

# CORONADO NATIONAL FOREST

## FOREST LEVEL ROADS ANALYSIS REPORT

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Approved by: \_\_\_\_\_  
Forest Supervisor Date

Reviewed by: \_\_\_\_\_  
Forest Engineer Date

Prepared by: \_\_\_\_\_  
Transportation Planner Date

# Coronado National Forest Forest Level Roads Analysis Report

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# Coronado National Forest Forest Level Roads Analysis Report

## Executive Summary

This analysis provides information that will help the Coronado National Forest to more efficiently and effectively manage the transportation system within existing and anticipated funding levels. Recommendations are made that will improve maintenance of high value roads, reduce road maintenance program costs, reduce adverse ecological road-related effects, and focus cooperative efforts with County and State transportation departments. The analysis provides general information to guide the next level of area or project analysis.

The 797.75 miles of roads analyzed are important for primary access to the multiple uses of the Coronado National Forest. Each road was categorized as “high” or “low” value for passenger car access to recreation, forest facilities, and resources, and for safety/protection needs. Each road was screened for its effect on human-caused wildfires, wildlife, cultural resources, air quality and watershed conditions and labeled as “may affect” or “not likely to affect.” This value and effect assessment (Appendix A) provides information to focus future transportation analyses and other planning efforts, and will guide the gathering of field data on affected resources, road conditions and transportation system uses.

Of the 797.75 miles analyzed, 96.5% or 770.06 miles were identified as **high value** roads for passenger car access. This is understandable, as these roads make up the main transportation system for the forest. About 89.9% (716.9 miles) of the road miles were found to have a **may affect** finding for human-caused wildfire, or to wildlife, watersheds, air quality or cultural resources. Approximately 62.1% (444.92 miles) of these may affect roads are FS jurisdiction; the remaining 37.9% (271.98 miles) are Private, State and County roads. The assessment of these roads will guide efforts at mitigation and cooperation with the private landowners, States and Counties.

Recommendations have been made for maintenance level changes to certain system roads to more accurately provide for the existing management activities along those roads (Appendix E). Priority right-of-way acquisitions are listed (Appendix C), as are roads where jurisdiction or maintenance should be reviewed and reconsidered (Appendix D). Finally, suggestions are made for transportation planners to pursue which will result in better data on the forest road system and better cooperation between agencies.

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## Introduction

This Forest level Roads Analysis addresses maintenance level 3, 4 and 5 roads or passenger car roads, which are primary access routes on the Coronado National Forest (CNF). Maintenance level 1 and 2 roads (closed and high clearance vehicle roads) will be addressed in the future at the watershed and project scale. The roads in this analysis were chosen from an existing inventory database representing the following categories:

- Forest Service jurisdiction, objective maintenance level 3, 4 and 5 roads.
- Forest Service jurisdiction, objective maintenance level 2 roads that appear to be candidates for increase in maintenance level.
- County, State and Private, maintenance level 3, 4 and 5 roads on the CNF.
- County, State and Private, maintenance level 3, 4 and 5 roads outside the CNF boundary, but part of an arterial or collector system, which enters the CNF.

The analysis was conducted by an interdisciplinary Forest Service team (Appendix F) from October through December, 2002, as directed by FSM 7710 using the procedure outlined in FS-643 Roads Analysis: *Informing Decisions About Managing the National Forest Transportation System*.

The objective of roads analysis in the Forest Service (FS) is to provide line officers with critical information to implement road systems that are safe and responsive to public needs, are affordable and efficiently managed, are adequate for management activities, have minimal negative ecological effects on the land, and are in balance with available funding.

## Products of the Analysis

- A report for line officers and the public that documents the information and analysis used to identify opportunities and set priorities for the future National Forest road system.
- Maps displaying the main road system for the entire Forest and the values and effects for each road or road segment.
- Tables listing priorities and recommended changes in the road system.

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### Scope of the analysis:

Geographic Scale	Forest-wide
Roads	Roads on existing inventory in the following categories: National Forest System roads - objective maintenance level 3 and 4 and a few maintenance level 2 roads that appear to be candidates for increase in maintenance level. State, County and Private roads - maintenance level 3, 4 and 5 on CNF and off CNF but part of arterial or collector system entering CNF..
Analysis period	20-year outlook on needs, effects and implications
Specialist Information	Forest level analysis was done using existing information and the judgment of the technical specialists. The analysis proceeded without information that could not be obtained within the analysis period, acknowledging that uncertainties remain.
Report Access	The report will be available for public access on the CNF internet web site.
Internal review	Coronado Forest Supervisor, Rangers and Staff.
Cooperating Agency Coordination	County and State Transportation Agencies were contacted regarding any concerns or issues. Cooperating Agencies will receive a copy of the report.

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## Existing Condition

Miles of roads in the analysis and Coronado National Forest road inventory per the INFRA database (12/2002):

Obj. Mtc. Level	Miles in Analysis <i>(Miles in CNF Inventory)</i>		
	Total	Forest Service Jurisdiction	Other Jurisdiction
1	<b>12.50</b> (161.51)	<b>12.50</b> (128.91)	<b>0</b> (32.6)
2	<b>116.31</b> (2171.22)	<b>96.21</b> (1690.609)	<b>20.10</b> (480.61)
3	<b>529.61</b> (620.424)	<b>357.75</b> (357.074)	<b>171.86</b> (263.35)
4	<b>101.56</b> (52.89)	<b>7.49</b> (7.49)	<b>94.07</b> (45.40)
5	<b>37.77</b> (29.167)	<b>3.167</b> (3.167)	<b>34.60</b> (26)
Total	<b>797.75</b> (3035.21)	<b>477.12</b> (2187.25)	<b>320.63</b> (847.96)

## Management Plan Road Information

The 1986 Coronado National Forest Plan (CNFP) and its nine amendments and three Change Notices provide direction for roads management. The recommendations in this Roads Analysis complement this direction and provide information for future Forest level management planning. Some of the CNFP information is highlighted here; please refer to the plan and amendment documents for complete and specific information.

*Issues, Concerns and Management Opportunities* (page 6): Several transportation-related issues are identified including:

- Need for rights-of-way allowing public access
- Commitment of resources to construction and maintenance (including signing) of roads
- Resolution of conflicts between multiple transportation users (hikers, equestrians, Off Highway Vehicles, etc.)
- Degree of public access to special use areas

*Management Direction* (Forest Plan Amendment No. 6, Jan 1992, replacement page 11): Forest goals include transportation systems, which meet land management and resource needs.

*Forest Objectives* (Appendix I, Tables 3-7 and 9, Forest Plan Change Notice No. 2, June 1996, New Pages 133-139): Lists of recreation-related road construction and reconstruction needs, administrative facility-related road construction and reconstruction needs, right-of-way needs, and major road

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reconstruction and construction needs outline specific projects and quantitative objectives associated with them.

In response to the specific list of fourteen objectives outlined in the CNFP, Appendix I, Table 9, the following has been accomplished to date:

## Major Roads

1. General Hitchcock Highway (26 miles) and Ski Valley Road (3.5 miles). The Federal Highway Administration (FHWA) project to reconstruct General Hitchcock Highway (Rd#833) is entering the last phase of construction in 2003, with completion of the entire route anticipated to be in 2005. No significant reconstruction work has occurred on Ski Valley Road (Rd#11).
2. Washington Camp/Montezuma Pass Road (Rd#61). Surface reconstruction of approximately 4 miles was accomplished in 1999 and 2001 using the mobile crusher unit. Little other reconstruction has occurred on the route to date on the 34.7 miles identified. Emergency repair in 1999 due to increased runoff from fires above the road was conducted to replace washed out drainage structures.
3. Ruby Road (Rd#39). A new bridge was constructed over Sycamore Creek on Ruby Road in 1999. Surface reconstruction was accomplished on approximately 10 miles of the roadway using the mobile crusher in 1997. No other significant reconstruction has occurred on the 13.5 miles identified.
4. Montezuma Pass Road (Rd#48). No significant reconstruction has occurred on the 5.3 miles identified.
5. Onion Saddle Road (Rd#42). 3.0 miles of the eastern (Cave Creek) portion of the road has been reconstructed. Another 0.7 mile needs to be reconstructed to complete the project. Bridges were reconstructed in 1991 to double lane in this section of road as well. An additional bridge was constructed over an adjoining road into a campground in 2001. Surface reconstruction using the mobile crusher was accomplished in 1995 on the rest of road #42 to the west. No other significant reconstruction has occurred on the western 26 miles of the route.
6. Carr Canyon Road (Rd#368). Reconstructed and resurfaced in 1987 and 1988. The route was reconstructed using the crusher and roto-trimmer in 2001.
7. Redington Pass (Rd#371). One mile on the west end was completed in 1988. 12.2 miles remain to be reconstructed.
8. Mt Lemmon Control Road (RD#38). Of the 17.5 miles in need of reconstruction, most has been crushed and surfaced by the mobile crusher and roto-trimmer. Emergency fire repair on the top 6.5 miles

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of the road resulted in the replacement and fortification of drainage structures in 2002.

9. Madera Canyon Road (Rd#70) and Bog Springs CG (Rd#70A). The campground road was crushed to an aggregate surface in 2001. The upper Madera Canyon Road, which is FS jurisdiction, is scheduled to be reconstructed in 2003/2004 in conjunction with a recreation capital investment project. The two bridges in the upper canyon are still in need of reconstruction.

### Other Roads

10. Administrative facility-related roads completed to date include those associated with the Nogales Ranger Station, Portal Administrative Site, Palisades Administrative Site, Rucker Administrative Site, and Columbine Administrative Site.
11. Recreation-related roads completed to date include East Cochise CG, Madera Picnic Area, Peña Blanca Parking and Comfort Station, Madera Entrance Facility, Madera Trailheads, Kentucky Camp Interpretive Site, Reef CG, Parker Canyon Lake Parking and Comfort Station, Mt. Graham Roadside Camps and Trail Access, Swift Trail VIS, Marijilda Canyon Interpretive Site, Whitetail CG, Gordon Hirabayashi Recreation Site, and Sabino VIS.
12. Rights-of-way acquisitions of passenger car roads to date include Road #61 (Hathaway) and Road #38 (Control Road).
13. Anticipated fuelwood area road needs of approximately 20 miles total have not been required. Only 2 miles of fuelwood roads were constructed on the Nogales District in the late 1980s.
14. Reconstruction of low traffic volume roads (ML 2 and 3) at a rate of approximately five miles per year to correct safety and maintenance problems has been met effectively through the use of the mobile crusher and roto-trimmer programs. Reconstruction using these innovative machines has reduced surface reconstruction costs to \$5,000/mile. Bridge inspections on all roads are up-to-date, and a signing program is underway to complete signing on all passenger car roads. Engineering studies will need to be conducted on many of these passenger car roads.

*Standards and Guidelines:* Management practices and activities have been assigned standards and guidelines to follow. Standards and guidelines are given which are applicable to all areas of the Forest and to specific management areas. Forest-wide standards and guidelines are reviewed below. Area and project scale analyses will analyze specific roads as they relate to specific management areas.

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On a Forest-wide basis, in relation to dispersed and developed recreation and wilderness management (Forest Plan Amendment No. 6, Jan 1992, replacement page 27-1), transportation planning is to consider existing and future needs for motorized and non-motorized recreation use. Users shall be contacted prior to closing routes to existing uses. When considering changes to the transportation system consider the recreational uses and appropriate maintenance level needs, safety, conflicting uses, and protection of natural resources. The requirement of conducting a roads analysis process when considering changes to the transportation system supports this guideline.

On a Forest-wide basis, in response to Wildlife and Fish O&M (Forest Plan Amendment No. 8, June 1996, replacement page 34) the density of existing roads and new road construction is limited to one mile of road or less per square mile. Temporary fuelwood roads are to be closed after harvest. New construction and maintenance of roads are to be coordinated on a project-by-project basis using established tolerance levels for state and federally listed threatened and endangered species.

Existing road density on the CNF is not easy to calculate accurately at this time due to the proliferation of wildcat roads on the Forest and the lack of validation of the geo-spatial data and the tabular data. As area and project scale road analyses are conducted in the future, geo-spatial and tabular data will be refined, and a more precise calculation of density can be obtained. Using the current data contained in the tabular INFRA database, the road density on the Coronado can be approximated to be between 0.8 and 1.1 miles per square mile. This estimate was calculated in the following way: Using the gross land area of 1,788,266 acres (*FS 383 – Land Areas as of 9/2000*) and the 3035.21 total miles in the inventory, density is calculated to be 1.1 miles/mi<sup>2</sup>. This calculation does not discount the private lands within the forest boundaries and it includes some roads outside the boundary. Using the area of National Forest System Lands of 1,717,857 acres and 2187.25 miles of FS jurisdiction road in the inventory, density is calculated to be 0.8 miles/mi<sup>2</sup>. This calculation does not include non-FS jurisdiction roads within the Forest boundary. Of course, neither of these calculations takes into consideration unclassified (wildcat) roads, which are known to exist on the Forest, especially on the districts bordering Mexico. Unclassified roads are user-created roads, not needed to meet Forest resource management objectives, and are not considered part of the Forest transportation system. These roads pose the greatest threat to public safety and contribute most to environmental degradation because they were not designed or constructed to any acceptable standards. Decommissioning of these roads will require roads analysis per FSM 7712.12b. The unclassified road inventories will be conducted using existing data and other readily available sources of information, such as aerial photographs, as allowed by FSM 7712.14.

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Forest-wide right-of-way acquisition standards and guidelines (Forest Plan Amendment No. 4, Jan 1998, replacement page 44) include working closely with other municipalities to ensure access to the Forest on State, County or permanent Forest Service roads and obtain public access for all permanent roads within Forest boundaries. Existing road management policy requires roads analysis to evaluate right-of-way needs (Appendix C) and coordinate with other government agencies and jurisdictions.

Forest-wide standards and guidelines (Forest Plan amendment No. 4, Jan 1989, replacement page 44) require that transportation system planning shall recognize driving for pleasure as an important aspect of the transportation system. The minimum transportation system shall meet management, protection and utilization needs in locations that minimize damage and maximize values to all resources. New construction needed for resource development and management will be to standards and constructed to the standards identified through transportation planning. Funding will continue to be the constraint on the intensity of road maintenance. Road maintenance will be conducted to protect investments, protect resources, and provide user safety and economy. Roads that cannot be maintained to standards due to budget constraints shall be closed if unacceptable resource damage is occurring. Maintenance agreements will be sought to supplement Forest budgets.

The National Forest System Road Management Rule (36 CFR Part 212) requires that road system management planning “help to identify a minimum road system that is commensurate with resource objectives, reflects likely funding, and, to the extent practicable, minimizes adverse environmental effects associated with road construction, reconstruction, and maintenance.” The value and effect assessment portion of this analysis (Appendix A) helps to qualify individual roads, so recommendations can be made regarding investment, mitigation and other planning options.

## **Road operation/maintenance funding and costs**

Road operation and maintenance funding on the CNF ranges from about \$600,000 to \$800,000 per year and is expected to increase in the future to address deferred maintenance backlogs.

In addition to maintenance funding, the Forest may be funded for road reconstruction projects. The most current ongoing project has reconstructed approximately 3 miles of the Portal Road (National Forest System Road #42) in phases for a total cost so far of about \$1.5 million.

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Road condition surveys conducted from 1998 through 2002 documented the work and associated costs needed to maintain roads to industry standards for safety and assigned traffic service level. Those surveys reveal funding needs as follows (INFRA Data Warehouse Report RTEWK01L, Oct 2002):

### Deferred Maintenance:

- \$8.45 million – FS roads, all maintenance levels (1-5)
- \$7.28 million – FS roads maintenance level 3, 4 & 5
- \$4.73 million – Critical priority ML 1-5
- \$4.13 million – Critical priority ML 3, 4 & 5
- \$2.31million – Critical health & safety, ML 3, 4 & 5
- \$406,000 – Critical resource protection, ML 3, 4, &5
- \$1.04 million – Critical Forest mission, ML 3, 4 & 5

### Annual Maintenance:

- \$5.18 million – FS roads, all maintenance levels (1-5)
- \$3.63 million – FS roads maintenance level 3, 4 & 5
- \$3.85 million – Critical priority ML 1-5
- \$3.11 million – Critical priority ML 3, 4 & 5
- \$1.09 million – Critical health & safety, ML 3, 4 & 5
- \$763,000 – Critical resource protection, ML 3, 4, &5
- \$1.26 million – Critical Forest mission, ML 3, 4 & 5

### Capital Improvement:

- \$9.18 million – FS roads, maintenance level 3 only
- \$6.97 million – Critical priority, ML 3 only
- \$126,000 – Critical health & safety, ML 3 only
- \$5.73 million – Critical resource protection, ML 3 only
- \$1.11 million – Critical Forest mission, ML 3 only

This data is being refined every year though verification efforts. INFRA cost estimates are being refined and updated using Regional Cost Guides. As work continues, these estimates will become more refined. However, Coronado records over the past seven years indicate that costs for our road surface reconstruction program using the mobile crusher and roto-trimmer are approximately 10% of the costs calculated in INFRA using contractor estimates (\$5,000/mile versus \$50,000/mile). Our unique ability to reconstruct at far lower cost suggests that our road maintenance budget is close to meeting Forest needs for Annual Maintenance. Addressing maintenance backlogs (Deferred Maintenance) will require additional funding or more efficient strategies, such as the Public Forest Service Road Program.

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The Public Forest Service Road Program may supply needed reconstruction dollars for roads fitting certain criteria. The requirements include roads that are Forest Service jurisdiction, provide unrestricted access for passenger cars and serve a compelling public need. The Coronado has 315.96 miles of roads identified as Potential Public Forest Service Roads (INFRA Report RTER016L, Jan 2002). Regions have submitted a 6-year program of work, detailing projects to cover a total amount of \$427 million/year nation-wide (approximately \$40 million per year for Region 3). The roads which the Coronado has proposed projects for, and the amount of money requested, are as follows:

- Montezuma Pass Rd#48 – 5.42 miles – \$2.171 million
- Washington/Montezuma Pass Rd#61 – 8.9 miles – \$3.368 million
- Middlemarch Rd#345 – 6.7 miles – \$3.059 million
- Ruby Rd#39 – 18.1 miles - \$7.376 million
- Box Canyon Rd #62 – 5.5 miles – \$2.44 million
- Control Rd#38 – 6.15 miles - \$2.225 million

Master cooperative maintenance agreements only exist between the Forest and two of the six Counties that the Forest resides in. These agreements are with Pima County and Cochise County and are dated February 5, 1979, and September 17, 1979, respectively. Pima, Cochise, and the other four Counties (Pinal, Santa Cruz, Graham, and Hidalgo) need new, updated Master Cooperative Agreements. Project agreements will reference and supplement these master agreements. Lists of roads on Schedule A's will help to address our combined road maintenance needs. These Agreements and Schedules should be reviewed and updated annually by the cooperating agency and the Forest Service. Accident report coordination and information sharing should be pursued with cooperating agencies and other law enforcement agencies through a Memorandum of Understanding (MOU).

### **Hazards and Benefits of Roads**

Roads on the CNF provide access for many uses. Their presence, necessary to carry out management objectives, affects the natural and cultural resources of the National Forest. See Appendix B for a more detailed discussion of the ecological, social and economic considerations associated with CNF roads.

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## CNF Forest Level Roads Analysis Process

### Value and Effect Assessment:

The interdisciplinary team (IDT) selected a method of analysis that would assess the values and the effects associated with each road.

The following values and effects were identified by the IDT. These also represent, in broad terms, the “issues” associated with the CNF main transportation system.

**Values:** Roads are valued for Forest management because they provide access to:

- FACILITIES
- RESOURCES
- RECREATION
- SAFETY (escape from populated areas inside the Forest boundary, access for wildfire and law enforcement response)

**Effects:** The presence or conditions of roads present effects associated with:

- HUMAN-CAUSED WILDFIRE
- WATERSHED CONDITION
- WILDLIFE
- CULTURAL RESOURCES
- AIR QUALITY

Roads were placed in categories of “high” or “low” value combined with “may affect” or “not likely to affect.” The overall value will be “high” if any of the four value criteria are assessed as high. The overall effect assessment will be “may affect” if any of the five effect criteria under them are assessed as “may affect.”

Recommendations were made for each of four categories (High/May Affect, Low/May Affect, High/Not Likely to Affect and Low/Not Likely to Affect) based on this assessment. This assessment provides information to focus future transportation analyses and other planning efforts, and will guide the need for gathering of field data on affected resources, road conditions and transportation system uses.

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## Value Assessment Criteria

**Facilities:** Access to FS administrative facilities and special use facilities is a criterion used to assess the value of a Forest Service-operated road. The FS cooperates with State and County agencies in accessing private land, but access to private land is not a primary value determining operation of Forest Service jurisdiction roads.

**HIGH** - A high value road has Forest Service-related facilities that require access by passenger car. Examples are Ranger District main offices, offices or locations that offer public information services, locations with crew quarters, facilities, and special-use facilities that require access by the general public.

**LOW** - A road accessing no facilities, facilities not open to the public, and facilities where high clearance vehicle access is adequate. Examples are roads to lookouts, some special-use sites, and FS communication sites.

**Resources:** Access to vegetative treatment areas, wood product management and harvest, and range resources.

**HIGH** - Roads that are the primary access to planned or potential vegetative management projects, or large amounts of high-value commercial wood resources. These roads will be used many times for vegetative management in the 20-year analysis period. These roads' improved condition reduces haul time/cost or improves safety significantly.

or

Roads that are the primary access to permitted grazing allotments where a maintenance level 3 road is needed to safely accommodate cattle trucks or larger trailers on a regular and recurring basis.

**LOW** - Roads that do not provide access to high value wood resources, or where consistent or recurring access by low clearance hauling vehicles is not needed.

or

Roads that do not provide access to permitted grazing allotments or roads where high clearance vehicle access is adequate for resource use and management.

**Recreation:** Access to dispersed recreation areas, trailheads, campgrounds, picnic areas, touring routes, and other recreation resources.

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**HIGH** - Access to recreation uses that require access by passenger car. Examples are developed sites in the urban, rural or roaded natural Recreational Opportunity Spectrum (ROS) class, main touring routes, main routes to many dispersed recreation sites.

**LOW** - High clearance vehicle access is adequate for use and management of the recreation resource. Examples are trailheads in roaded natural or semi-primitive motorized ROS class, and access to dispersed camping areas.

**Safety:** Access for fire suppression, law enforcement activities, evacuation routes and emergency medical response.

**HIGH** - Roads that provide alternate emergency egress from populated areas. Roads that provide access to areas at high risk of wildfire, with high resource or human values that make response time critical.

**LOW-** Roads to areas that are not populated or where access by high clearance vehicle will be adequate for fire suppression or law enforcement.

## Effect Assessment Criteria

### Human Caused Fire:

**MAY AFFECT** - Roads accessing areas that have a recorded pattern of human-caused fire ignitions, or that access areas where use, landownership, or vegetation and fuel conditions indicate a high potential for human-caused fire ignition.

**NOT LIKELY TO AFFECT** - Roads that are not evaluated as likely to affect.

### Watershed Condition (effect on water quality and inherent erosion hazard):

**MAY AFFECT** - The road management situation will hinder attainment of state water quality standards or the road is within 100 feet of an impaired stream or is within a riparian area. Road exists in highly erosive soils or is on a cross slope exceeding 40%.

**NOT LIKELY TO AFFECT** - State water quality standards can be achieved through assigned road management standards. Road is located mostly in inherently stable soils, is on a cross slope less than 40%, and is out of riparian areas.

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**Wildlife Effect Management Criteria:** Impacts from road use, maintenance, development and reconstruction will have varying degrees of effects depending on the spatial distribution, maintenance level, and distance of roads from critical wildlife habitats. For this Forest Roads Analysis, the criteria for evaluating effects on wildlife and plants are presented below. The criteria address effects from Forest Level 3, 4 and 5 roads on wildlife and plants and serve to rate the effect as either may affect or not likely to affect. Wildlife and plants used for this analysis will be species that are, in priority order, Group 1: Endangered, Threatened or Proposed wildlife and plant species; Group 2: Sensitive vertebrate wildlife species; and Group 3: Sensitive invertebrate wildlife and plant species.

In the criteria below, the phrase “passes within (1, ½ or ¼) mile of a known occurrence” means from the road centerline. The Endangered, Threatened, Proposed, and Sensitive species are those that are appropriate for each district; not all species will need to be assessed for all districts, Ecosystem Management Areas (EMAs), or roads.

In making the may affect/not likely to affect determination for the road segments, start with Group 1. If a particular segment scores “may affect” on a TEP species there is no need to proceed with Groups 2 & 3 for that segment. Proceed to Group 2 or Group 3, if necessary, if the segment scores “not likely to affect” for TEP species. If an Endangered, Threatened, Proposed or Sensitive species occurs anywhere along a segment, then the segment scores “may affect.”

The approach taken for the roads analysis is a “macro-filtering” approach; more refined than the U.S. Fish and Wildlife Service (USFWS) species lists we might use for a project area, but not as refined as an in-depth cause-and-result site-specific project evaluation.

## **Group 1: Endangered, Threatened or Proposed wildlife and plant species**

**MAY AFFECT** - The road intersects or passes within one (1) mile of a known occurrence, nest site, roost site or critical habitat of any listed plant or animal species, on or off Forest lands. For the Mexican Spotted Owl, the road intersects or passes through a known Protected Activity Center (PAC) based on past consultations with the USFWS regarding this species.

**NOT LIKELY TO AFFECT** - The road does not intersect or is more than one (1) mile from a known occurrence, nest site, roost site or critical habitat of any listed plant or animal species, on or off Forest lands. For the Mexican Spotted Owl, the road does not intersect or pass through a known Protected Activity Center (PAC).

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## Group 2: Sensitive vertebrate wildlife species

**MAY AFFECT** - The road intersects or passes within one-half mile of a known occurrence, PFA (Post-fledgling Family Area), nest site or roost site of any sensitive vertebrate animal species, on or off Forest lands.

**NOT LIKELY TO AFFECT** - The road does not intersect or is more than one-half mile from a known occurrence, PFA (Post-fledgling Family Area), nest site or roost site of any sensitive vertebrate animal species, on or off Forest lands.

## Group 3: Sensitive invertebrate wildlife and plant species

**MAY AFFECT** - The road intersects or passes within one-quarter mile of a known occurrence of any sensitive invertebrate wildlife or plant species, on or off Forest lands.

**NOT LIKELY TO AFFECT** - The road does not intersect or is more than one-quarter mile from a known occurrence of any sensitive vertebrate wildlife or plant species, on or off Forest lands.

**Cultural Resources Effect Assessment Criteria:** Effect assessments for roads analysis are guided by the following questions:

- Has the road been surveyed for cultural resources?
- Does the road impact any cultural resources?
- Is the road located in a high, moderate, or low site probability area?

**MAY AFFECT** - The road has been surveyed for cultural resources and identified sites are impacted by the road, OR the road has not been surveyed but is located in an area with high or moderate site density.

**NOT LIKELY TO AFFECT** - The road has been surveyed for cultural resources and no sites are impacted by the road, OR the road has not been surveyed but is located in a low site density area.

## Air Quality:

**MAY AFFECT** - The road is less than one (1) mile from a Class I airshed or a non-attainment area.

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**NOT LIKELY TO AFFECT** - The road is greater than one (1) mile from a Class I airshed or a non-attainment area.

## **General Recommendations for Value/Effect Categories:**

### **High Value/May Affect**

These roads are the “main transportation system” for the Forest. Recommend continued Forest Service or cooperative agency maintenance for passenger car access.

May affect and high value indicate these are the *highest* priority for investment of time and funds to mitigate or eliminate effects and accommodate uses. Concentration should first be given to critical elements, especially those considered critical health and safety needs.

Recommend mitigation of effect. Mitigation depends upon the specific effects and may include but is not limited to the following: additional maintenance efforts, reconstruction, relocation, seasonal maintenance restrictions, installation of structures, surfacing or road closure.

Efforts should be made to utilize funds available from other resources through grants and matching funds. An example is the 10% funds available for watershed protection projects.

### **Low Value/May Affect**

Passenger car access for enjoyment or use of National Forest resources is not needed on these roads. Recommend reducing maintenance costs by reducing maintenance level of FS jurisdiction roads to high clearance (ML 2) or administratively closed (ML 1).

Recommend mitigation of effect. Low Value/May Affect indicates these roads are second priority (behind the High Value/May Affect roads) for investment of time and funds to mitigate or eliminate effects. Mitigation depends upon the specific effects and may include, but is not limited to, the following: additional maintenance efforts, reconstruction, relocation, seasonal maintenance restrictions, installation of structures, surfacing, or road closure.

Coordinate with County government or private landowners to determine maintenance responsibility on roads needing passenger car access to private lands. On roads where the primary use is access to communities, request public roads agencies (counties, towns, state government) to assume road operational jurisdiction. On roads where exclusive need is access to private

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land, issue a special use permit for the road. On roads or road segments not open to the public and not required for access to private land, close or decommission the road. Additional information may be needed to determine level and type of use.

### **High Value/Not Likely to Affect**

These roads are the “main transportation system” for the Forest. Recommend continued Forest Service or cooperative agency maintenance for passenger car access.

Not likely to affect indicates low priority for investment of time and funds to mitigate risk, except where funds are needed to address critical health and safety needs.

### **Low Value/Not Likely to Affect**

Passenger car access for enjoyment or use of National Forest resources is not needed.

Recommend reducing maintenance costs by reducing maintenance level of FS jurisdiction roads to high clearance (ML 2), or administratively closed (ML 1).

Coordinate with County government or private landowners to determine maintenance responsibility on roads needing passenger car access to private lands. On roads where the primary use is access to communities, request public roads agencies (counties, towns, state government) to assume road operational jurisdiction. On roads where exclusive need is access to private land, issue a special use permit for the road. On roads or road segments not open to the public, and not required for access to private land, close or decommission the road. Additional information may be needed to determine level and type of use.

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## Analysis Results

### Value and Effect Analysis Results

**Total Miles analyzed = 797.75**

<p><b>High Value/May Affect</b></p> <p>86.39 percent = 689.21 total miles (417.23 miles FS jurisdiction)</p>	<p><b>Low Value/May Affect</b></p> <p>10.13 percent = 80.85 miles (32.20 miles FS Jurisdiction)</p>
<p><b>High Value/Not Likely to Affect</b></p> <p>3.47 percent = 27.69 total miles (27.69 miles FS jurisdiction)</p>	<p><b>Low Value/Not Likely to Affect</b></p> <p>0 percent = 0 total miles (0 miles FS jurisdiction)</p>

### Maintenance Needs

An assessment of operational/maintenance jurisdiction must be completed on selected roads to determine whether the existing allocation of responsibility is accurate. The mix of traffic on the road and documentation of the origination of the road can indicate the share that each agency or private party has in the operation of a road. Approximately 162 miles of FS jurisdiction roads in this analysis provide the primary access to communities on private lands (Appendix D). For many of these roads, the type and level of access needed for use of the private land is a higher standard than the level of access needed for the use or management of the National Forest lands. If the prevailing amount of traffic is due to accessing private lands, then jurisdiction of the road by a public road agency such as State or County is indicated. Determining the amount of use and the generator of the use on these roads is an important step in defining appropriate maintenance responsibility and can be obtained using traffic counters.

Road jurisdiction may also be affected by who developed the road and when the road was originally developed. Documentation of the origination of the road is needed to make this determination. Some roads currently under FS jurisdiction could be more appropriately put under the jurisdiction of the Counties, if road

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development preceded the creation of the National Forest. Appendix D lists the priorities to develop road use and historical information, to help define operational jurisdiction.

## **Reduce Maintenance Need**

This analysis supports the premise that current maintenance levels on the CNF main transportation system are correct. Recommendations have been made for some maintenance levels to be changed in the INFRA database. These changes include reducing maintenance level on roads that were found to be in the Low Value and May Affect category, changing roads which are labeled as ML1 in INFRA, but are, in fact, Special Use Roads or Administration Only roads, and roads that are not on the system but should be added (Appendix E).

## **Mitigating Effect**

Effect assessments for this analysis were based on information contained in the Forest's Geographic Information System (GIS). The assessment provides a screening level indication of the likelihood an effect is present. This indication is a useful tool in guiding issue development and planning additional data collection. Field analysis will be required to determine the most appropriate mitigation measures for each road or road segment.

## **Right-of-Way Needs and Priorities**

Appendix C lists the roads analyzed as high value that lack right-of-way through private land. In the past few years, several private landowners bordering CNF have locked gates on roads that lack legal right-of-way for the FS and public to cross their land. Additional closures are likely and may result in large portions of National Forest becoming inaccessible to the general public and to land managers. Rarely have these situations affected level 3, 4 or 5 roads to date.

## **Ecological, Social, and Economic Considerations**

Appendix B provides information on ecological, social and economic considerations that were addressed by the interdisciplinary team. This information provided the basis for the development of the value and effect assessment used in this analysis.

## **Additional Roads Analysis**

Watershed Analysis: The CNF is currently implementing area planning and treatment by 5th code watershed. Roads analysis should be integrated with the

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planning efforts for these watersheds. The priority watersheds listed by the Coronado National Forest Strategic Plan are:

- Upper San Pedro
- Upper Santa Cruz
- Rillito Creek

Road management issues or projects that may require a roads analysis include but are not limited to:

Forest-Wide:

- Unclassified (Wildcat) Road Decommissioning
- Border Issues (D1, D2, D3)
- Special Use Permit Proposals involving roads
- Right-of -Way Issues
- RS2477 Issues
- Off Highway Vehicle (OHV) Issues
- Land Exchange
- Recreation Development
- Mineral Entry
- Resource Management
- Watershed Issues
- Fire Access

## Conclusion

Future road management on the CNF should be guided by this Forest-level Road Analysis. This analysis provides for more efficient and effective road operation and maintenance; reduced road-related environmental effects; and safe, appropriate access for Forest use and management. As data becomes verified and refined, this Forest-level roads analysis may be revised.

Site-specific information on road effects and effective mitigation will be gathered during area or project planning.

Forest Service road system operation costs can be decreased by a reduction in maintenance level, by resolving jurisdiction questions, and by innovative maintenance strategies. Site-specific traffic analysis and coordination with County government is needed to support an effort to cooperate in maintenance efforts and implement jurisdiction reassignment.

# Coronado National Forest Forest Level Roads Analysis Report

## Appendices

Appendix A: Value/Effect Assessment Tables

[D1 Value Effectiveness](#)

[D2 Value Effectiveness](#)

[D3 Value Effectiveness](#)

[D4 Value Effectiveness](#)

[D5 Value Effectiveness](#)

Appendix B: [Ecological, Social and Economic Considerations](#)

Appendix C: [Right-of-Way Needs and Priorities](#)

Appendix D: [Jurisdiction Assessment Needs and Priorities](#)

Appendix E: [Maintenance Level Change Recommendations](#)

Appendix F: [Interdisciplinary Team](#)

Appendix G: Location Map

[Arizona Map](#)

[Coronado Map](#)

Appendix H: Roads in Analysis Maps by Ecosystem Management Area

[Chiricahua map](#)

[Dragoon map](#)

[Huachuca map](#)

[Peloncillo map](#)

[Pinaleno map](#)

[Santa Catalina map](#)

[Santa Rita map](#)

[Tumacacori map](#)

[Whetstone map](#)

Appendix I: Value and Effect Assessment Maps by Ecosystem Management Area

[Chiricahua map](#)

[Dragoon map](#)

[Huachuca map](#)

[Peloncillo map](#)

[Pinaleno map](#)

[Santa Catalina map](#)

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