparison with the size of the district and the improvements are dispersed across the landscape, it is not possible to quantify these benefits.

Cumulative Effects

Cumulative effects are defined as the incremental impact of an action, when added to other past, present, and reasonably foreseeable future actions.

Past and present trends in the project area include continued population growth of the communities surrounding the project area (Tucson, Oro Valley, Oracle, etc.) and increasing use of National Forest lands as a result. Past and present actions within the boundary of the SCRD have been described in the Table above.

Reasonably foreseeable future actions in the project area that affect water resources include:

- Oracle Hill, Bullock, and Aspen Wildfires resulted in increased erosion and sedimentation. Recovery from these fires is on-going and soils have mostly stabilized.

- Catalina-Rincon Firescape and Loma Linda Hazardous Fuels Reduction would result in an increase in sediment availability within the watersheds and a short term reduction in water quality. Long-term benefits to soils are predicted from improving forest health and watershed function, and reducing risks of catastrophic wildfire.

- Oracle Ridge Mine would have minor negative impacts to the watershed from ground disturbing activities resulting in the potential for increased sediment availability from mining activities, power line, heliport, and other facilities. There could be a reduction in ground water availability from this project depending on the source and amount of water used in operation.

- Redington Pass planning, cleanup, and other work, which would improve water quality in the long term by stabilizing and re-vegetating the site and eliminating off-road use.

- Marshall Gulch renovation would benefit soils by restoring the creek and improving hydrologic function.

- Sabino Scenic Trail would disturb soils in the areas of construction. The trail would result in increased soil compaction and erosion and potential adverse impacts to water quality.

- Mineral exploration could have an impact on water availability depending on the source and amount of water needed to conduction operations.

- Other actions listed in the cumulative effects section are not predicted to have an impact on water resources.

Because past, present, and future actions, when combined with travel management decisions, would not substantially alter water resources on the SCRD (and some would provide benefits), no cumulative effects from this project are expected.

Vegetation

The following is based on both a Forest Watershed and Forestry Program Manager's report filed in the administrative record as Item 8 and the District Biologist's report filed in the administrative record as Items 21 and 24.

Affected Environment

Elevations on the SCRD range from approximately 3000 ft to 9100 ft. The area supports a variety of habitat types, including various associations of Montane Conifer Forest and Woodland at the highest elevations; Madrean Evergreen Woodland, Interior Chaparral, Semi desert Grassland, Sonoran Desertscrub at the lowest elevations; and Interior Deciduous Riparian Woodland along certain drainage bottoms (Brown 1982).

The highest elevations support a mixed-conifer association of Rocky Mountain Montane Conifer Forest. In its mature state, this forest type supports Douglas-fir (*Psuedostuga menziezii*), ponderosa pine (*Pinus ponderosa*), southwestern white pine (*P. strobiformes*) and white fir (*Abies concolor*).

Below the elevations that support mixed-conifer, a pine-oak association of Rocky Mountain Montane Conifer Forest exists (Brown 1982). In the Basin and Range geographic province of southeastern Arizona, this forest type supports predominantly ponderosa pine (*Pinus ponderosa*) with understory oaks including Emory oak (*Quercus emorii*), Arizona white oak (*Q. arizonica*), and silverleaf oak (*Quercus hypoleucoides*). Other conifers also found in this habitat type include Apache pine (*P. engelmanii*), Arizona pine (*P. arizonica*), and Chihuahua pine (*P. leiophylla*).

The most common vegetation type on the SCRD is Evergreen Woodland, which is expressed in two forms, depending on soil and slope. Along canyon bottoms where soils are deeper and slopes more gradual, it is expressed in an Arizona oak/side oats grama association that displays an open-savannah quality. Typical tree species in this association are Arizona white oak (*Quercus arizonica*), alligator juniper (*Juniperus deppeana*), and piñon pine (*Pinus cembroides*). This association includes grasses that are well represented, including side-oats grama (*Bouteloua curtipendula*), three-awns (*Aristida ternipes*), and lovegrass (*Eragrostis intermedia*). Shrubs here include mountain mahogany (*Cercocarpus* spp.), shrub live-oak (*Quercus turbinella*), beargrass (*Nolina microcarpa*), Palmer's agave (*Agave palmeri*), and skunkbush sumac (*Rhus trilobata*).

On steeper slopes having shallower granitic soils, Evergreen Woodland is expressed in the form of a dense association of Emory oak (*Quercus emoryii*) and manzanita (*Arctostaphylos* spp.). In this association, grasses are poorly represented and shrubs dominate the middle story, with trees such as Emory oak, alligator juniper, and an occasional Arizona madrone (*Arbutus arizonica*) in the overstory. Madrean Evergreen Oak Woodland requires fire to maintain its structure and diversity. The woodlands in the Redington Pass area contain a high proportion of shrubs and a low proportion of grasses, mostly as a result of fire suppression. The suppressed fire regime is also responsible for the increase in shin-dagger agave (*Agave schottii*), which further reduces the proportion of grasses in the area.

Semi desert Grassland is found in the middle elevations on south-facing slopes and broad, open bajadas[24]. In its most well-developed state under a natural disturbance regime, this habitat is typically represented by a mix of native and non-native grasses, with sparse shrubs and very few tree species. Grasslands in Redington Pass show an overabundance of shrub and tree species primarily because of fire suppression and the loss of the natural fire cycle. The area also supports a large proportion of non-native Lehmann lovegrass (*Eragrostis lehmanniana*), which reduces the quality of the habitat for a variety of wildlife species.

Riparian Habitat

Numerous canyons or washes bisect the project area. Lemmon Creek, Sabino Canyon, Cañada del Oro, and parts of Romero, Montrose, and Bullock Canyons have perennial surface water flow. However, below the surface of the miles of dry reaches, the water table may be shallow in spots or have subsurface flow. This flow is close enough to the surface to sustain riparian vegetation in these areas.

There is approximately 1000 acres of riparian habitat on the SCRD, less than 0.4 percent of the SCRD total acreage. Five channels in the project area are identified in the Forest Plan as being true riparian areas: Ash Creek, Cañada del Oro, Miller Canyon, Nugget Canyon, and Paige Creek. Data collected in these channels to assess existing conditions indicate that all of them have true riparian vegetation present,

[24] A broad slope of debris spread along the lower slopes of mountains by descending streams.

and four of them (Ash Creek, Miller Canyon, Nugget Canyon, and Paige Creek) meet or are moving toward the desired conditions expressed in the Forest Plan.

Interior Deciduous Riparian Woodland is found along certain drainages. Drainages in the conifer belt support riparian woodland that includes certain deciduous species characteristic of high elevations, such as big tooth maple (*Acer grandidentatum*), gamble oak (*Quercus gambelii*), Rocky Mountain maple (*Acer glabrum*), and quaking aspen (*Populus tremuloides*).

Middle and lower sections of drainages typically support other riparian-obligate tree species such as Freemont cottonwood (*Populus freemontii*), Arizona sycamore (*Plantanus wrightii*), and a variety of willows (*Salix* spp*.).* Along less moist drainages and secondary benches adjacent to the best developed riparian habitat, a different form of riparian habitat is found. This plant association includes Arizona walnut (*Juglans major*) and netleaf hackberry (*Celtis reticulata*).

Invasive Plant Species

Comments received from the public during the scoping phase of this NEPA review expressed concern about the potential introduction and propagation of invasive plant species (also referred to as "exotic" and "non-native" species). The invasion of natural communities by introduced species, both plant and animal, is a major global threat to biodiversity (Lodge 1993; Adair and Groves 1997). Invasive plants have been found to affect ecosystem structure and function adversely in habitats throughout the world by reducing native species richness, altering water or fire regimes, changing soil nutrient status and altering geomorphological processes (Macdonald et al. 1989; and Cronk and Fuller1995).

Invasive plants, such as buffelgrass (*Pennisetum ciliare*), have been introduced to each of the five SCRDs of the Forest not only by seed dispersal from vehicles, but also from dispersal via personal clothing, equipment, and belongings (e.g., tents); horse and other pack-animal dung; and by natural sources, such as wind, water, and in wildlife scat. These species are particularly adept at achieving seed dispersal and out-competing other species for available life-sustaining resources.

To discourage their proliferation, the Forest treats populations of invasive plants with herbicides and/or mechanically removes them when and where it is feasible. Some constraints that limit the success of treatments include, but are not limited to, available staff certified in pesticide application, season, weather conditions, and more importantly, funding. Assistance in invasive species management on the SCRD has been generously provided in recent years by various volunteer, environmental, and community organizations.

Environmental Impacts

No Action

Direct and Indirect Effects

Vegetation and Riparian Habitat: From a vegetation perspective the primary difference in potential effects between the no action and preferred alternative is related to the 300-foot camping corridor on the NFSR 35 and the roads in the upper elevations of the Santa Catalina Mountains. Under the no action alternative the road system would be not be modified to remove approximately 25 miles of camping corridor. As a result approximately 1,842 acres would still be subject to the potential effect of off-road driving for the purposes of camping and game retrieval. Also, under this alternative 16.1 miles of NFSRs and unauthorized routes would not be decommissioned. Without decommission, these roads may still contribute to soil erosion due to lack of road maintenance and vegetative cover. Although the no action alternative does not propose the construction of new bypass routes, existing roads within creek beds and with drainage problems would still contribute to soil damage, soil loss and vegetation disturbance.

Invasive Plant Species: The no action alternative would contribute to the continued new introduction and spread of invasive species as vehicular travel and roadside disturbance would continue with no change. All roads (designated NFSR or unauthorized) analyzed as part of this process are already used by the public.

Preferred Alternative

Direct and Indirect Effects

Vegetation and Riparian Habitat: The 5.08 miles of roads proposed for addition as NFSRs occupy about 9.85 acres (0.0038 %) of SCRD land. After designation, they would be maintained, as funding allows. This would help minimize erosion along 0.78 miles of road within 100 feet of channels that support riparian vegetation in the Happy Valley area (Ash, Paige, Miller, and Turkey Creeks); 0.52 miles of road located within 100 feet of the channel of Cañada del Oro; 0.53 miles of road within 100 feet of Nugget Canyon; and 0.15 miles of road within 150 feet of Soldier Canyon, all of which support riparian communities. Roads proposed for designation as NFSRs, though unauthorized, have been in use for varying lengths of time, and native vegetation is no longer apparent within their prism. With continued use, additional impacts within their prism are not expected.

The 12.23 miles of NFSR and 9.29 miles unauthorized routes that would be re-designated as restricted to administrative and permitee use would have little impact on the current vegetative cover or soil compaction as these impacts have already occurred through continued use.

The 0.97 miles of proposed bypass route construction would contribute to loss of vegetation and cover and short term soil erosion on 1.88 acres. However, the new routes would replace poorly located existing roads, limiting the long term soil damage, erosion, and vegetation disturbance associated with this section of road.

Decommissioning of NFSR 625 would eliminate a road parallel to Catalina Highway, decreasing the potential for adverse impacts to vegetation to 0.23 miles (less than 1 acre) of mixed-conifer forest. Decommissioning of NFSRs 807A, 4451 and 4491 would decrease observed damage to vegetation in 1.67 miles (about 3 acres) of evergreen woodland. Decommissioning the old NFSR 4434 would eliminate an old spur road and reduce potential damage to the semi desert grassland vegetation on 0.11 miles (less than 1 acre). Furthermore, decommissioning of 14.09 miles of unauthorized routes would reduce

vegetation damage and soil compaction on 27.3 acres across the district. By following BMPs during road decommissioning, the Forest would minimize and/or avoid adverse effects on riparian-obligate plant composition and distribution. Decommissioning these roads would also reduce long-term erosion potential and contribute to overall vegetative cover.

The proposed restriction of off-road motorized travel on 25.32 miles, where adverse impacts to sensitive resources exist, would prevent further damage. The lack of off-road travel within 300ft on each side of these roads would restore about 1,842 acres of evergreen woodland and desert grassland communities, and areas of riparian habitat to a more natural state.

Invasive Plant Species: The potential for an increase in the introduction and propagation of invasive plants due to the proposed alternative is unlikely, because the roads proposed for addition to the system are already used by Forest visitors, and such use is not anticipated to substantially increase after their designation as NFSRs. There is a potential for disturbance-driven invasive species spread on about 2 acres due to the construction of new bypass routes. However, the Forest would take action to ensure that introduction and spread does not affect vegetation communities long-term. Decommissioning four NFSRs and a proposed restriction on off-road motorized travel on about 25 miles would lessen the risk of the introduction and spread of invasive species over about 1,842 acres of Forest.

The 12.23 miles of NFSR and 9.29 miles unauthorized routes that would be re-designated as restricted to administrative and permitee use would have little impact on the current vegetative cover or soil compaction; however, the limited use may also limit the new introduction of invasive species along these routes.

Cumulative Effects

The cumulative effects analysis area is defined by the SCRD boundary and comprises approximately 254,578 acres. Projects and actions considered for this cumulative effects analysis are limited to vegetation management projects and wildland and prescribed fires within the analysis area and within a ±10 year time window of the preferred alternative. See Table 3-1 for a list of candidate projects and actions.

Within the last 10 years, vegetation management in the form of fuelwood harvest, thinning, mastication, and prescribed fire has reduced the density of vegetation to more natural levels, promoted understory species, encouraged regeneration of tree species, created a mosaic of burned and unburned vegetation, improved nutrient cycling and soil fertility, and improved overall ecosystem health, structure, function and diversity. Wildland fire affected about 20,700 acres.

These fires have had mostly positive long-term effects on the vegetation communities similar to those described above.

In the next 10 years, similar projects are planned within the analysis area. The Catalina-Rincon FireScape (still undergoing NEPA), Oracle Ridge Ecosystem Restoration Project, Spencer-Bigelow Fuels Project, and Redington Pass Project will facilitate thinning, fire, mastication, and fuelwood treatments. Decommissioning roads may impact the feasibility of treatments as access is reduced. Where treatments do occur, ecosystem health, structure, function, and diversity would be improved. Furthermore, the Catalina-Rincon FireScape would limit positive impacts from the restriction on off-road motorized travel on about 25 miles, as FireScape proposes permitted fuelwood harvesting within this 300-foot corridor.

Climate Change

Affected Environment

The climate and predicted climate change trends on forests of the southwest are described in *Southwestern Region Climate Change Trends and Forest Planning* (2010)(Seager et al. 2007, Gutzler and Robbins 2010). The climate of the southwestern United States is often characterized as dry and hot, but variation in topography, seasonal monsoons, and the strong influence of the El Nino Southern Oscillation (ENSO) and other global circulation patterns add complexity to this region (USDA 2010).

The impacts from climate change are hard to predict due to the highly variable climate of the southwest and the unpredictability of the variables that influence climate over time at subregional scales. USDA (2010) described expected impacts from climate change for forests of the southwest that include: increasing temperatures, longer lasting summer heat waves, warmer winters, later monsoonal season, reduced precipitation, an increase in extreme floods, and other possible effects. However, current global climate change models are not yet precise enough to apply to land management at the eco-regional or national forest scale. Consequently, it is not possible to analyze impacts to climate change at the district and/or project level with existing models. Vehicle exhaust contributes to greenhouse gases and climate forcing, and fugitive dust from roads contributes to particulate matter in the air the influences insolation and precipitation and thus on a large scale could impact climate change.

No Action

No change in the amount of vehicle use is expected under this alternative. Continued use of unneeded roads can result in more fugitive dust compared to other alternatives, but this difference is not measurable.

Preferred alternative

Changes in forest system roads are not expected to change the amount of vehicle traffic on the district, as users would most likely use an alternative route. There may be slight reductions in fugitive dust from closing some roads. However, this reduction would be difficult to measure and is expected to be negligible compared to background levels.

Cumulative Effects

As stated above, current global climate change models are not yet precise enough to apply to land management practices at the eco-regional scale much less the National Forest scale.

Consequently it is not possible to analyze impacts at the Ranger District scale or project level. Past and foreseeably future projects and practices included in table 3-1 above likely have and likely will continue to continue to contribute incrementally to changes in global climate. The potential effects of the preferred alternative with respect to fugitive dust and air quality are expected to be negligible; hence the preferred alternative is not expected to contribute adversely to cumulative effects on climate change.

Heritage Resources

The following text is based on a Forest Archaeologist's report filed in the administrative record as Item X.

Regulatory Framework

Under Section 106 of the National Historic Preservation Act (NHPA), the Forest Service has the responsibility, in consultation with the State Historic Preservation Officer (SHPO), tribes, and other interested parties, to identify historic properties within the area of potential effect and to determine the effects that a proposal could have on historic properties and cultural resources. Section 106 protects National Register of Historic Places (NRHP)-eligible sites on an equal basis with listed sites. The general process for identifying historic properties, potential effects, and possible mitigation is defined in the NHPA's implementing regulations at 36 CFR Section 800.

The Advisory Council on Historic Preservation (ACHP) oversees the process.

Direction for NHPA Section 106 consultation is provided in the Forest Service, Region 3 First Amended Programmatic Agreement (PA) Regarding Historic Property Protection and Responsibilities. Appendix I of the PA is a "Standard Consultation Protocol for Travel Management Route Designation (Protocol)," which was adopted in 2007. In their analysis of the impacts of travel management actions on historic properties, Forest cultural resource specialists are allowed to use the Protocol in lieu of SHPO consultation procedures defined in the PA and 36 CFR Section 800.

The Protocol affirms that designating routes to authorize motorized use has the potential to affect cultural resource sites and accordingly, constitutes an undertaking requiring NHPA Section 106 consultation, for designations that involve the following:

1. previously closed roads and trails not open to motor vehicle use;
2. unauthorized roads and trails, which are those not designated with NFS identification numbers and which may include, but are not limited to, user-created roads, former temporary roads, and other unclassified roads and trails;
3. unauthorized fixed routes or spurs and their associated features that are used by the public to access dispersed camp sites or areas, including the dispersed camp sites and areas themselves;
4. fixed-distance corridors along certain roads, including exempt roads, that will be designated for motorized dispersed camping;
5. areas open to cross-country motorized travel;
6. roads or trails that are considered to be historic properties; and
7. new construction, reroutes, and realignments.

The designations in items 2, 3, and 4 are representative of the Alternatives addressed in this EA.

Section V.E.1 – 4 of the PA outlines the Region 3 Forests protocol for consultation. The PA direction is as follows:

- **No effect:** When the agreed-upon level of inventory is completed and no properties are present in the area of potential effect, the FS shall document a finding of "no historic properties affected". Except as specified in Stipulations V.E.6 and E.7, the undertaking may proceed following approval of the inventory report by the Forest Archaeologist or other authorized FS professional cultural resource specialist and approval of the undertaking by the Forest Supervisor

- **Properties present, but not affected**. When the agreed upon level of inventory is completed and eligible or unevaluated properties are present in the area of potential effect, and the FS determines that the undertaking will not have an effect on any such properties, the FS shall document a finding of "no historic properties affected".

- **No adverse effect**. When the FS determines that one or more historic properties may be affected by an undertaking it will apply the criteria of adverse effect from the Council's regulations (36 CFR 800.5[a]) to determine if the effect will be adverse. If the effect will not be adverse, the FS

shall provide the inventory documentation and proposed "no adverse effect" finding to the SHPO and other consulting parties. The SHPO shall have 30 days from receipt to review the finding. If the SHPO agrees with the finding the FS may proceed with the undertaking in accordance with the proposed conditions or treatment measures.

- **Adverse effect:** If the FS finds, in consultation with the SHPO that the undertaking will have an "adverse effect" on historic properties, the FS shall notify the Council as specified in Section VII and shall resolve adverse effects following the procedures in 36 CFR 800.6 or any applicable standard treatment or standard consultation protocol developed pursuant to Stipulations IV.A.4 or IV.A.5 of this Agreement.

Affected Environment

Historic Properties

Cultural resources on the SCRD include a large variety of archaeological and historical sites created during the long course of human occupation and use of the Santa Catalina and Rincon Mountains. These include past habitations, artifact scatters, rock art sites, buildings, and other properties that bear evidence of human activity and use, and have scientific, historic, and cultural importance. Prior to European contact (pre-contact), extensive Native American occupation occurred in the nearby San Pedro and Santa Cruz valleys. While long-term habitations were concentrated in these valleys, smaller sites are commonly found in the Forest up to approximately 4500 feet in elevation.

Forest archaeologists completed Heritage Resources Report #2013-05-002, which documents the results of surveys conducted to identify historic properties within the area of potential effect, determine eligibility for the NRHP, and assess the potential effects from the proposed road addition to the system, decommissioning of roads, and restrictions on off-road motorized travel. This report covers 100% of the proposed changes to the existing system. The report states that:

(1) one cultural resource site was found on the segments of unauthorized roads (5.08 miles) to be added to the system;

(2) four cultural resource sites were found on the segments of unauthorized roads (9.29 miles) to be added to the system with restricted access;

(3) twelve cultural resource sites were found during surveys of the unauthorized roads (12.23 miles) proposed for decommissioning; 4) records review identified 20 previously recorded sites within the area along 36 miles of SCRD road where off-road motorized travel would be restricted.

Provided the recommendations outlined in the report are followed, the Forest archaeologist determined that there would be "No Adverse Effect" by any component of the Preferred Alternative.

Tribal Consultation

The Coronado NF consults with twelve Native American Tribes who have ancestral ties to lands currently managed by the Forest Service. These tribes include the Ak-Chin Indian Community, the Ft. Sill Apache Tribe, the Gila River Indian Community, the Hopi Tribe, the Mescalero Apache Tribe, the Pascua Yaqui Tribe, the Salt River Pima-Maricopa Indian Community, the San Carlos Apache Tribe, the Tohono O'odham Nation, the White Mountain Apache Tribe, the Yavapai-Apache Nation, and the Pueblo of Zuni.

Tribes were initially contacted concerning policies and regulations regarding off-highway vehicle users on unauthorized routes with a letter dated May 18, 2007. In response, the Ak-Chin Cultural Resource Office (letter from Gary Gilbert, June 4, 2007) expressed a concern with adverse impacts due to OHV users, as their basket-making materials are collected on the forest.

Tribes were once again contacted during the scoping phase and sent letters asking for their comments and input on March 19, 2009. The White Mountain Apache Historic Preservation Office (THPO) responded (letter from THPO Mark Altaha, May 12, 2009) with the comment that "the proposed action ***will not have an effect*** to the White Mountain Apache tribe's Cultural Heritage Resources and/or historic properties. The project may proceed with the understanding that any ground disturbance should be monitored ***if*** there are reasons to believe that human remains and/or funerary objects are present, if they are encountered all construction activities are to be stopped and the proper authorities and/or affiliated tribe(s) be notified to evaluate the situation."

Consultation on the Travel Management Process continued in 2011. On November, 18, 2011, the general scoping notice was mailed to all interested parties (including the aforementioned` twelve Native American Tribes). No tribal comments were received in response to the general scoping notice. On January 20, 2012, CNF representatives made a presentation to the Four Southern Tribes Cultural Resources Working Group. Shortly afterward, on January 12, all 12 tribes were notified of the Collaborative Alternative Team participation in the Travel Management Process and they were invited to participate. On February 14, 2012, additional information was sent to Mr. Peter Steere, Tribal Historic Preservation Officer for the Tohono O'odham Nation, and once again encouraging participation in creation of the CAT alternatives. No tribal representatives participated in the subsequent CAT meetings regarding TMR implementation on the SCRD.

Tribes are currently being consulted regarding the updated results of archaeological surveys and recommendations for revised proposed action discussed in this EA.

Traditional and Contemporary Tribal Uses

At the time of the first Spanish and Jesuit missionary incursion into the area, the mountains of the Santa Catalina RD were well within the territory of O'odham peoples, with Akimel O'odham settlements in the Santa Cruz Valley on the south and west sides of the mountains and while O'odham peoples identified as Sobaipuri occupied settlements in the San Pedro Valley to the north and east (e.g., Dobyns 1976). By the 1760s, the Sobaipuri villages along the San Pedro were largely abandoned and occupants relocated to communities in the Santa Cruz Valley (Dobyns 1976). After that time, Western Apache bands made frequent use of the mountains. The mountain is known to O'odham as *Babad Duag* or *Papak Duag*, meaning Frog Mountain. As reported as early as Russell (1908) and Densmore (1929), the mountain is identified in traditional songs and stories of both the Akimel and Tohono O'odham. Representatives of the Four Southern Tribes of O'odham people have indicated that Babat Duag continues to be a place of traditional and cultural importance.

By the late 19th century, use of the mountains by native peoples had become limited. An 1890s account describes O'odham peoples cooking and processing agave, including making ropes from agave fiber at a camp along the western side of the mountains (Mulford 1896:62-63). The Pima Canyon Site on the south side of Pusch Ridge includes historic-period artifacts from such a camp. Western Apaches, particularly from San Carlos, regularly collected acorns on the Forest in the vicinity of Oracle until at least the mid-1900s, but it is unclear whether collection is presently on-going.

In recent decades, O'odham basket-makers have collected narrow-leaf yucca and beargrass from the Oracle area, both on and off the Forest. In recent years, Coronado NF personnel have facilitated collecting trips by Tohono O'Odham and Gila River youth and elder groups in the Oracle area. The Hasan Preparatory & Leadership School (a school designed to serve as an academically rigorous, bicultural, and community-based high school for Native youth) holds an annual weekend leadership camp at the Whitetail Campground. In addition, the Tohono O'Odham Justice Center hosts an annual administrative retreat at the Molino Basin Campground.

Environmental Impacts

Direct and Indirect Effects

Cultural resources such as archaeological remains are susceptible to impacts from road construction, use, maintenance, and from camping and motorized vehicle use adjacent to roads. Initial road construction can remove or disturb archaeological features and deposits. Road maintenance activities can cause further physical damage to archaeological materials within the road prism. Vehicles can crush or displace artifacts and features impacting the physical integrity of the site and destroying or impairing its scientific value. Repeated camping or parking in an area can result in removal of vegetation cover and increased potential for erosion. Removal of ground cover also increases the visibility of artifacts and features, making the more susceptible to collection or vandalism. These effects are direct and are generally irreversible.

Motorized vehicle roads can indirectly affect cultural resources by allowing easier access to remote areas, facilitating greater public visitation. Some studies in the Western US have shown that the closer a site is

to a motorized route, the higher the probability that artifacts have been collected or the site has been vandalized. On the Santa Catalina RD, and throughout most of the Coronado NF, looting has been much less prevalent than in many other parts of the Southwest. Relatively scarcity of whole ceramic vessels prized by collectors makes the SCRD's sites less appealing to looters. In addition, looting at local sites appears to be less common than 3 or 4 decades ago. Increased public awareness of the value of historic preservation, and of the illegality of unauthorized excavation and collection, as well as public involvement programs such as the Arizona Site Steward program, have led to a reduction in the amount of looting activity.

Archaeological survey identified four cultural sites with potential for direct impacts from camping, vehicular access, and erosion. Changing the designation of these roads from open authorized to open authorized restricted (by gating) will reduce these direct impacts to cultural resource sites.

Recent surveys of the areas surrounding roads proposed for designation identified seven cultural sites. The six newly recorded sites and one previously identified site will not be adversely affected by the preferred alternative changes due to the closure of one road and restricting access to five other roads. The Forest Archaeologist recommended the withdrawal of these five roads from the preferred alternative. The remaining roads are not expected to result in indirect impacts to cultural sites.

No Action

This alternative would result in no changes to National Forest System Road (NFSR) designations. Use of user-created and non-system routes would continue. No new road construction would be authorized, but decommissioning and recommendations for limited access to certain areas for resource concerns would be addressed. Potential adverse effects to heritage resources would remain continue to exist unless addressed on a site-specific basis. In addition, this alternative would also result in the retention of the 300 foot camping corridor along NFSR 35 and roads at the highest elevations in the Santa Catalina Mountains. This would have the potential to continue ground disturbance in these areas that could potentially affect heritage resources if any are present.

Under the No Action alternative, no user-created roads would be added to the NF System Roads, and would nominally be closed to the public. Roads that are proposed for decommissioning would remain open. At least nine cultural resource sites that are intersected by user-created roads would remain subject to those impacts. Vehicular access to the vicinity of the Sutherland Wash Rock Art District via a non-system road would continue.

Preferred Alternative

The majority of system roads and their previously designated 300-foot corridor would continue. Restrictions on off-road motor-vehicle travel on certain SCRD roads would have neither direct nor indirect potential to affect cultural resource sites. Adding user-created roads to the system has the

potential to affect cultural resource sites in and adjacent to those roads. In the majority of these cases, the roads have been in existence and in use for many years, and sites along them have been subject to impacts from that use. Archaeological survey identified six cultural sites crossed by, or adjacent to, these roads. In one of these cases, the proposed addition of a road has been dropped. In four cases, the road would be designated as open authorized restricted, that is, with no access to the general public. Changing the designation of these roads from open authorized to open authorized restricted (by gating) will reduce these direct impacts to cultural resource sites. In the sixth case, a site adjacent to a road proposed for designation as open authorized is recommended for monitoring to determine if impacts are occurring.

Closing non-system roads would result in decreased access to a number of cultural resource sites, and a decrease in the direct and indirect impacts associated with vehicular access. In nine cases, the proposed closure of a non-system road would halt vehicular access to sites. In five cases, cultural resource sites are present at the junction of a road proposed for closure and a NFS Road; minimum-impact closure such as signing is proposed for these situations. Closure of non-system roads would mean vehicles could not drive as close to the sites of the Sutherland Wash Rock Art District as at present.

Cumulative Effects

Reasonably foreseeable actions that could potentially affect cultural resources include a host of land-use practices discussed elsewhere in this report. Although these activities could affect cultural resources and their contexts in a variety of direct and indirect ways, those actions must comply with Section 106 of NHPA and are planned and managed whenever possible to minimize their effects through the use of design measures that mitigate potential disturbance. Application of the standards and protection measures included in the Protocol and elimination of cross-country travel would reduce the amount of land subject to ground disturbance by vehicle use. Selection of the preferred alternative is not expected to result in any significant increase in cumulative effects associated with cultural resources on the SCRD of the Coronado National Forest. Illegal activities such as vandalism and looting by pothunters clearly affect cultural resources. No indication of vandalism or pot hunting was documented in the six sites located near proposed roads. However, since these activities are illegal, they cannot be predicted.

Scenic Resources

The following text is based on the Forest Landscape Architect's report filed in the administrative record as Item 22.

Affected Environment

The landscape character of the Santa Catalina and Rincon Mountains includes low elevation Sonoran desert and semi-desert grasslands, mid elevation chaparral and oak woodlands, and high elevation pine-oak, ponderosa pine, and mixed conifer forests. There is riparian vegetation along many drainage

bottoms at all elevations. Elevations range from 2,724 ft. to 9,157 ft. Landforms vary from relatively gentle slopes in the foothills to steep and rugged mountains and sharply carved canyons.

Although nature and scenery are primary attractions for visitors, the valued landscape also includes a system of 284 miles of roads (most of which provide access to the forest and recreation opportunities), a network of hiking trails (including the Arizona National Scenic Trail), dozens of developed recreation sites (including campgrounds, picnic areas, vista points, and trailheads), two visitor centers, summer homes, historic sites, and a ski area.

Catalina Highway (which is locally known as Mt. Lemmon Highway) has numerous scenic designations, including a Pima County Scenic Route by (1980s), "Sky Island Scenic Byway" by Chief of the Forest Service in 1995, "Sky Island Parkway" by ADOT in 2001, and the road was designated a National Scenic Byway (NSB) by the Federal Highway Administration in 2005. The first two designations end at Summerhaven, while the Parkway and NSB designations extend to Marshall Gulch and Mt. Lemmon Ski Valley.

Modifications to the valued landscape character include various past and present land uses (such as fuelwood harvesting, vegetation management, and grazing) which are visible in some areas but have little impact on scenic quality, facilities (communication sites, astrophysical facilities, administrative sites) which are negative visual elements but are relatively small and isolated, and unmanaged recreation activities (such as OHV use and shooting areas) which is especially evident in areas such as Redington Pass. Natural disturbances that affect scenery include wildfires (especially the Bullock and Aspen Fires) and large debris flows which are concentrated in the Sabino Canyon area. Development on private lands alters the natural setting in some areas of the forest, especially where urban areas (such as the community of Summerhaven and metropolitan Tucson) abut National Forest lands. Public roads and trails are generally not considered negative visual elements because they provide access to the forest. Public recreation sites (campgrounds, trailheads, Ski Valley, organization camps, etc.) are evident, but are part of the valued landscape and have not resulted in substantial impacts to scenic resources, so these facilities and not usually considered negative impacts. Recreation residences generally blend into the landscape. Mines and quarries have degraded scenery in a few locations.

Forest Plan Direction

Current direction in the Forest Plan includes the following Forest-wide standards and guidelines for Visual Resource Management (p. 28):

- Maintain and protect the visual integrity of the landscape
- Rehabilitate or enhance the existing visual quality in the process of accomplishing other resource management practices.

The existing condition of scenic resources in the Santa Catalina EMA is generally good. Although effects from wildfire and human modifications are evident in most areas outside of wilderness, visitors are

treated to mostly natural landscapes that are markedly different from the urban setting where their journey began. Pusch Ridge Wilderness and Rincon Mountain Wilderness offer scenery that is generally in excellent condition.

The proposed project lies within Management Areas 1, 2, 3, 3A, 4, 7, and 9. Scenic quality standards and guidelines for Management Area 1, 2, 3, 3A, and 7 require that "Visual quality objectives will be met" (see Management Emphasis and Intensity on pages 47, 50, 55, 59, and 67). Scenic quality standards and guidelines for Management Area 4 require that "Visual quality objectives will be met or exceeded" (see Management Emphasis and Intensity on page 62). Standards and guidelines for Management Area 9 are to manage for 100% VQO Preservation (see Management Emphasis and Intensity on pages 79).

Visual Quality Objectives are based on two components:

- *Variety Class*, which is a measure of the visual variety or diversity of landscape character. The three variety classes are A (Distinctive), B (Common), and C (Minimal); and

- *Sensitivity Levels and Distance Zone*, which are a measure of viewer interest in scenic qualities of a landscape. The three levels are 1 (Highest), 2 (Average), and 3 (Lowest). Distance Zones include Foreground (up to 1/2 mile), Middleground (1/2 mile to 5 miles), and Background (over 5 miles).

There are no maps of Sensitivity Levels for the project area. However, a review of VQO maps indicates that primary visitor-access roads are the Highest, i.e., Sensitivity Level 1, including Mt. Lemmon Highway, Sabino Canyon, Redington Pass Road, the lower elevation parts of the Oracle Control Road, and the road into Happy Valley. A project-level review of Sensitivity Levels confirms that these are appropriate. It is unclear whether any Sensitivity Level 2 travelways or areas were identified in the VQO mapping, but some of the secondary roads would qualify.

Visual Quality Objectives on the SCRD vary from Preservation to Maximum Modification; definitions are provided in Table 3-8.

Table 3-8. Visual Quality Objectives (VQOs) on the SCRD.

VQO	MANAGEMENT DIRECTION
Preservation	Only ecological changes are allowed.

Retention	Management activities should not be evident to the casual Forest visitor.
Partial Retention	Management activities must be visually subordinate to the characteristic landscape.
Modification	Management activities may dominate the characteristic landscape, but must, at the same time, utilize naturally established form, line, color, and texture.
Maximum Modification	*(Note: In recent yea* Management activities may dominate the characteristic landscape, but should appear as natural occurrences when viewed as background. [25]

Environmental Impacts

No Action

Under the No Action alternative, the road system on the SCRD would consist of only the roads shown on the current Motor Vehicle Use Maps (MVUM), which include 284.13 miles of open roads. No changes would be made to the road system, and use on the 31 miles of unauthorized routes would continue to be prohibited. However, since it is difficult to enforce these prohibitions, some use (and associated impacts) would likely continue, at least in the short term.

Degradation of scenic integrity from non-system roads and dispersed recreation areas (including loss of vegetation, bare and compacted soils, muddy rutted areas, and erosion) would continue until all non-system roads were obliterated and naturalized, which would likely take many years. Recovery of damaged soils and vegetation would take much longer.

Preferred alternative

Direct and Indirect Effects

[25] In recent years, there has been a debate whether Maximum Modification is an acceptable VQO on National Forest lands.

The proposed project would

- Re-designate 12.23 miles of NFSR road as NFSR-Restricted.
- Decommission 2.01 miles of NFSR roads and 14.09 miles of unauthorized roads.
- Add 5.08 miles of unauthorized road to the NFSR system.
- Construct 0.97 miles of bypass routes (new roads) and add them to the NFSR system.
- Add 9.29 miles of unauthorized roads as NFSR-Restricted.
- Eliminate the 300 ft. camping corridor along 25.32 miles of roads and designate 16 existing user-created spur roads in Happy Valley.

Proposed changes would benefit scenic resources by:

- Getting some roads out of drainages, which would improve riparian vegetation and benefit scenery.
- Decommissioning some roads, which may result in short-term impacts to scenery, but once these areas were naturalized, scenic quality would be improved.
- Adding roads to the National Forest road system. System roads would be properly designed and maintained, which would reduce scenic impacts such as rutting and erosion.
- Restricting the use of some roads to administrative and/or permitee use only, this would limit vehicular use and associated damage (and would also provide quieter, scenic settings for visitors who seek non-motorized settings).
- Eliminating 300-foot camping corridors on Mt. Lemmon and in Happy Valley, which would reduce vegetation damage and compacted soils resulting from off-road vehicle use and dispersed camping.
- Closing an area in Redington Pass with shooting and camping impacts. Cleanup and closure would benefit scenery

The project is expected to be implemented over many years, and degradation of scenic integrity from non-system roads and dispersed recreation areas would continue until all non-system roads were obliterated and naturalized.

Constructing new roads could result in scenic impacts such as vegetation removal, cuts and fills, and drainage features. The proposed changes would be unlikely to cause many new impacts, though the proposed re-route of the road to Chimney rock (near Bellota Ranch) must be cut into a hillside to relocate it out of the low muddy area where the current road lies, and this would result in a more visible roadway.

Roads in VQO Partial Retention, Modification, and Maximum Modification are generally compatible with visual resource objectives. Roads in VQO Retention can be compatible if they are designed and constructed to minimize impacts to the valued landscape. Roads are not generally compatible with VQO Preservation. Although most of the proposed road changes are located in compatible VQOs, there would be some changes in VQO Retention and Preservation, and these are analyzed below.

Proposed changes in VQO Retention:

- Addition of non-system roads as NFSR in 6 areas: Dispersed camping areas in Happy Valley, an existing horse trailer parking area at the Hirabayashi Recreation Site, an existing road to recreation residences in the Bear Wallow area, three short existing segments of roads to access dispersed recreation sites along the Control Road, and two short existing segments of roads to access dispersed recreation sites near Charouleau Gap. These are existing roads and use areas, and proposed changes would meet VQO Retention.

- Addition of non-system roads as NFSR with restricted access in several areas. These are existing roads that access private lands, utility lines, recreation residences, Pima County maintenance yards, special use permitee facilities, a Forest Service administrative site, and a Forest Service lookout tower. These proposed changes would meet VQO Retention.

Proposed changes in VQO Preservation:

There are 3 road changes proposed in Management Area 9 which is to be managed for VQO Preservation and does not allow for human activities. These roads are located at the south end of the Rincon Mountain Wilderness. Two of the recommendations are to decommission roads, which would best meet this VQO. One of the recommendations is to restrict access on an existing road (Hidden Springs). Although the presence of a road is not consistent with VQO Preservation, this is an existing road leading to a water tank and in order for vehicles to use this road, Wilderness protocols would be used, which would help protect scenery.

Cumulative Effects

Cumulative effects are defined as the incremental impact of an action, when added to other past, present, and reasonably foreseeable future actions.

Past and present trends in the project area include continued population growth of the communities surrounding the project area (Tucson, Oro Valley, Oracle, etc.) and increasing use of National Forest lands as a result. Past and present actions within the boundary of the SCRD have been described in the Table above.

Reasonably foreseeable future actions in the project area that affect scenic resources include:

- Oracle Hill, Bullock, and Aspen Wildfires resulted in increased erosion and sedimentation. Recovery from these fires is on-going and soils have mostly stabilized.

- Catalina-Rincon Firescape and Loma Linda Hazardous Fuels Reduction would result in an increase in sediment availability within the watersheds and a short term reduction in water quality. Long-term benefits to soils are predicted from improving forest health and watershed function, and reducing risks of catastrophic wildfire.

- Oracle Ridge Mine would have minor negative impacts to the watershed from ground disturbing activities resulting in the potential for increased sediment availability from mining activities, power line, heliport, and other facilities. There could be a reduction in ground water availability from this project depending on the source and amount of water used in operation.

- Redington Pass planning, cleanup, and other work, which would improve water quality in the long term by stabilizing and re-vegetating the site and eliminating off-road use.

- Marshall Gulch renovation would benefit soils by restoring the creek and improving hydrologic function.

- Sabino Scenic Trail would disturb soils in the areas of construction. The trail would result in increased soil compaction and erosion and potential adverse impacts to water quality.

- Mineral exploration could have an impact on water availability depending on the source and amount of water needed to conduction operations.

- Other actions listed in the cumulative effects section are not predicted to have an impact on water resources.

Because past, present, and future actions, when combined with travel management decisions, would not substantially alter scenic resources on the SCRD (and some would provide benefits), no cumulative effects from this project are expected.

Minerals

Affected Environment

The SCRD contains copper, lead, zinc, molybdenum, silver, gold, tungsten, and other metal mineralization and deposits. Mineralization occurs in both lode (bedrock) and placer ("sediment") deposits. Mining began in the area in the late 19th century, and interest continues today though there is only one operation that has had any recent and significant production, the Oracle Ridge Mine. The mine is on patented land within the National Forest a few miles northeast of Mt. Lemmon. The Forest is currently evaluating a request for a special use permit for transporting slurry from the mine across Forest. There has also been a proposal for mineral exploration at the Korn Kob Mine located adjacent to Beuhman Canyon, northeast of Redington Pass.

A large percentage of the district that is open to mining claim location has active mining claims for which the Forest has not received plans of operation for exploration or mining. Although there are numerous active mining claims on the district, mineral rights alone do not justify motor vehicle access. An operator must have proposed an activity that necessitates such access, and, that activity must have been approved.

Environmental Consequences

Proposed mineral exploration at the Korn Kob Mine and proposed renewed mining activity at the Oracle Ridge Mine will require vehicular access across the Forest. Closure or change in road status with this analysis could impact operations associated with these mine sites.

No Action

There would be no change in access or operations for the Oracle Ridge or the Korn Kob Mine, under the no action alternative. All unauthorized roads not included on the MVUM would continue to be illegal to travel upon because they are not system roads. The Korn Kob proposed Plan of Operations includes test drilling along-road segments identified as

unauthorized routes 4447.049R-1, 4447.052R-1, 4447.052R-2 and 4447.052R-3Because travel on these routes would not be allowed except on routes included in the MVUM, this alternative may affect operations at the Korn Kob and could potentially require construction of new routes for exploratory drilling.

Preferred alternative

As a result of scoping comments NFSR 4451, also known as Lombar Hill Road, is no longer proposed for decommissioning in this alternative. This is a short segment of road with no Forest Service owned easement. It is included in the special use permit request for the Oracle Ridge Mine, and is the company's preferred route as an access road for maintenance to their slurry pipeline. Decommissioning of the road as was previously proposed would have been contrary to the company's proposal and would have likely result in the use of Forest Road 4450 as an alternative for access to the slurry line, putting mine vehicular traffic into Geesaman Wash.

The current Korn Kob Mine operators have proposed numerous exploration drill holes of off of NFSR 4447. Roads 4447.049R-1, 4447.052R-1, 4447.052R-2, 4447.052R-3, which would no longer be decommissioned under this alternative, are spurs off of NFSR4447 will be used for access under the current proposal. Modification of the preferred alternative to avoid decommissioning these roads will be consistent with the plan of operations and eliminate the need for construction of new spurs as alternate access to drill sites. Implementation of this alternative will therefore result in no additional impacts to mineral exploration associated with the Korn Kob Mine.

Cumulative Effects

Mineral exploration and extraction has been occurring on the SCRD for as long as the Forest Service has existed and the archaeological record indicates that it may have occurred as far back in time as the 18th century. Within the Boundary of the SCRD mining, particularly for copper, has occurred most actively from about the 1940's up to the present and is expected to continue into the future so long as copper prices can support the costs of extraction. Road construction is generally an integral part of most mineral extraction. Forest road management and land management policies can and have affected mineral extraction and exploration particularly as it relates to access for operations. In this case, the preferred alternative has addressed mining access issues at the two active mining operations on the SCRD. Therefore, implementation of the preferred alternative will not contribute adversely to cumulative effects of Forest Management on mining operations.

Socioeconomics

Affected Environment

The SCRD manages Coronado National Forest lands in Cochise, Pima, and Pinal counties. These three counties form the study area for the affected environment assessment. The environmental consequences analysis employs an 11-county region in Arizona and New Mexico in order to capture the flow of workers and goods across counties. The larger study area provides for a more accurate assessment of economic consequences.

Demographic Characteristics

In 2010, Cochise County had a population of 131,346, Pima County had a population of 980,263, and Pinal County had a population of 375,770 (U.S. Census Bureau 2010). Pinal County is the fastest growing county in the study area, more than tripling in size between 1990 and 2010 (U.S. Census Bureau 1990). Rapid population growth may indicate expanding economic opportunities and the presence of desirable natural and cultural amenities. National Forest System lands and other protected areas offer social and economic opportunities that may make an area attractive to new residents.

While rapid population growth often signals desirable community attributes, it can also impose costs on those communities. In particular, rapid growth can strain infrastructure, natural resources, and community cohesion. Increasing population size places pressure on forest resources and may spur demand for recreation opportunities.

All three counties have higher shares of individuals with disabilities and individuals aged 65 years or older than the state and nation (U.S. Census Bureau 2012a and U.S. Census Bureau 2012b). While disability and advanced age do not necessarily indicate mobility impairments, these classifications provide a useful proxy for individuals who may be affected disproportionately by restrictions on motorized use.

Hiking/walking is the most popular main activity by a large margin, with more than half of forest visitors citing it as the purpose of their visit. The most common motorized activity is driving for pleasure, which approximately one-quarter of forest visitors do during their trip and six percent identifying it as their main activity (USFS 2012).

Economic Characteristics

All three study area counties have per capita income below the state and national figures; however, per capita income in Pima County is not meaningfully different from per capita income in the state. Pinal County has the lowest per capita income among the considered geographies, yet it also has the highest median earnings for workers (U.S. Census Bureau 2010). This disparity may result from relatively low labor force participation. These data indicate a somewhat higher share of economic vulnerability in the study area relative to the state and nation. Economically vulnerable areas are less able to adapt to change. Changes to employment and income in the study area should be considered within this context.

Environmental Justice

The racial and ethnic composition of the study area counties is similar to the racial and ethnic composition of Arizona as a whole (U.S. Census Bureau 2010). Pinal County has the lowest poverty rate among the study area counties, Arizona, and the United States. This finding is consistent with the median earnings for workers data, presented above. Both Pima and Cochise counties have poverty rates above the state and national rates (U.S. Census Bureau 2010). Public lands provide affordable recreation opportunities to many Americans. In the study area, the proximity of Forest land makes the cost of visitation relatively low. Low-income individuals will have fewer resources for engaging in substitute behavior (e.g., participating in another activity or visiting another site). Therefore, adaptation to changes in motorized recreation opportunities may be more difficult for low-income individuals.

Environmental Consequences

A categorization of National Visitor Use Monitoring (NVUM) program data revealed that motorized use accounts for 14 to 24 percent of visitor activities and non-motorized use accounts for 77 to 87 percent of visitor activities. Since NVUM data is only available at the forest level, the economic consequences analysis is conducted for the forest as a whole. All miles of roads and trails across the forest are treated equally for the purposes of the economic analysis. In other words, the reduction of one mile of road open for public motorized use on the SCRD is assumed to have the same effect as a one mile reduction on the Safford Ranger District.

Direct and Indirect Effects Common to All Alternatives

None of alternatives would have environmental justice consequences. Estimated economic consequences are small and no disproportionately adverse effects to low-income and minority groups would result from any of the alternatives.

No Action – Direct and Indirect Effects

The no action alternative would continue current management of motorized recreation on the SCRD. The alternative would keep 263 miles of road and trail open to public motorized use, which accounts for approximately 12 percent of the mileage across the entire forest (2,154 miles). The no action alternative would continue to support approximately 91 jobs and $3.1 million in labor income associated with motorized recreation on the Coronado NF. The majority of recreation-related employment (approximately 400 jobs) would continue to be supported by non-motorized recreation on the forest.

Preferred alternative – Direct and Indirect Effects

The preferred alternative would reduce motorized opportunities on the SCRD by approximately 8 miles. This change would not measurably affect employment; however, it may have a minor effect on labor income. Assuming a linear relationship between motorized recreationist spending and miles of road and trails, labor income may decrease by approximately $11,500 (approximately 0.4 percent of labor income resulting from motorized recreation on the forest). However, substitute behavior is likely to minimize the potential economic consequences.

Cumulative Effects

Travel management planning on public lands throughout the region has generally reduced motorized recreation opportunities. Some of the activities listed in the cumulative effects table above have affected the economic contribution of motorized recreation within the communities served by the SCRD. Activities such as mineral exploration, fuelwood harvest, and livestock grazing have contributed beneficially to cumulative economic impacts by increasing available roads and therefore increasing vehicular recreation and its economic benefits. Other elements such as catastrophic wildfires have reduced the economic benefits of vehicular recreation because some roads were damaged and made unusable as a result of post-fire erosion. The effects of the preferred alternative are expected to primarily occur in the next ten years within the adjacent communities that derive the most benefit from recreational opportunities including vehicle-based recreation. As described above in the recreation section the preferred alternative on the SCRD will not change the recreation opportunity spectrum on the district. The preferred alternative is not expected to contribute adverse effects to the recreational opportunity spectrum and therefore will not reduce the economic benefits of vehicular recreation nor will it disproportionately affect low-income individuals.

Chapter 4 – Consultation and Coordination

The Forest Service consulted the following individuals, Federal, state and local agencies, tribes and non-Forest Service persons during the development of this environmental assessment:

Interdisciplinary Team:

Andrea Campbell	NEPA Planning,
Rachael Hohl	NEPA Planning
Kathy Makansi	Heritage
Bill Gillespe	Heritage, Tribal Relations
Michelle Girard	Soil, Air, Watershed
Rachael Biggs	Forestry, Fuels, Vegetation
Debbie Kriegel	Landscape Architect, Scenery Management
Devin Quintana	GIS, Engineering
Eli Curiel	Engineering, Travel Analysis Planning
Misty Shafiquila	Engineering
Linda Stamer	Recreation
Larry Pratt	Recreation
Heidi Schewel	Public Affairs
Joshua Taiz	Team Lead, Wildlife
Delilah Jawarski	Sociologist
Beverley Everson	Minerals
Stan Helin	District Ranger
Shalonda Guy	Deputy District Ranger

Other Participants:

James Sutton	Special Uses
Chrissy Pearson	Range

Federal, State, and Local Agencies:

US Fish & Wildlife Service

Arizona State Historic Preservation Office

Arizona Game and Fish Department

Pima County, AZ

Pinal County, AZ

American Indian Tribes:

Ak-Chin Indian Community

Ft. Sill Apache Tribe

Gila River Indian Community

Hopi Tribe

Mescalero Apache Tribe

Pascua Yaqui Tribe

Salt River Pima-Maricopa Indian Community

San Carlos Apache Tribe

Tohono O'odham Nation

White Mountain Apache Tribe

Yavapai-Apache Nation

Pueblo of Zuni

Tribal Consultation Summary

Table 1. Summary of tribal consultation on Travel Management issues

Date	Tribe	Location	Activity
5-18-07	Ak-Chin Indian Community	Contact Letter	Request for Input on Off-Road Vehicle Use
5-18-07	Ft. Sill Apache Tribe	Contact Letter	Request for Input on Off-Road Vehicle Use
5-18-07	Gila River Indian Community	Contact Letter	Request for Input on Off-Road Vehicle Use
5-18-07	Hopi Tribe	Contact Letter	Request for Input on Off-Road Vehicle Use
5-18-07	Mescalero Apache Tribe	Contact Letter	Request for Input on Off-Road Vehicle Use
5-18-07	Pascua Yaqui Tribe	Contact Letter	Request for Input on Off-Road Vehicle Use
5-18-07	Salt River Pima-Maricopa Indian Community	Contact Letter	Request for Input on Off-Road Vehicle Use
5-18-07	San Carlos Apache Tribe	Contact Letter	Request for Input on Off-Road Vehicle Use
5-18-07	Tohono O'odham Nation	Contact Letter	Request for Input on Off-Road Vehicle Use
5-18-07	White Mountain Apache Tribe	Contact Letter	Request for Input on Off-Road Vehicle Use
5-18-07	Yavapai-Apache Nation	Contact Letter	Request for Input on Off-Road Vehicle Use
5-18-07	Pueblo of Zuni	Contact Letter	Request for Input on Off-Road Vehicle Use
3-19-09	Ak-Chin Indian Community	Scoping Notice	Request comment on SCRD Scoping Notice
3-19-09	Ft. Sill Apache Tribe	Scoping Notice	Request comment on SCRD Scoping Notice
3-19-09	Gila River Indian Community	Scoping Notice	Request comment on SCRD Scoping Notice

3-19-09	Hopi Tribe	Scoping Notice	Request comment on SCRD Scoping Notice
3-19-09	Mescalero Apache Tribe	Scoping Notice	Request comment on SCRD Scoping Notice
3-19-09	Pascua Yaqui Tribe	Scoping Notice	Request comment on SCRD Scoping Notice
3-19-09	Salt River Pima-Maricopa Indian Community	Scoping Notice	Request comment on SCRD Scoping Notice
3-19-09	San Carlos Apache Tribe	Scoping Notice	Request comment on SCRD Scoping Notice
3-19-09	Tohono O'odham Nation	Scoping Notice	Request comment on SCRD Scoping Notice
3-19-09	White Mountain Apache Tribe	Scoping Notice	Request comment on SCRD Scoping Notice
3-19-09	Yavapai-Apache Nation	Scoping Notice	Request comment on SCRD Scoping Notice
3-19-09	Pueblo of Zuni	Scoping Notice	Request comment on SCRD Scoping Notice
11-18-11	Ak-Chin Indian Community	Second Scoping	Request comment on Second Scoping Notice
11-18-11	Ft. Sill Apache Tribe	Second Scoping	Request comment on Second Scoping Notice
11-18-11	Gila River Indian Community	Second Scoping	Request comment on Second Scoping Notice
11-18-11	Hopi Tribe	Second Scoping	Request comment on Second Scoping Notice
11-18-11	Mescalero Apache Tribe	Second Scoping	Request comment on Second Scoping Notice
11-18-11	Pascua Yaqui Tribe	Second Scoping	Request comment on Second Scoping Notice
11-18-11	Salt River Pima-Maricopa Indian Community	Second Scoping	Request comment on Second Scoping Notice
11-18-11	San Carlos Apache Tribe	Second Scoping	Request comment on Second Scoping Notice
11-18-11	Tohono O'odham Nation	Second Scoping	Request comment on Second Scoping Notice
11-18-11	White Mountain Apache Tribe	Second Scoping	Request comment on Second Scoping Notice
11-18-11	Yavapai-Apache Nation	Second Scoping	Request comment on Second Scoping Notice
11-18-11	Pueblo of Zuni	Second Scoping	Request comment on Second Scoping Notice

Tribal Concerns with the Santa Catalina Travel Management Project

Tribes were initially contacted concerning policies and regulations regarding off-highway vehicle users on unauthorized routes with a letter dated May 18, 2007. In response, the Ak-Chin Cultural Resource Office (letter from Gary Gilbert, June 4, 2007) expressed a concern with adverse impacts due to OHV users, as their basket-making materials are collected on the forest.

Tribes were once again contacted during the scoping phase and sent letters asking for their comments and input on March 19, 2009. The White Mountain Apache Historic Preservation Office (THPO) responded (letter from THPO Mark Altaha, May 12, 2009) with the comment that "the proposed action ***will not have an effect*** to the White Mountain Apache tribe's Cultural Heritage Resources and/or historic properties. The project may proceed with the understanding that any ground disturbance should be monitored ***if*** there are reasons to believe that human remains and/or funerary objects are present, if they are encountered all construction activities are to be stopped and the proper authorities and/or affiliated tribe(s) be notified to evaluate the situation."

Consultation on the Travel Management Process continued in 2011. On November, 18, 2011, the general scoping notice was mailed to all interested parties (including the aformentioned twelve Native American Tribes). No tribal comments were received in response to the general scoping notice. On January 20, 2012, CNF representatives made a presentation to the Four Southern Tribes Cultural Resources Working Group. Shortly afterward, on January 12, all 12 tribes were notified of the Collaborative Alternative Team participation in the Travel Management Process and they were invited to participate. On February 14, 2012, additional information was sent to Mr. Peter Steere, Tribal Historic Preservation Officer for the Tohono O'odham Nation, once again encouraging participation in creation of the CAT alternatives. No tribal representatives participated in the subsequent CAT meetings regarding TMR implementation on the SCRD.

Glossary of Terms

Abbreviations:

AASHTO. American Association of State Highway and Transportation Officials.

CFR. Code of Federal Regulations.

EM. Forest Service Engineering Manual.

EO. Executive Order.

FSH. Forest Service Handbook.

FSM. Forest Service Manual.

USC. United States Code

- **Access Right (1).** The right of ingress to and egress from a property that abuts a street or highway. (23 CFR 710.105)

- **Access Right (2).** The authority to pass over a property for purposes of ingress to or egress from a piece of property. (FSM 5460.5)

- **Administrative unit**. A National Forest, a National Grassland, a purchase unit, a land utilization project, Columbia River Gorge National Scenic Area, Land between the Lakes, Lake Tahoe Basin Management Unit, Midewin National Tallgrass Prairie, or other comparable unit of the National Forest System. (36 CFR 212.1, 36 CFR 261.2)

- **All-Terrain Vehicle.** A type of off-highway vehicle that travels on three or more low-pressure tires; has handle-bar steering; is less than or equal to 50 inches in width; and has a seat designed to be straddled by the operator. (FSH 2309.18.05)

- **Annual Maintenance.** Work performed to maintain serviceability, or repair failures during the year in which they occur. Includes preventive and/or cyclic maintenance performed in the year in which it is scheduled to occur. Unscheduled or catastrophic failures of components or assets may need to be repaired as a part of annual maintenance. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

- **Construction (1).** The supervising, inspecting, actual building, and incurrence of all costs incidental to the construction or reconstruction of a highway, including bond costs and other costs relating to the issuance in accordance with section 122 of bonds or other debt financing instruments and costs incurred by the State in performing Federal-aid project related audits that directly benefit the Federal-aid highway program. Such term includes--

(A) locating, surveying, and mapping (including the establishment of temporary and permanent geodetic markers in accordance with specifications of the National Oceanic and Atmospheric Administration of the Department of Commerce);

(B) resurfacing, restoration, and rehabilitation;

(C) acquisition of rights-of-way;

(D) relocation assistance, acquisition of replacement housing sites, and acquisition and rehabilitation, relocation, and construction of replacement housing;

(E) elimination of hazards of railway grade crossings;

(F) elimination of roadside obstacles;

(G) improvements that directly facilitate and control traffic flow, such as grade separation of intersections, widening of lanes, channelization of traffic, traffic control systems, and passenger loading and unloading areas; and

(H) capital improvements that directly facilitate an effective vehicle weight enforcement program, such as scales (fixed and portable), scale pits, scale installation, and scale houses. (23 USC 101)

- **Construction (2).** The erection, construction, installation, or assembly of a new fixed asset. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

- **Culvert.** A conduit or passageway under a road, trail, or other obstruction. A culvert differs from a bridge in that the top of a culvert does not serve as the road surface and is constructed entirely below the elevation of the traveled way. (Handbook of Steel Drainage & Highway Construction Products).

- **Cyclic Maintenance.** Preventive maintenance activities that recur on a periodic and scheduled cycle. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

- **Decommission.** Demolition, dismantling, removal, obliteration and/or disposal of a deteriorated or otherwise unneeded asset or component, including necessary cleanup work. This action eliminates the deferred maintenance needs for the fixed asset. Portions of an asset or component may remain if they do not cause problems nor require maintenance. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

- **Deferred Maintenance.** Maintenance that was not performed when it should have been or when it was scheduled and which, therefore, was put off or delayed for a future period. When allowed to accumulate without limits or consideration of useful life, deferred maintenance leads to deterioration of performance, increased costs to repair, and decrease in asset value. Deferred maintenance needs may be categorized as critical or non-critical at any point in time. Continued deferral of non-critical maintenance will normally result in an increase in critical deferred maintenance. Code compliance (e.g. life safety, ADA, OSHA, environmental, etc.), Forest Plan Direction, Best Management Practices, Biological Evaluations other regulatory or Executive Order compliance requirements, or applicable standards not met on schedule are considered deferred maintenance. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

- **Design Speed.** A selected speed used to determine the various geometric design features of the roadway with respect to topography, anticipated operating speed, the adjacent land use, and the functional classification of the road. The selected design speed should be consistent with the speeds that drivers are likely to expect on a given highway facility. (AASHTO, 2001, A Policy on Geometric Design of Highways and Streets)

- **Design Vehicle.** A selected vehicle, with representative weight, dimensions, and operating characteristics, used to establish the design controls for the road. There are four general classes of design vehicles: (1) passenger cars, (2) buses, (3) trucks, and (4) recreational vehicles. (AASHTO, 2001, A Policy on Geometric Design of Highways and Streets)

- **Designated road, trail, or area.** A National Forest System road, a National Forest System trail, or an area on National Forest System lands that is designated for motor vehicle use pursuant to 36 CFR 212.51 on a motor vehicle use map. (36 CFR 212.1)

    - **Easement (1).** A type of special use authorization (usually granted for linear rights-of-way) that is utilized in those situations where a conveyance of a limited and transferable interest in National Forest System land is necessary or desirable to serve or facilitate authorized long-term uses, and that may be compensable according to its terms. (36 CFR 251.51)

    - **Easement (2).** An interest in real property that conveys a right to use a portion of an owner's property or a portion of an owner's rights in the property. (23 CFR 710.105)

    - **Easement (3).** An interest in land owned by another party that entitles the holder to a specific limited use or enjoyment. (FSM 5460.5)

- **Forest Road.** A road wholly or partly within, or adjacent to, and serving the National Forest System that is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources. (23 USC 101)

    - **Forest Road and Trail Act Easement.** An easement issued by the Forest Service to a Public Road Authority for a non-Federal-Aid road or non-Forest Highway crossing National Forest System lands. (FSH 2709.12, 30)

- **Forest Road or Trail.** A road or trail wholly or partly within or adjacent to and serving the National Forest System that the Forest Service determines is necessary for the protection, administration and utilization or the National Forest System and the use and development of its resources. (36CFR 212.1, 36 CFR 251.5, 36 CFR 261.2)

- **Forest Trail.** A trail wholly or partly within, or adjacent to, and serving the National Forest System and which is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources. (23 USC 101)

- **Forest Transportation Atlas.** A display of the system of roads, trails and airfields of an administrative unit. (36 CFR 212.1)

- **Forest Transportation Facility.** A forest road or trail or an airfield that is displayed in a forest transportation atlas, including bridges, culverts, parking lots, marine access facilities, safety devices, and other improvements appurtenant to the forest transportation system. (36 CFR 212.1)

- **Forest Transportation System.** The system of National Forest System roads, National Forest System Trails, and airfields on National Forest System lands. (36 CFR 212.1)

- **Forest Transportation System Management.** The planning, inventory, analysis, classification, record keeping, scheduling, construction, reconstruction, maintenance, decommissioning, and other operations undertaken to achieve environmentally sound, safe, cost-effective, access for use, protection, administration, and management of National Forest System lands. (FSM 7705)

- **Fugitive Dust.** Particles lifted into the ambient air caused by man-made and natural activities such as the movement of soil, vehicles, equipment, blasting, and wind. This excludes particulate matter emitted directly from the exhaust of motor vehicles and other internal combustion engines, from portable brazing, soldering, or welding equipment, and from piledrivers.

- **Heavy maintenance.** Work usually done by highway agencies in repairing damage normally expected from seasonal and occasionally unusual natural conditions or occurrences. It includes work at a site required as a direct result of a disaster which can reasonably be accommodated by a State or local road authority's maintenance, emergency or contingency program. (23 CFR 668)

- **High Scenic Integrity.** Landscapes where the valued physical, biological and cultural features

  appear intact. Deviations may be present, but must repeat the form, line, color, texture and pattern

  common to the landscape character so completely and at a scale where they are not evident.

- **Highway.** The term ``highway'' includes-- (A) a road, street, and parkway, (B) a right-of-way, bridge, railroad-highway crossing, tunnel, drainage structure, sign, guardrail, and protective structure, in connection with a highway; and (C) a portion of any interstate or international bridge or tunnel and the approaches thereto, the cost of which is assumed by a State transportation department, including such facilities as may be required by the United States Customs and Immigration Services in connection with the operation of an international bridge or tunnel. (23 USC 101)

- **Jurisdiction (1)**. The legal right or power to interpret and apply the law. Authority or control. (Webster)

- **Jurisdiction (2).** The legal right to control and regulate the use of a transportation facility. Roads on National Forest lands are under the control of the Forest Service, except for public roads established under the Act of July 26, 1866, private roads, roads for which the Forest Service has granted rights-of-way to private landowners or public road agencies, and roads whose use and rights pre-date the National Forest. Other factors may affect jurisdiction on acquired lands or easements. Review the granting document and obtain appropriate legal opinion for these cases, when necessary. There are roads on the transportation system where the Forest Service has limited rights of use and no jurisdiction over the traffic, such as private road systems and State, county, or township roads. (FSH 7709.59.21)

- **Jurisdiction (3)**. The legal right or authority to control, operate, regulate use of, maintain, or cause to be maintained, a transportation facility, through ownership or delegated authority. The authority to construction or maintain such a facility may be derived from fee title, easement, written authorization, or permit from a Federal agency, or some similar method. (23 CFR 660.103)

- **Local Road (1).** A road that primarily provides access to land adjacent to collector roads over relatively short distances at low speeds. (AASHTO, 2001, A Policy on Geometric Design of Highways and Streets)

- **Local Road (2).** A forest road that connects terminal facilities with forest collector, forest arterial or public highways. Usually forest local roads are single purpose transportation facilities. (FSH 7709.54, no longer in print)

- **Low-Volume Road.** A road that has an average daily traffic of 400 or less. (AASHTO, 2001, Guidelines for Geometric Design of Very Low-Volume Local Roads)

- **Maintenance (1).** The preservation of the entire highway, including surface, shoulders, roadsides, structures and such traffic-control devices as are necessary for its safe and efficient utilization. (23 USC 101)

- **Maintenance (2).** The upkeep of the entire forest transportation facility including surface and shoulders, parking and side areas, structures, and such traffic-control devices as are necessary for its safe and efficient utilization. (36 CFR 212.1)

- **Maintenance (3).** The act of keeping fixed assets in acceptable condition. It includes preventive maintenance normal repairs; replacement of parts and structural components, and other activities needed to preserve a fixed asset so that it continues to provide acceptable service and achieves its expected life. Maintenance excludes activities aimed at expanding the capacity of an asset or otherwise upgrading it to serve needs different from, or significantly greater than those originally intended. Maintenance includes work needed to meet laws, regulations, codes, and other legal direction as long as the original intent or purpose of the fixed asset is not changed. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

- **Maintenance Levels.** Defines the level of service provided by, and maintenance required for, a specific road, consistent with road management objectives and maintenance criteria. (FSH 7709.58, 12.3)

    - **Maintenance Level 1.** Assigned to intermittent service roads during the time they are closed to vehicular traffic. The closure period must exceed 1 year. Basic custodial maintenance is performed to keep damage to adjacent resource to an acceptable level and to perpetuate the road to facilitate future management activities. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level. Appropriate traffic management strategies are "prohibit" and "eliminate". Roads receiving level 1 maintenance may be of any type, class or construction standard, and may be managed at any other maintenance level during the time they are open for traffic. However, while being maintained at level 1, they are closed to vehicular traffic, but may be open and suitable for non-motorized uses. (FSH 7709.58, 12.3)

    - **Maintenance Level 2.** Assigned to roads open for use by high clearance vehicles. Passenger car traffic is not a consideration. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level. Appropriate traffic management strategies are either to (1) discourage or prohibit passenger cars or (2) accept or discourage high clearance vehicles. (FSH 7709.58, 12.3)

    - **Maintenance Level 3.** Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. Roads in this maintenance level are typically low speed, single lane with turnouts and spot surfacing. Some roads may be fully surfaced with either native or processed material. Appropriate traffic management strategies are either "encourage" or "accept." "Discourage" or "prohibit" strategies may be employed for certain classes of vehicles or users. (FSH 7709.58, 12.3)

    - **Maintenance Level 4.** Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated. The most appropriate traffic management strategy is "encourage." However, the "prohibit" strategy may apply to specific classes of vehicles or users at certain times. (FSH 7709.58, 12.3)

- **Maintenance Level 5.** Assigned to roads that provide a high degree of user comfort and convenience. These roads are normally double-lane, paved facilities. Some may be aggregate surfaced and dust abated. The appropriate traffic management strategy is "encourage." (FSH 7709.58, 12.3)

- **Moderate Scenic Integrity.** Landscapes where the valued physical, biological and cultural features appear slightly altered. Noticeable deviations remain visually subordinate to the landscape character being viewed.

- **Motor Vehicle.** Any vehicle which is self-propelled, other than:

    - A vehicle operated on rails; and

    - Any wheelchair or mobility device, including one that is battery-powered, that is designed solely for use by a mobility-impaired person for locomotion, and that is suitable for use in an indoor pedestrian area. (36 CFR 212.1, 36 CFR 261.2)

- **Motor Vehicle Use Map.** A map reflecting designated roads, trails, and areas on an administrative unit or a Ranger District of the National Forest System. (36 CFR 212.1)

- **Motorized Equipment (1).** Any machine activated by a nonliving power source except small battery-powered hand-carried devices such as flashlights, shavers, Geiger counters, and cameras. (36 CFR 261.2)

- **Motorized Equipment (2).** Machines that use a motor, engine, or other nonliving power sources. This includes, but is not limited to, such machines as chain saws, aircraft, snowmobiles, generators, motorboats, and motor vehicles. It does not include small battery or gas powered hand-carried devices such as shavers, wristwatches, flashlights, cameras, stoves, or other similar small equipment. (FSM 2320.5)

- **National Forest System.** As defined in the Forest Rangeland Renewable Resources Planning Act, the ``National Forest System" includes all National Forest lands reserved or withdrawn from the public domain of the United States, all National Forest lands acquired through purchase, exchange, donation, or other means, the National Grasslands and land utilization projects administered under title III of the Bankhead-JonesFarm Tennant Act (50 Stat. 525, 7 U.S.C. 1010-1012), and other lands, waters or interests therein which are administered by the Forest Service or are designated for administration through the Forest Service as a part of the system. (36 CFR 212.1)

- **National Forest System Land.** All lands, waters, or interests therein administered by the Forest Service. (36 CFR 251.51)

- **National Forest System Road.** A forest road other than a road which has been authorized by a legally documented right-of-way held by a State, county or other local public road authority. (36 CFR 212.1, 36 CFR 251.51, 36 CFR 261.2)

    - **National Forest System Trail**. A forest trail other than a trail which has been authorized by a legally documented right-of-way held by a State, county or other local public road authority. (36 CFR 212.1)

- **Obliteration (1).** To eliminate completely so as to leave no trace. (Webster)

- **Obliteration (2).** The reclamation and or restoration of land to resource production from that of a transportation facility. (FSH 7709.54, no longer in print)

    - **Off-Highway Vehicle (*1*).** Any motorized vehicle designed for or capable of cross county travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain. (36 CFR 212.1)

    - **Off-Highway Vehicle (2).** Any motorized vehicle designed for or capable of cross county travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain; except that term excludes (A) any registered motorboat, (B) any fire, military, emergency or law enforcement vehicle when used for emergency purposes, and any combat or combat support vehicle when used for national defense purposes, and (C) any vehicle whose use is expressly authorized by the respective agency head under a permit, lease, license, or contract. (EO 116-44 as amended by EO 11989). See also FSM 2355. 01 - Exhibit 01.

    - **Off road Vehicle.** Synonymous with off-highway vehicle. (FSM 7709.55 34)

        - **Open to Public Travel (1).** The road section is available, except during scheduled periods, extreme weather or emergency conditions, passable by four-wheel standard passenger cars, and open to the general public for use without restrictive gates, prohibitive signs, or regulation other than restrictions based on size, weight, or class of registration. Toll plazas of public toll roads are not considered restrictive gates. (23 CFR 460.2)

        - **Open to Public Travel (2). E**xcept during scheduled periods, extreme weather conditions, or emergencies, open to the general public for use with a standard passenger auto, without restrictive gates or prohibitive signs or regulations, other than for general traffic control or restrictions based on size, weight, or class of registration. (23 CFR 660.103)

- **Operating Costs for Traffic Monitoring, Management, and Control.** Includes labor costs, administrative costs, costs of utilities and rent, and others costs associated with the continuous operation of traffic control, such as integrated traffic control systems, incident management programs, and traffic control centers. (23 USC 101)

- **Operating Speed.** The speed at which drivers are observed operating their vehicles during free-flow conditions. (AASHTO, 2001, A Policy on Geometric Design of Highways and Streets)

- **Passenger Cars.** These include passenger cars of all sizes, sport/utility vehicles, minivans, vans and pickup trucks. (AASHTO, 2001, A Policy on Geometric Design of Highways and Streets)

    - **Permit.** A special use authorization which provides permission, without conveying an interest in land, to occupy and use National Forest System land or facilities for specified purposes, and which is both revocable and terminable. (36 CFR 251.51)

- **Private Road.** A road under private ownership authorized by easement to a private party, or a road which provides access pursuant to a reserved or private right. (FS-643, Roads Analysis; Informing Decisions About Managing the National Forest Transportation System, August 1999.)

- **Public Agency.** Any organization with administrative or functional responsibilities which are directly or indirectly affiliated with a governmental body of any nation, State, or local jurisdiction. (23 CFR 635.102)

- **Public Authority.** A Federal, State, county, town or township, Indian tribe, municipal or other local government or instrumentality thereof, with authority to finance, build, operate or maintain toll or toll-free highway facilities. (23 CFR 460.2)

    - **Public Lands Highway**. A forest road under the jurisdiction of and maintained by a public authority and open to public travel or any highway through unappropriated or unreserved public lands, nontaxable Indian lands, or other Federal reservations under the jurisdiction of and maintained by a public authority and open to public travel. (23 USC 101)

- **Public Road.** Any road or street under the jurisdiction of and maintained by a public authority and open to public travel. (23 USC 101)

    - **Reconstruction.** To construct again. (Webster)

    - **Recreational Vehicle.** These include motor homes, cars with camper trailers, cars with boat trailers, motor homes with boat trailers and motor homes pulling cars. (AASHTO, 2001, A Policy on Geometric Design of Highways and Streets)

- **Rehabilitation (1).** Minor reconstruction. Non-standard highway-related operation and maintenance activities to provide minor upgrades to a highway. (23 CFR 625)

- **Rehabilitation (2).** Renovation or restoration of an existing fixed asset or any of its components in order to restore the functionality or life of the asset. Because there is no significant expansion or change of purpose for the fixed asset, the work primarily addresses deferred maintenance. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

    - **Repair.** Work to restore a damaged, broken, or worn-out fixed asset, component, or item of equipment to normal operating condition. Repairs may be done as annual maintenance or deferred maintenance activities. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

    - **Replacement.** Substitution or exchange of an existing fixed asset or component with one having essentially the same capacity and purpose. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

    - **Restoration.** To bring back to an original state. (Webster)

    - **Right-of-Way (1).** Land authorized to be used or occupied for the construction, operation, maintenance and termination of a project or facility passing over, upon, under or through such land. (36 CFR 251.51)

    - **Right-of-Way (2).** A privilege or right to cross over or use the land of another party for egress and ingress such as roads, pipelines, irrigation canals, or ditches. The right-of-way may be conveyed by an easement, permit, license, or other instrument. (FSM 5460.5)

    - **Road (1).** A motor vehicle route over 50 inches wide, unless identified and managed as a trail. (36 CFR 212.1)

- **Road (2).** A general term denoting a facility for purposes of travel by vehicles greater than 50 inches width. Includes only the area occupied by the road surface and cut and fill slopes. (FSM 2355.05)

- **Road Construction or Reconstruction.** Supervising, inspecting, actual building, and incurrence of all costs incidental to the construction or reconstruction of a road. (36 CFR 212.1)

- **Road Decommissioning.** Activities that result in the stabilization and restoration of unneeded roads to a more natural state. (36 CFR 212.1)

- **Road Maintenance.** The ongoing upkeep of a road necessary to retain or restore the road to the approved road management objective. (FSM 7705)

- **Road Management Objectives.** Defines the intended purpose of an individual road based on management area direction and access management objectives. Road management objectives contain design criteria, operation criteria, and maintenance criteria. (FSH 7709.55, 33)

- **Roadway.** The portion of a highway, including shoulders and auxiliary lanes, for vehicular use. (AASHTO, 2001, A Policy on Geometric Design of Highways and Streets)

- **Routine Maintenance.** Work that is planned to be accomplished on a continuing basis, generally annually or more frequently. (FSH 7709.58, 13.41)

- **Other than Routine Maintenance.** Work that can be deferred without loss of road serviceability, until such time that the work can be economically or efficiently performed. The frequency of such work is generally longer than a year. (FSH 7709.58, 13.41)

- **Service Life.** The length of time that a facility is expected to provide a specified service. (FSH 7709.56b, 05)

- **Special Use Authorization.** A permit, term permit, lease, or easement which allows occupancy, use, rights, or privileges of National Forest System land. (36 CFR 251.51)

- **Subject to the Highway Safety Act (HSA).** National Forest System roads that are open to use by the public for standard passenger cars. This includes roads with access restricted on a seasonal basis and roads closed during extreme weather conditions or for emergencies, but which are otherwise open for general public use. (FSM 7705)

- **Trail.** A route 50 inches or less in width or a route over 50 inches wide that is identified and managed as a trail. (36 CFR 212.1)

- **Trailhead.** The transfer point between a trail and a road, lake, or airfield. The area may have developments that facilitate the transfer from one transportation mode to another. (FSM 2353.05)

- **Trail Vehicle.** Vehicle designed for trail use, such as bicycles, snowmobiles, trail bikes, trail scooters, and all-terrain vehicles. (FSM 2353.05)

- **Travel Management atlas.** An atlas that consists of a forest transportation atlas and a motor vehicle use map or maps. (36 CFR 212.1)

- **Travel Route.** A road, river or trail, that is open for use by members of the general public. (36 CFR 292.21)

    - **Unauthorized Road or Trail.** A road or trail that is not a forest road or trail or a temporary road or trail and that is not included in a forest transportation atlas. (36 CFR 212.1)

Unauthorized roads are categorized into two types and recorded in the SYSTEM linear event in the Infra Travel Routes database. The two types are:

- ✓ **Undetermined.** Roads where long term purpose and need has yet to be determined, and

- ✓ **Not Needed.** Roads not needed for long-term management of national forest resources as determined through an appropriate planning document. (Travel Routes National Data Dictionary for Roads)

- **Vehicle.** Any device in, upon, or by which any person or property is or may be transported, including any frame, chassis, or body of any motor vehicle, except devices used exclusively upon stationary rails or tracks. (36 CFR 261.2)

- **Wheelchair.** A device designated solely for use by a mobility impaired person for locomotion that is suitable for use in an indoor pedestrian area. (36 CFR 212.1, FSM 2352.05)

- **Wet Weather Road System.** A system of roads, trails, and areas that are open for motor vehicle use to provide limited access to NFS lands when emergency travel restrictions are in place

- **Wet Weather Roads Policy.** Emergency travel restrictions, implemented at the discretion of the Forest Supervisor or District Ranger, based on soil moisture conditions and the potential for road and resource damage. The policy is implemented through the issuance of an official Order describing the conditions, prohibitions and exemptions to the Order. An Exhibit (map) that clearly depicts those roads, trails, and areas that are open for motor vehicle use is included with the Order.

Chapter 5 – References

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