

Draft Environmental Assessment for Coronado National Forest Road Construction Project

Prepared for

**Department of Homeland Security
U.S. Customs and Border Protection
U.S. Border Patrol**

and

**U.S. Department of Agriculture
Coronado National Forest
Nogales Ranger District**

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Table of Contents

FINDING OF NO SIGNIFICANT IMPACT	v
CHAPTER 1 – PURPOSE AND NEED	1
Introduction	1
Document Structure	1
Background.....	2
Purpose and Need for Action.....	2
Proposed Action	2
Decision Framework.....	2
Public Involvement.....	4
Issues Identified During Scoping.....	4
Forest Land and Resource Management Plan Consistency	5
Travel Management Rule.....	5
CHAPTER 2 – PROPOSED ACTION AND ALTERNATIVES	7
Alternative 1 – No Action.....	7
Alternative 2 – Proposed Action.....	7
Fresnal Wash	11
Cantinas Reservoir	11
Sycamore Canyon.....	12
Mitigation Measures	12
Alternatives Considered, But Eliminated from Further Analysis	15
CHAPTER 3 – ENVIRONMENTAL CONSEQUENCES	17
Comparison of Impacts of the Alternatives	18
Cumulative Effects	20
Air Quality and Climate Change	22
Affected Environment.....	22
Air Quality	22
Climate Change.....	24
Environmental Consequences.....	24
Units of Measure for impact significance (Indicators): Air Quality and Climate Change.....	24
General Conformity Rule.....	24
Greenhouse Gas Reporting Rule.....	25
Alternative 1 – No Action Direct and Indirect Effects	25
Alternative 2 – Proposed Action Direct and Indirect Effects	25
Mitigation Measures	26
Cumulative Effects.....	26
Soils and Water Resources	26
Affected Environment.....	26
Soil Resources.....	26
Surface Water Resources	27
Groundwater Resources	28
Environmental Consequences.....	28

Units of Measure for Impact Significance (Indicators): Soil and Water Resources	28
Alternative 1 – No Action Direct and Indirect Effects	28
Alternative 2 – Proposed Action Direct and Indirect Effects	29
Mitigation Measures	30
Cumulative Effects.....	31
Wildlife and Fisheries.....	32
Affected Environment.....	32
Environmental Consequences.....	34
Units of Measure for Impact Significance (Indicators): Wildlife and Fisheries	34
Alternative 1 – No Action Direct and Indirect Effects	35
Alternative 2 – Proposed Action Direct and Indirect Effects	35
Mitigation Measures	36
Cumulative Effects.....	37
Special Status Species – Forest Service Sensitive Plant and Management Indicator Species and Migratory Birds	37
Affected Environment.....	37
Environmental Consequences.....	38
Units of Measure for Impact Significance (Indicators): Special-Status Species - Forest Service Sensitive Plant and Management Indicator Species and Migratory Birds	38
Alternative 1 – No Action Direct and Indirect Effects	38
Alternative 2 – Proposed Action Direct and Indirect Effects	38
Mitigation Measures	41
Cumulative Effects.....	42
Special Status Species – Threatened and Endangered Species.....	43
Chiricahua Leopard Frog (<i>Lithobates chiricahuensis</i>)	43
Jaguar (<i>Panthera onca</i>).....	44
Mexican Spotted Owl (<i>Strix occidentalis lucida</i>)	45
Northern Mexican Gartersnake (<i>Thamnophis eques megalops</i>)	46
Ocelot (<i>Leopardus pardalis</i>).....	47
Sonora Chub (<i>Gila ditaenia</i>).....	47
Southwestern Willow Flycatcher (<i>Empidonax traillii extimus</i>).....	48
Western Yellow-billed Cuckoo (<i>Coccyzus americanus occidentalis</i>)	48
Environmental Consequences.....	48
Units of Measure for Impact Significance (Indicators): Threatened and Endangered Species.....	48
Alternative 1 – No Action Direct and Indirect Effects	49
Alternative 2 – Proposed Action Direct and Indirect Effects	49
Chiricahua Leopard Frog (<i>Lithobates chiricahuensis</i>)	49
Jaguar (<i>Panthera onca</i>).....	50
Mexican Spotted Owl (<i>Strix occidentalis lucida</i>)	51
Northern Mexican Gartersnake (<i>Thamnophis eques megalops</i>)	51
Ocelot (<i>Leopardus pardalis</i>).....	52
Sonora Chub (<i>Gila ditaenia</i>).....	52
Southwestern Willow Flycatcher (<i>Empidonax traillii extimus</i>).....	53
Western Yellow-billed Cuckoo (<i>Coccyzus americanus occidentalis</i>)	53
Mitigation Measures	54
Cumulative Effects.....	54

Vegetation Resources and Invasive Plant Species.....	55
Affected Environment.....	55
Environmental Consequences.....	56
Units of Measure for Impact Significance (Indicators): Vegetation Resources and Invasive Plant Species	56
Alternative 1 – No Action Direct and Indirect Effects	56
Alternative 2 – Proposed Action Direct and Indirect Effects	56
Mitigation Measures	57
Cumulative Effects.....	58
Heritage Resources	58
Affected Environment.....	58
Environmental Consequences.....	60
Units of Measure for Impact Significance (Indicators): Heritage Resources	60
Alternative 1 – No Action Direct and Indirect Effects	60
Alternative 2 – Proposed Action Direct and Indirect Effects	60
Cumulative Effects – Proposed Action	61
Access.....	61
Affected Environment.....	61
Environmental Consequences.....	62
Units of Measure for Impact Significance (Indicators): Access	62
Alternative 1 – No Action Direct and Indirect Effects	62
Alternative 2 – Proposed Action Direct and Indirect Effects	62
Cumulative Effects.....	63
Recreation Resources.....	64
Affected Environment.....	64
Environmental Consequences.....	66
Units of Measure for Impact Significance (Indicators): Recreation	66
Alternative 1 – No Action Direct and Indirect Effects	66
Alternative 2 – Proposed Action Direct and Indirect Effects	67
Mitigation Measures	68
Cumulative Effects.....	68
Scenery Resources	68
Affected Environment.....	68
Environmental Consequences.....	69
Units of Measure for Impact Significance (Indicators): Scenery Resources	69
Alternative 1 – No Action Direct and Indirect Effects	69
Alternative 2 – Proposed Action Direct and Indirect Effects	69
Mitigation Measures	70
Cumulative Effects.....	70
Environmental Justice.....	70
Affected Environment.....	70
Environmental Consequences.....	71
Units of Measure for Impact Significance (Indicators): Environmental Justice.....	71
Alternative 1 – No Action Direct and Indirect Effects	71
Alternative 2 – Proposed Action Direct and Indirect Effects	71

CHAPTER 4 – CONSULTATION AND COORDINATION	73
Scoping Process.....	73
Consultation with Others.....	73
Federal Agencies.....	74
State/County/Local Government.....	74
CHAPTER 5 – LITERATURE CITED	75

Appendices

- A. Scoping Comment Summary
- B. Arizona SHPO Determination Letters

Figures

Figure 1.1 Project vicinity.....	3
Figure 2.1a Location of proposed road construction in the Fresno Wash area.....	8
Figure 2.1b Location of proposed road construction in the Cantinas Reservoir area.....	9
Figure 2.1c Location of proposed road construction in the Sycamore Canyon area.....	10
Figure 3.1 Recreation resources and ROS designations in the project area.....	65

Tables

Table 1.1 Issues Identified during Scoping.....	4
Table 3.1 Summary and Comparison of Impacts Associated with Primary Resource Concerns Identified during Public Involvement.....	18
Table 3.2 Projects Included in the Cumulative Effects Analysis Area Related to the Proposed Project.....	21
Table 3.3 National Ambient Air Quality Standards.....	23
Table 3.4 Impact Indicators for Soil and Water Resources under the Proposed Action.....	29
Table 3.5 Direct Impacts to Vegetation Type (Acres Lost or Altered).....	36
Table 3.6 Recreation Sites and Activities in the Recreation Analysis Area.....	64

DRAFT
FINDING OF NO SIGNIFICANT IMPACT
Proposed Coronado National Forest Road Construction Project

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

The U.S. Customs and Border Protection (CBP), U.S. Border Patrol Tucson Sector, in coordination with the U.S. Forest Service (Forest Service), proposes to fund the construction of approximately 4 miles of access road. The Coronado National Forest would be responsible for final design and construction of the roads. The proposed locations for construction of the new access roads, including closing portions of existing roads, were chosen to minimize environmental impacts while increasing safety and efficiency for CBP personnel patrolling the border region. The proposed road segments would be located in three areas along the border region within the Nogales Ranger District: Fresnal Wash, Cantinas Reservoir, and Sycamore Canyon. Approximately 1.2 miles of roads in the Fresnal Wash and Sycamore Canyon areas would be closed to motorized to foster resource protection. The Fresnal Wash area road relocation would reduce impacts to existing cultural resource sites. The Sycamore Canyon road relocation and closure would reduce impacts to Sycamore Creek and the Sonora chub (*Gila ditaenia*). Improving access in the Cantinas Reservoir area would increase CBP personnel safety and increase patrol efficiency by connecting roads in the remote location.

The newly constructed road segments in all three construction areas would be native surfaced (constructed of native soil materials) and engineered to conform to the Forest Service Maintenance Level 2 standards, suitable for high-clearance vehicles. Equipment needed to construct the new access roads includes a bulldozer, dump truck, grader, and loader. A water tender would also be used for compaction of the road surface and dust abatement during construction. Access to the three construction areas would be via existing roads, and no temporary roads would be necessary for project implementation. Maintenance of the new access roads would be on an “as-needed” basis or in the event of emergency situations that require repair. All new proposed road segments are designated “Open Authorized Restricted.” Forest Road (FR) 4181 will be decommissioned, and other roads that are to be decommissioned are user-created routes.

The Fresnal Wash road construction area is located approximately 6 miles east of Sasabe, Arizona. Three segments, totaling approximately 0.7 mile, are proposed to be constructed in the Fresnal Wash area. The proposed roads would disturb approximately 2.1 acres of native vegetation, based upon a maximum road width of 14 feet (including 10-foot by 40-foot pullouts at ¼-mile intervals), and maximum disturbance width of 25 feet. Three segments of existing “user-created” road are identified for closure in Fresnal Wash (approximately 0.3 mile of FR 601-7.17R1 and approximately 0.3 mile of FR 601-8.10R-1), totaling approximately 1 acre of closure based on a 14-foot-wide road prism. These roads would either be closed at their entrance with an earthen berm barrier and/or closed road surfaces would be scarified (ripped) and seeded. No soil disturbance would occur in the cultural resource protection zone in the Fresnal Wash area.

The Cantinas Reservoir road construction area is located approximately 10 miles east of Sasabe, Arizona. Proposed project activities in this area include the construction of four road segments that total 2.6 miles to provide safe and effective border area access and close the gaps within the existing road network. This includes two 14-foot-wide segments that are one lane, and two 20-foot-wide segments that are two lanes with no pullouts. Some roads are one lane with turnouts because of low expected CBP traffic volume and speed, whereas others are two lanes due to higher expected CBP traffic volume and/or speed. The proposed roads in the Cantinas Reservoir area would disturb approximately 10.2 acres of native vegetation in this portion of the proposed project. The 20-foot-wide segments would disturb approximately 6.3 acres, based upon a maximum 40-foot disturbance width. The 14-foot-wide segments would disturb approximately 4.0 acres, based upon a maximum 25-foot disturbance width.

The Sycamore Canyon road construction area is located approximately 15 miles west of Nogales, Arizona. One 0.6-mile road segment is proposed to be constructed. This would allow CBP to avoid crossing Sycamore Creek, a sensitive environmental resource. This proposed one-lane segment, including 10-foot by 40-foot pullouts at ¼-mile intervals, would disturb approximately 1.8 acres of native vegetation, based upon a maximum road width of 14 feet and maximum disturbance width of 25 feet. Approximately 0.6 mile of FR 4181, which crosses Sycamore Creek at a low-water crossing, would be closed to motorized vehicles, with an earthen berm barrier to foster resource protection, and portions of the closed road surfaces would be scarified (ripped) and seeded. This totals approximately 1 acre of closure based on a 14-foot-wide road prism. A sign directing users to the new Sycamore Canyon Trail access would be placed on FR 39 at the closure location.

Alternative 1 – No Action: Under the no action alternative, current management plans would continue to guide management of the project area. The proposed roads would not be constructed, no roads would be closed, and existing uses of the project area would continue.

Alternative 2 – Proposed Action: Alternative 2 consists of the proposed action described above and includes construction of approximately 4 miles of roads and closing of approximately 1.6 miles of roads in the Fresnal Wash, Cantinas Reservoir, and Sycamore Canyon areas of the Coronado National Forest. The proposed action also includes a comprehensive set of mitigation measures that will be incorporated into project implementation.

PUBLIC INVOLVEMENT

The public scoping process for this proposal was initiated by advertising the proposed project in the *Nogales International* (newspaper of record) on January 3, 2014. An announcement describing the details of the proposed project and how to submit comments was mailed on January 3, 2014, to applicable federal, state, and local agencies, federally recognized tribes, private property owners, and local interest groups, and parties interested in projects on the Nogales Ranger District and the Coronado National Forest. The 30-day period for submitting scoping comments was from January 3 through February 3, 2014. The Coronado National Forest Road Construction Project was added to the Coronado National Forest Schedule of Proposed Actions during the second quarter of Fiscal Year 2014.

A Notice of Availability (NOA) for this Environmental Assessment (EA) and proposed Finding of No Significant Impact (FONSI) was published in the *Nogales International* on September 29, 2015. The EA was available electronically at:

<http://www.cbp.gov/about/environmental-cultural-stewardship/cbp-environmental-documents> and for review and at the Nogales-Rochlin Public Library from September 29 to October 29, 2015. This was done to solicit comments on the proposed action and involve the local community in the decision-making process.

ENVIRONMENTAL CONSEQUENCES:

Mitigation measures to reduce or minimize potential impacts on a particular resource are described in Chapter 2 of the EA and are incorporated by reference to this FONSI.

Physical Environment: Construction of roads in the Fresnal Wash, Cantinas Reservoir, and Sycamore Canyon areas would have a permanent, direct impact on approximately 14.1 acres of Coronado National Forest land. Mitigation measures included in the Environmental Assessment will be implemented during and following construction.

The proposed action would have a negligible impact on air quality. Temporary and minor increases in air emissions and fugitive dust would be anticipated during the activities. However, air emissions associated with these activities would not be anticipated to exceed federal and state air quality criteria.

Negligible adverse impacts would occur to soils and stormwater flows in washes on or abutting the roadway, caused by an increase in erosion potential and in the deposition or reworking of fill material in wash crossings. Long-term, minor, beneficial impacts to surface water would be expected from the closure of the low-water road crossing at Sycamore Creek. Standard mitigation measures will be implemented during and following construction to minimize adverse impacts. Long-term minor beneficial impacts to water quality would result from closure of the low-water road crossing at Sycamore Creek.

Natural Environment: Construction of roads in the Fresnal Wash, Cantinas Reservoir, and Sycamore Canyon areas would result in the loss of approximately 14.1 acres of vegetation and habitat would have short-term, negligible impacts to general wildlife but would not adversely impact the population viability of any plant or wildlife species in the region. Construction activities would avoid impacting vegetation to the maximum extent possible. Standard mitigation measures will be implemented during construction to minimize adverse impacts. Long-term, beneficial impacts to riparian vegetation would result from closure of the low-water road crossing at Sycamore Creek.

CBP's determination is that implementation of the proposed action as described may affect but is not likely to adversely affect Chiricahua leopard frog (*Lithobates chiricahuensis*), jaguar (*Panthera onca*), Mexican spotted owl (*Strix occidentalis lucida*), Sonora chub), northern Mexican gartersnake (*Thamnophis eques megalops*), ocelot (*Leopardus pardalis*), southwestern willow flycatcher (*Empidonax traillii eximius*), and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*). CBP's determination is that implementation of the proposed action as described may affect but is not likely to adversely affect Chiricahua leopard frog, jaguar, Mexican spotted owl, and Sonora chub designated critical habitat. CBP's determination is that implementation of the proposed action as described will not result in adverse modification of northern Mexican gartersnake (*Thamnophis eques megalops*) proposed critical habitat.

Standard mitigation measures such as erosion-control measures and species-specific conservation measures would minimize potential impacts to wildlife. A complete list of mitigation measures and species-specific conservation measures is provided in Chapter 2 of the EA.

Cultural Resources: CBP has completed cultural resource surveys of all areas proposed for disturbance under the proposed action. In a letter dated August 30, 2012 (see Appendix B), the Arizona State Historic Preservation Office (SHPO) determined the proposed road construction at Fresnal Wash would result in no effect on historic properties. In a letter dated December 19, 2014, the SHPO determined that the proposed road construction in the Cantinas Reservoir and Sycamore Canyon project areas would result in no effect on historic properties. Based on this record, CBP has completed compliance with Section 106 of the National Historic Preservation Act.

If unanticipated discoveries of cultural properties or unanticipated impacts to known cultural properties occur after construction has commenced, all work in the immediate area must cease immediately and the Nogales District Archaeologist must be contacted to initiate the consultation process as outlined in the Advisory Council on Historic Preservation Regulations (36 Code of Federal Regulations [CFR] 800.13). The District Archaeologist will inform the Nogales District Ranger when construction may resume in the area. If human remains are found, work in the immediate area must cease immediately. The Nogales District Archaeologist will implement tribal consultation in accordance with the Native American Graves Protection and Repatriation Act, and 43 CFR 10.6. CBP would implement the following procedures in accordance with 36 CFR 800.13. CBP would immediately cease all operations for the portion of the activity with the potential to adversely affect a historic property and secure the impacted area.

Human Environment: Road construction would result in short- and long-term, minor adverse impacts from construction, traffic disturbance of recreationists, and reduced access. Long-term, beneficial impacts would result from increasing road access and adding efficiency to CBP patrols in this region and enhancing the safety and security of the area. Due to the remote location of the project area, there would be no impact to or displacement of any low-income or minority populations.

Finding: On the basis of the findings of the EA, which is incorporated by reference and has been conducted in accordance with the National Environmental Policy Act, the Council on Environmental Quality regulations, and Department of Homeland Security Management Directive 023-01, and after careful review of the potential environmental impacts of implementing the proposal, we find there would be no significant impact on the quality of the human or natural environment, either individually or cumulatively; therefore, there is no requirement to develop an Environmental Impact Statement. Further, we commit to implement mitigation measures identified in the EA and supporting documents.

Chief
Strategic Planning, Policy and Analysis Division
U.S. Customs and Border Protection

Date

Executive Director
Facilities Management and Engineering
U.S. Customs and Border Protection

Date

Chapter 1 – Purpose and Need

Introduction

The U.S. Customs and Border Protection, Tucson Sector (CBP), in cooperation with the U.S. Forest Service (Forest Service), is proposing to construct approximately 4 miles of roads in three different areas of the Nogales Ranger District of the Coronado National Forest (the proposed action). Construction of these roads is intended to provide improved access to the U.S. and Mexican border on the Coronado National Forest, enabling CBP to safely and effectively execute its statutory mission while protecting environmentally sensitive resources.

The proposed access road segments would be constructed on the Nogales Ranger District, located in southeastern Arizona. Encompassing four mountain ranges, the Nogales Ranger District consists of two discontinuous areas roughly bisected by Interstate 19 and the communities of Tubac and Rio Rico. The construction would occur on the southern portion of the Nogales Ranger District, bordered on the north by private and State Trust lands, on the east by private lands, on the west by the Buenos Aires National Wildlife Refuge, and on the south by the U.S. and Mexican border.

The total area of the Nogales Ranger District is about 352,280 acres. It includes the Santa Rita, Tumacacori, Pajarito, and San Luis Mountains. Elevations generally range from 3,500 feet above mean sea level (amsl) in Nogales to 9,453 feet amsl at Mount Wrightson. Topography in the project area includes numerous mountains and valleys that generally slope from north to south.

This Environmental Assessment (EA) presents the results of an analysis of the direct, indirect, and cumulative environmental consequences of the proposed action and no action alternative.

Document Structure

CBP, in coordination with the Forest Service, has prepared this EA in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. This EA discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. The document is organized into four parts with appendices:

- **Purpose and Need:** This section includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. This section also details the framework that CBP and the Coronado National Forest will use in the decision-making process, how CBP informed the public of the proposal, and how the public responded.
- **Proposed Action and Alternatives:** This section provides a more detailed description of the proposed action. This discussion also includes mitigation measures and monitoring.
- **Environmental Consequences:** This section describes the environmental effects of implementing the proposed action and the no action alternatives and begins with a summary table (see Table 3.1) of the environmental consequences associated with each alternative. The analysis is organized by resource area. Within each section, the affected environment is described first, followed by the effects of the no action alternative that provides a baseline for evaluation and comparison of the proposed action alternative.
- **Consultation and Coordination:** This section provides a list of preparers and agencies consulted during the development of the EA.
- **Appendices:** The appendices provide more detailed information to support the analyses presented in the EA.

Background

The CBP U.S. Border Patrol Tucson Sector contains areas of rugged and remote terrain that are difficult to access for border enforcement activities. The current road network near the U.S. and Mexican border region within the Coronado National Forest contains gaps that create breaks in CBP's ability to safely and effectively conduct border enforcement operations. These gaps require CBP agents to take lengthy detours to areas of National Forest System (NFS) lands that could be more adequately accessed with the construction of short road segments. Other current access roads are located in environmentally sensitive areas, and need to be relocated to reduce potential environmental impacts to cultural resources, sensitive species, and riparian areas. CBP currently accesses the border fence for patrol operations from roads that potentially impact adjacent cultural resources sites and riparian areas; relocation could promote environmental protection.

Purpose and Need for Action

There is a need to improve access to NFS lands along the U.S. and Mexican border in order to enable CBP to safely and effectively execute its statutory mission while protecting environmentally sensitive resources. Border areas within the Nogales Ranger District are experiencing an increasing trend in illicit border activity. In addition, some of the existing road network currently used by CBP is within environmentally sensitive locations. The primary purpose of the proposed project is to provide safe and effective border area access, close the gaps within the existing road network, and protect environmentally sensitive resources through relocating portions of current access roads along this section of the U.S. and Mexican border.

Proposed Action

CBP, in coordination with the Forest Service, is proposing to construct approximately 4 miles of roads and close approximately 1.2 miles of roads in three different areas of the Nogales Ranger District of the Coronado National Forest to meet the Purpose and Need (Figure 1.1). These three areas are: Fresnal Wash, Cantinas Reservoir, and Sycamore Canyon. The proposed locations for construction of new access roads, including closing portions of existing roads, were chosen to minimize environmental impacts while increasing safety and efficiency for CBP personnel patrolling the border region.

The Fresnal Wash area road relocation would reduce impact to existing cultural resource sites by closing approximately 0.6 mile of road to public access. The Sycamore Canyon road relocation and closure of approximately 0.6 mile of road to public access would reduce impacts to Sycamore Creek and the Sonora chub (*Gila ditaenia*). Improving access in the Cantinas Reservoir area would increase CBP personnel safety and increase patrol efficiency through connecting roads in the remote location.

A detailed description of the proposed action is included in Chapter 2.

Decision Framework

CBP and the Forest Service will review the proposed action and no action alternative, as well as the associated environmental consequences. CBP and the Forest Service will sign separate decisions. The Forest Service will authorize implementation of the selected alternative and would construct the roads. CBP will authorize the expenditure of funds to implement road construction for the selected alternative. The Nogales District Ranger of the Coronado National Forest is the deciding official for the Forest Service, and the Executive Director of Facilities Management and Engineering is the deciding official for CBP.

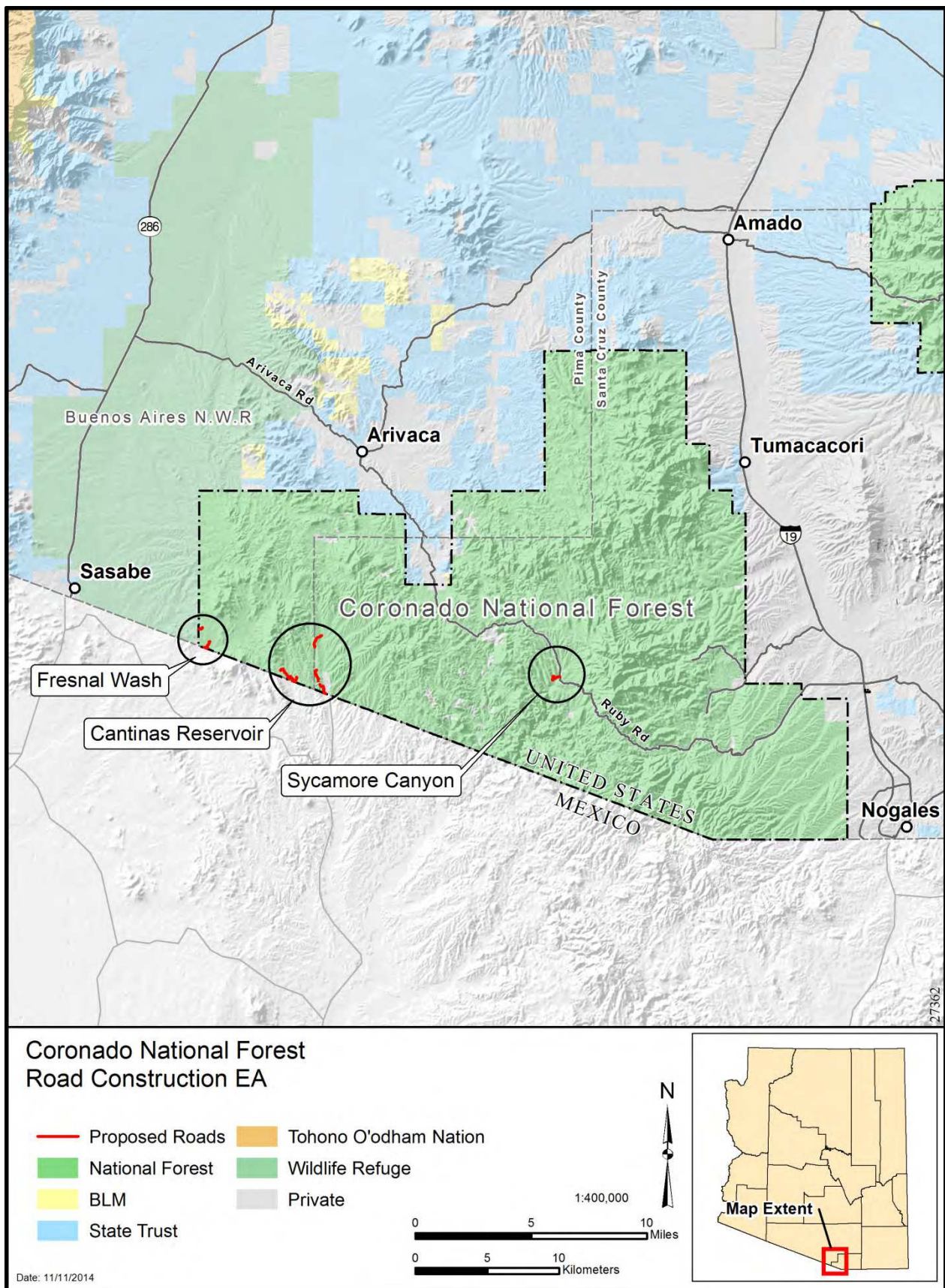


Figure 1.1 Project vicinity.

The decision made by each deciding official would contain activities that meet the purpose and need and provide consistency with the *Coronado National Forest Land and Resource Management Plan* (Forest Plan; Forest Service 1986, as amended) standards and guidelines for all related resource areas. Specifically, the deciding officials will:

- approve or not approve the implementation of the proposed action;
- identify what, if any, mitigation measures will be implemented to protect resources in the project areas; or
- determine necessity of Environmental Impact Statement (EIS) development.

This EA discloses the environmental consequences of implementing the proposed action and alternatives, to facilitate public understanding and engagement and informed decision making. This analysis incorporates by reference (in accordance with 40 Code of Federal Regulations [CFR] 1502.21) the project record, including the area archeological surveys, biological resources specialist report, and other technical documentation used to support analyses, summarized herein.

Public Involvement

The Coronado National Forest Road Construction Project was added to the Coronado National Forest Schedule of Proposed Actions during the second quarter of Fiscal Year 2014. The scoping process for this proposal was initiated by advertising the proposed project in the *Nogales International* (newspaper of record) on January 3, 2014. An announcement describing the details of the proposed project and how to submit comments was mailed on January 3, 2014, to applicable government agencies and tribes, and parties interested in projects on the Nogales Ranger District and the Coronado National Forest. The 30-day period for submitting scoping comments was from January 3 through February 3, 2014.

A summary of the comments received during the scoping period is included as Appendix A. CBP received 18 comment submittals that contained a total of 72 individual comments.

Issues Identified During Scoping

Issues identified during scoping include the concerns included in Table 1.1.

Table 1.1 Issues Identified during Scoping

Issue Category	Issue Summary
Access	The proposed action could cause the public to lose access to areas of the National Forest; roads being closed and decommissioned should be replaced by public access roads.
Air Quality	The proposed action has the potential to impact air quality through generation of dust.
Biology	The proposed action road construction and decommissioning could impact Endangered Species, including the Sonoran chub and jaguar; include U.S. Fish and Wildlife consultation, if necessary. The proposed action road construction could further impacts of invasive plant on the National Forest.
Border Security	The proposed action road construction could impact border security, both negatively and beneficially.
Cultural Resources	The proposed action road construction and decommissioning could impact the area's cultural resources, including the area's Tribal interests.
Road Design and Alignment	Road construction design standards that decrease erosion, accommodate flash floods, and increase road longevity should be included in the proposed action. Include design description for road closures. Road alignment should be relocated to avoid private property.
Hydrology/Soils	Road construction that crosses washes and floodplains could impact waterways and destroy habitat and cause erosion.

Forest Land and Resource Management Plan Consistency

The National Forest Management Act (16 United States Code [USC] 1600 *et seq.*) mandates that all proposed actions be reviewed for consistency with the Forest Plan (Forest Service 1986, as amended). The Forest Plan provides Forest-wide land management direction through standards and guidelines for all resource areas. The Forest Plan was adopted in 1986 and last amended in 2005, and is currently undergoing revisions in order to update its content and direction.

The plan assigns specific Forest Management Areas with particular goals, standards, and guidelines. For the proposed action, the Fresno Wash, Cantinas Reservoir, and the majority of the Sycamore Canyon construction areas are located within Forest Management Area 4, characterized by desertscrub, grassland, chaparral, and woodland vegetation types. The management emphasis for this area is the promotion of forage for livestock grazing, improvement of game habitat, and fuel wood resources (Forest Service 1986:62). Forest Management Area 4 standards and guidelines specific to road and trail maintenance as identified in the Forest Plan (Forest Service 1986:65) include:

- Bring existing roads and trails that are to be retained on the system to a maintainable standard which is suitable for the planned use and provides for safety and resource protection.
- Maintain 80% of roads to Level 2 standards.
- Close, drain, and revegetate existing roads that are determined to be unneeded for further use. This should be a cost of the initiating resource element.

A small portion of the proposed action in the Sycamore Canyon area is located in Forest Management Area 7, which is defined by riparian vegetation types. Management emphasis in this area is to promote unique wildlife or vegetative species in these riparian watershed environments (Forest Service 1986:67). Forest Management Area direction specific to road planning and maintenance as identified in the Forest Plan (Forest Service 1986:69–70) includes:

- Attempt to avoid these areas with new road and trail development.
- Bring existing roads and trails that are to be retained on the system to a maintainable standard which is suitable for the planned use and provides for minimum safety and resource protection. Maintain roads to be Level 2.
- Close, drain, and revegetate existing roads that are determined to be unneeded for further use. This should be a cost of the initiating resource element.

This proposed action is consistent with the Forest Plan standards and guidelines. No amendments to the Forest Plan are necessary prior to implementation of the proposed action.

Travel Management Rule

In 2005, the Forest Service published the final Travel Management Rule, which requires all National Forests to designate a system of roads, trails, and areas that are open to motor vehicle use by the public. It also prohibits the use of motor vehicles on roads and in areas (cross-country) that are not part of the travel management system (36 CFR 212). The Coronado National Forest is currently conducting the Travel Management Planning NEPA process and finalizing its motorized transportation system for each of its five Ranger Districts under the Travel Management Rule mandate.

The Nogales Ranger District has completed a Travel Analysis Plan, and is conducting NEPA on the future motorized transportation system on the District. The roads proposed for construction under this proposed action would be incorporated into the District's transportation system, as appropriate. The Nogales Ranger District NEPA Travel Management Plan will correspond to this proposed action, and roads that are proposed for construction and closure under this proposed action would be incorporated into the transportation system.

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Chapter 2 – Proposed Action and Alternatives

This chapter describes the alternatives considered for the Coronado National Forest Road Construction Project. Each alternative considered is described below. CBP and the Forest Service worked together to develop a proposed action that meets the purpose and need of safe and effective border access while protecting sensitive environmental resources. No specific number of alternatives is required or prescribed (36 CFR 220.7(b)(2)). NEPA requires that the agency study, develop, and describe appropriate alternatives to recommend courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources. If no unresolved conflicts exist, the EA need only analyze the proposed action and proceed without consideration of additional topics (36 CFR 220.7(b)(2)(i)).

Alternative 1 – No Action

No action is included as an alternative to the proposed action, in accordance with Council on Environmental Quality (CEQ) requirements (40 CFR 1502.14(d)). Under the no action alternative, current management plans would continue to guide management of the existing road network. The proposed roads would not be constructed and use of the existing road system along the U.S. and Mexican border would continue in the same manner. CBP would continue to have difficulty patrolling the area due to gaps within the existing road network requiring out-of-the-way travel to access border areas. Additionally, CBP would continue to use roads located in environmentally sensitive areas and negatively impact resources.

The no action alternative forms the baseline against which the potential impacts of the proposed action and any other action alternatives are compared. Thus, it includes current actions and activities in the existing road network. No activities would be implemented to accomplish the purpose and need of the project.

Alternative 2 – Proposed Action

CBP, in coordination with the Forest Service, proposes the construction of approximately 4 miles of access roads and closure of approximately 1.2 miles of roads in environmentally sensitive areas to provide enhanced access for border patrol activities and protect environmental resources. Construction is proposed in three areas in the border region within the Nogales Ranger District: Fresnal Wash, Cantinas Reservoir, and Sycamore Canyon.

Approximately 0.7 mile of access road would be constructed in Fresnal Wash, 2.6 miles constructed in Cantinas Reservoir, and 0.6 mile constructed in Sycamore Canyon. Approximately 0.6 mile of existing road in the Fresnal Wash and 0.6 mile of road in Sycamore Canyon would be closed to motorized travel by earthen berm barriers at the road entrances to foster resource protection. Ground disturbance for the road construction would total approximately 14.2 acres. Figures 2.1a, 2.1b, and 2.1c present the construction areas, the locations for the proposed road segments, and the portions of existing road that would be closed under the proposed action.

The proposed roads were identified by the Coronado National Forest's road engineer to allow for enhanced border access by CBP and to reroute roads in environmentally sensitive areas. CBP would fund the road construction and road closure. The Forest Service would be responsible for final design, construction, and maintenance of the approximately 4 miles of proposed roads and the closure of 1.2 miles of existing road.

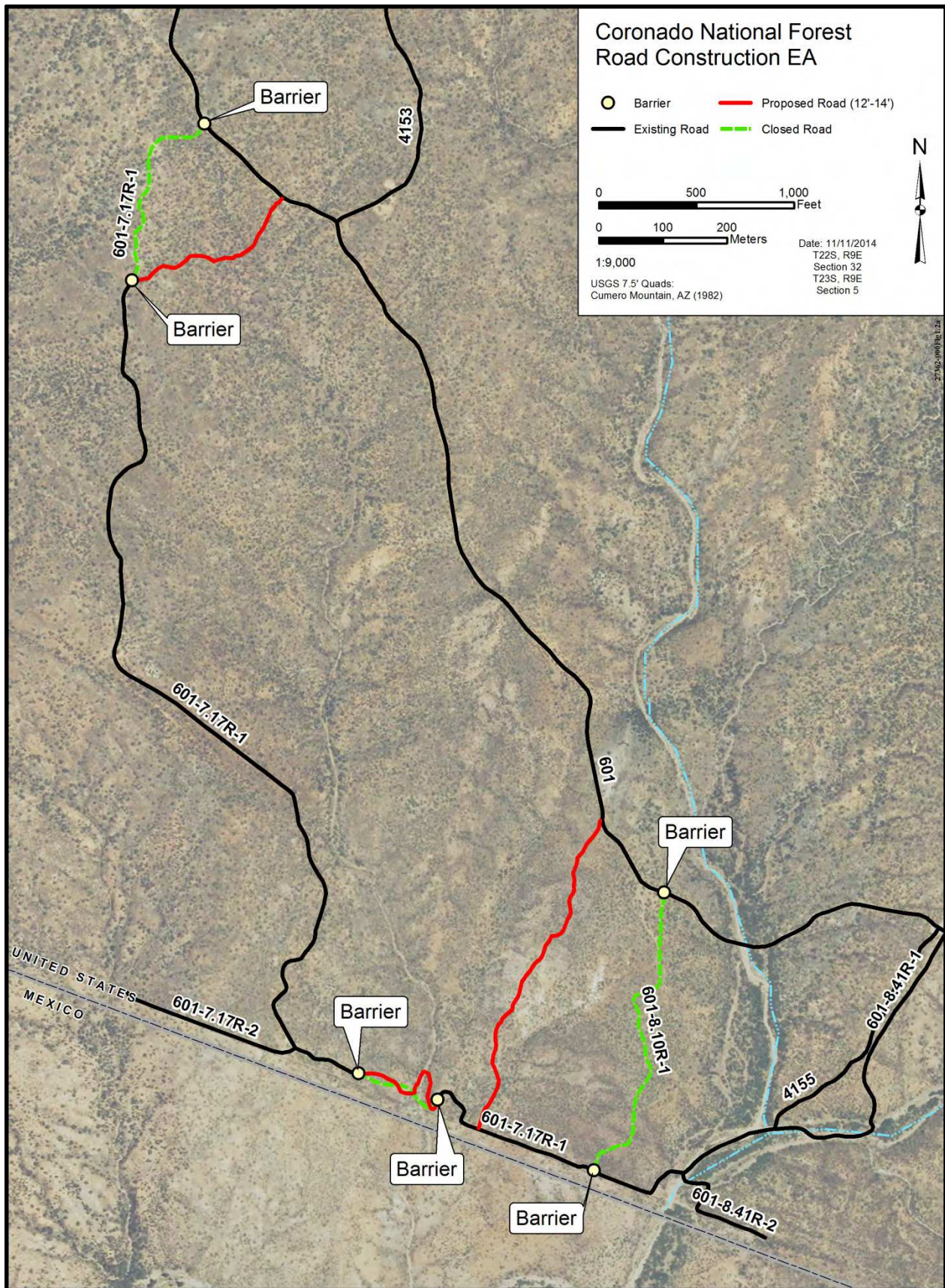


Figure 2.1a Location of proposed road construction in the Fresnal Wash area.

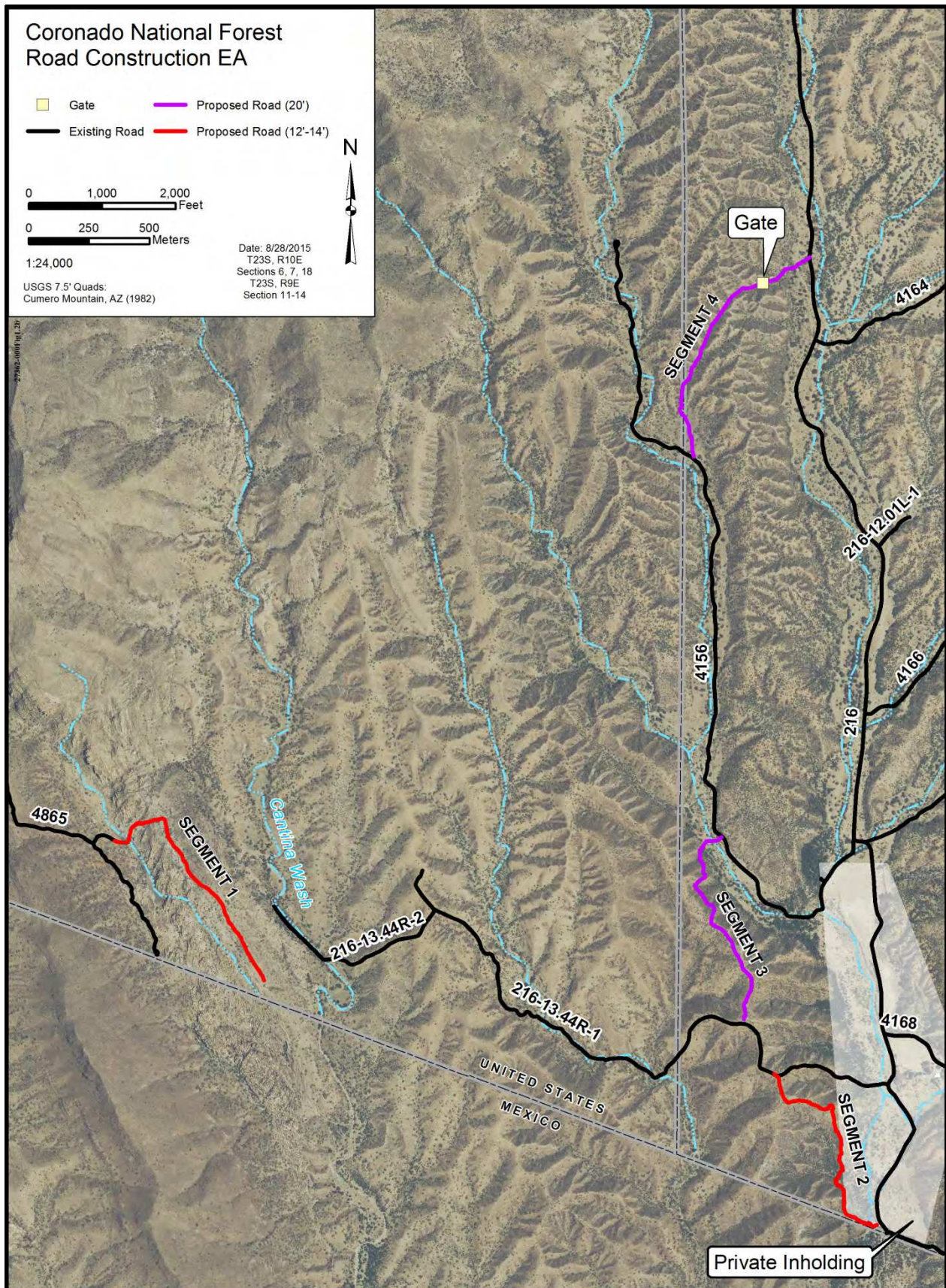


Figure 2.1b Location of proposed road construction in the Cantinas Reservoir area.

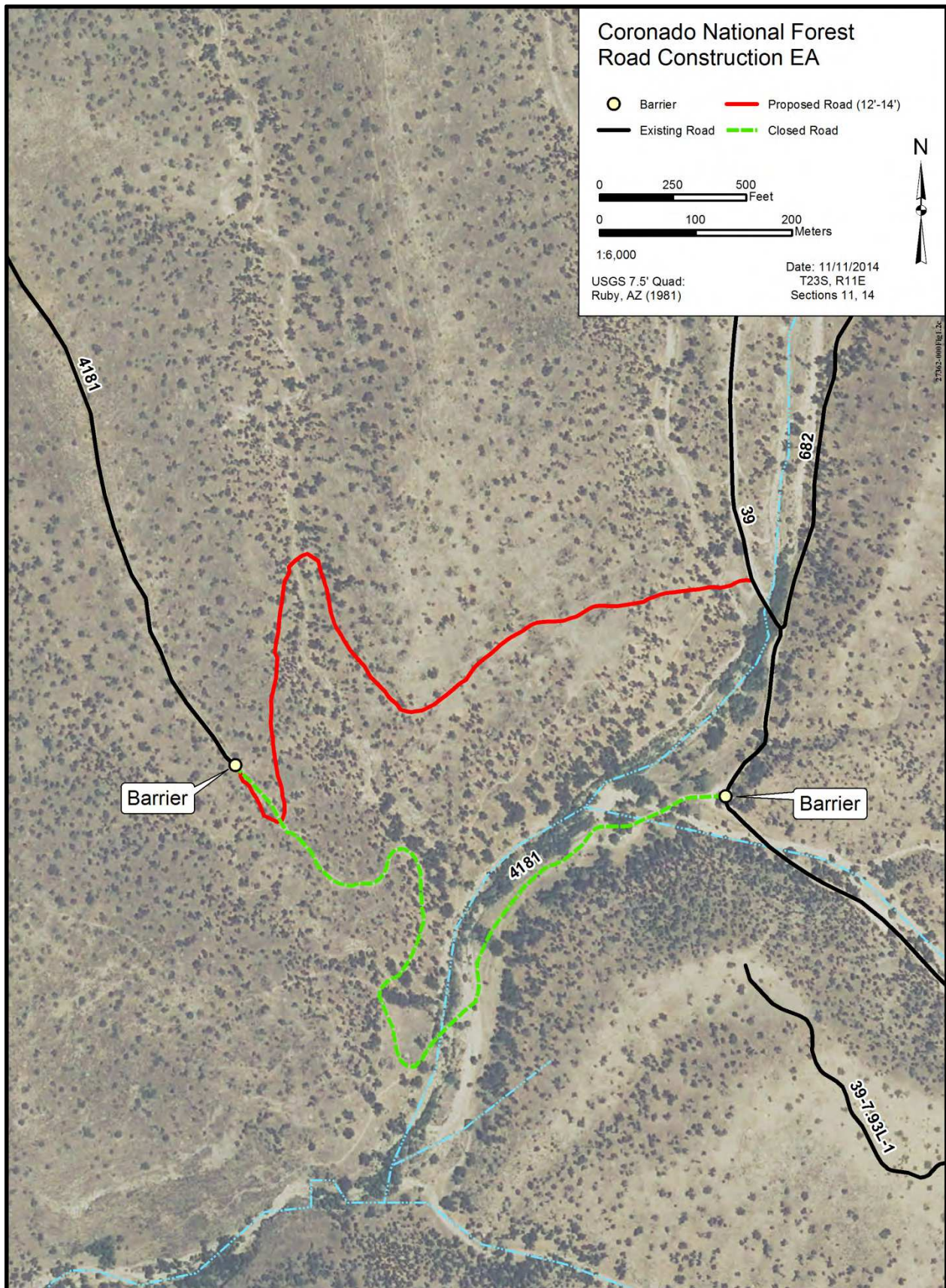


Figure 2.1c Location of proposed road construction in the Sycamore Canyon area.

The newly constructed road segments in all three construction areas would be native surfaced (constructed of on-site soil materials), engineered to conform to the Forest Service Maintenance Level 2 Standard (Forest Service Handbook [FSH] 7709.59, sec. 62.31 [Forest Service 2009]), and be suitable for high-clearance vehicles. Equipment needed to construct the new access roads includes trackhoes, bulldozers, dump trucks, graders, compactors, and loaders and similar heavy equipment. A water tender would also be used for compaction of the road surface and dust abatement during construction. Several corrugated metal drainage pipes will be required at larger dry wash crossings. No aquatic organisms have been identified that would require passage considerations at these drainage pipes. Road construction in all three areas is anticipated to take approximately 6 months of total equipment use time. Construction is expected to begin in October 2016. Access to the three construction areas would be via existing roads, and no temporary roads would be necessary for project implementation. Maintenance of the new access roads would be on an “as-needed” basis or in the event of emergency situations that require repair.

All new proposed road segments are designated “Open Authorized Restricted.” Forest Road (FR) 4181 will be decommissioned, and other roads that are to be decommissioned are user-created routes.

Fresnal Wash

The Fresnal Wash road construction area is located approximately 6 miles east of Sasabe, Arizona, in Section 32, Township 22 South, Range 9 East, and Section 5, Township 23 South, Range 9 East, Gila and Salt River Baseline and Meridian, Pima County, Arizona (see Figure 2.1a). Three segments, totaling approximately 0.7 mile, are proposed to be constructed in the Fresnal Wash area. The proposed roads would disturb approximately 2.1 acres of native vegetation, based upon a maximum road width of 14 feet (including 10-foot by 40-foot pullouts at ¼-mile intervals), and maximum disturbance width of 25 feet.

Three segments of existing “user-created” road are identified for closure in Fresnal Wash (approximately 0.3 mile of FR 601-7.17R1 and approximately 0.3 mile of FR 601-8.10R-1), totaling approximately 1 acre of closure based on a 14-foot-wide road prism. These roads would either be closed at their entrance with an earthen berm barrier and/or closed road surfaces would be scarified (ripped) and seeded (see Figure 2.1a). No soil disturbance would occur in the cultural resource protection zone in the Fresnal Wash area.

Cantinas Reservoir

The Cantinas Reservoir road construction area is located approximately 10 miles east of Sasabe, Arizona, in Sections 6, 7, and 18, Township 23 South, Range 10 East, and Sections 11 through 13, Township 23 South, Range 9 East, Gila and Salt River Baseline and Meridian, Pima and Santa Cruz Counties, Arizona (see Figure 2.1b). CBP currently accesses this area from the east via FR 4865 and from the west via FR 216. Proposed project activities in this area include the construction of four road segments that total 2.6 miles to provide safe and effective border area access and close the gaps within the existing road network. This includes two 14-foot-wide segments that are one lane, and two 20-foot-wide segments that are two lanes with no pullouts. Some roads are one lane with turnouts because of low expected CBP traffic volume and speed, whereas others are two lanes due to higher expected CBP traffic volume and/or speed. A road with a single lane and turnouts has less disturbance area and is faster and cheaper to construct and maintain.

Segment 1 is a 0.7-mile, one-lane road with 10-foot by 40-foot pullouts at ¼-mile intervals near Cantinas Reservoir, that stems off of FR 4865. Segment 2 is a 0.6-mile, one-lane road with 10-foot by 40-foot pullouts at ¼-mile intervals that connects FR 216-13 to the border fence. Segment 3 is a 0.6-mile, two-lane road that connects FR 4156 to FR 216-13. Segment 4 is a 0.7-mile, two-lane road that connects FR 216 to FR 4156. A gate would be located in the north half of Segment 4 (see Figure 2.1b) to restrict access and reduce traffic impacts on private property.

The proposed roads in the Cantinas Reservoir area would disturb approximately 10.2 acres of native vegetation in this portion of the proposed project. The 20-foot-wide segments would disturb approximately 6.3 acres, based upon a maximum 40-foot disturbance width. The 14-foot-wide segments would disturb approximately 4.0 acres, based upon a maximum 25-foot disturbance width.

Sycamore Canyon

The Sycamore Canyon road construction area is located approximately 15 miles west of Nogales, Arizona, in Sections 11 and 14, Township 23 South, Range 11 East, Gila and Salt River Baseline and Meridian, Santa Cruz County, Arizona (see Figure 2.1c). One 0.6-mile road segment is proposed to be constructed. This will allow CBP to avoid crossing Sycamore Creek, a sensitive environmental resource. This proposed one-lane segment, including 10-foot by 40-foot pullouts at ¼-mile intervals, would disturb approximately 1.8 acres of native vegetation, based upon a maximum road width of 14 feet and maximum disturbance width of 25 feet.

Approximately 0.6 mile of FR 4181, which crosses Sycamore Creek at a low-water crossing, would be closed to motorized vehicles with an earthen berm barrier to foster resource protection, and portions of the closed road surfaces would be scarified (ripped) and seeded (see Figure 2.1c). This totals approximately 1 acre of closure based on a 14-foot-wide road prism.

A sign directing users to the new Sycamore Canyon Trail access would be placed on FR 39 at the closure location.

Mitigation Measures

Mitigation measures that were developed to reduce potential impacts from the proposed road construction project will be incorporated into the proposed action. These mitigation measures would be applied to the proposed action to reduce environmental impacts both during and post-construction. Resource-specific mitigation measures are listed below and described in the applicable sections in Chapter 3.

- Construction activities shall comply with all appropriate regulations, including Arizona Administrative Code R18-2-604 through 607, and R18-2-804; and Pima County Code 17.1 and 17.16, which require mitigation measures for the control of dust from open areas, roadways, and material handling; control of emissions from the operation of mobile equipment; fugitive dust permits for activities such as building roads; and limits on visible emissions.
- Construction would adhere to mitigation measures for erosion control and sediment runoff to surface waters (Forest Service 2012):
- Orient the stream crossing perpendicular to the channel to the extent practicable.
- Keep approaches to stream crossings to as gentle a slope as practicable.
- At stream crossings, consider natural channel adjustments and possible channel location changes over the design life of the structure.
- Design the stream crossing structure to have sufficient capacity to convey the design flow without appreciably altering streamflow characteristics.
- Install stream crossings to sustain bankfull dimensions of width, depth, and slope and maintain streambed and bank resiliency and continuity through the structure.
- In floodplains, use suitable measures to protect fill from erosion and to avoid or minimize failure of the stream crossing at flood flows.
- Use suitable measures to provide floodplain connectivity to the extent practicable.
- At stream crossings, use suitable measures to avoid or minimize scour and erosion of the channel, crossing structure, and foundation to maintain the stability of the channel and banks.

- For stream crossings, select and design low-water crossing structures to maintain the function and bedload movement of the natural stream channel. Construct the low-water crossing to conform to the site, channel shape, and original streambed elevation and to minimize flow restriction, site disturbance, and channel blockage to the extent practicable.
- Riprap will be placed in locations where erosion would be likely to occur without some form of energy dissipation due to concentrated runoff from road drainage pipes, grade dips, or leadout ditches.
- Road surfaces would be composed of native material, and no additional surface materials would be required or brought into the project area.
- Preparation of a Stormwater Pollution Prevention Plan (SWPPP) would identify erosion control methods and comply with the Arizona Pollutant Discharge Elimination System (AZPDES) Construction General Permit conditions.
- Prepare and implement the SWPPP prior to construction activities.
- Implement mitigation measures described in the SWPPP to reduce erosion.
- Consider areas with highly erodible soils when planning the activities and incorporate measures such as wattles, aggregate materials, and wetting compounds in the erosion-control mitigation measures.
- During construction, establish designated areas for equipment staging and parking to minimize the area of ground disturbance.
- The natural drainage pattern of the area would be maintained wherever practicable.
- Steep excavated slopes would be stabilized.
- Suitable species and establishment techniques would be used to cover or revegetate disturbed areas in compliance with local direction and requirements in accordance with Forest Service Manual (FSM) 2070 and FSM 2080 for vegetation ecology and prevention and control of invasive species.
- During construction, vehicles would be required to stay on designated driving routes to avoid excessive soil and vegetation disturbance, to minimize the introduction and spread of noxious weeds.
- During construction, silt fencing and floating silt curtains would be installed and maintained in areas susceptible to erosion to prevent movement of soil and sediment and to minimize turbidity increases in water.
- During construction, disturbed areas would be routinely inspected to verify that erosion and stormwater controls are implemented and functioning as designed and are suitably maintained. Erosion and stormwater controls would be maintained as necessary to ensure proper and effective functioning.
- Construction work would cease during heavy rains and would not resume until conditions are suitable for the movement of equipment and materials.
- Animal collisions would be minimized during construction activities by limiting speeds on the proposed roads to no more than 25 miles per hour (mph) and employing the use of wildlife crossings.
- Disturbed areas would be revegetated with native species.
- Initial mechanical vegetation clearing should be timed to avoid the migration, breeding, and nesting time frame of migratory birds (February 1 through August 31). When initial mechanical vegetation clearing must be implemented during February 1 through August 31, a survey for nesting migratory birds would be conducted immediately prior to the start of activities. If an

active nest is found, a buffer zone will be established around the nest and no activities would occur within that zone until nestlings have fledged and abandoned the nest.

- If mechanical methods are used to remove invasive plants, the entire plant should be removed and placed in a disposal area. If herbicides are used, the plants will be left in place. All chemical applications on federally managed land must be used in coordination with the federal land manager. Training to identify nonnative invasive plants will be provided for CBP personnel or contractors, as necessary.
- Fill material, sandbags, hay bales, and mulch brought in from outside the project area would be identified by its source location. Contractors would use sources that are sterile or weed-free.
- The perimeter of all new areas to be disturbed would be clearly demarcated using flagging or temporary construction fencing. No disturbance would be allowed outside that perimeter.
- If vegetation must be removed, allow natural regeneration of native plants by cutting vegetation with hand tools, mowing, trimming, or other removal methods that allow root systems to remain intact.
- Vegetation targeted for retention would be flagged to reduce the likelihood of being treated.
- Trees that are 6 inches in diameter at breast height (breast height defined as 4.5 feet) would be left on-site with no more than one-third of each individual tree pruned from the ground up to a maximum of 8 feet. For example, a 24-foot tree could be pruned 8 feet up from the ground.
- To prevent the introduction of invasive species seeds, all earthmoving and hauling equipment would be washed at the contractor's storage facility prior to entering the construction site.
- To prevent invasive species seeds from leaving the site, all construction equipment will be inspected and all attached plant/vegetation and soil/mud debris will be removed prior to leaving the construction site.
- To protect individuals of listed species within the project area, suspend work in the immediate vicinity of the individual until it moves out of harm's way on its own, or enlist a qualified specialist (individuals or agency personnel with a permit to handle the species) to relocate the animal to a nearby safe location in accordance with accepted species-handling protocols.
- A training program would be developed and implemented to inform construction personnel of the listed species that occur within the project area, penalties for violation of state or federal laws, implementation of included conservation actions/best management practices (BMPs), and reporting requirements.
- The visible space shall be checked underneath all vehicles and heavy equipment for listed species and other wildlife prior to moving vehicles and equipment at the beginning of each workday and after vehicles have idled for more than 15 minutes.
- Chiricahua Leopard Frog (*Lithobates chiricahuensis*)
 - A site-specific SWPPP and a spill protection plan will be prepared and regulatory approval sought, as required by regulations, for activities that could result in sedimentation and that occur within 0.3 mile of potentially occupied habitat. This will include, but is not limited to, placing straw bale type sediment traps at the inlet of ponds or stock tanks and upstream of drainages known to be occupied by the species or within critical habitat of the species.
 - Any use or storage of fuels will be kept 0.3 mile away from locations where this species occurs.
- Jaguar (*Panthera onca*) and Ocelot (*Leopardus pardalis*)
 - The potential for Animal collisions would be minimized by limiting speeds on the proposed roads to no more than 25 mph and employing the use of wildlife crossing signs.

- To prevent the spread of invasive plant species, guidance from the following resources will be implemented: *Inspection and Cleaning Manual for Equipment and Vehicles to Prevent the Spread of Invasive Species* (DiVittorio et al. 2012); *Preventing the Spread of Invasive Plants: Best Management Practices for Land Managers* (Cal-IPC 2012); and *Invasive Plant Prevention Guidelines* (Clark 2003).
- The Sycamore Canyon trailhead access information provided to forest users would be updated.
- Roads will be aligned and constructed to visually blend into the surrounding landscape.
- All surface disturbances, including road construction and associated travel, would be kept to the minimum necessary to accomplish construction of the roads.
- Reclamation of all surface disturbances must be initiated immediately upon completion of activities. Reclamation of disturbed areas shall, to the extent practicable, include contouring disturbances to blend with the surrounding terrain, replacing topsoil, smoothing and blending the original surface colors to minimize impacts to visual resources, and seeding the disturbed areas with native seeds.
- Revegetation efforts must establish a stable biological ground cover equal to that which occurred prior to disturbance. Mulching may be appropriate for conserving moisture and holding seed on-site, thus improving the chances for successful establishment.

Alternatives Considered, But Eliminated from Further Analysis

In the process of developing this EA, CBP considered additional alternatives to the proposed action. It was requested that CBP and the Forest Service consider an alternative that included no net increase in overall road length on the National Forest. CBP and the Forest Service considered this and determined that developing an alternative to the proposed action that resulted no net increase in overall road length would not meet the purpose and need to provide safe and effective border area access and close the gaps within the existing road network.

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Chapter 3 – Environmental Consequences

This section summarizes the physical, biological, social, and economic environments of the affected project area and the potential changes to those environments due to implementation of the alternatives. For purposes of this analysis, the term *project area* refers to the three road construction locations (Fresnal Wash, Cantinas Reservoir, and Sycamore Canyon). The term *analysis area* refers to the geographic bounds of each resource being analyzed. The baseline condition of the affected environment (or existing conditions) serves as the basis for analysis of effects and comparison of each alternative, as presented in Chapter 2. The current conditions and any known trends are described to provide readers with a basis for assessing the consequences of the alternatives; the resources and potential impacts discussed in the following sections are related issues identified during public and agency scoping.

Resources described in detail are: air quality and climate change, soils and water resources, wildlife and fisheries, special-status species, vegetation resources and invasive plant species, heritage resources, recreation and access, scenery resources, and environmental justice.

The potential direct, indirect, and cumulative effects of the alternatives analyzed in detail are considered. Effects are quantified where possible, and qualitative discussions are included.

The following discussion elaborates on the nature of the characteristics that might relate to impacts on resources.

- Short term or long term. These characteristics are determined on a case-by-case basis and do not refer to any rigid time period. In general, short-term effects are those that would occur only with respect to a particular activity or for a finite period or only during the time required for construction activities. Long-term effects are those that are more likely to be persistent and chronic.
- Direct or indirect. A direct effect is caused by and occurs contemporaneously at or near the location of the action. An indirect effect is caused by a proposed action and might occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action. For example, a direct effect of erosion on a stream might include sediment-laden waters in the vicinity of the action, whereas an indirect impact of the same erosion might lead to lack of spawning and result in lowered reproduction rates of indigenous fish downstream.
- Negligible, minor, moderate, or major. These relative terms are used to characterize the magnitude or intensity of an impact. Negligible effects are generally those that might be perceptible but are at the lower level of detection. Impacts are considered minor if project-related impacts would occur, but resources would retain existing character and overall baseline conditions. Impacts are considered moderate if project-related impacts would occur, and resources would partially retain existing character. Some baseline conditions would remain unchanged. Finally, project-related impacts considered as major would create a high degree of change within the existing resource character and overall condition of resources.
- Adverse or beneficial. An adverse effect is one having unfavorable, or undesirable outcomes on the man-made or natural environment. A beneficial effect is one having positive outcomes on the man-made or natural environment. A single act might result in adverse effects on one environmental resource and beneficial effects on another resource.
- Significance. Significant effects are those that, in their context and due to their intensity (severity), meet the thresholds for significance set forth in CEQ regulations (40 CFR Part 1508.27).
- Context. The context of an effect can be localized or more widespread (e.g., regional).

- **Intensity.** The intensity of an effect is determined through consideration of several factors, including whether an alternative might have an adverse impact on the unique characteristics of an area (e.g., historical resources, ecologically critical areas), public health or safety, or endangered or threatened species or designated critical habitat. Effects are also considered in terms of their potential for violation of federal, state, or local environmental law; their controversial nature; the degree of uncertainty or unknown effects, or unique or unknown risks; if there are precedent-setting effects; and their cumulative effects.

This chapter is organized by resource. Resource indicators are discussed in each section below. Within each section, the affected environment is briefly described, followed by the anticipated environmental consequences (impacts) of implementing each alternative.

Comparison of Impacts of the Alternatives

Potential impacts of the no action alternative and proposed action evaluated in this EA are presented in Table 3.1 below.

Table 3.1 Summary and Comparison of Impacts Associated with Primary Resource Concerns Identified during Public Involvement

Primary Resource Concern	Unit of Measure (Indicator)	Alternative 1 (No Action)	Alternative 2 (Proposed Action)
Air Quality and Climate Change	Emissions exceed de minimis levels Emissions exceed levels requiring reporting	No impact above baseline conditions for air quality and climate change.	Short-term, minor, adverse impact from sporadic, localized, and temporary fugitive dust emissions of particulates from soil disturbance during construction; particulate and gaseous exhaust emissions from vehicles and construction machinery. No violation of National Ambient Air Quality Standards or limits for greenhouse gas thresholds.
Soils and Water Resources	Acres of ground disturbance from road construction (related to sedimentation) Number of new road crossings of washes, intermittent, or perennial streams Number of new road crossings across designated floodplains	No impact above baseline conditions for acres of ground disturbance, water/wash and floodplain crossings. Minor long-term adverse impact of sedimentation related to continued access across the Sycamore Creek low-water crossing.	Approximately 14.1 acres of vegetation and ground disturbance would occur for road construction. Short- and long-term, negligible, direct and indirect adverse impacts would occur to soils and stormwater flows in washes on or abutting the roadway, caused by an increase in erosion potential and in the deposition or reworking of fill material in wash crossings. Long-term beneficial impact from reducing sedimentation related to closing Sycamore Creek low-water road crossing. Long-term adverse impact to waters of the U.S. is considered negligible. Fourteen crossings of waters of the U.S. within the right-of-way total approximately 0.06 acre. All proposed crossings would involve work in ephemeral drainages. One wash crossing is located within designated 100-year floodplains.
Wildlife and Fisheries	Potential to impact wildlife and fisheries habitat Potential to impact wildlife and fisheries species	Minor long-term adverse impact to wildlife and fisheries at Sycamore Creek from continued access across the Sycamore Creek low-water crossing.	Short-term minor direct adverse impacts would occur during construction activities, from road traffic and removal of approximately 14.1 acres of vegetation. Long-term adverse direct impacts are negligible. Long-term beneficial impact would result from reducing direct impact related to closing Sycamore Creek low-water road crossing.

Table 3.1 Summary and Comparison of Impacts Associated with Primary Resource Concerns Identified during Public Involvement, Continued

Primary Resource Concern	Unit of Measure (Indicator)	Alternative 1 (No Action)	Alternative 2 (Proposed Action)
Special-Status Species - Forest Service Sensitive Plant and Management Indicator Species (MIS) and Migratory Birds	Potential for the proposed action to affect Forest Service Sensitive species, or MIS, including those identified by Arizona Game and Fish Department's (AGFD's) Heritage Data Management System (AGFD 2013)	Minor long-term adverse impact to special status species using habitat at Sycamore Creek from continued access across the Sycamore Creek low-water crossing.	Short- and long-term negligible adverse impact to special status species. The proposed road construction may impact individual Forest Service Sensitive species, but is not likely to result in a trend toward federal listing or loss of viability. The proposed road construction would remove habitat for MIS; the proposed project is not expected to result in detectable changes in the forest-wide habitat or population trends for MIS. Long-term beneficial impact to several riparian- or aquatic-dependent Forest Service Sensitive and MIS species populations within the analysis area due to the closure of the road that currently crosses Sycamore Creek.
Special Status Species – Threatened and Endangered Species	Presence or absence of threatened, endangered, or proposed species Potential for the proposed action to affect Chiricahua leopard frog, Mexican spotted owl (<i>Strix occidentalis lucida</i>), Sonora chub, southwestern willow flycatcher (<i>Empidonax traillii extimus</i>), and western yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>)	Minor long-term adverse impact to threatened and engendered species using habitat at Sycamore Creek from continued access across the Sycamore Creek low-water crossing.	The proposed action may affect but is not likely to adversely affect Chiricahua leopard frog, Mexican spotted owl, northern Mexican gartersnake, ocelot, Sonora chub, southwestern willow flycatcher, western yellow-billed cuckoo, and jaguar. The proposed action may affect but is not likely to adversely affect Chiricahua leopard frog, Mexican spotted owl, jaguar, and Sonora chub designated critical habitat. No adverse modification would occur to proposed northern Mexican gartersnake critical habitat.
Vegetation Resources and Invasive Plant Species	Potential to impact native vegetation communities Risk for the introduction and spread of invasive plant species	Minor long-term adverse impact to riparian vegetation community at Sycamore Creek from continued access across the Sycamore Creek low-water crossing. No impact in invasive species risks above existing conditions.	Road construction and improvement activities would be expected to permanently impact approximately 14.1 acres across all three project areas, resulting from the complete removal of all vegetation. Permanent, direct, adverse impacts to approximately 0.008% of the Tumacacori Ecosystem Management Area from the proposed action (approximately 0.014% of the mapped grasslands, approximately 0.006% of the mapped desert communities, and approximately 0.002% of the mapped Madran encinal woodland) represents an overall negligible to minor impact on the areas native vegetation communities. Long-term, adverse moderate indirect impact from potential spreading of existing infestations from other locations due to the use of the new roads. Mitigation measure implementation would minimize risk.
Heritage Resources	Potential impact to National Register of Historic Places (NRHP)-eligible or NRHP-listed heritage resources	No impact in current conditions in Sycamore Canyon and Cantinas Reservoir areas. Long-term, moderate, adverse impact from continued use Fresno Wash roads that would continue to cause damage to two NRHP-eligible resources.	Long-term, negligible adverse impacts to NHRP-eligible site, Old Ruby Road, in the vicinity of the Sycamore Canyon area of the project area. Within the current project corridor this linear road site has been continuously graded and modernized and the limited impact of the proposed project will not affect the overall significance of this site. Long-term, moderate, beneficial impact from closing Fresno Wash roads that are currently damaging two NRHP-eligible resources.

Table 3.1 Summary and Comparison of Impacts Associated with Primary Resource Concerns Identified during Public Involvement, Continued

Primary Resource Concern	Unit of Measure (Indicator)	Alternative 1 (No Action)	Alternative 2 (Proposed Action)
Access	Potential changes impacts to access to and within Coronado National Forest lands Potential for changes in safety and border security on the Nogales Ranger District	No impact in current conditions of Coronado National Forest access. Moderate, long-term, adverse impact on border security from continued difficult and inefficient border access.	Minor, long-term, adverse impact to public motorized access in the Fresnal Wash area. No change in administrative access to the Fresnal Wash area. No changes to public access to the Cantinas Reservoir area would result from the proposed action; major, long-term, beneficial impact on border access for security purposed would occur as a result of this alternative. The closure of FR 4181 would reduce motorized public access to this area of Sycamore Canyon and result in a minor, long-term, adverse impact on public motorized access to this area. Long-term beneficial impact to the area through increased access, safety, and security. This increased presence of CBP patrols along the border is a deterrent to illegal activity and is expected to increase safety and security for persons in the border region.
Recreation Resources	Potential changes to existing recreation experiences and opportunities within Coronado National Forest lands	No impact to existing recreation experiences and opportunities.	Road construction would result in short-term, minor adverse impact from construction and traffic disturbance of recreationists. Trailhead access to Sycamore Canyon Trail would be moved by approximately 0.3 mile and result in long-term, minor, adverse impacts to recreation.
Scenery Resources	Potential change to existing scenery experiences, settings, and deviations to landscape character	No impact to existing scenery experiences, settings, and deviations to landscape character	Long-term, adverse, negligible impact would result from road construction in the Scenic Integrity Objective (SIO) High designation. The proposed construction of new road segments would maintain the form, line, color, and texture of the existing landscape and would be compatible with the SIO. Road closure in Sycamore Canyon area would result in long-term beneficial impacts to scenery resources.
Environmental Justice	Potential impact to or displacement of any low-income or minority populations	No impact to or displacement of any low-income or minority populations	Due to the remote location of the project area, there would be no impact to or displacement of any low-income or minority populations.

Cumulative Effects

The cumulative effects analysis is presented under each resource impact analysis. A cumulative effect on the environment results from incremental effects of the proposed action, when added to the effects of other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes the other actions and regardless of land ownership on which the other actions occur (40 CFR 1508.7). An individual action when considered alone may not have a significant effect, but when its effects are considered in sum with the effects of other past, present, or reasonably foreseeable future actions, the effects may be significant.

The cumulative effects analysis area is the Nogales Ranger District. Cumulative effects in the analysis are assessed in terms of how the alternative would add to the past, present, and reasonably foreseeable future

actions described below. Existing conditions by resource reflect the effects of past and present actions that have occurred.

Projects included in the cumulative effects analysis on the Nogales Ranger District are presented in Table 3.2 below.

Table 3.2 Projects Included in the Cumulative Effects Analysis Area Related to the Proposed Project

Project/Event (Level of analysis)	Type	Date	Notes	Construction Area
Specific				
Coronado National Forest Nogales Ranger District Travel Management Rule (EA)	Motorized road management	Initiated 2006 Ongoing	Nogales Ranger District is currently finalizing the Travel Management Plan (Forest Service 2014a)	Forest wide, Nogales Ranger District
Mt. Hopkins Re-Entry Thinning Project (Categorical Exclusion [CE])	Fuels Management	10/7/2014	Nogales Ranger District coordinating with the Smithsonian Institution to thin and chip near structures on the Mt. Hopkins Observatory site	Mt. Hopkins Observatory site
Special-Use Permit Outfitter/Guide Arizona Hunting Adventures (CE)	Special use management	Decision Memo expected: 01/2014 - pending Expected implementation 02/2014 - pending	Issuance of special-use permit authorizing outfitter-guide activities	Forest wide; may allow activities within all three construction areas if permitted by the Coronado National Forest
Special-Use Permit Outfitter/Guide Miraval Resort Operating Co (CE)	Special use management	Decision Memo: 05/28/2014 Implementation 05/2014	Issuance of special-use permit authorizing outfitter-guide activities to the public (hiking, biking, rock climbing, and birding)	Forest wide
CBP Tucson West Surveillance Tower Project	Border security	Initiate 2008 Ongoing	50 surveillance towers (12 currently constructed)	Buenos Aires National Wildlife Refuge and Nogales Ranger District (west side)
Pedestrian fence	Border security	2007	Pedestrian border fence in the area of Sasabe (7 miles) and Nogales (5 miles)	Along the U.S. and Mexican border near Nogales and Sasabe, Arizona.
Zone 20 border road improvement project	Border security	Initiated 2011 Ongoing	Approximately 8 miles of road along the border	West of the Nogales pedestrian fence
Several sections of vehicle fence EV-1A, DV-5A, and DV-6 have also been constructed	Border security	2008	Approximately 13.8 miles in multiple segments along the U.S. and Mexican border within the Coronado National Forest	Border area of the Nogales Ranger District
Vehicle fence segments	Border security	Planned for future construction Expected Implementation unknown	Proposed vehicle fence that is unfunded for construction at this time	Various locations along the border in the Nogales Ranger District

Table 3.2 Projects Included in the Cumulative Effects Analysis Area Related to the Proposed Project, Continued

Project/Event	Type	Date	Notes	Construction Area
Specific				
Tactical Infrastructure Maintenance and Repair (EA)	Border security	Initiated 2013 Ongoing	Existing tactical infrastructure includes fences and gates, roads and bridges/crossovers, drainage structures and grates, lighting and ancillary power systems, and communication and surveillance tower components	Maintenance and repair of existing tactical infrastructure along the U.S. and Mexican border in Arizona.
Buenos Aires National Wildlife Refuge Comprehensive Conservation Plan	Wildlife habitat management	2003	Describes how the USFWS intends to manage the refuge over a 15-year time frame	Buenos Aires National Wildlife Refuge
General				
Treatment of noxious weeds – six Forests	Direction incorporated into Forest Plan	Ongoing	Forest wide	
Firewood collection	Forest wide policy	Ongoing	Forest wide	
Forest Service road maintenance	Annual road maintenance	Ongoing	500 miles per year on the Forest	
Grazing	Continuation of authorized livestock grazing	Ongoing	Fresnal allotment Cross S allotment Bear Valley allotment	Fresnal Wash: Cumero pasture in Fresnal allotment Cantinas Reservoir: Coches, Horse I, Horse II, Horse III, and Tres Bellotas pastures in Cross S allotment; Lower Fresnal pasture in Fresnal allotment Sycamore Canyon: Bear Valley and Montana pastures in Bear Valley allotment

Air Quality and Climate Change

Affected Environment

Air Quality

Title I of the Clean Air Act requires the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The EPA has established NAAQS for the following pollutants: carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), ozone (O₃), lead (Pb), and particulate matter equal to or less than 10 microns in diameter (PM₁₀) and 2.5 microns in diameter (PM_{2.5}). The EPA designates areas as meeting (attainment) or not meeting (non-attainment) the NAAQS.

The Clean Air Act identifies two types of NAAQS, primary and secondary. Primary standards provide public health protection, including protecting the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. These standards are defined in terms of threshold concentration measured as an average for specified periods of time. Pollutants with acute health effects were given short-term standards, and pollutants with chronic health effects were given long-term standards. Since the NAAQS were first established, revisions have been made that modify which pollutants are regulated, the allowable ambient concentrations, and the time interval over which the pollutant is measured.

The Arizona Department of Environmental Quality (ADEQ) oversees the implementation of the federal Clean Air Act in most of the state of Arizona, including Santa Cruz County. Pima County, Arizona, is within the Pima Intrastate Air Quality Control Region (40 CFR 81.269) and is overseen by the Pima County Department of Environmental Quality (PDEQ). Both ADEQ and PDEQ have adopted air quality standards identical to the federal standards. The area of the proposed action is classified by the EPA and ADEQ as being in attainment with the NAAQS. The current NAAQS are presented in Table 3.3.

Table 3.3 National Ambient Air Quality Standards

Pollutant	Primary Standards		Secondary Standards	
	Averaging Time	Level	Averaging Time	Level
CO	1 hour ^a 8 hour ^a	35 ppm 9 ppm	- -	- -
Pb	3 months (rolling) ^b	0.15 µg/m ³	3 months (rolling) ^b	Same as Primary
NO ₂	1 hour ^d Annual ^c	100 ppb 53 ppb	Annual ^c	Same as Primary
O ₃	8 hour ^e	0.075 ppm	8 hour ^e	Same as Primary
PM ₁₀	24 hour ^f	150 µg/m ³	24 hour ^f	Same as Primary
PM _{2.5}	24 hour ^g Annual ^h	35 µg/m ³ 12 µg/m ³	24 hour ^g Annual ^h	Same as Primary 15 µg/m ³
SO ₂	1 hour ⁱ	0.075 ppm	3 hour ^j	0.5 ppm

Source: EPA (2012).

Notes: µg/m³: micrograms per cubic meter; ppm: parts per million.

^a Not to be exceeded more than once per year.

^b Not to be exceeded.

^c Annual mean.

^d The 3-year average of the 98th percentile of the daily maximum 1-hour average must not exceed this standard.

^e The 3-year average of the 4th-highest daily maximum 8-hour average O₃ concentration measured at each monitor within an area over each year must not exceed this standard.

^f Not to be exceeded more than once per year on average over 3 years.

^g The 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed this standard.

^h The 3-year average of the annual arithmetic mean PM_{2.5} concentrations from single or multiple community-oriented monitors must not exceed this standard.

ⁱ The 3-year average of the annual 99th percentile of the 1-hour daily maximum must not exceed this standard.

^j Not to be exceeded more than once per year.

The analysis area for air quality is considered the southern area of the Nogales Ranger District that includes the proposed construction areas. Non-attainment areas are defined as those regions where the NAAQS are exceeded for at least one pollutant. The nearest non-attainment area is the Nogales PM₁₀

non-attainment area, approximately 40 miles east of the analysis area. Class I areas are those areas that have been designated under the Clean Air Act as areas of special national or regional natural, scenic, recreational, or historic value and afforded special protection. The nearest Class I area is Saguaro National Park, approximately 50 miles northeast of the analysis area. Actions that would affect air quality in Class I areas may be subject to additional scrutiny.

Major sources of air pollutants in Pima and Santa Cruz Counties include agriculture, mobile sources, electricity generation, and mining. Sources include the Valencia Power Plant in Nogales, approximately 40 miles east of the analysis area, and the Sierrita Mine, approximately 40 miles to the northeast. Natural processes, such as wildfires, and vegetation and soil also release significant amounts of some pollutants into the atmosphere.

Climate Change

Reports by the Intergovernmental Panel on Climate Change (2007) and the U.S. Global Change Research Program (Karl et al. 2009; U.S. Global Change Research Program 2009) conclude that the climate is changing, that the change will accelerate, and that human-caused emissions of greenhouse gases (in particular, carbon dioxide [CO₂]) are the primary cause of accelerated climate change. Projected impacts of climate change on the proposed action area include changes to regional temperature, changes to precipitation levels and patterns, and harm to existing wildlife and agriculture.

Environmental Consequences

Units of Measure for impact significance (Indicators): Air Quality and Climate Change

- Emissions exceed de minimis levels
- Emissions exceed levels requiring reporting

These rules and their applicability thresholds are explained below. Actions that are expected to emit pollutants below these thresholds are automatically assumed to have no significant impact.

General Conformity Rule

All actions taken by federal agencies, including the Proposed Action, must comply with EPA's General Conformity Rule (40 CFR 93). This rule ensures that any action taken by a federal agency in nonattainment and maintenance areas do not interfere with a state's plans to meet NAAQS.

Under the General Conformity Rule, federal agencies must work with state, Tribal, and local governments in a nonattainment or maintenance area to ensure that federal actions conform to the air quality plans established in the applicable State or Tribal implementation plan.

The General Conformity Rule also establishes a de minimis level for criteria pollutants. The de minimis level is the threshold for determining if a general conformity determination must be performed. Activities below this threshold level are assumed to have no significant impact on air quality. The de minimis levels for the proposed action (which are in attainment or unclassified for all criteria pollutants) are:

- Volatile organic compounds, nitrogen oxides, CO, SO₂, PM₁₀, and PM_{2.5}: 100 tons per year
- Lead (Pb): 25 tons per year

Activities above this threshold are required to make a formal general conformity determination.

Greenhouse Gas Reporting Rule

The greenhouse gas reporting rule (40 CFR 98) requires stationary sources emitting greenhouse gasses over 25,000 metric tons carbon dioxide equivalent per year to report their emissions to the EPA. Carbon dioxide equivalent is a measure which takes into account the relative global warming potential (GWP) of each greenhouse gas, as well as the mass of pollutant emitted.

For example, a source emitting 1 metric ton of methane (GWP = 25), would be said to have emitted 25 metric tons carbon dioxide equivalent. This approach allows the impacts of all greenhouse gases (CO₂, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbon, and sulfur hexafluoride) to be considered together.

For this analysis, actions below the 25,000 metric tons carbon dioxide equivalent threshold are assumed to have no significant impact.

Alternative 1 – No Action Direct and Indirect Effects

Under the no action alternative, the Coronado National Forest would continue to manage the areas of Fresno Wash, Cantinas Reservoir, and Sycamore Canyon as directed under its Forest Plan (Forest Service 1986) and no new access roads would be constructed. Travel, maintenance, and repair activities on existing roads would continue and would have a negligible, long-term impact on air quality through fossil fuel combustion and fugitive dust emissions. This alternative represents no change from current conditions. Therefore, neither the general conformity nor the greenhouse gas reporting rules apply, and no impact would occur.

Alternative 2 – Proposed Action Direct and Indirect Effects

Emissions related to the proposed action include combustion of fossil fuels and fugitive dust associated with construction of approximately 4 miles of new access roads. Short term, minor, adverse impacts from increased emissions would occur from road construction and vehicle travel on the new unpaved roads. However, long-term activities (vehicle travel, maintenance and repair of roads) are similar to the no action alternative; therefore, long-term, adverse impacts are considered negligible.

Short-term road construction emissions would consist of tailpipe emissions from construction equipment, and fugitive dust associated with earthmoving activities and disturbed surface areas. Construction equipment would be limited to a bulldozer, dump truck, grader, loader, and water tender. Mitigation measures would be used for the control of fugitive dust (see Mitigation Measures section below), and impacts would be minor.

Direct impacts on ambient air quality would be short-term, minor, adverse, and dependent on weather conditions. Construction emissions would be short-lived (< 1 year), and geographically dispersed (in the area of each road segment). Once construction is complete, the effect on air quality would be identical to the no action alternative, and may be even less if these roads are able to reduce vehicle miles traveled by CBP by allowing more direct routes.

The primary greenhouse gas emitted by the proposed action is CO₂ (combustion of diesel fuel and gasoline in the combustion equipment and passenger vehicles). Total estimated greenhouse gas emissions from the proposed project, including road construction, ongoing maintenance, and road use, would not exceed the greenhouse gas reporting threshold. Therefore, long-term, adverse impacts on climate change would be negligible.

Neither the general conformity nor the greenhouse gas reporting threshold would be anticipated to be exceeded. Consequently, no significant impact is expected from the proposed action.

Mitigation Measures

- Construction activities shall comply with all appropriate regulations, including Arizona Administrative Code R18-2-604 through 607, and R18-2-804; and Pima County Code 17.12 and 17.16, which require mitigation measures for the control of dust from open areas, roadways, and material handling; control of emissions from the operation of mobile equipment; fugitive dust permits for activities such as building roads; and limits on visible emissions. Arizona Administrative Code R18-2-604, Open Areas, restricts fugitive dust emissions from open areas, including, but not limited to, driveways, parking areas, vacant lots, dry washes, and riverbeds. Good modern practices for earth-moving/excavating activities would be implemented. These include using approved dust suppressants or adhesive soil stabilizers, paving, covering, landscaping, continuous wetting, or detouring maintenance and repair areas, barring access to maintenance and repair areas, or other acceptable means of reducing significant amounts of airborne dust. Pima County Code 17.12.470, Fugitive dust activity permits, states that no person shall conduct, cause or allow land stripping, earthmoving, blasting, trenching, or road construction without first obtaining an activity permit from the Control Officer.

Cumulative Effects

Construction emissions would be short-lived and geographically dispersed; it is therefore unlikely that any other activities would be occurring in the area at the same time and have a combined adverse impact to air quality. Emissions from vehicle travel are expected to be even less as these roads are not frequently traveled, and would not contribute to any degradation in air quality.

In addition, effects of climate change on the project area are also considered a cumulative effect, as they result from the cumulative emissions of greenhouse gases across the globe. Current research suggests that climate change will have several effects on the project area and throughout southeast Arizona (Southwestern Region Climate Change and Forest Planning Work Group 2010). Temperature levels in the Southwest are anticipated to rise as a result of global climate change. By the end of the twenty-first century, temperatures could rise by 5 degrees Fahrenheit (°F) to 8°F. Overall precipitation levels in the Southwest are anticipated to fall by as much as 10% as a result of global climate change. The effects of these changes on the project area are expected to be an increased risk of drought and wildfire. However, since estimated greenhouse gas emissions from the proposed project would not exceed the greenhouse gas reporting threshold, cumulative effects on climate change are negligible.

Soils and Water Resources

Affected Environment

Soil Resources

The analysis area for soils and water resources is the southern area of the Nogales Ranger District that includes the proposed construction areas. Soils in the project area vary between Fresnal Wash, Cantinas Reservoir, and Sycamore Canyon. Soils in the Fresnal Wash construction area consist of the Chiricahua-Lampshire association, a clayey-loamy aridisol mix that is well drained and has moderate runoff potential. Soils in the Cantinas Reservoir construction area include Chiricahua-Lampshire, the Whitehouse-Hathaway association (steep slopes, well drained, high runoff, mixed and gravelly alluvium), Caralampi (gravelly sandy loam, steep, well drained, high erosion) Comoro (floodplain, low runoff, well-drained

coarse loams) and Pima (floodplain, low runoff, well-drained fine silts) components. Lastly, the proposed construction area in Sycamore Canyon crosses through Atascosa (very steep and gravelly sandy loams, high runoff) and Comoro soil units. Several soils classified as prime farmland if irrigated (Comoro, Pima) exist along canyon floors; however, none are irrigated within the project area (National Resources Conservation Service 2014).

In general, soils are loamy, gravelly, and relatively shallow, and are susceptible to high runoff potential (depths from 0–21 inches except in canyon floors) due to the high slope topography throughout the region. A mix of granite, sandstone, and volcanics is the primary source material for soils in and near the project area.

Topography in the project area varies with elevation ranging from approximately 3,650 to 4,150 feet amsl. The area contains rolling hill ridges and rock outcroppings that give way to flat bottom canyon floors with coarse- and fine-grained alluvium. Existing unpaved roads are present along similar topographic conditions adjacent to proposed segments; otherwise, development is very sparse.

Surface Water Resources

As is typical throughout southern Arizona, the region is situated in the Basin and Range physiographic province, which is characterized by broad, gently sloping alluvial basins that are separated by north- to northwest-trending fault-block mountains (Arizona Department of Water Resources [ADWR] 2010). The proposed action's three main segment areas lie within a diverse geographic setting, situated on numerous compact mountain ranges, ridges, canyons, and valleys, including Coches Ridge, Bear Valley, and Sycamore Canyon. This creates a diverse hydrologic setting, with ephemeral, intermittent, and perennial reaches nestled in canyons throughout the region. The project area spans four 12-digit Hydrologic Unit Code [HUC] watersheds (Canoa Wash, Upper Fresno, Tres Bellotas Canyon, and Sycamore Canyon), which are all subwatersheds to the 125 square-mile Rio De La Concepcion watershed (8-digit HUC code 15080200) that drains in Mexico.

Arivaca Creek lies approximately 6 miles to the north and west of the project area and is the main regional drainage. There are no springs intersecting or adjacent to the project area (EPA 2014a). Sycamore Canyon appears to have intermittent or perennial flow at and south of the project area, based on historical aerial photography, and is the only perennial reach nearby. The ADWR Water Atlas for the Tucson Active Management Area (AMA) indicates that Sycamore Canyon is perennial (ADWR 2010); however, there are no permanent surface water features in the project area. There are no designated Wild and Scenic Rivers under the Wild and Scenic Rivers Act of 1968 (16 USC 1271). The project area does not lie within any riparian areas or wetlands mapped by the U.S. Fish and Wildlife Service (USFWS) (2014a).

Data on floodplains mapped by the Federal Emergency Management Agency (FEMA) show that flood hazard areas have not been determined for most of the region,¹ with the exception of a portion of Tres Bellotas Canyon (FEMA 2014). There are 100-year floodplains mapped within a small portion of Cantinas Wash segment 2 in the project area and on an unnamed tributary to the west. Other significant drainages such as Sycamore Canyon and Cantinas Wash could be flood-prone areas. Artificial impoundments (small reservoirs, stock tanks) are scattered through drainage corridors in the region, but none are adjacent to the project area.

Review of aerial photography and field reconnaissance indicates that the project area crosses 14 ephemeral watercourses that may be waters of the U.S. No wetlands, lakes, rivers, or special aquatic sites (as defined in 40 CFR Part 230(E)) exist. Each road crosses at least one dry channel bed of an

¹ FEMA panels 04023C0400C and 04019C4725L.

unnamed ephemeral wash. Most of these washes are subject to flooding, most frequently during the summer monsoon. Damage to the crossings within the washes may require repair, such as fill material for rutted or washed-out sections or the removal of debris, to make the crossings and roadway segment accessible.

Historical precipitation data from the Western Regional Climate Center (2014) show three co-op stations with data near the project area (Sasabe, Bear Valley, Ruby 4 Northwest [NW]). Bear Valley (1 mile southeast of the Sycamore Canyon construction area) and Ruby (5 miles northeast of Cantinas Reservoir construction area) stations captured data between 1943 and 1957 and 1895 to 1955, respectively, and ranged between 18.77 and 18.95 inches of rain annually. Sasabe (6 miles west of Fresno Wash construction area) collected data from 1959 to 2012 and averaged 16.67 inches annually. Average annual precipitation events measuring greater than 0.01 inch range from 40 to 56 inches.

Groundwater Resources

The analysis area is located in the southern portion of the Avra Valley sub-basin within the ADWR Tucson AMA. AMAs are designated planning areas where groundwater depletion is most severe and are subject to regulation pursuant to the Groundwater Code of 1980. Groundwater movement in this part of the Avra Valley sub-basin is generally to the north where groundwater levels have remained relatively constant between 1994 and 2005 (ADWR 2010).

A search of the ADWR wells registry database indicates there is a total of 23 registered water wells within approximately 3 miles of the project area; 11 in the Fresno Wash area, 2 in the Sycamore Canyon area, and 10 in the Cantinas Reservoir area. Groundwater levels in these wells range from 8 feet below ground surface (bgs) in the Fresno Wash area to 250 feet bgs in the Cantinas Reservoir area.

Environmental Consequences

Units of Measure for Impact Significance (Indicators): Soil and Water Resources

- Acres of ground disturbance from road construction (related to sedimentation)
- Number of new road crossings of washes, intermittent or perennial streams
- Number of new road crossings across designated floodplains

Alternative 1 – No Action Direct and Indirect Effects

The Coronado National Forest would continue to manage the areas of Fresno Wash, Cantinas Reservoir, and Sycamore Canyon as directed under its Forest Plan (Forest Service 1986). No new access roads would be constructed. Under the no action alternative, there is a potential for short- and long-term, minor, adverse impacts on surface waters. Without proper access, vehicles used for patrol and enforcement require lengthy detours or may travel off existing roads to reach the areas proposed for access, which could expose soils and increase runoff potential. Current road access near Sycamore Canyon includes a low-water crossing, which may contribute to increased turbidity in Sycamore Canyon, which contains the endangered Sonora chub. This crossing would not be closed to public access under this alternative. However, it is not known to what degree of effect continued use of the road would have beyond a minor impact. However, in context of the large sizes of the watersheds in the Nogales Ranger District, this area of effect is still very small. Impacts would be extremely difficult to measure, and it would be difficult to conclude that any given impact was a direct result of the no action alternative.

No impacts are expected to groundwater or wells.

Alternative 2 – Proposed Action Direct and Indirect Effects

Approximately 14.1 acres of vegetation and ground disturbance would occur for road construction, which would impact soil and water resources with the potential to increase erosion and sedimentation. Vegetation serves as a protective cover for the soil by dissipating the impact from rainfall and stormwater runoff energy. Erosion is a natural process, and a limited amount of soil erosion and sedimentation can benefit riparian ecosystems and enhance soil development in low areas (Baker et al. 2004). However, with the removal of vegetation and soil disturbance in the project area, an increase in the erosion process would occur because less water would likely infiltrate into the soil during high-intensity rainfall events, causing an increase in surface runoff and sedimentation into washes. Similarly, road crossings at washes or through floodplains also have the potential to increase erosion and sedimentation during rain events. These impacts to soil and water resources would be mitigated with the use of erosion-control measures. Additionally, 1.2 acres of road closure would occur in the Fresno Wash and Sycamore Canyon areas. Closing existing roads and returning them to a natural state would offset some of the potential impacts to soil and water resources.

The proposed project would also introduce 14.1 acres of compacted roadbed into the watersheds. Compacted areas that are devoid of vegetation would increase runoff velocities during storm events with the potential for increase in erosion. However, because the proposed roads would not be completely impervious and because the compacted roadbed areas would be small relative to the greater Rio De La Concepcion watershed (125 square miles), impacts from compacted roadbeds would be negligible.

Erosion-control mitigation measures would be installed before ground disturbance occurs to maintain stormwater runoff on-site during construction. Table 3.4 presents a summary of how the proposed action would affect the impact indicators for soil and water resources.

Table 3.4 Impact Indicators for Soil and Water Resources under the Proposed Action

Indicator	Fresno Wash	Cantinas Reservoir	Sycamore Canyon	Total
Acres of ground disturbance	2.1	10.2	1.8	14.1
Acres identified for closure	1	0	1	2
Net change in acreage	+1.1	+10.2	+0.8	+12.1
Stream crossings added	3	9	2	14
Stream crossings eliminated	1	0	2	4
Net change in crossings	+2	+9	0	+10

The mitigation measures would be effective in eliminating direct and indirect adverse impacts to soils and stormwater flows in washes on or abutting the roadway that are caused by an increase in erosion potential. All deposition or reworking of fill material in wash crossings would be protected by the mitigation measures and would eliminate sedimentation in stormwater runoff during construction. With the implementation of erosion-control mitigation measures, there is no expected impact on downstream water quality. Construction would adhere to the Santa Cruz County Floodplain and Erosion Hazard Management Ordinance (2001-03), that is, no stockpiling of materials or staging areas in floodways or floodplains unless approved by the floodplain administrator. Providing designed and maintained access roads would have a long-term, minor, beneficial impact to surface water resources by removing, improving, or limiting areas that are used but unmaintained. Soil stability in these unmaintained areas would be allowed to recover over time. Given that most of the soils in each region have a high erosion

potential, use of a maintained road with implemented mitigation measures could improve erosion potential relative to baseline conditions.

The precise acreage of waters of the U.S. impacted by the proposed action is not yet known, but cumulatively, the 14 crossings of waters of the U.S. within the right-of-way total approximately 0.06 acre. All proposed crossings would involve work in ephemeral drainages. One wash crossing is located within designated 100-year floodplains. Long-term, adverse impact to waters of the U.S. is considered negligible.

Erosion-control mitigation measures would be installed in the Sycamore Canyon area, which is intermittent or perennial and harbors sensitive aquatic species. Increases in turbidity can adversely affect respiration in aquatic biota (Trombulak and Frissell 1999). The mitigation measures would eliminate downstream impacts that would come from additional sediment contained in runoff. Additionally, the project area crosses two tributaries that flow directly into Sycamore Creek; however, an access road that currently crosses Sycamore Canyon directly would be replaced in the proposed action. When subjected to heavier traffic, rutting occurs, which in turn is exacerbated by rain events that further erode the surface. Unmanaged stormwater flow also causes general erosion to occur, washing out complete sections of road and in many instances making roads impassable. With the installation of erosion-control mitigation measures, construction impacts would be eliminated. The resulting road would be an improvement from the current network, which includes the Sycamore Canyon crossing and unmaintained roads nearby.

Additionally, post-construction, erosion-control mitigation measures would be adopted to ensure stabilization of the project areas and to maintain runoff on-site during maintenance and repair activities. With the implementation of these mitigation measures, there would be no expected impact on downstream water quality. Pertinent federal, state, and local permits would be obtained for any work, including work that might occur in jurisdictional drainages.

No impacts are expected to groundwater or wells. Any water used for dust control during construction would be hauled in and would not be significant enough to contribute to measurable well depletion or recharge.

Mitigation Measures

- The project is anticipated to be authorized under a Clean Water Act Nationwide Permit 14 for linear transportation projects in or crossing non-tidal waters of the U.S.
- Construction would adhere to mitigation measures for erosion control and sediment runoff to surface waters (Forest Service 2012):
 - Orient the stream crossing perpendicular to the channel to the extent practicable.
 - Keep approaches to stream crossings to as gentle a slope as practicable.
 - At stream crossings, consider natural channel adjustments and possible channel location changes over the design life of the structure.
 - Design the stream crossing structure to have sufficient capacity to convey the design flow without appreciably altering streamflow characteristics.
 - Install stream crossings to sustain bankfull dimensions of width, depth, and slope and maintain streambed and bank resiliency and continuity through the structure.
 - In floodplains, use suitable measures to protect fill from erosion and to avoid or minimize failure of the stream crossing at flood flows.
 - Use suitable measures to provide floodplain connectivity to the extent practicable.

- At stream crossings, use suitable measures to avoid or minimize scour and erosion of the channel, crossing structure, and foundation to maintain the stability of the channel and banks.
- For stream crossings, select and design low-water crossing structures to maintain the function and bedload movement of the natural stream channel. Construct the low-water crossing to conform to the site, channel shape, and original streambed elevation and to minimize flow restriction, site disturbance, and channel blockage to the extent practicable.
- Riprap will be placed in locations where erosion would be likely to occur without some form of energy dissipation due to concentrated runoff from road drainage pipes, grade dips, or leadout ditches.
- Road surfaces would be composed of native material, and no additional surface materials would be required or brought into the project area.
- Preparation of a SWPPP would identify erosion control methods and comply with the AZPDES Construction General Permit conditions.
- Prepare and implement the SWPPP prior to construction activities.
- Implement mitigation measures described in the SWPPP to reduce erosion.
- Consider areas with highly erodible soils when planning the activities and incorporate measures such as wattles, aggregate materials, and wetting compounds in the erosion-control mitigation measures.
- During construction, designated areas for equipment staging and parking would be established to minimize the area of ground disturbance.
- The natural drainage pattern of the area would be maintained wherever practicable.
- Steep excavated slopes would be stabilized.
- Suitable species and establishment techniques would be used to cover or revegetate disturbed areas in compliance with local direction and requirements in accordance with FSM 2070 and FSM 2080 for vegetation ecology and prevention and control of invasive species.
- During construction, vehicles would be required to stay on designated driving routes to avoid excessive soil and vegetation disturbance, to minimize the introduction and spread of noxious weeds.
- During construction, silt fencing and floating silt curtains would be installed and maintained in areas susceptible to erosion to prevent movement of soil and sediment and to minimize turbidity increases in water.
- During construction, disturbed areas would be routinely inspected to verify that erosion and stormwater controls are implemented and functioning as designed and are suitably maintained. Erosion and stormwater controls would be maintained as necessary to ensure proper and effective functioning.
- Construction work would cease during heavy rains and would not resume until conditions are suitable for the movement of equipment and materials.

Cumulative Effects

Past, present, or reasonably foreseeable future actions projects located within the same watershed that would involve ground disturbance could contribute to the overall cumulative impacts to soil and water resources when combined with the proposed project. Those projects include past construction of pedestrian and vehicle border fences, CBP Tucson West Surveillance Tower Project, and the Zone 20

Border Road improvement Project. In addition, the ongoing activity of grazing within the watersheds would contribute to vegetation removal and erosion, and thus would contribute to the cumulative impacts to soil and water resources. However, positive impacts would be realized with the implementation of the Nogales Ranger District Travel Management Plan, which will allow for comprehensive management of roads and roadless areas. Given that mitigation measures for the proposed project would minimize erosion and sedimentation, the addition of approximately 4 miles, or 14.1 acres, of unpaved roads would not significantly contribute to impacts in soil or water resources when combined with other past, present, or reasonably foreseeable future projects.

Wildlife and Fisheries

Affected Environment

CBP developed a Biological Assessment/Evaluation in coordination with the Coronado National Forest that evaluates the area's biological resources in detail (CBP 2015). The biological resources sections presented below (wildlife and fisheries, special-status species, and vegetation and invasive plant species) contain excerpted information from that evaluation. The analysis methodology used for all biological resource sections below is defined as follows. The project area is defined as the total disturbance footprint (approximately 14.1 acres) from the proposed roads as described in Chapter 2. The analysis area for biological resources is defined as the project area plus a larger surrounding area (0.25-mile buffer, which includes proposed barriers and gates) that may experience direct or indirect temporal and spatial impacts from the proposed project (a total of approximately 2,060 acres, of which 1,753 acres are on NFS lands). Temporally, the potential on-site and off-site impacts resulting from the proposed project encompass all the activities associated with construction (approximately 6 months) and vehicular use (indefinite) of the proposed roads.

The analysis area includes areas outside the project area that may be affected by noise, dust, and road decommissionings. To develop the analysis area, a 0.25-mile buffer was chosen because construction noise is probably the most far-reaching impact that is likely to occur from this project to biological resources. Although noise has the potential to impact several wildlife species within the analysis area, the noise levels at which different wildlife species are impacted is largely unknown. However, several noise studies have been conducted for one species, the Mexican spotted owl (*Strix occidentalis lucida*), and the known threshold distance for noise impacts to this species was used as a surrogate for all wildlife species assessed in this document. The extent of dust impacts, however, is likely to be less than the 0.25-mile potential extent of noise impacts due to small road footprint and short construction schedule of this project. Although the extent of dust impacts to species is unknown, it would likely decrease with increasing distance from the project area.

The USFWS's guidance is to limit potentially disturbing activities to areas ≥ 0.25 mile from Mexican spotted owl nest sites, and although this project will be constructed outside the breeding bird season, or after nest searches have been completed, this is the best available science and is thus the basis for determining the expanse of the analysis area, unless stated otherwise. The extent of dust impacts, however, is likely to be less than the 0.25-mile potential extent of noise impacts due to small road footprint and short construction schedule of this project. Although the extent of dust impacts to species is unknown, it would likely decrease with increasing distance from the project area.

Botanical and wildlife field surveys were conducted in June 2014. These botanical surveys were floristic in nature, identifying the dominant plants present as well as other less dominant species observed, and a more focused search was not conducted for the Forest Service focal plant species that may occur in the vicinity of the project area or use habitats similar to those associated with the project area. In some cases, focal species occurrences have not been documented or mapped in the vicinity of the project area, but the

project area lies within the range of the species. Fieldwork consisted of habitat assessments for Threatened, Endangered, and Proposed (TEP) plants and invasive species, as well as general floristic surveys. Botanical surveys were performed at a time of year, however, when several plant species might not be detectable because winter rains were sparse and summer monsoons had not yet begun.

The wildlife survey covered the entire project area and portions of the analysis area. Due to the biologically diverse and sensitive nature of the Sycamore Canyon analysis area, extra time and focus was spent in Sycamore Canyon within the analysis area. Pedestrian field studies were conducted and focused on documenting potential habitat for wildlife. Observations of all wildlife species were recorded. Sensitive biological resources present, or potentially present, were identified through a literature review identified in the pre-field reviews section above. No species-specific wildlife surveys were conducted. Wildlife species detected during field surveys by sight, calls, tracks, scat, or other sign were recorded. In addition to species actually observed, expected wildlife usage of the area was determined according to known habitat preferences of wildlife species and knowledge of their relative distributions in the area.

The main focus of the faunal species surveys was to identify habitat suitability for special status wildlife within the project area in order to predict those species with a higher probability of occurrence in the project area. The fact that a species was not detected does not mean that the species does not occur in the project area. Surveys for wildlife species have the inherent limitation that absence is difficult or impossible to determine; this is especially true for wildlife species with a nocturnal pattern of activity or that are otherwise difficult to detect. Because the wildlife surveys occurred at only one portion of the day and one season of the year, they capture only a snapshot in time; therefore, we also used our experience gained on similar projects and also on thorough literature reviews to identify suitable wildlife habitat.

General wildlife and fisheries resources that are known to occur or are likely to occur within the analysis area, including the project area and analysis area, are described below.

No fish occur within the project area at any of the three sites; however, a pool containing Sonora chub occurs approximately 0.2 mile south of the Sycamore Canyon project area. This species is listed as threatened under the Endangered Species Act (ESA) and is, therefore, discussed in the Special-Status Species section. Nonnative fish, including mosquitofish (*Gambusia affinis*), golden shiner (*Notemigonus crysoleucas*), or green sunfish (*Lepomis cyanellus*), also may occur in Sycamore Canyon, as they have been found in the Sycamore Canyon drainage and surrounding areas (USFWS 1992).

Although most amphibians require a source of standing or flowing water to complete their life cycle, some terrestrial species can survive in drier areas by remaining in moist environments found beneath leaf litter and fallen logs, or by burrowing into the soil. These xeric-adapted species conserve moisture by emerging only under conditions of high humidity or when the weather is cool and/or wet. Mesic forest, meadow, and riparian habitats in the project areas provide potential habitat for amphibian species that require permanent water as well as species adapted to drier conditions. Because the project areas are all dry, amphibians would generally only be found in the Sycamore Canyon creek channel, which occurs approximately 0.2 mile south of the Sycamore Canyon proposed road segment. In the project area, they would be rarely encountered and only probably observed during rain events or times of uncommonly high humidity. No amphibians were observed during field surveys, as would be expected due to the time of day and year in which the surveys occurred. Common amphibians that may be present in the project and analysis areas, based on known range and habitat preferences, include Great Plains narrow-mouthed toad (*Gastrophryne olivacea*) and Sonoran desert toad (*Incilius alvarius*) (Brennan 2008; Brennan and Holycross 2006).

The diversity of reptile species is related to the diversity of plant communities found on the site. Typically, plant communities that have an abundant amount of leaf litter, rocks, and rotting logs have a higher diversity than areas that have been highly modified or disturbed. Many reptile species are small

and cryptic, and thus were unlikely to be observed during the field visit. Reptiles observed during field visit included whiptail lizard (*Aspidoscelis* sp.), elegant earless lizard (*Holbrookia elegans*), twin-spotted spiny lizard (*Sceloporus bimaculosus*), and ornate tree lizard (*Urosaurus ornatus*). Common reptiles expected to occur in the project area, based on known range and habitat preference, include canyon spotted whiptail (*Aspidoscelis burti*), Sonoran spotted whiptail (*Aspidoscelis sonora*), glossy snake (*Arizona elegans*), tiger rattlesnake (*Crotalus tigris*), thornscrub hook-nosed snake (*Gyalopion quadrangulare*), hooded nightsnake (*Hypsiglena novum*), common kingsnake (*Lampropeltis getula*), Sonoran whipsnake (*Masticophis bilineatus*), coachwhip (*Masticophis flagellum*), brown vinesnake (*Oxbelis aeneus*), regal horned lizard (*Phrynosoma solare*), gophersnake (*Pituophis catenifer*) green ratsnake (*Senticolis triaspis*), Yaqui black-headed snake (*Tantilla yaquia*), and black-necked gartersnake (*Thamnophis cyrtopsis*) (Brennan 2008; Brennan and Holycross 2006).

A number of bird species, including neotropical migratory birds, are known to nest in or near the project area. The native desert, grassland, Madrean encinal woodland, and riparian communities in and adjacent to the project area provide habitat for many bird species. The common species of birds likely to be encountered at each of the project areas changes due to differing plant species and vegetative structure. Additionally, the proximity of the Sycamore Canyon project area to Sycamore Canyon, with its tall riparian vegetation and perennial water supply, adds species that select for those habitat components.

The following bird species were observed at the Fresno Wash and Cantinas Reservoir analysis areas during the site visits: black-throated sparrow (*Amphispiza bilineata*), ash-throated flycatcher (*Myiarchus cinerascens*), verdin (*Auriparus flaviceps*), red-tailed hawk (*Buteo jamaicensis*), gray hawk (*B. plagiatu*), northern cardinal (*Cardinalis cardinalis*), turkey vulture (*Cathartes aura*), common raven (*Corvus corax*), summer tanager (*Piranga rubra*), vermilion flycatcher (*Pyrocephalus rubinus*), Bell's vireo (*Vireo bellii*), and white-winged dove (*Zenaida asiatica*). The following bird species were observed at the Sycamore Canyon analysis area: turkey vulture, Montezuma quail (*Cyrtonyx montezumae*), Arizona woodpecker (*Picoides arizonae*), Gila woodpecker (*Melanerpes uropygialis*), green-tailed towhee (*Pipilo chlorurus*), canyon towhee (*Melospiza fusca*), northern mockingbird (*Mimus polyglottos*), Lucy's warbler (*Oreothlypis luciae*), blue grosbeak (*Passerina caerulea*), spotted towhee (*Pipilo maculatus*), summer tanager, black phoebe (*Sayornis nigricans*), lesser goldfinch (*Spinus psaltria*), Mexican jay (*Aphelocoma wollweberi*), and white-winged dove.

The project area contains foraging, breeding, cover, and movement corridor habitat for many mammal species. The Coues whitetail deer (*Odocoileus virginianus*) was the only mammal species observed during the field visit. However, many mammal species are cryptic or nocturnal and thus were unlikely to be observed during the field visit. Based on known range and habitat preferences, these small mammal species may occur in the project area: round-tailed ground squirrel (*Citellus tereticaudus*), pocket mice (*Chaetodipus* sp. and *Perognathus* sp.), kangaroo rats (*Dipodomys* sp.), antelope jackrabbit (*Lepus alleni*), desert cottontail (*Sylvilagus audubonii*), and hooded skunk (*Mephitis macroura milleri*). Larger mammals that may occur in the project area include the coyote (*Canis latrans*), mountain lion (*Felis concolor*), and coati (*Nasua narica*) (MacMahon 1985).

Environmental Consequences

Units of Measure for Impact Significance (Indicators): Wildlife and Fisheries

- Potential to impact wildlife and fisheries habitat
- Potential to impact wildlife and fisheries species

Alternative 1 – No Action Direct and Indirect Effects

Under the no action alternative, no new access roads would be built, and CBP would continue to use the existing road network. The Coronado National Forest would continue routine maintenance of the existing road network, as necessary. There would be no direct, adverse impact to the wildlife and fisheries resources in project area vegetation communities from road construction. However, ongoing recreational and CBP use of the road that crosses Sycamore Creek (closed under the proposed action) would cause minor, long-term adverse impacts to the riparian and aquatic species known to occur in the analysis area, including injury, mortality, noise, erosion, and sedimentation due to the presence of vehicular traffic on the roadway.

Alternative 2 – Proposed Action Direct and Indirect Effects

Under the proposed action, direct and indirect impacts to native vegetation would occur from ground-disturbing activities related to road construction. Vegetation is a critical component of wildlife habitat in terms of foraging sites, food supplies, cover/shelter, and breeding sites. Losses of or disturbance to native vegetation can impact habitat availability and quality for wildlife species. The proposed road construction would completely remove vegetation within the road footprint and adjacent disturbance area (25 to 40 feet). Permanent, direct, adverse impacts to potential wildlife habitat from the proposed action would result from the removal of approximately 14.1 acres of vegetation: 10.5 acres within grasslands, 2.5 acres within desert communities, and 1.1 acres within Madrean encinal woodland (Table 3.5). However, these impacts would be negligible due to the small acreage being disturbed for the proposed action. Long-term, beneficial impacts may occur to the area's vegetation and habitat from the proposed 2 acres of road closures in the Fresno Wash and Sycamore Canyon areas.

The proposed action does not occur within riparian areas at any of the three project areas. In the Sycamore Canyon area, the road would be constructed approximately 0.2 mile north of the Sycamore Canyon creek channel (which contains riparian vegetation and aquatic habitat, although it is not mapped as riparian vegetation type by the Forest Service). Thus, no negative direct impacts to riparian vegetation or aquatic habitat are anticipated. Short-term, direct, adverse impacts to riparian and aquatic species may include an increase in noise or dust during construction of the road at the Sycamore Canyon project area and would be minor. An indirect impact to riparian and aquatic species in the Sycamore Canyon analysis area is likely beneficial: the road within the channel would be closed to all motorized travel and traffic and would be rerouted farther away from the riparian species, which may reduce vehicular mortality and impacts of noise and erosion/sedimentation within Sycamore Canyon to riparian and aquatic species and habitats.

Noise disturbance impacts on wildlife species include alteration of habitat use (avoidance or abandonment of an area, either temporarily or permanently), interruption of reproductive activities (courtship, mating, prenatal care, nesting, etc.), and increased predation (especially of abandoned nests). Disturbance impacts on wildlife species have been fairly well documented for a number of species, including deer, small mammals, reptiles, and nesting and perching birds. Most species exhibit a "flight" response to disturbance, resulting in temporary—or if disturbance is constant, permanent—displacement. Flight responses and/or disturbances can negatively impact animal health by requiring increased energy expenditures. Some of the project area is already disturbed by noise—including use of existing roads by CBP, recreational use of roads, grazing (e.g., allotment rancher use)—and these impacts have likely already occurred or are occurring in some portions of the project area. The construction of the proposed project would increase the amount of activity occurring in certain parts of the project area on a short-term basis. Use of heavy equipment, small machinery, and presence of crews during daylight hours would result in higher noise levels and may locally displace animals that are foraging, denning, or breeding in the area, and these impacts would vary by species. Those activities may further displace animals from the area on a temporary basis. The magnitude of short-term, adverse impacts from noise is uncertain, but these impacts are expected to decrease as the distance from the proposed action increases.

Some losses of individual animals are likely due to the various construction activities associated with the proposed project, but the short-term, adverse impacts are likely to be minor and negligible relative to the species population numbers. The potential for death or injury of animals depends on time of year, activity patterns of the individual species, and the activity taking place on the ground. Some loss of animals may occur due to vegetation clearing, road grading, and equipment usage. Animals denning in trees, shrubs, and grasses may be injured or killed during vegetation removal. Equipment use off roads and grading and compacting of soil to construct roads may result in losses of fossorial species if burrows are crushed within the project area.

Some impacts to breeding behavior of animals, including common and sensitive species, may occur. Because the vegetation is going to be cleared outside bird breeding season (approximately February to August, depending on the species), short-term, adverse impacts to breeding birds or their nests are likely to be minor and negligible. Implementation of the proposed action may result in unintentional impacts to individual migratory birds. However, the project complies with the Migratory Bird Executive Order (January 11, 2001), because the analysis meets direction defined under the 2008 Memorandum of Understanding between the Forest Service and USFWS. Cavity-dwelling bats or those bat species that roost under peeling bark also have the potential to be impacted by felling of trees. As trees are being cut, the disturbance is likely to cause bats to abandon the tree before it falls. Thus, most individuals would be able to avoid injury or death. Within the Sycamore Canyon analysis area, the plan to remove traffic from the stream channel would provide a long-term, minor, beneficial impact to species that breed in the riparian area with movement of vehicular traffic disturbance farther away from Sycamore Canyon.

A number of animals, including some Forest Service Sensitive species, use snags for denning, foraging, and breeding sites (including woodpeckers, nuthatches, owls, etc.). The proposed road construction project could result in the removal of snags or larger cavity-bearing oak trees. However, the overall number of cavity-bearing trees or snags removed is likely to be small, as much of the vegetation encountered is shrubby or grasses, or consists of smaller cacti. The proposed project will occur outside breeding season (approximately February to August), which will largely avoid the impacts to breeding cavity-nesting species. Nesting birds will seek alternate nest sites if those snags are not available to them. Adverse impacts on snag-dependent wildlife species would be short term and minor.

Table 3.5 Direct Impacts to Vegetation Type (Acres Lost or Altered)

Vegetation Type	<i>Fresnal Wash</i>	<i>Cantinas Reservoir</i>	<i>Sycamore Canyon</i>	Total
Grasslands	2.1	7.4	1.0	10.5
Desert communities	0	2.4	0.1	2.5
Madrean encinal woodland	0	0.4	0.7	1.1
Total	2.1	10.2	1.8	14.1

Closing FR 4181, which crosses Sycamore Creek, would likely have a long-term, direct, beneficial impact on species using the aquatic and riparian areas of the Sycamore Canyon analysis area. This would be due to the removal of vehicular traffic from the at-grade crossing in Sycamore Canyon, and moving the traffic farther away from species using the riparian area.

Mitigation Measures

Impacts on wildlife and fisheries would be avoided, minimized, or mitigated through the implementation of appropriate mitigation measures, as presented in Appendix E of the Biological Assessment/Evaluation (CBP 2015).

- Minimize animal collisions during construction activities by limiting speeds on the proposed roads to no more than 25 mph and employing the use of wildlife crossing.
- Revegetate disturbed areas with native species.

Cumulative Effects

Road closures and/or improvements, road and trail maintenance, and construction of the fence could result in impacts to wildlife and fisheries due to habitat removal, vehicular mortality of wildlife, and increased fugitive dust and noise. Additional road restrictions and closures could reduce motorized use, which would benefit most wildlife and fish species, whereas construction of fence may limit wildlife movements across the international border. Authorized grazing, recreational activities, treatments of noxious weeds, and firewood collection are continuations of existing uses, and, provided that no changes are proposed, they would result in no additional impacts to wildlife and fisheries within the analysis area. When considered together, most of these actions, when combined with the expected impacts from the proposed project, would have minimal negative cumulative impacts such as loss or fragmentation of habitat, noise, and dust for some wildlife and fish species, but could result in positive cumulative impacts for some wildlife and fish species. The future construction of segments of border fence along with the proposed action, however, would result in cumulative negative impacts to wildlife movements across the international border.

Special Status Species – Forest Service Sensitive Plant and Management Indicator Species and Migratory Birds

Affected Environment

Special-status species discussed in this section include Forest Service Sensitive species and Management Indicator Species (MIS), and migratory birds that are known to occur or are likely to occur within the project and/or analysis area. The potential for these special-status species to occur within the project and/or analysis areas was based on records from literature reviews, past survey efforts, the Arizona Game and Fish Department's (AGFD's) Arizona Heritage Geographic Information System (AZHGIS) (AGFD 2014), the USFWS's Information, Planning, and Conservation System (IPaC) database (USFWS 2014b), and online locality information such as the AGFD's Heritage Data Management System (HDMS) (AGFD 2013), USFWS's Arizona Ecological Services website (USFWS 2014c), Southwest Environmental Information Network (SEINet) (2014), Sky Island Alliance's Madrean Archipelago Biodiversity Assessment Project (Sky Island Alliance and Sonoran Joint Venture 2011), and eBird (2014).

There are 24 Forest Service Sensitive plant species, of 29 initially considered, that are known to or are likely to occur in the project area and analysis area (see part III of the Biological Assessment/Evaluation [CBP 2015] for complete list).

There are 31 Forest Service Sensitive animal species, of 48 initially investigated, that are known to or are likely to occur in the project area and analysis area (see part III of the Biological Assessment/Evaluation [CBP 2015] for complete list).

There are 33 species and one group identified as MIS for the Coronado National Forest. Of these, 13 species and one group of MIS are known to or may occur in the analysis areas: American peregrine falcon (*Falco peregrinus anatum*), Bell's vireo (*Vireo bellii*), elegant trogon (*Trogon elegans*), five-striped sparrow (*Aimophila quinquetriata*), Gould's turkey (*Meleagris gallopavo mexicana*), gray hawk (*Buteo nitidus*), Montezuma quail (*Cyrtonyx montezumae*), northern beardless-tyrannulet (*Camptostoma imberbe*), rose-throated becard (*Pachyramphus aglaiae*), Sonora chub (*Gila ditaenia*), sulphur-bellied

flycatcher (*Myiodynastes luteiventris*), thick-billed kingbird (*Tyrannus crassirostris*), and white-tailed deer, as well as the group primary and secondary cavity nesters (see part V of the Biological Assessment/Evaluation [CBP 2015]). Of these, white-tailed deer were observed in the analysis area during site visits.

Although a survey for migratory birds was not completed for the purposes of this project, 12 bird species were observed in the Fresno Wash and Cantinas Reservoir project areas, and 15 bird species were observed in the Sycamore Canyon project area during the site visit (see Wildlife and Fisheries section); all but one are protected under the Migratory Bird Treaty Act (MBTA), which provides federal protection to migratory birds, including nests and eggs. There are likely many more migratory bird species that occur in the project area than were observed.

Species observed during the 2014 site visit include Santa Cruz striped agave (*Agave parviflora*) in the Cantinas Reservoir project area, several Santa Cruz beehive cactus (*Coryphantha recurvate*), some live and some dead, in the Sycamore Canyon project area, and Montezuma quail and Sonora chub in the Sycamore Canyon analysis area.

Environmental Consequences

Units of Measure for Impact Significance (Indicators): Special-Status Species - Forest Service Sensitive Plant and Management Indicator Species and Migratory Birds

- Potential for the proposed action to affect Forest Service Sensitive species, or MIS, including those identified by AGFD's HDMS (AGFD 2013)

Alternative 1 – No Action Direct and Indirect Effects

Under the no action alternative, no new access roads would be built and CBP would continue to use the existing road network. The Coronado National Forest would continue routine maintenance, as necessary, of the existing road network. There would be no adverse impact to Forest Service plant and animal sensitive species, MIS, or migratory bird from road construction. However, ongoing recreational and CBP use of the road that crosses Sycamore Creek (closed under the proposed action) would cause minor, long-term adverse impacts to the riparian and aquatic species known to occur in the analysis area, including injury, mortality, noise, erosion, and sedimentation due to the presence of vehicular traffic on the roadway.

Alternative 2 – Proposed Action Direct and Indirect Effects

Impacts of the proposed action alternative to special-status species: Forest Service plant and animal sensitive species, MIS, or migratory birds are discussed in detail in the Biological Assessment/Evaluation (CBP 2015). Although the proposed road construction may impact individual Forest Service Sensitive species, it is not likely in result in a trend toward federal listing or loss of viability. And the proposed road construction would remove habitat for MIS, the proposed project is not expected to result in detectable changes in the forest-wide habitat or population trends for MIS on the Coronado National Forest. This would result in short- and long-term, minor adverse impacts to these sensitive species from the proposed action. Expected impacts from the proposed action to sensitive species and MIS are generally similar in nature to those presented above in the Wildlife and Fisheries resource section.

Of the Forest Service Sensitive plant species that were evaluated in the Biological Assessment/Evaluation (CBP 2015) the determination of impacts of the proposed action as described is as follows:

1) will not impact:

- Arizona coralroot

- Arizona manihot
- Ayenia
- Pima Indian mallow
- Rutter's false goldenaster

2) may impact individuals, but is not likely to result in a downward trend toward federal listing as threatened or endangered or loss of viability (i.e., the impacts associated with the proposed project would be localized to individuals and populations in the analysis area and would not affect other populations across the forest):

- Alamos deer vetch
- Arid throne fleabane
- Arizona passionflower
- Bartram stonecrop
- Beardless chinchweed
- Catalina beardtongue
- Chihuahuan sedge
- Chiltepin
- Chiricahua Mountain brookweed
- Cochise sedge
- Gentry indigo bush
- Large-flowered blue star
- Lemmon's stevia
- Metcalfe's tick-trefoil
- Nodding blue-eyed grass
- Santa Cruz beehive cactus
- Santa Cruz star leaf
- Santa Cruz striped agave
- Sonoran noseburn
- Supine bean
- Sycamore Canyon muhly
- Virlet paspalum
- Whisk fern
- Wiggin's milkweed vine

3) may impact individuals and is likely to result in a downward trend toward federal listing as threatened or endangered or loss of viability:

- The project is not expected to interfere with maintaining viable populations well-distributed for any of these Sensitive species.

Of the Forest Service Sensitive wildlife species that were evaluated in the Biological Assessment/Evaluation (CBP 2015), the determination of impacts of the proposed action as described is as follows:

1) will not impact:

- Arizona treefrog
- Lowland leopard frog
- Western barking frog
- Huachuca springsnail
- Sonoran talussnail
- Stephan's riffle beetle
- Gray vireo
- Sprague's pipit
- Merriam's mouse
- Tarahumara frog
- Sabino Canyon damselfly
- Red-backed whiptail
- Sonoran desert tortoise
- Sonoyta mud turtle
- Buff-collared nightjar
- Northern goshawk

2) may impact individuals, but is not likely to result in a downward trend toward federal listing as threatened or endangered or loss of viability: (i.e., the impacts associated with the proposed project would be localized to individuals and populations in the analysis area and would not affect other populations across the forest):

- Cestus skipper
- Brown vinesnake
- Green ratsnake
- Thornscrub hook-nosed snake
- Abert's towhee
- Arizona grasshopper sparrow
- Broad-billed hummingbird
- Elegant trogon
- Northern beardless-tyrannulet
- Sulphur-bellied flycatcher
- Violet-crowned hummingbird
- Mexican long-tongued bat
- Western red bat
- Western yellow bat
- Sunrise skipper
- Giant spotted whiptail
- Mountain skink
- Yaqui black-headed snake
- American peregrine falcon
- Arizona woodpecker
- Cactus ferruginous pygmy-owl
- Gould's turkey
- Rose-throated becard
- Thick-billed kingbird
- Whiskered screech-owl
- Hooded skunk
- Pale Townsend's big-eared bat
- Varied bunting
- Buff-collared nightjar

3) may affect individuals and is likely to result in a downward trend toward federal listing as threatened or endangered or loss of viability:

- The project is not expected to interfere with maintaining viable populations well-distributed for any of these Sensitive species.

The CBP's determination of impacts of the proposed action as described is that this project is not expected to result in downward trends toward listing as threatened or endangered or loss of viability to forest-wide habitat or population of MIS on the Coronado National Forest. The mitigation measures presented below are expected to effectively reduce potential impacts to the MIS habitats present in the project area. The scope of this project is too small relative to the landscape to make a real loss in MIS populations across the Coronado National Forest or even in the analysis area.

Some impacts to breeding behavior of animals, including common and sensitive species, may occur. Because the vegetation is going to be cleared outside bird breeding season (approximately February to August, depending on the species), short-term, adverse impacts to breeding birds or their nests are likely to be minor and negligible. Implementation of the proposed action may result in unintentional impacts to individual migratory birds. However, the project complies with the Migratory Bird Executive Order (January 11, 2001), because the analysis meets direction defined under the 2008 Memorandum of Understanding between the Forest Service and USFWS. Cavity-dwelling bats or those bat species that roost under peeling bark also have the potential to be impacted by felling of trees. As trees are being cut, the disturbance is likely to cause bats to abandon the tree before it falls. Thus, most individuals would be able to avoid injury or death. Within the Sycamore Canyon analysis area, the plan to remove traffic from the stream channel would provide a long-term, minor, beneficial impact to species that breed in the riparian area with movement of vehicular traffic disturbance farther away from Sycamore Canyon.

The proposed action has the potential to have a long-term beneficial impact to several riparian- or aquatic-dependent Forest Service Sensitive and MIS species populations within the analysis area due to the closure of the road that currently crosses Sycamore Canyon.

Mitigation Measures

Impacts on special-status species would be avoided, minimized, or mitigated through the implementation of appropriate mitigation measures, as presented in Appendix E of the Biological Assessment/Evaluation (CBP 2015).

- Initial mechanical vegetation clearing should be timed to avoid the migration, breeding, and nesting time frame of migratory birds (February 1 through August 31). When initial mechanical vegetation clearing must be implemented during February 1 through August 31, a survey for nesting migratory birds would be conducted immediately prior to the start of activities. If an active nest is found, a buffer zone will be established around the nest and no activities would occur within that zone until nestlings have fledged and abandoned the nest.
- If mechanical methods are used to remove invasive plants, the entire plant should be removed and placed in a disposal area. If herbicides are used, the plants will be left in place. All chemical applications on federally managed land must be used in coordination with the federal land manager. Training to identify nonnative invasive plants will be provided for CBP personnel or contractors, as necessary.
- Identify fill material, sandbags, hay bales, and mulch brought in from outside the project area by its source location. Use sources that are sterile or weed-free.
- Clearly demarcate the perimeter of all new areas to be disturbed using flagging or temporary construction fencing. Do not allow any disturbance outside that perimeter.
- If vegetation must be removed, allow natural regeneration of native plants by cutting vegetation with hand tools, mowing, trimming, or other removal methods that allow root systems to remain intact.
- Vegetation targeted for retention would be flagged to reduce the likelihood of being treated.
- Trees that are 6 inches in diameter at breast height (breast height defined as 4.5 feet) would be left onsite with no more than one-third of each individual tree pruned from the ground up to a maximum of 8 feet. For example, a 24-foot tree could be pruned 8 feet up from the ground.
- To prevent the introduction of invasive species seeds, all earthmoving and hauling equipment would be washed at the contractor's storage facility prior to entering the construction site.
- To prevent invasive species seeds from leaving the site, all construction equipment will be inspected and all attached plant/vegetation and soil/mud debris will be removed prior to leaving the construction site.
- Minimize animal collisions during construction activities by limiting speeds on the proposed roads to no more than 25 miles per hour and employing the use of wildlife crossing signs.
- Revegetate disturbed areas with native species.
- To protect individuals of listed species within the project area, suspend work in the immediate vicinity of the individual until it moves out of harm's way on its own, or enlist a qualified specialist (individuals or agency personnel with a permit to handle the species) to relocate the animal to a nearby safe location in accordance with accepted species-handling protocols.

- Develop and implement a training program to inform construction personnel of the listed species that occur within the project area, penalties for violation of state or federal laws, implementation of included conservation actions/BMPs, and reporting requirements.
- Check visible space underneath all vehicles and heavy equipment for listed species and other wildlife prior to moving vehicles and equipment at the beginning of each workday and after vehicles have idled for more than 15 minutes.

Cumulative Effects

Cumulative impacts analyses consider the impacts of past, present, and future actions that may combine with the predicted impacts of the proposed action. Cumulative impacts result when the impacts of an analysis are added to or interact with other impacts in a particular place and within a particular time. The analysis area for cumulative impacts analysis depends on the distribution of the species. The cumulative impacts analysis area for some species is much smaller (project area), but analysis for some species where local impacts can be extended to the regional scale through animal movement and population dynamics may be larger.

Past, present, and ongoing activities and their impacts to species/habitats are described in the baseline condition discussions for each species. Ongoing activities are recurring activities that have occurred over time and will continue to occur (e.g., grazing activities, road maintenance, trail maintenance, recreational use of the Coronado National Forest, etc.). For the species and habitats included in this project area, the impacts of past and ongoing activities are included in the species-by-species discussion of existing conditions/baseline. The Forest Plan and supporting EIS also contain discussions of various past influences on the Coronado National Forest. Past and ongoing projects in the analysis area include motorized road closures and/or improvements and road maintenance, issuances of special-use permits authorizing outfitter-guide activities to the public (including hiking, biking, rock climbing, and birding), treatments of noxious weeds, firewood collection, and authorized livestock grazing.

Non-Forest Service actions that would take place in the foreseeable future and within the analysis area (or within the Nogales Ranger District) include the construction of a border security project (i.e., vehicle fence segments). These segments of fence are planned for various locations along the border in the Nogales Ranger District and are unfunded for construction at some unknown future date. At this time, it is unknown whether any of these segments are within TEP or Sensitive species' habitat.

Road closures and/or improvements, road and trail maintenance, and construction of the fence could result in impacts to vegetation and wildlife due to habitat removal, vehicular mortality of wildlife, and increased fugitive dust and noise. Additional road restrictions and closures could reduce motorized use, which would benefit most wildlife species, whereas construction of fence may limit wildlife movements across the international border. Authorized grazing, recreational activities, treatments of noxious weeds, and firewood collection are continuations of existing uses, and, provided that no changes are proposed, they would result in no additional impacts to biological resources within the analysis area. When considered together, most of these actions, when combined with the expected impacts from the proposed project, would have minimal negative cumulative impacts such as loss or fragmentation of habitat, noise, and dust for some Forest Service Sensitive plant and wildlife species, but could result in positive cumulative impacts for some Forest Service Sensitive plant and wildlife species. The future construction of segments of border fence along with the proposed action, however, would result in cumulative negative impacts to wildlife movements across the international border.

Special Status Species – Threatened and Endangered Species

Special-status species discussed in this section include federally listed species that are protected under the ESA that are known to occur or are likely to occur within the project and/or analysis area. TEP species and their proposed and designated critical habitat are presented. Current TEP lists were obtained from the USFWS's IPaC (USFWS 2014b) and are used for this analysis. The following discussions focus on TEP species known to occur in the project area, those that have a high likelihood of occurrence based on proximity to the project area, or those that have suitable habitat present in or adjacent to the project area. This is based on records from HDMS (AGFD 2013) and AZHGIS (AGFD 2014) or personal observations during surveys of the project area, and/or presence of habitat in or near the analysis area.

No federally listed plants are known to occur—as documented by field inventory, AZHGIS (AGFD 2014), and HDMS (AGFD 2013)—in the project or analysis areas. No designated critical habitat for any TEP plant species occurs within the analysis area.

All TEP wildlife species and critical habitat (from the IPaC list described above) are presented in part IV of the Biological Assessment/Evaluation (CBP 2015) and were considered in this evaluation. The analysis area for all TEP wildlife species in this analysis is the project area plus a 0.25-mile buffer around the project area.

Federally listed wildlife species that are known to occur in the analysis area include Sonora chub (visually detected during June 2014 field survey), southwestern willow flycatcher (*Empidonax traillii extimus*) (audibly detected during June 2014 field survey), and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) (eBird 2014). Further, federally listed wildlife species that are known to occur—as documented by AZHGIS (AGFD 2014) and HDMS (AGFD 2013)—within 3 miles of the project area include Chiricahua leopard frog, jaguar (*Panthera onca*), and Mexican spotted owl. Designated critical habitat for the Chiricahua leopard frog and Mexican spotted owl occurs in the Sycamore Canyon project and analysis areas. Also, the analysis area is within the elevational range of the ocelot (*Leopardus pardalis*) and contains this species' habitat; therefore, it is possible that an ocelot (or ocelots) could use the analysis area as part of its home range, or as a foray area (i.e., foraging, scouting, mate-seeking). Designated critical habitat for jaguar and Sonora chub occurs within the Sycamore Canyon analysis area, and proposed critical habitat for northern Mexican gartersnake (*Thamnophis eques megalops*) occurs within the Fresno Wash analysis area. CBP has determined the proposed action may affect but is not likely to adversely affect jaguar, Mexican spotted owl, and Sonora chub designated critical habitat and is not likely to result in adverse modification to northern Mexican gartersnake proposed critical habitat.

The Biological Assessment/Evaluation (CBP 2015) presents detailed information for each of the species carried forward for full analysis. Excerpts from that document are presented below.

Chiricahua Leopard Frog (*Lithobates chiricahuensis*)

The Chiricahua leopard frog was listed as a threatened species on June 13, 2002 (USFWS 2002), without critical habitat. Included in the listing was a special rule to exempt operation and maintenance of livestock tanks on non-federal lands from the Section 9 take prohibitions of the ESA. On March 20, 2012, the USFWS designated critical habitat for the Chiricahua leopard frog (USFWS 2012a). The designated critical habitat totals approximately 11,467 acres in Apache, Cochise, Gila, Graham, Greenlee, Pima, Santa Cruz, and Yavapai Counties, Arizona; and Catron, Hidalgo, Grant, Sierra, and Socorro Counties, New Mexico. The physical or biological features of critical habitat in stream and riverine lotic systems are contained within the riverine and riparian ecosystems formed by the wetted channel and adjacent floodplains within 328 lateral feet on either side of bankfull stage. Based on this, the Sycamore Canyon

analysis area overlaps approximately 40 acres of Chiricahua leopard frog designated critical habitat in the Sycamore Canyon Unit in Santa Cruz County. Further, approximately 325 feet of the easternmost portion of the project area occurs within the Sycamore Canyon Unit of designated critical habitat.

No species-specific surveys have been conducted for Chiricahua leopard frogs for the purposes of this project. However, the action area is located within the elevational range of the species, and Chiricahua leopard frogs are known to occur in the Altar Valley within 3 miles of all three analysis areas (AGFD 2014). The distance between the Altar Valley locations of this species and the analysis area is within the intermittent and perennial drainages dispersal range for this species, i.e., 3 miles along intermittent drainages, and 5 miles along perennial drainages (USFWS 2011). There are no perennial natural aquatic habitats known to support the Chiricahua leopard frog in the project area. Sycamore Canyon was occupied at the time of listing, and both Yank Tank and Sycamore Canyon were occupied as of 2012 when critical habitat was designated (USFWS 2012a), and the Sycamore Canyon analysis area contains Primary Constituent Elements (PCEs) for this species: it is less than 1 mile overland from Yank Tank, a known occupied location and within a combination of perennial drainage, intermittent drainage, and overland distance of less than 5 miles of Sycamore Canyon, a known breeding location. Additionally, approximately 325 feet of the easternmost portion of the project area occurs within the Sycamore Canyon Unit of designated critical habitat.

Jaguar (*Panthera onca*)

The jaguar was listed as an endangered species in the U.S. portion of the species' range on July 22, 1997 (USFWS 1997), without critical habitat, and the non-U.S. population was listed as endangered in 1972 (USFWS 2000). In 2010, the USFWS, together with the Jaguar Recovery Team, developed a recovery outline with scientific population and habitat analyses for jaguars that were considered in the preparation of a critical habitat proposal for the species in the northern portion of their range (Jaguar Recovery Team and USFWS 2012b). On March 5, 2014, the USFWS designated critical habitat for the jaguar (USFWS 2014d). The critical habitat totals approximately 764,207 acres in Pima, Santa Cruz, and Cochise Counties in Arizona, and Hidalgo County in New Mexico. One unit of critical habitat, Unit 2—Atascosa (144,865 acres in the Tumacacori, Atascosa, and Pajarito Mountains, in Pima and Santa Cruz Counties, Arizona) overlaps 40 acres of the Sycamore Canyon analysis area. There is no jaguar critical habitat within any of the project areas or within the Fresno Wash or Cantinas Reservoir analysis areas. All three mountain ranges within the Atascosa Unit are considered to have been occupied at the time of the listing of this species, and it may be currently occupied based on multiple photos of two, or possibly three, jaguars from 2001–2008.

The Atascosa critical habitat unit contains all elements of the physical or biological feature (i.e., PCEs) essential to the conservation of the jaguar, including expansive open spaces in the southwestern United States of at least 38.6 square miles in size that:

1. Provide connectivity to Mexico;
2. Contain adequate levels of native prey species;
3. Include surface water sources available within 12.4 miles of each other;
4. Contain 1% to 50% canopy cover within Madrean evergreen woodland or semidesert grassland vegetation communities;
5. Are characterized by rugged terrain;
6. Are below 6,562 feet amsl in elevation; and
7. Are characterized by minimal to no human population density, no major roads, or no stable nighttime lighting over any 0.4-square-mile area.

The analysis area is within the elevational range of the species and contains this species' habitat. Additionally, at least two (Macho A and Macho B) (possibly three or four) male jaguars were documented in the Atascosa and Tumacacori Mountains between 2001 and 2008 (USFWS 2014d), at least one of which was within 3 miles of the Sycamore Canyon project area (AGFD 2014). Therefore, it is possible that a jaguar (or jaguars) could use the analysis area as part of its home range, or as a foray area (i.e., foraging, scouting, mate-seeking).

Surveys for this species have not been conducted within the analysis area for the purposes of the proposed project, and without surveys, there is no evidence that jaguars do or do not occur in the analysis area. The University of Arizona has received funding for a 3-year project to detect and monitor wildcats through the use of motion-sensor trail cameras along the northern boundary of the U.S.-Mexico border, from the Baboquivari Mountains in Arizona to the Animas Mountains in New Mexico (Jaguar Recovery Team and USFWS 2012b). Cameras are located on the Coronado National Forest within or near the analysis area; however, these cameras have not captured any photographs of jaguars on the Coronado National Forest in the Nogales Ranger District. Even with camera trap surveys, it is quite possible for a Type II error (claiming absence when indeed the species is present), as indicated in a study by Rosas-Rosas and Bender (2012).

Further, the analysis area is located within the Atascosa unit of critical habitat (USFWS 2014d), and most of the PCEs essential to the conservation of the jaguar are present (e.g., analysis area contains open spaces with minimal to no human population density and no stable nighttime lighting, provides connectivity to Mexico, contains adequate levels of native prey species, and includes surface water sources in semidesert grassland and Madrean evergreen woodland vegetation).

Finally, the analysis area is located within diffuse movement area D19 (Tumacacori/San Luis Mountains Wildland Block), as identified during the development of the 2012 Pima County Wildlife Connectivity Assessment: Report on Stakeholder Input (AGFD 2012). A diffuse movement area is a type of wildlife movement area within a wildland block. The Fresnal Wash analysis area is located within landscape movement area L20 (San Luis Mountains/Coches Ridge to Mexico). A landscape movement area is a type of wildlife linkage in which animals move between distinct habitat blocks, and the San Luis Mountains/Coches Ridge to Mexico landscape movement area (L20) connects the Tumacacori/San Luis Mountains Wildland Block (D19) to Mexico. The jaguar is a species that is known for both the San Luis Mountains/Coches Ridge to Mexico landscape movement area (L20) and the Tumacacori/San Luis Mountains Wildland Block (D19).

Mexican Spotted Owl (*Strix occidentalis lucida*)

The Mexican spotted owl was listed as a threatened species on March 16, 1993 (USFWS 1993). The USFWS appointed the Mexican Spotted Owl Recovery Team in 1993, which produced the Mexican Spotted Owl Recovery Plan in 1995 (USFWS 1995a), and a First Revision of the Draft Recovery Plan for the Mexican Spotted Owl is now available (USFWS 2012c). The USFWS designated critical habitat for Mexican spotted owl, effective September 30, 2004 (USFWS 2004). Approximately 8.6 million acres of critical habitat for Mexican spotted owl was designated in Arizona, Colorado, New Mexico, and Utah, mostly on federal lands (USFWS 2004). Within this area, critical habitat is limited to areas that meet the definition of protected and restricted habitat, as described in the Recovery Plan. Protected habitat includes all known owl sites and all areas within mixed-conifer or pine-oak habitat with slopes greater than 40% where timber harvest has not occurred in the past 20 years. Restricted habitat includes mixed-conifer forest, pine-oak forest, and riparian areas outside protected habitat. The Sycamore Canyon analysis area overlaps approximately 271 acres of critical habitat Unit BR-W-13 (Atascosa and Pajarito Mountains Area) in Santa Cruz County.

No species-specific surveys have been conducted for Mexican spotted owls for the purposes of this project; however, the analysis area is within the elevational range of the species and contains some elements of this species' habitat. Further, this species has been documented within 3 miles of the Sycamore Canyon project area (AGFD 2014) and within Sycamore Canyon (eBird 2014). The Sycamore Canyon analysis area overlaps critical habitat Unit BR-W-13 (Atascosa and Pajarito Mountains Area), and the Sycamore Canyon analysis area contains some PCEs for this species. The Coronado National Forest compiled information on Mexican spotted owl Protected Activity Center locations on the Coronado National Forest, and there are no documented Protected Activity Centers within the analysis area. Additionally, the Coronado National Forest conducted surveys for this species in Sycamore Canyon in March and May 2014 and detected no Mexican spotted owls (Forest Service 2014c). The Mexican spotted owl PCEs related to forest structure that are present in the Sycamore Canyon analysis area include a range of large riparian forest types tree species, shade canopy, a wide range of tree and plant species, the presence of water, and clumps or stringers of riparian vegetation.

Northern Mexican Gartersnake (*Thamnophis eques megalops*)

On July 10, 2013, the USFWS proposed the listing of the northern Mexican gartersnake as threatened with critical habitat (USFWS 2013a, 2014d) based on recent information that the species has been reduced to approximately less than 10% of its former distribution, and further declines of the species have been documented in Arizona. On July 7, 2014, the USFWS determined that threatened species status under the ESA is warranted for this species in Arizona and New Mexico (effective August 7, 2014) (USFWS 2014e).

Concurrent with the proposed the listing of the northern Mexican gartersnake as threatened, the USFWS proposed designation of critical habitat for the species on July 10, 2013 (78 Federal Register [FR] 41500; 78 FR 41550) (USFWS 2013a, 2013b). Approximately 421,423 acres, including 912 stream miles, is being proposed as critical habitat for this species in Arizona and New Mexico. A portion of the Buenos Aires National Wildlife Refuge (BANWR) Unit of proposed critical habitat for the northern Mexican gartersnake is located within the action area. This unit is located in southern Arizona, northwest of Nogales and south of Three Points, in Pima County. There is a total of 117,335 acres of proposed critical habitat in this unit, which contains springs, seeps, streams, stock tanks, and terrestrial space, of which 1,972 acres are on BANWR. This unit is considered to be currently within the geographic area occupied by the species. The PCEs for this species are described in the Biological Assessment/Evaluation. Approximately 54.5 acres of proposed critical habitat is located within the Fresnal Wash action area. There is no proposed critical habitat for this species within the Cantinas Reservoir or Sycamore Canyon action areas or within any of the three project areas.

There is a low-density population of northern Mexican gartersnakes, originating from Arivaca Cienega, which is potentially sustained in the Altar Valley through a reliable prey base provided by the existing metapopulation of Chiricahua leopard frogs found in the central tanks area of BANWR (USFWS 2013a, 2013b). Hence, there is a potential for the northern Mexican gartersnake to occur within the Altar Valley and the action area. There are no perennial natural aquatic habitats known to support the northern Mexican gartersnakes in the project area. However, there are washes and drainages, including Sycamore Creek, which could provide movement corridors and stock tanks (most are likely ephemeral, but some could be perennial) within the action area and which could potentially support this species.

No species-specific surveys have been conducted for the northern Mexican gartersnake for the purposes of this project. Habitat for this species is present within the action area, but there are no occurrence records of the species within 3 miles of the project area (AGFD 2014). Finally, although proposed critical habitat is mapped within the Fresnal Wash action area on the BANWR Unit, these PCEs are not present within the Fresnal Wash action area.

Ocelot (*Leopardus pardalis*)

The ocelot was listed as an endangered species in the U.S. portion of its range on July 21, 1982 (USFWS 1982), without critical habitat. Recovery of the ocelot was originally addressed in the Listed Cats of Texas and Arizona Recovery Plan (USFWS 1990). An updated draft recovery plan has since been released (USFWS 2010). No Recovery Units (RUs) or management areas were developed as part of the 1990 recovery plan (USFWS 1990); however, the updated draft recovery plan identified two management units that cover the entire subspecies *Leopardus pardalis sonoriensis* and *L. p. albescens* (USFWS 2010). The updated plan also summarized information available in scientific literature regarding the status and threats to the ocelot throughout its range and recommended general actions and criteria for addressing these threats and evaluating range-wide recovery. The proposed project is within the historic range and management unit of *L. p. sonoriensis*; however, it mostly focuses on ocelots and ocelot habitat in Texas.

There are no documented occurrences of ocelots within 3 miles of the project area (AGFD 2014), and there are no recent or historic unconfirmed or confirmed records of this species in the action area. The action area is within the elevational range of the species and contains this species' habitat; therefore, it is possible that an ocelot (or ocelots) could use the action area as part of its home range, or as a foray area (i.e., foraging, scouting, mate-seeking).

Surveys for this species have not been conducted within the action area for the purposes of the proposed project, and without surveys, there is no evidence that ocelots do or do not occur in the action area. The University of Arizona has received funding for a 3-year project to detect and monitor wildcats through the use of motion-sensor trail cameras along the northern boundary of the U.S. and Mexican border, from the Baboquivari Mountains in Arizona to the Animas Mountains in New Mexico (Jaguar Recovery Team and USFWS 2012b). Cameras are located on the Coronado National Forest within or near the action area; however, these cameras have not captured any photographs of ocelots on the Coronado National Forest in the Nogales Ranger District. Even with camera trap surveys, it is quite possible for a Type II error (claiming absence when indeed the species is present), as indicated in a study by Rosas-Rosas and Bender (2012) (see Jaguar section above).

Finally, the action area is located within diffuse movement area D19 (Tumacacori/San Luis Mountains Wildland Block), as identified during the development of the 2012 Pima County Wildlife Connectivity Assessment: Report on Stakeholder Input (AGFD 2012). A diffuse movement area is a type of wildlife movement area within a wildland block. The Fresnal Wash action area is located within landscape movement area L20 (San Luis Mountains/Coches Ridge to Mexico). A landscape movement area is a type of wildlife linkage in which animals move between distinct habitat blocks, and the San Luis Mountains/Coches Ridge to Mexico landscape movement area (L20) connects the Tumacacori/San Luis Mountains Wildland Block (D19) to Mexico. The ocelot is a species that is known for both the San Luis Mountains/Coches Ridge to Mexico landscape movement area (L20) and the Tumacacori/San Luis Mountains Wildland Block (D19), whereas the ocelot is known only for the San Luis Mountains/Coches Ridge to Mexico landscape movement area (L20).

Sonora Chub (*Gila ditaenia*)

The Sonora chub was listed as threatened with critical habitat under the ESA on April 30, 1986 (USFWS 1986). A recovery plan was completed in 1992 (USFWS 1992). In 1986, the USFWS designated critical habitat for the Sonora chub within Santa Cruz County, Arizona (USFWS 1986). The designated critical habitat included the entire area where the species was known at the time to occur in the United States. Designated critical habitat for this species includes Sycamore Creek, from Yank's Spring downstream to the International Border with Mexico; Yank's Spring; also the lower 1.25 miles of Peñasco Creek; and the lower 0.25 mile of an unnamed stream that enters Sycamore Creek from the west. The critical habitat

includes a 25-foot-wide riparian area along each side of Sycamore and Peñasco Creeks; however, Yank's Spring does not include a riparian zone because the spring is impounded in concrete tank and lacks a riparian zone. The Sycamore Canyon analysis area overlaps approximately 1 acre of designated critical habitat for the Sonora chub. There is no designated critical habitat for this species in the Fresno Wash or Cantinas Reservoir analysis areas or any of the project areas. Known PCEs include pools of clean, permanent water with intermediate riffle areas or intermittent pools held by bedrock or maintained by subsurface flow where pools are often shaded by canyon walls.

The Sonora chub is present within the analysis area within Yank's Spring and Sycamore Creek downstream and south of the project area.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

The southwestern willow flycatcher was listed as endangered, without critical habitat, on February 27, 1995 (USFWS 1995b). There is no designated critical habitat for this species within the analysis area.

There are no documented occurrences of southwestern willow flycatchers within 3 miles of the project area (AGFD 2014; eBird 2014); however, during the June 2014 site visit, SWCA Environmental Consultants biologists heard the characteristic fitz-bew song that distinguishes this subspecies from other birds (including other *Empidonax*) from at least two individuals southeast of and downstream from the Sycamore Canyon project area and within the analysis area. During migration, southwestern willow flycatchers will “use a wider array of forest and shrub habitats than they do for breeding, although riparian vegetation may still be a preferred migration habitat type” (Sogge et al. 2010). Southwestern willow flycatchers generally arrive on breeding grounds between early May and early June, but because arrival dates are variable, multiple subspecies of spring migrant willow flycatchers pass through areas where southwestern willow flycatchers are nesting early in the season (Sogge et al. 2010). Similarly, fall migrants may occur where southwestern willow flycatchers are still breeding in mid- to late summer, which can make it challenging for observers to differentiate local breeders from migrants. The analysis area is within the elevational range of the species and contains this species' migratory habitat; therefore, it is possible that southwestern willow flycatchers could use the riparian habitat in the Sycamore Canyon analysis area as migratory stopover habitat.

Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)

Effective November 3, 2014, the western yellow-billed cuckoo was listed as threatened under the ESA. There is no proposed critical habitat for this species within the analysis area.

A species-specific survey targeting western yellow-billed cuckoos was not conducted for the purposes of this project. However, western yellow-billed cuckoo habitat is present in the analysis area, and the analysis area is within the known range of the species. Further, the species has been documented within 3 miles of the Cantinas Reservoir and Sycamore Canyon project areas (AGFD 2013) and within the analysis area in Sycamore Canyon (eBird 2014). However, no proposed critical habitat for this species is present within the analysis area.

Environmental Consequences

Units of Measure for Impact Significance (Indicators): Threatened and Endangered Species

- Presence or absence of threatened, endangered, or proposed species
- Potential for the proposed action to affect Chiricahua leopard frog, Mexican spotted owl, Sonora chub, southwestern willow flycatcher, and western yellow-billed cuckoo

Alternative 1 – No Action Direct and Indirect Effects

Under the no action alternative, no new access roads would be built and CBP would continue to use the existing road network. The Coronado National Forest would continue routine maintenance, as necessary, of the existing road network. There would be no adverse impact to TEP species. However, ongoing use of the road that crosses Sycamore Creek (closed under the proposed action) would cause minor, long-term adverse impacts to the TEP species that occur there.

Alternative 2 – Proposed Action Direct and Indirect Effects

Potential effects of the proposed action alternative on federally listed species are also discussed below. See part IV of the Biological Assessment/Evaluation (CBP 2015) for more details.

Chiricahua Leopard Frog (*Lithobates chiricahuensis*)

Direct effects are caused by the action and occur at the same time and in the same place as the action. Construction activities for the proposed project are not likely to result in direct effects in the form of mortality effects to the Chiricahua leopard frog because there are no perennial natural aquatic habitats or stock tanks or documented occurrences of the species within the project area. If an individual was in the area during construction, then effects due to noise associated with construction activities could occur. Indirect effects are caused by the action and are later in time, but are reasonably certain to occur. An indirect effect to this species in the Sycamore Canyon analysis area is likely beneficial: the road within the channel would be closed with an earthen berm, decommissioned, and closed to all motorized travel, which would reduce vehicular mortality and effects of noise and erosion/sedimentation within Sycamore Canyon. Indirect effects on water quality from stormwater runoff or increased sedimentation that could occur to downstream Chiricahua leopard frog habitat would be mitigated through the use of mitigation measures to control stormwater runoff (see Chapter 2).

This project would directly impact approximately 0.2 acre (325 feet long by 25 feet wide) of designated critical habitat within the project area that includes the following PCEs (USFWS 2012a):

upland habitats that provide opportunities for foraging and basking that are immediately adjacent to or surrounding breeding aquatic and riparian habitat); and dispersal and nonbreeding habitat, consisting of areas with ephemeral (present for only a short time) . . . water that are generally not suitable for breeding, and associated upland or riparian habitat that provides corridors (overland movement or along wetted drainages) for frogs among breeding sites in a metapopulation (not more than 1.0 mile overland, 3.0 miles along ephemeral or intermittent drainages . . . ; in overland and nonwetted corridors, provide some vegetation cover or structural features for shelter, forage, and protection from predators, and in wetted corridors, provide some ephemeral . . . habitat; are free of barriers that block movement by Chiricahua leopard frogs. . . .

Additionally, this project could indirectly impact (e.g., minimal and insignificant impacts upon erosion, sedimentation, and compaction of soils) up to approximately 40 acres of designated critical habitat within the Sycamore Canyon analysis area. Any disturbance in intermittent or ephemeral drainages connected to perennial water breeding areas could result in effects to PCEs for this species. However, due to the small area of impacts, the short duration of construction activities, the timing of construction, and the fact that construction activities would take place in uplands and ephemeral drainages away from Sycamore Canyon, these effects are likely to be insignificant and discountable. A beneficial effect of the project is the closure of the road that currently crosses Sycamore Canyon, which would reduce human activities near the aforementioned PCEs for this species.

The aforementioned potential effects on Chiricahua leopard frogs and their designated critical habitat are expected to be insignificant and discountable due to the size of the project area and the short duration of

the construction impacts and because the species is likely to only infrequently use the ephemeral drainages in the project area for dispersal activities.

Based upon the above information and details included in the Biological Assessment/Evaluation (CBP 2015) it is determined that implementation of the proposed action as described may affect but is not likely to adversely affect the Chiricahua leopard frog or designated critical habitat.

Jaguar (*Panthera onca*)

Jaguars are native to southeastern Arizona in the type of habitat that exists in the proposed project and analysis areas: open spaces with minimal to no human population density and no stable nighttime lighting that provide connectivity to Mexico, contain adequate levels of native prey species, include surface water sources in semidesert grassland and Madrean evergreen woodland vegetation, and contain some areas of rugged terrain. Jaguars have been documented in the Atascosa and Tumacacori Mountains between 2001 and 2008.

Jaguars are secretive animals that tend to avoid areas with considerable human activity (e.g., noise, light, habitat disturbance). They are difficult to detect, even when present, without extensive camera surveys or trained tracking dogs. Jaguars have large home ranges, and males may make extensive terrestrial forays, so it is possible one or more of these animals does or would occur in the analysis area in the future. Further, there is contiguous habitat or corridors available for movement, so the analysis area could be within the home range of one or more jaguars. Again, because surveys for this species have not been conducted within the analysis area for the purposes of the proposed project—and even with camera trap surveys, it is quite possible for a Type II error (i.e., claiming absence when indeed the species is present)—without convincing survey data, the presence or absence of jaguars in the proposed project or analysis areas cannot be determined. Jaguars in the analysis area could experience effects of habitat removal and noise that could alter their behavior (e.g., shift home range, movement patterns, and foraging areas) to avoid these anthropogenic disturbances. Noise from construction of the roads disturb jaguars, likely causing changes in dispersal, communication patterns, and hunting success; increased stress response (NoiseQuest 2011; Pater et al. 2009). The magnitude of impacts from noise are uncertain, but these impacts are expected to decrease as the distance from the mine increases. Effects on jaguars could also result from prey species experiencing the same effects as the jaguars, hence reducing prey availability and altering their predator-prey relationships. Changes to food sources could also result in changes in dispersal and hunting success.

Jaguars in the action area could experience effects of habitat removal and noise that could alter their behavior (e.g., shift home range, movement patterns, and foraging areas) to avoid these anthropogenic disturbances. Noise from construction of the roads disturb jaguars, likely causing changes in dispersal, communication patterns, and hunting success; increased stress response; and possibly damaged hearing if the noise is loud enough (NoiseQuest 2011; Pater et al. 2009). The magnitude of impacts from noise are uncertain, but these impacts are expected to decrease as the distance from the mine increases. Effects on jaguars could also result from prey species experiencing the same effects as the jaguars, hence reducing prey availability and altering their predator-prey relationships. Changes to food sources could also result in changes in dispersal and hunting success.

Although the proposed project would not directly affect any jaguar PCEs because there are none in the project area, it may indirectly affect jaguar PCEs because the action area is below 6,562 feet amsl in elevation and is characterized by minimal to no human population density, no major roads, and no stable nighttime lighting. The proposed project is not likely to affect connectivity to Mexico or to decrease the levels of native prey species: there is already vehicular traffic in the project area, and this project would just be moving the traffic to different alignments. A beneficial effect of the project is the closure of the road that currently crosses Sycamore Canyon, which will reduce human activities near a surface water

source. BMPs to minimize potential impacts to this species are listed in Appendix E of the Biological Assessment/Evaluation (CBP 2015).

Based upon the above information and details included in the Biological Assessment/Evaluation (CBP 2015) it is determined that implementation of the proposed action as described may affect but is not likely to adversely affect the jaguar and its designated critical habitat are expected.

Mexican Spotted Owl (*Strix occidentalis lucida*)

Direct effects are caused by the action and occur at the same time and in the same place as the action. Construction activities for the proposed project are not likely to result in direct effects in the form of mortality effects to the Mexican spotted owl because there are no documented occurrences of this species or likely nesting habitat within the project area. Noise associated with construction activities could affect Mexican spotted owls in the Sycamore Canyon analysis area where they have been documented. Although the magnitude of effects from noise is uncertain, these effects are expected to decrease as the distance from the project construction activities increases. Because construction activities are anticipated to be short-term and would be conducted outside of nesting season, the effects on Mexican spotted owls due to noise are expected to be minor.

Indirect effects are caused by the action and are later in time, but are reasonably certain to occur. An indirect effect to this species in the Sycamore Canyon analysis area is likely beneficial: the road within the channel would be closed with an earthen berm, decommissioned, and closed to all motorized travel, which would reduce vehicular mortality and effects of traffic noise to Mexican spotted owls within Sycamore Canyon.

The project will directly impact 1.8 acres of designated critical habitat within the Sycamore Canyon project area, of which 0.7 acre is mapped as Madrean encinal woodland. There are oak trees within the project area, and if they are impacted by the construction of the project this would result in effects to PCEs related to forest structure and maintenance of adequate prey species; however, due to the small area of impacts, these effects are likely to be insignificant and discountable. A beneficial effect of the project is the closure of the road that currently crosses Sycamore Canyon, which will reduce human activities near the aforementioned PCEs for this species.

These aforementioned potential effects on Mexican spotted owls and designated critical habitat for the species are expected to be insignificant and discountable due to the size of the project area and the timing and short duration of the construction impacts.

Based upon the above information and details included in the Biological Assessment/Evaluation (CBP 2015) it is determined that implementation of the proposed action as described may affect but is not likely to adversely affect the Mexican spotted owl or designated critical habitat.

Northern Mexican Gartersnake (*Thamnophis eques megalops*)

Direct effects are caused by the action and occur at the same time and in the same place as the action. Construction activities for the proposed project are not likely to result in direct effects in the form of mortality impacts to northern Mexican gartersnakes because there are no perennial natural aquatic habitats or stock tanks or documented occurrences of the species within the project area. Noise associated with construction activities could directly impact northern Mexican gartersnakes in the action area, and although the magnitude of impacts from noise is uncertain, these impacts are expected to decrease as the distance from the project construction activities increases. Construction activities are anticipated to be short term. The impacts of noise on northern Mexican gartersnakes in the action area could range from habitat use changes, activity pattern changes, changing time of day when communicating, increased stress responses, decreased immune responses, decreased foraging efficiency and success, reduced reproductive success, changes in predator-prey relationships, intraspecific diminished communication, and hearing

damage. These responses can vary, depending on the nature of the sound, including sound level, rate of onset, duration, number of events, spectral distribution of sound energy, and level of background noise.

Indirect effects are caused by the action and are later in time, but are reasonably certain to occur. An indirect impact to this species in the Sycamore Canyon action area is likely beneficial: the road within the channel would be gated, closed to the public, and only used minimally by the Forest Service, which would reduce vehicular mortality and impacts of noise and erosion/sedimentation within Sycamore Canyon. Indirect effects on water quality from stormwater runoff or increased sedimentation that could occur to downstream northern Mexican gartersnake habitat would be mitigated through the use of BMPs to control stormwater runoff (see Appendix E of the Biological Assessment/Evaluation [CBP 2015]).

Based upon the above information and details included in the Biological Assessment/Evaluation [CBP 2015], it is determined that implementation of the proposed action as described may affect but is not likely to adversely affect the northern Mexican gartersnake and will not result in adverse modification of proposed critical habitat.

Ocelot (*Leopardus pardalis*)

Ocelots are native to southeastern Arizona in the type of habitats that exist in the proposed project and action areas (i.e., connectivity to Mexico and adequate levels of native prey species). Although ocelots have been not documented in or near the action area, they are secretive animals that tend to avoid areas with considerable human activity (e.g., noise, light, habitat disturbance). They are difficult to detect, even when present, without extensive camera surveys or trained tracking dogs. Ocelots have large home ranges, and males may make extensive terrestrial forays, so it is possible one or more of these animals does or would occur in the action area in the future. Further, there is contiguous habitat or corridors available for movement, so the action area could be within the home range of one or more ocelots. Again, because surveys for this species have not been conducted within the action area for the purposes of the proposed project—and even with camera trap surveys, it is quite possible for a Type II error (i.e., claiming absence when indeed the species is present)—without convincing survey data, the presence or absence of ocelot in the proposed project or action areas cannot be determined.

Ocelots in the action area could experience effects of habitat removal and noise that could alter their behavior (e.g., shift home range, movement patterns, and foraging areas) to avoid these anthropogenic disturbances. Noise from construction of the roads could disturb ocelots, likely causing changes in dispersal, communication patterns, and hunting success; increased stress response; and possibly damaged hearing if the noise is loud enough. The magnitude of impacts from noise are uncertain, but these impacts are expected to decrease as the distance from the mine increases. Effects on ocelots could also result from prey species experiencing the same effects as the ocelots, hence reducing prey availability and altering their predator-prey relationships. Changes to food sources could also result in changes in dispersal and hunting success. BMPs to minimize potential impacts to this species are listed in Appendix E of the Biological Assessment/Evaluation (CBP 2015).

Based upon the above information and details included in the Biological Assessment/Evaluation (CBP 2015), it is determined that implementation of the proposed action as described may affect but is not likely to adversely affect the ocelot.

Sonora Chub (*Gila ditaenia*)

Direct effects are caused by the action and occur at the same time and in the same place as the action. Construction activities for the proposed project are not likely to result in direct effects in the form of mortality effects to Sonora chubs because there are no perennial natural aquatic habitats or stock tanks or documented occurrences of the species within the project area.

Indirect effects are caused by the action and are later in time, but are reasonably certain to occur. An indirect effect to this species in the Sycamore Canyon analysis area is likely beneficial. The road within the channel would be closed with an earthen berm, decommissioned, and closed to all motorized travel, which would reduce vehicular mortality and effects of noise and erosion/sedimentation within Sycamore Canyon. Indirect effects on water quality from stormwater runoff or increased sedimentation that could occur to downstream Sonora chub habitat would be mitigated through the use of mitigation measures to control stormwater runoff as presented in the Soils and Water Resources section.

Based upon the above information and details included in the Biological Assessment/Evaluation (CBP 2015) it is determined that implementation of the proposed action as described may affect but is not likely to adversely affect the Sonora Chub or designated critical habitat.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

Direct effects are caused by the action and occur at the same time and place as the action. The proposed road construction will not destroy any habitat for this species (i.e., dense riparian habitats where surface water is present or where soil moisture is high); thus, no direct effects to nesting sites or individuals in the form of mortality is anticipated. Further, no direct effects to nesting individuals are expected because the road construction would occur outside of breeding season, or following nest surveys. Effects (fugitive dust, noise and vibration) may occur as a result of road construction and road use because at least two individuals were observed in the analysis area during the June 2014 field surveys. Indirect effects are caused by the action and are later in time but are reasonably certain to occur. An indirect effect to this species in the Sycamore Canyon analysis area is likely beneficial: the road within the channel would be closed with an earthen berm, decommissioned, and closed to all motorized travel, which would reduce vehicular mortality and effects of noise and erosion/sedimentation within Sycamore Canyon. Indirect effects on water quality from stormwater runoff or increased sedimentation that could occur to downstream southwestern willow flycatcher habitat would be mitigated through the use of mitigation measures to control stormwater runoff as presented in the Soils and Water Resources section. These potential effects on southwestern willow flycatchers are expected to be insignificant and discountable due to the size of the project area, and the timing and short duration of the construction effects, and because the road construction is not occurring within this species' preferred habitat.

Based upon the above information and details included in the Biological Assessment/Evaluation (CBP 2015), it is determined that implementation of the proposed action as described may affect but is not likely adversely affect the southwestern willow flycatcher.

Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)

Direct effects are caused by the action and occur at the same time and place as the action. The proposed road construction will not destroy any deciduous riparian habitat (including tall trees, water sources, etc.); thus, no direct effects to nesting sites or individuals in the form of mortality are anticipated. Further, no direct effects to nesting individuals are expected because the road construction would occur outside of breeding season, or following nest surveys. Effects (fugitive dust, noise and vibration) may occur as a result of road construction and use because the species has been documented as occurring within 3 miles of the project area. Indirect effects are caused by the action and are later in time but are reasonably certain to occur. As the road within the Sycamore Canyon channel itself is being closed, a positive indirect effect of the proposed project may be that the traffic (with the effects of noise and dust) will be moved farther away from deciduous riparian habitat, which is suitable nesting, foraging, and roosting habitat for this species. Indirect effects on water quality from stormwater runoff or increased sedimentation that could occur to downstream western yellow-billed cuckoo habitat would be mitigated through the use of mitigation measures to control stormwater runoff as presented in the Soils and Water Resources section. These potential effects on western yellow-billed cuckoos are expected to be insignificant and discountable.

due to the size of the project area, and the timing and short duration of the construction effects, and because the road construction is not occurring within this species' preferred habitat.

Based upon the above information and details included in the Biological Assessment/Evaluation (CBP 2015), it is determined that implementation of the proposed action as described may affect but is not likely to adversely affect the western yellow-billed cuckoo and will not result in adverse modification of proposed critical habitat for the species.

No adverse effects are expected to the above eight species, because the likelihood of adverse effects is so low as to be insignificant and discountable. No adverse effects are expected to occur for designated critical habitat for Chiricahua leopard frog, jaguar, Mexican spotted owl, northern Mexican gartersnake, and Sonora chub, because the likelihood of adverse effects is so low as to be insignificant and discountable.

Mitigation Measures

Impacts on TEP species would be avoided, minimized, or mitigated through the implementation of appropriate mitigation measures listed below (see Appendix E of the Biological Assessment/Evaluation [CBP 2015]).

- To protect individuals of listed species within the project area, suspend work in the immediate vicinity of the individual until it moves out of harm's way on its own, or enlist a qualified specialist (individuals or agency personnel with a permit to handle the species) to relocate the animal to a nearby safe location in accordance with accepted species-handling protocols.
- Develop and implement a training program to inform construction personnel of the listed species that occur within the project area, penalties for violation of state or federal laws, implementation of included conservation actions/mitigation measures, and reporting requirements.
- Check visible space underneath all vehicles and heavy equipment for listed species and other wildlife prior to moving vehicles and equipment at the beginning of each workday and after vehicles have idled for more than 15 minutes.
- Revegetate disturbed areas with native species.
- Chiricahua Leopard Frog (*Lithobates chiricahuensis*)
 - A site-specific SWPPP and a spill protection plan will be prepared and regulatory approval sought, as required by regulations, for activities that could result in sedimentation and that occur within 0.3 mile of potentially occupied habitat. This will include, but is not limited to, placing straw bale type sediment traps at the inlet of ponds or stock tanks and upstream of drainages known to be occupied by the species or within critical habitat of the species.
 - Any use or storage of fuels will be kept 0.3 mile away from locations where this species occurs.
- Jaguar (*Panthera onca*) and Ocelot (*Leopardus pardalis*)
 - Animal collisions would be minimized by limiting speeds on the proposed roads to no more than 25 mph and employing the use of wildlife crossing signs.

Cumulative Effects

The majority of the lands within analysis area are federal lands within the project area; therefore, most of the activities that could potentially affect the TEP species described above, within the analysis area, are

likely federal activities subject to additional Section 7 consultation under the ESA. Exceptions could include recreation without a federal nexus and cross-border activities that include the following: human traffic; deposition of trash; new trails from human traffic; increased fire risk from human traffic; and water depletion and contamination. Because the proposed project is considered to be a very low risk to these species and their habitat, and may even benefit some species, this project is not expected to add to the reasonably foreseeable effects to this species on the Coronado National Forest.

Vegetation Resources and Invasive Plant Species

Affected Environment

The analysis area for biological resources is defined as the project area plus a larger surrounding area (0.25-mile buffer, which includes proposed barriers and gates) that may experience direct or indirect temporal and spatial impacts from the proposed project (a total of approximately 2,060 acres, of which 1,753 acres are on NFS lands). This section identifies the vegetation resources and invasive plant species that are known to occur or are likely to occur within the project and/or analysis areas (see parts II and VI of the Biological Assessment/Evaluation [CBP 2015] for more details). The potential for these resources to occur within the project and/or analysis areas were identified using a modified version of the Tumacacori Ecosystem Management Area (EMA) Potential Natural Vegetation Types (Curiel 2009) used for analysis in the Nogales Travel Management Plan (Forest Service 2014b), and field visits that occurred in June 2014.

Fresnal Wash. The Fresnal Wash project area is described as semi-desert grassland biotic community (Brown 1994) and is mapped by the Forest Service as grasslands vegetation type. The overall Fresnal Wash analysis area is mapped by the Forest Service as desert communities, grasslands, and riparian vegetation types. Common plant species within the project area include: cane bluestem (*Bothriochloa barbinodis*), fairyduster (*Calliandra eriophylla*), mealy goosefoot (*Chenopodium incanum*), barrel cactus (*Ferocactus* spp.), ocotillo (*Fouquieria splendens*), slender janusia (*Janusia gracilis*), littleleaf ratany (*Krameria erecta*), pepperweed (*Lepidium* sp.), tansyleaf tansyaster (*Machaeranthera tanacetifolia*), velvetpod mimosa (*Mimosa dysocarpa*), tulip pricklypear (*Opuntia phaeacantha*), curvenut combseed (*Pectocarya recurvata*), and velvet mesquite (*Prosopis velutina*). Nonnative plant species observed in the Fresnal Wash project area include lovegrass (*Eragrostis* sp.) species, but surveys were unlikely to have detected all of the invasive plant species present due to the time of year and limited scope of the field visit.

Cantinas Reservoir. The Cantinas Reservoir project area is located in the semi-desert grassland biotic community (Brown 1994) and is mapped by the Forest Service as grasslands, Madrean encinal woodland, and desert communities vegetation types. Similarly, the overall Cantinas Reservoir analysis area is mapped by the Forest Service as desert communities, grasslands, and Madrean encinal woodland vegetation types, with areas of riparian vegetation. Common plants at the westernmost portion of this project area include carelessnessweed (*Amaranthus palmeri*), ragweed (*Ambrosia* sp.), cane bluestem, fairyduster, mealy goosefoot, common sotol (*Dasyilirion wheeleri*), low woollygrass (*Dasyochloa pulchella*), buckwheat (*Eriogonum* sp.), barrel cactus, ocotillo, littleleaf ratany, pepperweed, velvetpod mimosa, tulip pricklypear, phacelia (*Phacelia* sp.), woolly plantain (*Plantago patagonica*), velvet mesquite, Emory oak (*Quercus emoryi*), and banana yucca (*Yucca baccata*). In the eastern portion of the project area, the most common plant species include carelessnessweed, cane bluestem, fairyduster, barrel cactus, ocotillo, pepperweed, catclaw mimosa (*Mimosa aculeaticarpa* var. *biuncifera*), tulip pricklypear, phacelia, velvet mesquite, Emory oak, and Mexican blue oak (*Q. oblongifolia*). Nonnative plant species observed in the Cantinas Reservoir project area include a mustard (*Brassica* sp.) species, but all invasives were unlikely to have been detected due to the time of year and limited scope of the field visits.

Sycamore Canyon. This project area is located in the Madrean evergreen woodland biotic community (Brown 1994) and is mapped by the Forest Service as grasslands, Madrean encinal woodland, and desert communities vegetation types. Although riparian habitat is not mapped within the Sycamore Canyon analysis area, riparian vegetation and aquatic habitat is present within the analysis area adjacent to the project area within Sycamore Canyon. Common plants within the project area include spidergrass (*Aristida ternipes*), spiderling (*Boerhavia* sp.), cane bluestem, hairy grama (*Bouteloua hirsuta*), fairyduster, sandmat (*Chamaesyce* sp.), common sotol, coralbean (*Erythrina flabelliformis*), catclaw mimosa, wooly plantain, velvet mesquite, Emory oak, and Mexican blue oak. Nonnative plant species observed in the Sycamore Canyon project area include cheatgrass (*Bromus tectorum*), a mustard species, and a lovegrass species; however, all nonnative species were unlikely to have been detected due to the time of year and limited scope of the field visits.

Buffelgrass (*Pennisetum ciliare*) is an invasive warm-season perennial bunchgrass from Africa that has become a serious ecological threat in southern and central Arizona. It is a particular threat on the Nogales Ranger District in the Sonoran Desert vegetation type along the Mexico border in the Tumacacori Mountains (Forest Service 2014b). Buffelgrass spreads rapidly and forms dense stands that compete with native plants for soil moisture, nutrients and seedling establishment sites. Buffelgrass also creates large fine fuel loads that carry more frequent and intense fires than native vegetation, threatening non-fire adapted ecosystems. The Nogales District is at high risk for invasion by buffelgrass due to its proximity to the international border. Millions of acres in Mexico have been planted with buffelgrass for livestock forage, creating a huge seed source for transport by the thousands of vehicles, people and animals crossing the border every month, both legally and illegally. Several large border buffelgrass infestations have already been identified on the Nogales Ranger District (Forest Service 2014b).

Environmental Consequences

Units of Measure for Impact Significance (Indicators): Vegetation Resources and Invasive Plant Species

- Potential to impact native vegetation communities
- Risk for the introduction and spread of invasive plant species

Alternative 1 – No Action Direct and Indirect Effects

Under the no action alternative, no new access roads would be built, and CBP would continue to use the existing road network. The Coronado National Forest would continue routine maintenance, as necessary, of the existing road network. There would be no adverse impact to the project area vegetation communities from road construction. However, ongoing use of the road that crosses Sycamore Creek (closed under the proposed action) would cause minor, long-term adverse impacts to general riparian vegetation in the stream area. No impact would occur associated with invasive plant species risks above existing conditions, because these activities are already occurring within the project area.

Alternative 2 – Proposed Action Direct and Indirect Effects

Under the proposed action direct and indirect impacts to native plant species would occur from ground-disturbing activities related to road construction. The construction activities would directly impact individual plants and their habitats, leading to death and injury of individual plants, and a small overall percent loss of that vegetation community forest-wide. Vegetation would be completely removed within the road footprint and adjacent disturbance area (25 to 40 feet) by ground-based equipment during the construction of new roads. Permanent, direct, adverse impacts to Forest Service vegetation types from the proposed action would result from the removal of approximately 14.1 acres of vegetation: 10.5 acres

within grasslands, 2.5 acres within desert communities, and 1.1 acres within Madrean encinal woodland (see Table 3.5). Permanent, direct, adverse impacts to approximately 0.008% of the Tumacacori EMA from the proposed action (approximately 0.014% of the mapped grasslands, approximately 0.006% of the mapped desert communities, and approximately 0.002% of the mapped Madrean encinal woodland) represents an overall negligible to minor impact on the areas native vegetation communities compared to the remaining acreage forest-wide. General impacts to soils could result in indirect impacts to plants through localized and/or widespread increases in erosion and sedimentation. Additionally, erosion and soil compaction can slow natural revegetation of disturbed areas because seeds do not have the opportunity to germinate. This proposed action is relatively small (14.1 acres of disturbance), and standard mitigation measures would be implemented to minimize erosion impacts. Therefore, this project would likely have only minimal and insignificant impacts upon erosion, sedimentation, and compaction of soils.

Any ground-disturbing activity can facilitate the establishment and spread of noxious or invasive weed species. Roads and trails are the primary transmission corridors for spreading buffelgrass on the Nogales Ranger District. These plant species have the ability to out-compete desirable native plant species, including special status species for available water and nutrients, and can increase fuels that accelerate fire return intervals. Once established, these species can eliminate native vegetation and associated plant and wildlife habitats. Indirect impacts of invasive plant species spreading from the project areas could result from the proposed project. Under all road construction activities, the Coronado National Forest implements rigorous mitigation measures to minimize the risk of spreading invasive plant species. With implementation of these mitigation measures, long-term, adverse impacts from invasive species risk would be moderate.

Mitigation Measures

Impacts on vegetation would be avoided, minimized, or mitigated through the implementation of appropriate mitigation measures listed below (see Appendix E of the Biological Assessment/Evaluation [CBP 2015]). The Coronado National Forest also implements applicable mitigation measures included in the listed reference materials.

- To prevent the spread of invasive plant species, guidance from the following resources will be implemented: *Inspection and Cleaning Manual for Equipment and Vehicles to Prevent the Spread of Invasive Species* (DiVittorio et al. 2012); *Preventing the Spread of Invasive Plants: Best Management Practices for Land Managers* (Cal-IPC 2012); and *Invasive Plant Prevention Guidelines* (Clark 2003).
- If mechanical methods are used to remove invasive plants, the entire plant should be removed and placed in a disposal area. If herbicides are used, the plants will be left in place. All chemical applications on federally managed land must be used in coordination with the federal land manager. Training to identify nonnative invasive plants will be provided for CBP personnel or contractors, as necessary.
- Fill material, sandbags, hay bales, and mulch brought in from outside the project area would be identified by its source location. Contractors would use sources that are sterile or weed-free.
- The perimeter of all new areas to be disturbed would be clearly demarcated using flagging or temporary construction fencing. No disturbance would be allowed outside that perimeter.
- If vegetation must be removed, allow natural regeneration of native plants by cutting vegetation with hand tools, mowing, trimming, or other removal methods that allow root systems to remain intact.
- Vegetation targeted for retention would be flagged to reduce the likelihood of being treated.

- Trees that are 6 inches in diameter at breast height (breast height defined as 4.5 feet) would be left on-site with no more than one-third of each individual tree pruned from the ground up to a maximum of 8 feet. For example, a 24-foot tree could be pruned 8 feet up from the ground.
- To prevent the introduction of invasive species seeds, all earthmoving and hauling equipment would be washed at the storage facility prior to entering the construction site.
- To prevent invasive species seeds from leaving the site, all construction equipment will be inspected and all attached plant/vegetation and soil/mud debris will be removed prior to leaving the construction site.
- Disturbed areas would be revegetated with native species.

Cumulative Effects

Road closures and/or improvements, road and trail maintenance, and construction of the border fence could result in impacts to plant species due to injury or mortality from removal and increased fugitive dust, and introduction of invasive species. As discussed above, the Nogales Ranger District is experiencing increasing threats from invasive plant species. In particular, buffelgrass has invaded several areas of the district near the border (Forest Service 2014b). Road closures associated with the Travel Management Plan and the proposed action would remove motorized use, which would benefit most plant species and reduce the possibility of introducing exotics. Authorized grazing, recreational activities, treatments of noxious weeds, and firewood collection are continuations of existing uses, and, provided that no changes are proposed, they would result in no additional impacts to vegetation and invasive plant species risks within the analysis area. When considered together, most of these actions, when combined with the expected impacts from the proposed project, would have negligible adverse cumulative impacts such as loss or fragmentation of habitat, and dust for some plant species.

Heritage Resources

Affected Environment

Heritage resources may be defined as physical manifestations associated with past or present cultures. These resources include prehistoric and historic period archaeological sites as well as historical buildings and structures. Heritage resources also refer to places that are areas of traditional religious and cultural importance. These places, which may include archaeological sites, may be natural landforms, large landscapes, or small, discrete use areas. They may be places associated with sacred beings or ancestors recorded and passed down through oral histories or they may be places where community members came in the past and still come in the present, using the area as a continuation of traditions, thereby maintaining community beliefs and practices.

Heritage resources also include Traditional Cultural Properties (TCPs). A TCP is considered a formal designation that is applied to areas central to a traditional community's cultural practice and spiritual beliefs. These important places are directly tied to a community's heritage, and thereby help define and maintain cultural identity.

Four criteria are applied in the evaluation of cultural properties for inclusion in the National Register of Historic Places (NRHP) (36 CFR 60.4). Normally, a cultural property must be at least 50 years old and meet at least one of these four criteria to be considered eligible for listing in the NRHP. Any cultural property that is eligible for inclusion in, or listed in, the NRHP is considered a "historic property." According to the NRHP criteria, the quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, and structures

- A. that are associated with events that have made a substantial contribution to the broad patterns of our history; or
- B. that are associated with the lives of persons important in our past; or
- C. that embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent important and distinguished entity whose components may lack individual distinction; or
- D. that have yielded, or may be likely to yield, information important in prehistory or history.

In addition to demonstrating significance in one or more categories cited above, a property must demonstrate integrity. The historic property must convey its significance, as evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric use (National Park Service 2002). Integrity is evaluated in terms of seven qualities: association, location, materials, setting, feeling, design, and workmanship. These qualities are useful for analyzing the types of integrity that a resource might possess. Any cultural resource that is considered ineligible for inclusion in the NRHP is not considered a historic property.

The analysis area for cultural resources is considered a 1-mile buffer around each of the three construction areas. A site record inventory of all known cultural resources within this 1-mile buffer was conducted to identify site types, distribution, and location in proximity to the project area. The records inventory consists of a comprehensive review of files from the Coronado National Forest, the AZSITE database, as well as a review of available literature and maps of the proposed project area.

In addition to archival research, intensive pedestrian surveys were also conducted in each of the three construction areas. Between June 18 and June 21, 2012, HDR | EOC Engineering, Inc. (HDR EOC), surveyed the west side of Fresno Wash in order to find suitable areas for the development of new access roads. Two NRHP-eligible historic properties recorded prior to the HDR EOC survey are directly impacted by current access roads used by CBP for its border protection operations. The proposed access roads evaluated in this EA in the Fresno Wash construction area were routed based on the HDR EOC survey, the results of which are presented in HDR EOC (2012). In a letter dated August 30, 2012, the Arizona State Historic Preservation Office (SHPO) determined the access roads as proposed in this EA for Fresno Wash would result in no effect on historic properties (Appendix B).

The Cantinas Reservoir and Sycamore Canyon construction areas were surveyed on March 21 and May 6, 2014, to identify any heritage resources that may be impacted by the proposed project. The archival records search and pedestrian survey of four proposed CBP roads resulted in the identification of a portion of a previously documented site AR-03-05-02-544 CBP (2014) in the Sycamore Canyon portion of the project area. Also known as Old Ruby Road, AR-03-05-02-544 is a historic linear site consisting of several segments of the previous State Route 289 road alignment. In addition, culverts, bridges, road cuts, and other road-related features were documented along the 10-mile length of road. The site was determined eligible for listing in the NRHP by SHPO in 2004 under Criterion D. The Sycamore Canyon project area partially overlaps Old Ruby Road where the proposed road ties into the existing, in-use Ruby Road on the east side of the project corridor. The corridor overlaps a 16-foot-long by 100-foot-wide section of the road. The portion of Ruby Road that is within the current project corridor consists of a 16-foot-wide, raised, bedded, bladed, single-lane road. There were no associated features within the project corridor. The road retains integrity in the aspects of design, location, and setting. See Appendix B for the SHPO concurrence letter on the Cantinas Reservoir and Sycamore Canyon portions of the project area.

Environmental Consequences

Units of Measure for Impact Significance (Indicators): Heritage Resources

- Potential impact to NRHP-eligible or NRHP-listed heritage resources

Alternative 1 – No Action Direct and Indirect Effects

The Coronado National Forest would continue to manage the areas of Fresnal Wash, Cantinas Reservoir, and Sycamore Canyon as directed under its Forest Plan (Forest Service 1986) and no new access roads would be constructed.

Under this alternative, no impacts to heritage resources would occur in the Cantinas Reservoir and Sycamore Canyon construction areas; however, two NRHP-eligible, historic properties (prehistoric archaeological sites) within the Fresnal Wash construction area would continue to be impacted by vehicular traffic along the existing access roads bisecting each of these sites. This would result in long-term, moderate, adverse impacts to heritage resources of the area.

Alternative 2 – Proposed Action Direct and Indirect Effects

Under this alternative, approximately 4 miles of roads would be constructed in three areas: Fresnal Wash, Cantinas Reservoir, and Sycamore Canyon. Additionally, approximately 0.6 mile of existing roads in Fresnal Wash and 0.6 mile of existing roads in Sycamore Canyon would be closed to motorized use by an earthen berm barrier.

The HDR EOC (Fresnal Wash) archaeological survey and associated report (HDR EOC 2012) recommended that this project as presented and evaluated in this EA would have a finding of no historic properties affected. The proposed access roads within the Fresnal Wash construction area were routed around archaeological sites within the vicinity; the construction of the access roads as proposed would not directly or indirectly impact any sensitive heritage resources. A long-term beneficial impact would result from rerouting the road and closing segments currently impacting archeological sites.

No impacts to heritage resources would occur in the Cantinas Reservoir area of the project area. The Old Ruby Road is the only NRHP-eligible site in the vicinity of the Sycamore Canyon area of the project area; however, the portion of AR-03-05-544 in the project area corridor has been continuously graded and modernized. Therefore, the limited impacts of the proposed project would not affect the overall significance of this site. The proposed action would result in long-term, negligible adverse impacts to this eligible site.

Additionally, under this alternative, portions of existing roads in the Cantinas Reservoir and Sycamore Canyon construction areas are proposed to be closed to motorized use. No hard closure or rehabilitation activities are anticipated along those segments identified for closure. Instead, these segments would be closed to motorized use by an earthen berm barrier. With no ground disturbance or similar activities for those segments proposed to be closed to public use, and no heritage resources within the areas of proposed new access road, there would be no negative direct or indirect impacts to sensitive heritage resources under this alternative.

If cultural materials are discovered during project implementation, all work in the immediate area must cease immediately and the District Archaeologist must be contacted to initiate the consultation process as outlined in the Advisory Council on Historic Preservation Regulations (36 CFR 800.13). The District Archaeologist will inform the Nogales District Ranger when construction may resume in the area.

If human remains are found, work in the immediate area must cease immediately; the District Archaeologist will implement tribal consultation in accordance with the Native American Graves Protection and Repatriation Act and 43 CFR 10.6.

Cumulative Effects – Proposed Action

The analysis areas for cumulative effects to heritage resources are the three construction areas evaluated in this EA: Fresno Wash, Cantinas Reservoir, and Sycamore Canyon. The existing environmental conditions of the project area for the three construction areas reflect the natural and anthropogenic changes brought on by long-term human use of the project area (e.g., the network of Forest Service roads that serve recreation, grazing, and hunting activities).

Cumulatively, past and present activities that contribute to impacts on heritage resources include grazing, use and maintenance of project area roads, and recreational/hunting activity (see Table 3.6 for specific information). Each of these actions has the potential to remove, displace, or damage artifacts, features, and/or deposits of cultural material. Given the non-renewable nature of cultural resources—particularly archaeological and historical sites—any portion of a site that has been damaged or removed diminishes its cultural and scientific value permanently.

The Nogales Ranger District Travel Management Plan EA is currently under development and will implement off-road motorized vehicle restrictions. This action will either cease or limit off-road vehicle use within the Nogales Ranger District. This will restrict most surface disturbance to areas along roads open for public use, decreasing the risk of disturbance to existing heritage resources. The proposed action would close two sections of road that are currently impacting the two NRHP-eligible historic properties. Cumulative impacts to these resources would be lessened with the restrictions imposed on these road segments. The ongoing management of the Nogales Ranger District Travel Management system may change the total open-road density of the analysis area. The exact level of change is unknown at this time; however, the change should be positive due to the reduced amount of off-road vehicle activity. There will always be a potential for additive effects from future wildfires. These effects are difficult to quantify.

The additive effect of the cumulative projects listed in the Cumulative Effects section at the beginning of this chapter, when analyzed with the proposed action, would be minor and are not anticipated to change existing heritage resources in the analysis area beyond the existing conditions.

Access

Affected Environment

The analysis area for access is the southern area of the Nogales Ranger District that includes the proposed construction areas (Figure 3.1). Access to Coronado National Forest lands for public use and administrative use for resource management activities may be impacted by changes in the Forest Service road network. Access is needed for non-motorized, mechanized, and motorized activities (Forest Service 2013a). These include public uses, such as recreation, grazing, exploration for mineral deposits, and special uses granted by the Forest Service. Administrative uses, such as fire suppression, vegetation management, road maintenance, facilities operation and maintenance, and border security, also depend on adequate and efficient access to NFS lands.

Over the past 25 years, private land owners have contested the status of many long-established national forest access roads through their lands and subsequently closed such roads to public use where no legal right of public access exists (Forest Service 2013a).

Currently, access to the Fresnal Wash area is provided via Arizona State Route 286 (South Sasabe Road) in the BANWR, either by Antelope Tour Loop or West Antelope Drive. Antelope Tour Loop becomes FR 4153 upon entering the Coronado National Forest, which traverses south to connect with FR 601 in the Fresnal Wash construction area (see Figure 2.1a). Likewise, West Antelope Drive also provides access to this portion of the project area; located farther south of Antelope Tour Loop, this road parallels the U.S. and Mexican border before becoming FR 601 in the Coronado National Forest just northwest of the Fresnal Wash construction area. FR 601 continues northeast out of the project area, connecting with FR 216, a Forest Road open to highway-legal vehicles (including passenger cars), before leaving the NFS road network as South Tres Bellotas Road. FR 601-8.41R-1, FR 601-7.17R-1, FR 601-8.10R-1 are all restricted in use and FR 4155, FR 601-7.17.R-2, and FR 601-8.41R-2 are identified to be decommissioned by the Forest Service under the preliminary proposed action for travel management.

Access from the north to the Cantinas Reservoir construction area is direct via South Tres Bellotas Road (FR 216), which provides access to the Tres Bellotas Ranch, a private in-holding that is partially within the project area. There are no additional roads that provide access to this part of the project area. FR 216-13.44R-1 and FR 216-13.44R-2 have been identified as restricted Forest Service roads under the preliminary proposed action for travel management.

For the Sycamore Canyon construction area, access is provided via FR 39 (Ruby Road). The travel management preliminary proposed action presents restricted access along FR 4181 and decommissioning of FR 39-7.93L-1.

Impacts on the Coronado National Forest from undocumented immigration and other illegal activities have resulted in the creation of a number of unauthorized trails and roads. Effects from these types of activities extend many miles into the Coronado National Forest, and are not limited to the international border (Forest Service 2013a).

Environmental Consequences

Units of Measure for Impact Significance (Indicators): Access

- Potential for changes to access to and within Coronado National Forest lands
- Potential for changes in safety and border security on the Nogales Ranger District

Alternative 1 – No Action Direct and Indirect Effects

The Coronado National Forest would continue to manage the areas of Fresnal Wash, Cantinas Reservoir, and Sycamore Canyon as directed under its Forest Plan (Forest Service 1986), and no new access roads would be constructed. CBP would continue to conduct its border patrol activities in the same manner. The public would continue to access Forest Service lands in the same manner.

With no new access roads, CBP would continue difficult and inefficient patrol operations within the current road network system. Illegal border activities would persist under current conditions and potentially impact access to the Coronado National Forest lands through the construction of unauthorized roads and trails. This would result in a moderate, long-term, adverse impact on border security in the area.

Alternative 2 – Proposed Action Direct and Indirect Effects

All new proposed road segments would be designated “Open Authorized Restricted.” This means that the new roads would be open for administrative motorized use, but not open to public motorized use.

Construction of three road segments and closure of three road segments in the Fresno Wash area would change National Forest access in the area. Each closed road segment would be replaced by a newly constructed road in a nearby location. The newly constructed roads would provide administrative motorized access to the same general vicinity of the National Forest as the closed roads. However, public motorized access to portions of the National Forest accessed by the new roads would be restricted under the proposed action. This would result in a minor, long-term, adverse impact to public motorized access in this area. There would be no change in administrative access to the Fresno Wash area.

In the Cantinas Reservoir area four new road segments would be constructed and no roads would be closed. The new roads would provide improved access to the U.S. and Mexican border via FR 4156, potentially removing certain types of traffic (such as border security patrols) away from FR 216. Approximately 510 feet of the southernmost spur road in the Cantinas Reservoir area would enter the Tres Bellotas property. Access to and from the property would not be restricted or otherwise negatively impacted under this alternative. All new constructed roads in the Cantinas Reservoir area would be designated as “Open Authorized Restricted” and not available for public use. No changes to public access to the Cantinas Reservoir area would result from this alternative. A major, long-term, beneficial impact on border access for security purposes would occur as a result of this alternative.

In the Sycamore Canyon construction area one road segment would be constructed and one road segment would be closed. The segment of FR 4181 that crosses Sycamore Canyon at a low-water crossing would be closed motorized use under this alternative. A new road segment would be constructed to connect FR 4181 and FR 39. This new segment would be designated as “Open Authorized Restricted” and would not be available for public use. The closure of FR 4181 and the lack of public access to the newly constructed road would reduce motorized public access to this area of Sycamore Canyon and impact the area’s users. This would result in a minor, long-term, adverse impact on public motorized access to this area.

Construction of the proposed road segments would temporarily impact access along roads identified for motorized use in each of the three construction areas; however, these impacts would last only the duration of construction. Public and agency (Forest Service and CBP) access to general areas of the Coronado National Forest would not be restricted. This alternative is consistent with future travel management planning efforts on the Nogales Ranger District.

Increasing road access and adding efficiency to CBP patrols in this region is expected to result in a long-term beneficial impact to the area through increased safety and security. This increased presence of CBP patrols along the border is a deterrent to illegal activity and is expected to increase safety and security for persons in the border region.

Cumulative Effects

The cumulative effects analysis area is the Nogales Ranger District. Project having impacts on access and border security occurring in the past, present, or future within the analysis area include travel management planning and other CBP security projects. Impacts of these projects will change access in the Nogales Ranger District and increase border security. This proposal, when viewed in relationship to cumulative projects, would have no negative cumulative effect on public access in the area. This proposal, when reviewed in relation to other CBP border security projects in the vicinity of the Nogales Ranger District, would have a positive effect on the safety and security of the region and would increase safety for persons along the border.

Recreation Resources

Affected Environment

The analysis area for recreation resources is the southern area of the Nogales Ranger District that includes the proposed construction areas (see Figure 3.1). Recreation uses in the project area include hiking, hunting, camping, mountain biking, off-highway vehicle (OHV) use, fishing, target shooting, equestrian use, prospecting, rock collecting, bird watching, and sight-seeing. Table 3.6 provides the inventory of recreation sites within the analysis area.

Table 3.6 Recreation Sites and Activities in the Recreation Analysis Area

Recreation Site/Activity	Location Relative to the Proposed Project Areas
Sycamore Canyon Trail and Trailhead	Trailhead and trail are approximately 0.2 mile south of the Sycamore Canyon construction area
Atascosa Trail and Trailhead	Trailhead and Trail are approximately 3.1 miles east of the Sycamore Canyon construction area
Dispersed camping	Occurs along: Forest Roads 601, 4153, and 4155 within the Fresnal Wash construction area Forest Roads 216 and 4156 within the Cantinas Reservoir construction area Forest Road 682 within the Sycamore Canyon construction area
Hunting	Analysis area within AGFD Game Management Unit 36B
OHV use	Occurs in all proposed project areas

The Sycamore Canyon Trail traverses north-south through the Goodding Research Natural Area and the Pajarita Wilderness Area. Following the stream at the bottom of the canyon, visitors walk along sheer rock cliffs that form the canyon walls. The Sycamore Canyon Trail is 5.3 miles long and ends at the U.S. and Mexican border, connecting to a lesser-used trail called the Border Trail. Approximately 5.1 miles of the Sycamore Canyon Trail and the entire length of the Border Trail are within the Pajarita Wilderness. The Atascosa Trail is northeast of the Pajarita Wilderness Area, climbing steadily and steeply for 2.5 miles from the trailhead along Arivaca-Ruby Road (FR 39) to an abandoned fire lookout tower at the top of Atascosa Peak. The Atascosa Trail offers views of Castle Rock, Montana Peak, the cliffs of Sycamore Canyon, Baboquivari Peak, the Santa Rita and Huachuca Mountains, as well as the buildings of Kitt Peak Observatory.

Dispersed camping (camping outside of developed campgrounds without amenities such as water and restroom facilities) occurs in areas adjacent to Forest Roads open to motorized travel. The Nogales Ranger District is in the process of developing travel management regulations that designate roads open to motorized travel and disallows motorized travel off of designated roads. Motorists will be able to drive a certain distance from the side of all open system roads to conduct dispersed camping. Currently, the recommended areas on the Nogales Ranger District (within the vicinity of the project areas) for dispersed camping with motor vehicles are: Forest Roads 601, 4153, and 4155 in the Fresnal Wash construction area; FRs 216 and 4156 in the Cantinas Reservoir construction area; and Forest Road 682 within the Sycamore Canyon construction area.

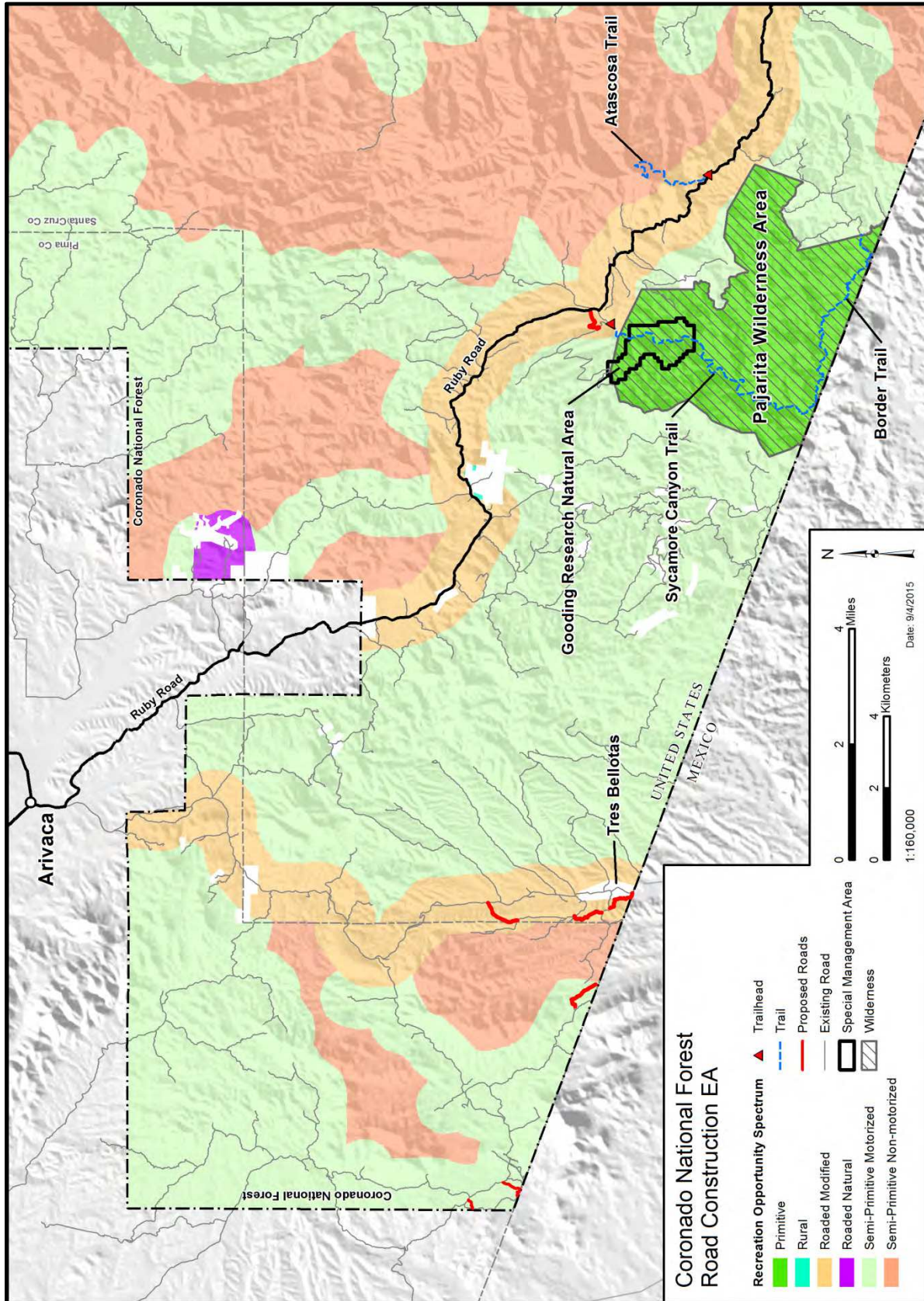


Figure 3.1 Recreation resources and ROS designations in the project area.

Hunting activity occurs on the Nogales Ranger District and is an important recreation opportunity in the area. The recreation analysis area is within AGFD Game Management Unit 36B. Species hunted within this Game Management Unit that are within the project areas include white-tailed deer, dove, and quail.

OHV use occurs on authorized and unauthorized roads within and adjacent to all proposed project areas in the Nogales Ranger District. OHV activity in the areas has steadily increased due to the increasing popularity of OHV activities in the region. The ongoing Travel Management Plan effort is working to address OHV use in the proposed project areas.

The Recreation Opportunity Spectrum (ROS) is a system for classifying and managing recreation opportunities based on an inventory of three settings: physical, social, and managerial. Different attributes within these three settings help establish an area's attributes, allowing it to be categorized into one of six different ROS classes, ranging from the highly developed Urban classification to undeveloped Primitive areas. The ROS categories in the recreation analysis area (see Figure 3.1) consist of Roded Modified, Semi-Primitive Motorized, Semi-Primitive Non-motorized, and Primitive. The Primitive classification is associated with the Pajarita Wilderness Area and the Goodding Research Natural Area, just south of the Sycamore Canyon construction area. Motorized use is prohibited in these areas, as the objective is to provide for primitive recreation in a road-free and non-motorized environment.

The Sycamore Canyon construction area and the proposed roads on the eastern portion of the Cantinas Reservoir construction area are within the Roded Modified classification. This category provides for a range of recreation activities and visitor experiences that are compatible with a significantly modified and motorized setting. Often, recreation resources and opportunities in Roded Modified areas depend on motorized access via secondary roads that connect to primary roads within the Forest Service road network. Roads in this classification are typically unpaved, native-surface secondary roads.

The Fresnal Wash construction area and the western road segment in the Cantinas Reservoir construction area falls entirely within the Semi-Primitive Motorized ROS class. In Semi-Primitive Motorized areas, visitors enjoy a natural setting with only minor modifications to the environment. The social setting provides for a low frequency of contact, although the sounds of motorized vehicles may be heard. Access to these areas is typically via non-motorized and motorized trails; however, existing roads do not generally accommodate (or are closed to) passenger vehicles and require a higher clearance.

Environmental Consequences

Units of Measure for Impact Significance (Indicators): Recreation

- Potential changes to existing recreation experiences and opportunities within Coronado National Forest lands

Alternative 1 – No Action Direct and Indirect Effects

The Coronado National Forest would continue to manage the areas of Fresnal Wash, Cantinas Reservoir, and Sycamore Canyon as directed under its Forest Plan (Forest Service 1986), and no new access roads would be constructed. CBP would continue to conduct its border patrol activities in the same manner.

For recreation, under the no action alternative, recreation resources would remain under current conditions, and no impacts are anticipated to occur.

Alternative 2 – Proposed Action Direct and Indirect Effects

Impacts to the ROS designations within the analysis area are limited. Construction of the proposed road segments would not directly or indirectly impact any areas designated Primitive or Semi-Primitive Non-motorized. Additionally, under this alternative, the construction of the proposed road segments in those areas designated Roaded Modified and Semi-Primitive Motorized would be compatible with the provisions of the ROS designation. Therefore, no negative direct or indirect effects would occur in those areas or to these designations under this alternative.

There is a potential for short- and long-term, direct and indirect adverse effects on trails and recreation users from construction of the road segments. All three construction areas are within the vicinity of dispersed camping, and any camping or other associated recreation activities taking place in the area would potentially be directly and indirectly impacted during the construction phase. Direct impacts for all three construction areas would include the potential for temporarily restricted access to dispersed camping corridors, whereas indirect impacts would consist of noise and possible dust emissions from heavy equipment that would last the duration of construction in each of the three construction areas.

Construction equipment would access the Fresno Wash construction area via FR 601 or FR 4153, and project activities in this area would result in negligible, short-term, adverse impacts on recreational activities primarily associated with the dispersed camping corridors along FR 601 and FR 4155. Construction of the road segments connecting to FR 601 would potentially impact access to these areas, as well as resulting in an increase in noise due to the presence of equipment. These impacts would be temporary, lasting the duration of construction. Three segments are identified for closure. However, these are not designated dispersed camping areas, and no dispersed camping or recreation areas would be impacted long term under this alternative. This would result in a negligible, short-term, adverse impact on public recreation opportunities in these areas.

For the Cantinas Reservoir construction area, construction equipment would primarily use FR 216 for access, and project activities in this area would result in negligible, short-term, adverse impacts on recreation. Construction of the 20-foot-wide road segments would directly affect the dispersed camping corridors along FR 4156 and FR 216. The presence of heavy equipment and noise generated by these construction activities would result in direct and indirect adverse impacts to the dispersed camping corridors and associated recreational use in the vicinity. These impacts would last the duration of construction. No segments are identified for closure in the Cantinas Reservoir area, and no dispersed camping corridors or recreation areas would be impacted long term under this alternative. This would result in a negligible, short-term, adverse impact on public recreation opportunities in these areas.

Sycamore Canyon Trailhead is located off FR 4181 in the Sycamore Canyon construction area (see Figure 3.1). The presence and noise of construction equipment, which would access the project area via FR 39, would present a direct, short-term, adverse impact of disturbance to recreational trail users and an indirect, short-term, adverse impact of disturbance to the dispersed camping corridor along FR 682. The existing segment of FR 4181 that currently provides direct access to the trail and trailhead would be closed to motorized use with an earthen berm barrier after the new Sycamore Canyon segment is constructed. This closure would alter trail access by requiring hikers to use a short portion of the closed road to access the trail. Visitors would be required to walk approximately 1,700 feet (0.3 mile) from FR 39 to access the current trailhead. The proposed action includes placing a sign at FR 39 guiding users to the trailhead, thus reducing impacts to recreation visitors. This would result in a minor, long-term, adverse impact on public recreation opportunities in this area. This segment is not designated as a dispersed camping corridor; therefore, closure would not result in any long-term adverse impacts (loss of area) to dispersed camping in the area.

Mitigation Measures

- Sycamore Canyon trailhead access information as provided to forest users would be updated

Cumulative Effects

The cumulative effects analysis area is the Nogales Ranger District. Project having recreation impacts occurring in the past, present, or future within the analysis area include travel management planning, CBP border security projects, and grazing uses. Travel management planning may impact recreation access for dispersed camping and OHV uses on the Nogales Ranger District. However, the negative effects on recreation resources, when combined with effects from this proposed action, would not result in impacts to recreation beyond negligible. Negligible cumulative effects on recreation are expected to occur from the construction of the road segments in the Fresnal Wash, Cantinas Reservoir, and Sycamore Canyon project areas.

Scenery Resources

Affected Environment

Scenery resources are the visible physical features over a landscape; these may include land, vegetation, water, wildlife, structures, and other features. Combined, these types of physical feature values makes a landscape unique, creating landscape character, which provides a baseline for scenery management and assessing a landscape's scenic integrity.

The analysis area for scenery resources is the southern area of the Nogales Ranger District that includes the proposed construction areas. The Nogales Ranger District is an important scenic area adjacent to the international border with Mexico. Vegetation in the area ranges from semi-desert grasslands to evergreen woodlands. The District provides a variety of natural landscapes, including the Pajarita Wilderness, the Goodding Research Natural Area, and riparian areas.

The Pajarita Wilderness is a 7,420-acre area managed to maintain wilderness characteristics. These characteristics include natural conditions and ecological processes, and provide visitors with opportunities for quiet and primitive recreation (Forest Service 2013a). Within the Pajarita Wilderness Area is the Goodding Research Natural Area. Management of this type of special area aims to preserve and conserve diverse and unique natural resources for the purpose of research and education. In particular, the Goodding Research Natural Area contains very diverse Madrean pine-oak woodland with unique aquatic features along the U.S. and Mexican border (Forest Service 2013a).

The Forest Service uses the Scenery Management System to systematically determine the relative value of scenery on NFS lands. The process involves identifying scenic components as they relate to people, mapping the components, and assigning a value for aesthetics. The value assigned to the map components is the Scenic Integrity Objective (SIO), which is used to assist the Forest Service in making decisions relative to scenery resources. SIOs indicate the maximum acceptable degree of alteration or change to a landscape and are used for forest plan monitoring and project planning (Forest Service 2013b).

The SIOs for the scenery analysis area are defined in the Forest Plan currently in revision (Forest Service 2013a). The SIOs in the analysis area include Very High, High, and Moderate. SIO Very High areas are defined as landscapes where the valued character is intact, with only minor deviations (if any). SIO High areas are those where the landscape character appears intact, though roads provide access to the national forest and places from which to view the landscape. In this SIO, activities may only repeat attributes of form, line, color, texture, and pattern common to the landscape. SIO Moderate areas are those where the

valued landscape appears slightly altered and facilities are those valued by forest visitors and privately owned recreation areas. Moderate areas have noticeable deviations, but they must remain visually subordinate to the landscape character being viewed (Forest Service 2013a, 2013b). The majority of the analysis area is in the SIO High designation, with Pajarita Wilderness Area and Goodding Research Natural Area in the Very High category, and those locations comprising the easternmost part of the southern portion of the Nogales District in the SIO Moderate class. The three construction areas (Fresnal Wash, Cantinas Reservoir, and Sycamore Canyon) are in the SIO High designation.

Scenic quality on the Nogales Ranger District is generally considered acceptable; however, due to forest management of different resources, the landscape character has been impacted (Forest Service 2013a). International border activities, including undocumented immigration, drug trafficking, and law enforcement operations, affect scenic quality and have the potential to alter landscape character. The entire southern border of the analysis area is adjacent to the international border. A large percentage of illegal activities have been occurring on forest lands in recent years as a result of increased border security on lands outside the administrative forest boundary (Forest Service 2013a). CBP infrastructure and operations have led to the construction of new roads, walls, fences, and surveillance towers along the border with Mexico.

Environmental Consequences

Units of Measure for Impact Significance (Indicators): Scenery Resources

- Potential change to existing scenery experiences, settings, and deviations to landscape character

Alternative 1 – No Action Direct and Indirect Effects

The Coronado National Forest would continue to manage the areas of Fresnal Wash, Cantinas Reservoir, and Sycamore Canyon as directed under its Forest Plan (Forest Service 1986), and no new access roads would be constructed. CBP would continue to conduct its border patrol activities in the same manner. Illegal border activities would persist and potentially impact scenic resources, as it has through the dumping of trash and debris.

Alternative 2 – Proposed Action Direct and Indirect Effects

All construction areas are within the SIO High designation, a management category requiring that any activities repeat attributes of form, line, color, and texture found in the existing landscape character. Considering that most of the existing roads in this portion of the Nogales Ranger District are located within the SIO High designation (Forest Service 2013b), the proposed road segments would not present a general alteration in existing landscape features of the area.

Construction of three road segments and closure of three road segments in the Fresnal Wash area would alter the area's scenery resources. Proposed mileage for road construction and road closure is nearly equal. Road relocation is proposed to protect cultural resources in the area. The relocated roads would be constructed in a manner that protects scenery resources (see Mitigation Measures below); therefore, impact to scenery resources and the casual observer of the resources would be negligible.

In the Cantinas Reservoir area, four new road segments would be constructed, and no roads would be closed. Casual observers in the area include adjacent private property owners and area ranching permittees. Construction of approximately 2.6 miles of road would alter the area's scenery resources by increasing linear contrast of form, line, and color in the existing landscape. The roads would be constructed in a manner that protects scenery resources to the extent possible (see Mitigation Measures below). Increasing border security in the area would reduce current negative impacts to scenery resources

from illegal border activities that occur in the area (trash dumping, illegal road and trail construction). Overall impact to scenery resources and the area's casual observers would be negligible.

In the Sycamore Canyon construction area, one road segment would be constructed, and one road segment of nearly equal length would be closed. The segment of FR 4181 that crosses Sycamore Canyon at a low-water crossing would be closed to motorized use under this alternative, and a new road segment would be constructed to connect FR 4181 and FR 39. The new road would be constructed in a manner that protects scenery resources to the extent possible (see Mitigation Measures below). The proposed road construction in the Sycamore Canyon construction area is outside the Pajarita Wilderness Area and the Goodding Research Natural Area. Closing the road that crosses Sycamore Canyon would be a beneficial impact to casual observers visiting the Sycamore Creek because traffic would be removed from the creek area and the riparian vegetation would be allowed to recover. Overall, impact to scenery resources and casual observers in the area would be negligible.

All roads proposed for construction would be constructed in a visually sensitive manner and repeat attributes of form, line, color, and texture found within the three construction areas. This would reduce the contrast between the constructed roads and the existing landscape, thus reducing the impact on scenery resources. The roads would also be constructed to Forest Service standards using general guidelines for scenery management. Because the proposed action is compatible with the SIO designation and road design would be similar to other roads in the area, overall impacts on scenery resources from the proposed project are expected to be long term, adverse, and negligible.

Mitigation Measures

- Roads to be constructed consistent with the guidelines of SIO High designation.
- Roads will be aligned and constructed to visually blend into the surrounding landscape.
- All surface disturbances, including road construction and associated travel, would be kept to the minimum necessary to accomplish construction of the roads
- Reclamation of all surface disturbances must be initiated immediately upon completion of activities. Reclamation of disturbed areas shall, to the extent practicable, include contouring disturbances to blend with the surrounding terrain, replacing topsoil, smoothing and blending the original surface colors to minimize impacts to visual resources, and seeding the disturbed areas with native seeds.
- Revegetation efforts must establish a stable biological ground cover equal to that which occurred prior to disturbance. Mulching may be appropriate for conserving moisture and holding seed on-site, thus improving the chances for successful establishment.

Cumulative Effects

No cumulative effects on scenery resources are expected to occur from the construction of the road segments in Fresno Wash, Cantinas Reservoir, and Sycamore Canyon.

Environmental Justice

Affected Environment

The EPA's Office of Environmental Justice defines environmental justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies

(EPA 2014b). Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group(s), should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Meaningful involvement means that 1) community residents in the potential impact area have an appropriate opportunity to participate in decisions about a proposed activity that would affect their environment and/or health; 2) the public's contribution can influence the regulatory agency's decision; 3) the concerns of all participants involved would be considered in the decision-making process; and 4) the decision-makers seek out and facilitate the involvement of those in the potential impact area (EPA 2014b).

Environmental justice is achieved when everyone, regardless of race, culture, or income, enjoys the same degree of protection from environmental and health hazards and has equal access to the decision-making process, in order to have a healthy environment in which to live, learn, and work (EPA 2014b). Executive Order 12898 (February 11, 1994) and its accompanying memorandum have the primary purpose of ensuring that "each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

Portions of the Nogales Ranger District are used by Native American tribal members for collection of traditional or medicinal plants.

Environmental Consequences

Units of Measure for Impact Significance (Indicators): Environmental Justice

- Potential impact to or displacement of any low-income or minority populations

Alternative 1 – No Action Direct and Indirect Effects

The Coronado National Forest would continue to manage the areas of Fresnal Wash, Cantinas Reservoir, and Sycamore Canyon as directed under its Forest Plan (Forest Service 1986), and no new access roads would be constructed. CBP would continue to conduct its border patrol activities in the same manner. Illegal border activities would persist and potentially impact scenic resources. No impact to the environmental justice conditions would occur under the no action alternative.

Alternative 2 – Proposed Action Direct and Indirect Effects

Under the proposed action, because of the remote location of the project area, there would be no impact to or displacement of any low-income or minority populations. Additionally, several Native American tribes were consulted in the early planning stages of this analysis and asked to provide information on any area or property of cultural or religious importance within the three construction areas (see Chapter 4). No tribal resources were identified by the responding tribes. Overall, there would be no change under this alternative for low-income or minority populations, or tribal communities, and therefore no impact, to environmental justice resources from the proposed project.

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Chapter 4 – Consultation and Coordination

Scoping Process

The Coronado National Forest Road Construction Project was added to the Coronado National Forest Schedule of Proposed Actions during the second quarter of Fiscal Year 2014. The scoping process for this proposal was initiated by advertising the proposed project in the *Nogales International* (newspaper of record) on January 3, 2014. An announcement describing the details of the proposed project and how to submit comments was mailed on January 3, 2014, to applicable government agencies and parties interested in projects on the Nogales Ranger District and the Coronado National Forest. The 30-day period for submitting scoping comments was from January 3, 2014, through February 3, 2014.

A summary of the comments received during the scoping period is included as Appendix A. CBP received 18 comment letters that contained a total of 72 individual comments.

Consultation with Others

CBP has initiated consultation with the Arizona SHPO regarding the NRHP eligibility of the cultural resources found during the cultural resource survey. As a result of this consultation, one archaeological site has been identified as eligible for listing in the NRHP. Consultation is ongoing to address the project's effects on cultural resources.

Section 106 of the National Historic Preservation Act also requires federal agencies to consult with Native American tribes and Native Hawaiian organizations, as appropriate, on historic properties of religious or cultural significance that may be affected by the undertaking. CBP has initiated consultation with the following tribes by providing a description of the project, the results of archaeological surveys, and requesting information on properties of cultural or religious importance:

- Ak-Chin Indian Community
- Fort 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

The White Mountain Apache Tribe, San Carlos Apache Tribe, and the Gila River Indian Community have responded that the project is unlikely to affect properties of cultural significance to their tribes.

CBP is also conducting consultation with the USFWS on impacts to threatened and endangered species.

CBP has also consulted with the following federal, state, and local agencies. Non-governmental organizations and citizens were also contacted during the development of this EA.

Federal Agencies

U.S. Fish and Wildlife Service

Bureau of Land Management

National Park Service, Saguaro National Park

State/County/Local Government

Arizona Game and Fish Department

Arizona Department of Water Resources

Arizona Department of Environmental Quality

Arizona Department of Transportation

Arizona State Historic Preservation Office

Cochise County

Pima County

Hidalgo County

Graham County

Pinal County

Santa Cruz County

City of Nogales

Town of Patagonia

United States Army, Fort Huachuca

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APPENDIX A

Scoping Comments Received

Coronado National Forest Roads EA – Scoping Comment Summary

Access – Commenters are concerned that the public will lose historic access to areas of the National Forest. They want to be assured that the roads being closed and decommissioned will be replaced by public access roads. Other comments supported having locked gates on roads to maintain quiet areas and following the Travel Management Plan (TMP) for roads on the Nogales RD.

Air Quality - The Proposed Action has the potential to impact air quality through generation of dust. Comment included mitigation measures to reduce dust.

Biology – Comments included information generated from the Heritage Data Management System for each road segment area to include in the EA.

Endangered Species – Comments requested that the EA and CBP evaluate impacts on the Sonoran Chub and Jaguar and consult with the USFWS on these species, if necessary.

Invasive Species – Comments requested that environmental impacts of invasive plant species be analyzed in the EA.

Border Security – Comments included commendation of CBP, their mission, and the importance of border road access for national security. Other commenters requested that the potential for the proposed road construction to increase illicit activity at the border, such as drug smuggling, be analyzed in the EA for potential decreases in safety in the area. Comments directed at CBP policy included requests for construction of a border fence to better secure this area of the border, requests for more CBP presence at the border.

Cultural Resources – Comment requested that a thorough analysis of all cultural resources for both road construction and decommissioning areas be presented to evaluate the protection of cultural resources. Also requested that appropriate Tribes be consulted about the project.

Road Design and Alignment

Design/Engineering- Several comments included information and requests for specific road construction design standards to decrease erosion, accommodate flash floods, and increase road longevity.

Road Alignment – Commenters expressed concern about the proposed near the Tres Bellotas Ranch in the Cantinas Reservoir area. They expressed that this road be re-located to an area further away from the ranch – possible on the Roosevelt Easement at the International Boundary. Primary concern was safety for residents.

Road Closures – A comment requested that design information needs to be included in the EA regarding the road closures including information how the closures will be designed and implemented.

Hydrology/Soils – Comments included concern about how the roads would be designed to cross washes and floodplains. The Santa Cruz County Floodplain and Erosion Hazard Management Ordinance was

presented for CBP review and compliance. Other comments were concerned about road maintenance during the summer monsoon season in the impact of erosion and the potential for habitat destruction.

NEPA Process

Coordination/Consultation – Comments from SHPO and AGFD requested consultation/coordination on the proposed action and EA and another comment requested that CBP consult with all appropriate land management agencies.

Comment – Commenters requested a 30-day public comment review period for the Draft EA. They also requested that CBP post all project information on their website.

Alternatives – Commenter expressed concern that the Scoping Notice included only two alternatives – Proposed Action and No Action. They requested that CBP include additional alternatives to fully analyze the project. A specific alternative requested for analysis is “no net increase in overall road length” – an equal amount of roads constructed and closed/decommissioned.

Cumulative Impacts – Comments included presentation of potential cumulative impacts to address in the EA. These included 1) other CBP activities and infrastructure taking place in the border area and 2) future activities occurring on the new roads that could present long term and cumulative impact.

Mitigation – Comments presented cases where previous CBP road projects did not follow through on agreed upon mitigation for environmental impacts in compliance documents. Concern was expressed that CBP does not construct projects as presented in environmental compliance documentation.

Letter Number	Commenter Type	Commenter	Organization	Code	Code Number	Description	Comment
7-I	Individual	Anonymous		BORD	1	General	Constituent appreciates the hard work of CBP to control illegal traffic in the area
7-I	Individual	Anonymous		DESI	1	Design/Engineering	Road design must consider flash flood potential to avoid road loss. Large box or corrugated drainage culverts should be installed, though articulated concrete matting is acceptable where properly installed to prevent undercutting from the upstream side
7-I	Individual	Anonymous		DESI	1	Design/Engineering	CBP should consider providing support to the County for maintenance of Smith Avenue, since CBP is a primary user and CBP use is resulting in deterioration of the road
1-I	Individual	B. Todd Curtis		ACCESS	2	ATV	I am also in two groups that enjoy responsible offroading on USFS and AZ State Trust Lands- we all hold valid permits for this. I would hope that some of these areas may be available for us to utilize, with your collective permission? There are less and less access areas for responsible hunters, outdoorsmen and responsible Jeep Clubs and we hope you would take this into consideration in your road construction.
1-I	Individual	B. Todd Curtis		ACCESS	3	Hunting	I have read the proposal. I think it is basically a very good idea, other than potential for arbitrarily gating portions of roads...I frequently hunt in 36B, which definitely takes in all of the Sycamore Canyon area and I believe small portions of the areas near Sasabe; which I much less frequently hunt. I like the idea of new roads in these areas, connecting the so called "gaps" in your patrol areas. I would hope that these potentially 'monitored with gate' areas will be open during the whitetail deer hunts.
15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	BORD	1	General	There is also the likelihood that the new and upgraded roads will actually increase, rather than decrease, illicit traffic in the Coronado National Forest.
15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	BORD	1	General	In comparing the No Action Alternative with multiple other alternatives, the potential for improved roads to increase, rather than decrease, illicit traffic should be examined in light of this and other examples of road construction making it easier for smugglers to move through our borderlands.
15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	CULT	1	General	The Scoping Notice says of the existing roads that the Fresno Wash road would replace, "These access roads could impact adjacent cultural resource sites and relocation would foster environmental protection in the area." To evaluate these claims there should be a thorough description of the "adjacent cultural resource sites." Are these sites believed to be related to the Tohono O'odham nation, and if so have they been consulted regarding this project? Do these sites include the potential for human remains, thereby bringing the Native American Graves Protection and Repatriation Act into play?
15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	NEPA	1	Coordination/Consultation	Any new road project, in the Coronado National Forest or elsewhere, should involve extensive prior consultation and a commitment to adhere to the results of discussions with land managers.
15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	BIOL	2	Sonoran Chub	The existing road that the proposed Sycamore Canyon road would replace is said to cross "an important habitat area to the endangered Sonoran Chub." The impacts or current Border Patrol activities upon the Sonoran Chub should be described in detail to allow stakeholders to evaluate the difference between the existing and proposed roads. Has there been a section 7 consultation under the Endangered Species Act related to the existing activities? If so, any documents related to it should be immediately provided to stakeholders as well as cited.

15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	HYDRO	2	Soils	There are concerns about opening and maintaining new roads after the summer monsoon seasons. Opening these roads could cause erosion and habitat destruction in at least one sensitive area; further maintenance of roads will increase the impacted area, erosion and costs.
15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	NEPA	2	Comment	We expect this project, and all U.S. Customs and Border Patrol (CBP) projects, to fully adhere to the National Environmental Policy Act and the public consultation requirements therein. For the Coronado National Forest Road Construction Project, we request a public comment period of at least 30 days.
15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	NEPA	2	Comment	There is no additional information about this project posted at http://www.cbp.gov/xp/cgov/border_security/ti/ti_projects/ . This is not a viable source for information about this CBP project. CBP should make all of its environmental documents available to the public on this website, and should provide another 30 or 60 day comment period so the public and other agencies have an opportunity to review relevant information and provide input.
15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	BIOL	3	Jaguar	Most of the Coronado National Forest Road Construction Project area is within or very near the revised critical habitat of the jaguar proposed by the U.S. Fish and Wildlife Service (attachment A) and jaguar presence has been documented near proposed road construction sites. All analysis of the Coronado National Forest Road Construction Project must take this into account, and all analysis of threatened and endangered species for this project should be done in consultation with the U.S. Fish and Wildlife Service.
15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	DESI	3	Road Closures	If roads are to be closed maps should be included that indicate which ones. There should also be much more detail regarding what form such closure will take. Will closure simply mean installing gates and using the roads less often, restricting use to horse and ATV patrols, or complete demolition and revegetation?
15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	NEPA	3	Alternatives	CBP should analyze multiple options and means for achieving its goals if it is to craft a fully compliant document that gives decision makers sufficient information to make an informed decision.
15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	NEPA	3	Alternatives	We suggest a third alternative be considered, which would require no net increase in overall road length, meaning that an equal amount of roads as will be constructed will also be closed and restored. Roads would be redirected out of sensitive riparian areas. This measure would ensure that no additional smuggling routes are being created, and strengthen CBP's argument that the Coronado National Forest Road Construction Project is being done with environmental conservation in mind.
15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	BIOL	4	Invasive Species	There are already concerns in these areas about invasive plant species such as Lehmann lovegrass (<i>Eragrostis lehmanniana</i>) and buffelgrass (<i>Pennisetum ciliare</i>), both of which compete with native plant species and create unnatural fire conditions. Because Lehmann lovegrass produces many seeds and is well-adapted to fire and grazing, it easily out-competes other native plant species. Likewise, buffelgrass is fire-adapted and also crowds out native plant species. All of these impacts must be thoroughly evaluated and analyzed in the Draft Environmental Impact Statement.

15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	NEPA	4	Cumulative Impacts	In discussing the Fresno Wash road the notice states that "CBP currently accesses the border fence for patrol operations from spur roads..." What is the Customs and Border Protection designation of this section of border fence? Is it, for example, D-5 (pedestrian fencing), or DV-6, DV-7, or DV-8 (vehicle barriers)? What design is the fencing section that this road will intersect with? Have any environmental documents, such as an Environmental Assessment, Environmental Impact Statement, or Environmental Stewardship Plan, been completed for this section of fencing or any of CBP's roads in the vicinity? If such documents do exist they should be cited, and pdfs should be made available online. Any environmental studies or documents prepared for tactical infrastructure in the vicinity of the proposed Cantinas Reservoir and Sycamore Canyon roads should likewise be cited and made publicly available. The cumulative impacts of existing fencing and/or roads in the vicinity of the proposed roads should be described and discussed in detail.
15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	NEPA	4	Cumulative Impacts	Once finished, the renovated road could invite increased usage of off-road vehicles and associated cross-country travel. Roads and motorized uses can have serious detrimental effects on habitats and wildlife. These effects include direct, indirect, and cumulative impacts, ranging from mortality from vehicles, modification of animal behaviors, altered use of habitats, facilitation of the spread of exotic, invasive, and parasitic species, adverse genetic effects, and fragmentation of connected habitats. The Coronado National Forest Road Construction Project could have such an effect. This aspect and the cumulative impacts to the lands must be thoroughly analyzed in any subsequent NEPA documents.
15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	NEPA	5	Mitigation	We are concerned that, given CBP's past history of allowing contractors to ignore pledges made to land managers (SBNWR is only one example of many) similar pledges made regarding the Coronado National Forest Road Construction project may also be forgotten once construction begins.
15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	NEPA	5	Mitigation	We are concerned that similar pledges of mitigation measures that might be made in the NEPA documents for the Coronado National Forest Road Construction Project might also be ignored.
15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	NEPA	5	Mitigation	We suggest that CBP analyze cumulative impacts at similar, nearby project areas, such as the Zone 20 Road Project west of Nogales, AZ, prior to initiating the Coronado National Forest Road Construction Project.
15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	NEPA	5	Mitigation	[P]roviding promised mitigation to the Lower Rio Grande Valley NWR, and reaching out to the San Bernardino NWR and the Coronado National Forest, as well as other federally protected lands that have been impacted by CBP's past projects, to ensure that past harm has been fully addressed, would reduce the lack of faith that we and other stakeholders currently have in CBP's promises.
15-O	Organization	Dan Millis	Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Sky Island Alliance	NEPA	5	Mitigation	Mitigation cannot be relied on for a Finding of No Significant Impact for this project, since other CBP projects have shown inadequate mitigation or a complete lack of mitigation. An Environmental Impact Statement is meaningless without confidence that the mitigation that it identifies will be carried out.

5-G	Government	Diane L. Arnst	Arizona Department of Environmental Quality (ADEQ)	AIRQ	1	General	Your project is not located in a maintenance or nonattainment area for any air quality regulated pollutants. As described, it may have a de minimis impact on air quality. Disturbance of particulate matter is anticipated during construction. Considering prevailing winds, to comply with other applicable air pollution control requirements and minimize adverse impacts on public health and welfare, the following information is provided for consideration:
5-G	Government	Diane L. Arnst	Arizona Department of Environmental Quality (ADEQ)	AIRQ	1	General	This action, plan or activity may temporarily increase ambient particulate matter (dust) levels. Particulate matter 10 microns in size and smaller can penetrate the lungs of human beings and animals and is subject to a National Ambient Air Quality Standard (NAAQS) to protect public health and welfare. Particulate matter 2.5 microns in size and smaller is difficult for lungs to expel and has been linked to increases in death rates; heart attacks by disturbing heart rhythms and increasing plaque and clotting; respiratory infections; asthma attacks and cardiopulmonary obstructive disease (COPD) aggravation. It is also subject to a NAAQS.
5-G	Government	Diane L. Arnst	Arizona Department of Environmental Quality (ADEQ)	AIRQ	1	General	The following measures are recommended to reduce the disturbance of particulate matter, including emissions caused by strong winds as well as machinery and trucks tracking soil off the construction site: I. Site Preparation and Construction A. Minimize land disturbance; B. Suppress dust on traveled paths which are not paved through wetting, use of watering trucks, chemical dust suppressants, or other reasonable precautions to prevent dust entering ambient air; C. Cover trucks when hauling soil; D. Minimize soil track-out by washing or cleaning truck wheels before leaving construction site; E. Stabilize the surface of soil piles; and F. Create windbreaks. II. Site Restoration A. Revegetate any disturbed land not used; B. Remove unused material; and C. Remove soil piles via covered trucks.
5-G	Government	Diane L. Arnst	Arizona Department of Environmental Quality (ADEQ)	AIRQ	1	General	The following rules applicable to reducing dust from open areas, dry washes or riverbeds, roadways and streets are enclosed: Arizona Administrative Code R18-2-604 and R18-2-605; Arizona Administrative Code R18-2-804.
2-I	Individual	Gordon White		ACCESS	1	General	I do not agree with closing or restricting, to any US Citizen, any roads constructed with public monies.
4-G	Government	J.J. Salazar	Hidalgo County, New Mexico	BORD	1	General	Hidalgo County supports the proposed action. It is very important to improve access along the U.S. / Mexico border, especially in the Coronado National Forest; so that CBP can respond and execute their mission in a safe manner.
3-G	Government	James Cogswell	Arizona State Historic Preservation Office (SHPO)	NEPA	1	Coordination/Consultation	I look forward to consultation on this undertaking pursuant to Section 106 of the National Historic Preservation Act.

17-G	Government	Jean A. Calhoun	U.S. Fish and Wildlife Service	NEPA	1	Coordination/Consultation	Please continue to include me and add Jason Douglas (also same mailing address as below) to the mailing list for the 3 roads in the Coronado National Forest project.
13-O	Organization	Jim Chilton	Southern Arizona Cattlemen's Protective Association	BORD	2	Policy	To actually secure the international boundary between Nogales, Arizona and Sasabe, Arizona, a wall or fence must be completed to fill the existing 25-miles gap between Nogales and Sasabe, which is currently only a 4-strand, unpatrolled, barbed wire fence which ranchers have to maintain in order to keep their cattle in the United States and Mexican cattle in Mexico. This easily-cut fence does nothing to stop drug traffic.
13-O	Organization	Jim Chilton	Southern Arizona Cattlemen's Protective Association	DESI	2	Road Alignment	We are seriously concerned that the proposed roads on the Robinson Tres Bellotas ranch (Cross S allotment-Cantinas Reservoir) pass right in the front yards of the Robinson's houses and barns. The road should be located adjacent to a wall to be constructed on the Roosevelt easement at the international Boundary.
13-O	Organization	Jim Chilton	Southern Arizona Cattlemen's Protective Association	DESI	2	Road Alignment	No road should pass right in front of the Robinson's houses and barns since it would result in exposing the Robinsons to greater danger and violence. As a consequence, please locate a road south of the Robinson's privated deeded land next to a real, effective wall on the Roosevelt Easement.
13-O	Organization	Jim Chilton	Southern Arizona Cattlemen's Protective Association	DESI	2	Road Alignment	A road on the Roosevelt easement would minimize high speed chases and/or shootouts. Illegal trafficking whether it be people or narcotics would not be guided to our very doorstep with hijacking actions, Cartel violence, and essential USBP responses endangering family members, children, employees, or livestock.
12-O	Organization	Jim Terlep	Southern Arizona Hiking Club	ACCESS	1	General	In your letter of 3 January 2014, under Project Background is stated "Other current access roads are located in environmentally sensitive areas, and need to be relocated to reduce potential environmental impacts to cultural sites, sensitive species, and riparian areas." If current roads are being closed due to their potential environmental impact then the newly built roads must be open to the public to maintain historic access.
12-O	Organization	Jim Terlep	Southern Arizona Hiking Club	ACCESS	1	General	Your letter further states under Proposed Action "Selected roads may be gated and used for administrative purposes only". What is not stated is which roads and how many miles of roads will be gated for administrative purposes only. Will the gated roads be the newly built roads only or will the closures include existing roads or a combination of both? Why would existing roads, which have traditionally been open, be closed to the public through an administrative decision.
12-O	Organization	Jim Terlep	Southern Arizona Hiking Club	ACCESS	1	General	New roads for Border Patrol access should not be used as a means to close existing public roads.
12-O	Organization	Jim Terlep	Southern Arizona Hiking Club	ACCESS	1	General	Newly built roads must be open to the public to maintain historic access. That no roads be closed for administrative purposes. New roads for Border Patrol access should not be used as a means to close existing public roads.
12-O	Organization	Jim Terlep	Southern Arizona Hiking Club	ACCESS	1	General	If an existing road is closed for environmental reasons, then the new road is open to the public, to maintain access.
12-O	Organization	Jim Terlep	Southern Arizona Hiking Club	ACCESS	4	Recreation	We have a keen interest in maintaining full access to the roads necessary for continued recreation throughout and around the Nogales District of the Coronado National Forest (CNF).
12-O	Organization	Jim Terlep	Southern Arizona Hiking Club	ACCESS	4	Recreation	In the Fresnal Wash area we hike to Cumero Mountain, using FR 601, an extension of Antelope Drive and identified on the 2012 CNF Motor Vehicle Use Map as open for public use. This road not only provides hikers access to the far southwest corner of CNF but is part of loop drive which can be used by and birders in the Buenos Aires National Wildlife Refuge, bicyclists, OHV users, hunters and others.
12-O	Organization	Jim Terlep	Southern Arizona Hiking Club	ACCESS	4	Recreation	North of the Cantinas Reservoir area we have regularly hike to Fraquita Peak using either South Tres Bellotas Road (FR216) or Yellow Jacket Road (FR4157, 4164). We need to maintain our access to this peak as well as Black Mesa and the various canyons off the above roads, to include Aqua Carcada, Canancito, Mojonera, Sierra and Cochee Canyons.

12-O	Organization	Jim Terlep	Southern Arizona Hiking Club	ACCESS	4	Recreation	In the Sycamore Canyon Area we hike in Sycamore Canyon which is a hiking route to the Pajarita Wilderness. We use the road access (FR4112) to Yank Tank and hike a number of mountain peaks surrounding the proposed Sycamore Canyon road construction. These peaks include Bartolo Mtn, Dicks Peak, Murphy Peak, Montana Peak, Ramanote Peak, Bartlett Mtn, Chiminea Peak, Ruby Peak and Atascosa Peak and Lookout.
12-O	Organization	Jim Terlep	Southern Arizona Hiking Club	ACCESS	5	Travel Management Planning	CNF is in the process of a Travel Management Plan which specifically addresses the environmental impact of its road system.
12-O	Organization	Jim Terlep	Southern Arizona Hiking Club	ACCESS	5	Travel Management Planning	That the CNF Travel Management Plan be used for road management.
10-G	Government	John E. Hays	Santa Cruz County Flood Control District	HYDRO	1	Floodplains	Crossings of washes, creeks or other riverine areas draining more than 10 acres are considered regulatory under the Santa Cruz County Floodplain and Erosion Hazard Management Ordinance #2001-03 (http://www.co.santacruz.az.us/public_works/flood/pdf/Ordinance.pdf) and any improvements (grading, culverts, etc) are required, at a minimum, to be reviewed by the Flood Control District prior to the start of work. At a maximum, individual Floodplain Use Permits will be required, depending on the nature of the work.
10-G	Government	John E. Hays	Santa Cruz County Flood Control District	HYDRO	1	Floodplains	Driveway and Drainage Crossing Standards, http://www.co.santacruz.az.us/public_works/flood/pdf/DrivewayCrossingStandard.pdf , can be used in lieu of engineering, for smaller crossings where improvements are desired.
14-G	Government	John Windes	Arizona Game and Fish Department (AGFD)	ACCESS	1	General	We support the closure of selected roads or portion of roads to ensure protection of these resources provided that alternative public access is created.
14-G	Government	John Windes	Arizona Game and Fish Department (AGFD)	ACCESS	1	General	We were unable to determine, through this scoping notice, which portions of those new roads will be closed to the general public. We understand the need to reduce vehicle interference with daily operations segments of surveillance facilities. However, we are concerned with limiting general public access down these new roads if overall public access to an area is expected to be diminished by the action.
14-G	Government	John Windes	Arizona Game and Fish Department (AGFD)	BIOL	1	Heritage Data Management System	We have included sensitive species information from our Heritage Data Mangement System for your convenience.
14-G	Government	John Windes	Arizona Game and Fish Department (AGFD)	NEPA	1	Coordination/Consultation	The Arizona Game and Fish Department (Department) has reviewed the recent Coronado National Forest Road Construction Scoping Notice, dated January 3, 2014. The Department would like to coordinate with your office as this project moves forward. Examination of several alternatives to build a better road system that suits the public's and law enforcement's needs, while reducing impacts to wildlife and habitat is a worthwhile undertaking that the Department fully supports.
14-G	Government	John Windes	Arizona Game and Fish Department (AGFD)	NEPA	1	Coordination/Consultation	We would like to coordinate with your office prior to issuance of the EA for public comment to ensure any conflicts are resolved prior to the public comment period.
8-O	Organization	Judy Keeler	Bootheel Heritage Association	BORD	1	General	The proposed action appears to enable the CBP to safely and responsibly execute its statutory mission while protecting environmentally sensitive resources.
11-I	Individual	Lutz W. Dahlke		ACCESS	1	General	I am a responsible 4 wheeler and support 100% the building of new roads in our National Forest with public funds. However I am vehemently opposed to gating any roads for administrative purposes in our National Forest.
16-I	Individual	Lyle Robinson Lowell Robinson		ACCESS	1	General	That there be installed locked gates at each end of the connector road to maintain the Quiet Area as outline in the USFS travel management plan.
16-I	Individual	Lyle Robinson Lowell Robinson		BORD	2	Policy	We asked that a substantial fence be constructed along the border to block the roads coming out of Mexico in each of the canyons that the new road will cross. This we know will stop vehicles loaded with drugs or people from using the connector road. We also asked that this fence be constructed in a fashion that would also contain livestock in order that infectious diseases in Mexican livestock would not be transferred to US livestock. This type of fencing will also dramatically reduce the number of cattle being stolen by the drug traffickers that cross on horses and mules returning to Mexico.
16-I	Individual	Lyle Robinson Lowell Robinson		BORD	2	Policy	We asked that there be a continual presence of the USBP be in the area making sure that the area be protected. Having lived along the border for over 40 years we have seen a growing trend amongst the agents in that they are reluctant to be close to the actual border as they fear being targets for "Sicarios" (hitmen).

16-I	Individual	Lyle Robinson Lowell Robinson		BORD	2	Policy	In our view a road without the fence will cause many more security issues for our families, our livelihood, the agents in the area and the environment. If vehicle traffic is not stopped by a fence, smugglers will have a route from Sasabe to the Ruby road that they will be able to play cat and mouse with the USBP, endangering lives all the way through.
16-I	Individual	Lyle Robinson Lowell Robinson		DESI	2	Road Alignment	As the owners of the Tres Bellotas ranch (Cross S allotment) we have been involved from the beginning of the proposed road connection NFSR 4865 to NFSR 216-13.
16-I	Individual	Lyle Robinson Lowell Robinson		DESI	2	Road Alignment	We asked that if the connector road was built, that a bypass road be built to bypass our homes. In order that any illegal trafficking whether it be people or narcotics would not come to our very homes in high speed chases or shootouts with USBP endangering family members, children, employees or livestock.
9-I	Individual	Orin Witt		DESI	1	Design/Engineering	I am very concerned about the quality of road construction in remote areas of our state. Previous standards have been lax to non-existent, resulting in road surfaces that fail quickly during our monsoon seasons. Please include the following considerations in your design:
9-I	Individual	Orin Witt		DESI	1	Design/Engineering	Crown the road surface. A minimum of three inches of crown will shed run-off waters and prevents -or at least slows potholing.
9-I	Individual	Orin Witt		DESI	1	Design/Engineering	Provide ditches along both sides of the road and make them continuous. Borrow ditches provide a needed conduit for run off and they collect sediments that can be re-spread on the road surface to maintain the crown.
9-I	Individual	Orin Witt		DESI	1	Design/Engineering	Use large corrugated metal pipe and stabilized low water crossings at areas where washes cross the road. These flood control devices are expensive to install, but invaluable in keeping the road open during monsoon season.
18-O	Organization	Steve Scheumann	Huachuca Hiking Club	ACCESS	1	General	Fresnal Wash area. We support the proposed new roads and recommend they be added to the forest road system as "open to the public". Regarding roads they connect to, we further recommend the following roads be classified as "open to the public": 601-7.17R-1, 601-8.10R-1, and 601-8.41R-1. These latter roads are proposed to be restricted by the Nogales Ranger District Travel Management Plan but would greatly benefit the public interest if access is provided.
18-O	Organization	Steve Scheumann	Huachuca Hiking Club	ACCESS	1	General	Cantinas Reservoir area. We support the proposed new roads and recommend they be added to the forest road system as "open to the public". Regarding roads they connect to, we further recommend the following roads be classified as "open to the public": 216-13.44R-1, 216-13.44R-2, and 4168-1.90R-1. These latter roads are proposed to be restricted by the Nogales Ranger District Travel Management Plan but would greatly benefit the public interest if access is provided.
18-O	Organization	Steve Scheumann	Huachuca Hiking Club	ACCESS	1	General	Sycamore Canyon area. We support the proposed new road and recommend it be added to the forest road system as "open to the public". Regarding roads it connects to, we further recommend the following roads be classified as "open to the public": 4180 and 4181. These latter roads are proposed to be restricted by the Nogales Ranger District Travel Management Plan but would greatly benefit the public interest if access is provided, particularly considering the large expanse of forest land that is currently blocked off to the public in that area. Plus it would give forest visitors access to the Pajarita Wilderness boundary which is a popular destination in that area.
18-O	Organization	Steve Scheumann	Huachuca Hiking Club	ACCESS	4	Recreation	[I]f forest roads are needed to access portions of the forest for border security, these roads can and should be open for the general public to serve the public interest. Hunters, hikers, birders, and a wide variety of forest visitors should be able to access portions of the forest that otherwise would be inaccessible.
6-O	Organization	Thomas N. Johnson	Green Valley Hiking Club	ACCESS	4	Recreation	I have reviewed the proposed road construction projects in the three areas identified in the Coronado National Forest Road Construction Scoping Notice dated 3 January 2014 (Sycamore Canyon, Cantinas Reservoir and Fresnal Wash) and have determined that there will be no impact to the operations of the Green Valley Hiking Club.

APPENDIX B

Arizona SHPO Determination Letters

~~SHPO-2012-0787~~ (106949)
SHPO-2011-1580

1300 Pennsylvania Avenue NW
Washington, DC 20229



**U.S. Customs and
Border Protection**

Mr. James Garrison
State Historic Preservation Officer
Arizona State Parks
1300 W. Washington Street
Phoenix, AZ 85007

DELIVERED AUG 10 2012
RECEIVED
AUG 14 2012
ARIZONA STATE PARKS, N.P.O.

Subject: Cultural Resources Survey of 256 acres West of Fresno Wash, Coronado National Forest, in Support of Access and Maintenance of Roads to Existing Border Fence, U.S. Customs and Border Protection, U.S. Border Patrol, Tucson Sector

Dear Mr. Garrison:

U.S. Customs and Border Protection (CBP) intends to undertake new road construction and maintenance and repair of existing roads which provide access to an existing border fence at Fresno Wash in Coronado National Forest. An initial survey of existing roads which provide access to the legacy fence identified two archeological sites along or within those roads. During a site visit on March 1, 2012, CBP agreed with yourself and the representatives of Coronado National Forest that the best solution would be avoidance of these archeological sites. HDR/EOC has now completed a Class I Overview and Class III Cultural Resources Survey of 256 acres in the project vicinity for the primary purpose of identifying alternative routes which provide vehicular access to the legacy fence, but avoid cultural resources.

During the course of this survey, HDR/EOC identified three previously unrecorded archaeological sites [AZ DD:11:78 (ASM)/AR-03-05-02-829 (CNF), AZ DD:11:79 (ASM)/AR-03-05-02-830 (CNF) and AZ DD:11:80(AMS)/AR-03-05-02-831 (CNF)] and ten isolated occurrences. The survey also resulted in an update on the boundaries of two previously recorded sites AZ DD:11:10 (ASM)/AR-03-05-02-753(CNF) and AZ DD:11:14 (ASM)/AR-03-05-02-021 (CNF).

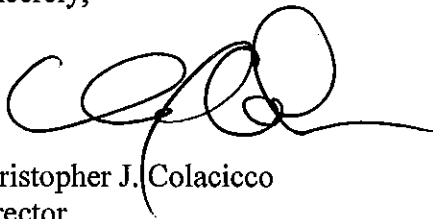
New access routes to the existing fence which successfully avoid all cultural resources and meet CBP operational requirements have now been identified. CBP has determined that the proposed new construction and maintenance of access roads will result in no adverse effect to any National Register of Historic Places-eligible resources.

I request your concurrence on our determinations of no effect on cultural resources as contained in the enclosed report. A signature line below is provided to facilitate your response. I request that you return the signed document via email to me at Christopher.Colacicco@dhs.gov. If you have questions or concerns about this project, please contact Mr. Steve Hodapp at (202) 326-4459. Thank you for your cooperation.

Mr. James Garrison

Page 2

Sincerely,



Christopher J. Colacicco
Director
Real Estate and Environmental Service Division
Border Patrol Facilities and Tactical Infrastructure
Program Management Office

Enclosures Cultural Resources Report

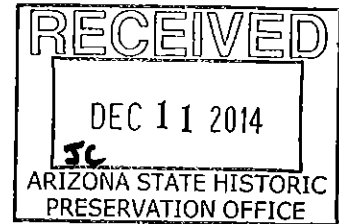
no NRHP-eligibility determinations made by CBP, but all sites will be avoided. Therefore, a finding of No Historic Properties Affected is appropriate

CONCURRENCE WITH THE NO EFFECT DETERMINATION FOR ROAD CONSTRUCTION AND MAINTENANCE AT FRESNAL WASH, CORONADO NATIONAL FOREST, TUCSON SECTOR, ARIZONA. *Subject to Coronado National Forest and Tribal concerns*

for *Samuel Capwell* *8/30/12*
Mr. James Garrison DATE
Arizona State Historic Preservation Officer
Arizona State Parks



**U.S. Customs and
Border Protection**



Mr. James Garrison
State Historic Preservation Officer
Arizona State Historic Preservation Office
1300 West Washington
Phoenix, AZ 85007

Subject: SHPO-2014-1037(121816) - Consultation with the Arizona State Historic Preservation Office for the Coronado Roads Environmental Assessment, Pima and Santa Cruz Counties, Arizona

Dear Mr. Garrison:

On September 22, 2014, U.S Customs and Border Protection (CBP), Tucson Sector initiated formal consultation with the Arizona State Historic Preservation Office (SHPO) under Section 106 of the National Historic Preservation Act for the Coronado Roads project on the Nogales Ranger District within the Coronado National Forest. The project areas are located within and adjacent to Cantinas Reservoir and Sycamore Canyon in the Nogales Range District, Pima and Santa Cruz Counties, Arizona, which abuts the U. S.–Mexico border.

A copy of the cultural resources survey report, *Archaeological Survey for Several Proposed Roads near the U.S.-Mexico International Border, Pima and Santa Cruz Counties, Arizona*, was transmitted along with the September 22, 2014 cover letter. In this cover letter, CBP recommended this project will have no adverse effect to historic properties and invited SHPO to review the cultural resources report and provide comments. On October 7, 2014, SHPO responded to CBP's initial request for comments on the submitted report, seeking clarification and additional information on the proposed project. To address SHPO's comments and technical concerns, the following actions were taken:

1. Additional fieldwork was conducted to document the portion of Ruby Road (AR-03-05-02-544) within the project area, evaluate the segment's integrity/eligibility for the National Register of Historic Places (NRHP), and evaluate the proposed project's potential for adverse effects on this segment.
2. Applicable provisions of the U.S. Forest Service Maintenance Level 2 Standards (Forest Service Handbook 7709.59, sec. 62.31) were added to the Project Description to address the concern over the construction of pullouts; the stipulation that pullouts would be constructed in surveyed areas was added.

Technical Concerns:

1. The General Land Office (GLO) research was discussed in the report and additional information on resources within the 1-mile radius, including Tres Bellotas Canyon, was incorporated into this section, as was an examination of the Roskrige Pima County 1893 map. Information on the Tres Bellotas Ranch was also added to the Cultural History.
2. The a discussion on the discrepancies associated with the locations of AZ DD:11:4(ASM), AR-03-05-02-003 and AR-03-05-02-789 were added to the Previous Research section.
3. Previous surveys on the maps in Appendix A (Maps A-1, 2, and 3) have been labeled.
4. All maps in the submitted report are at a 1:24,000 scale; however, the maps appear to have been reduced in size due to formatting or printing.
5. The missing text addressing NRHP eligibility was added to the bottom of Tables 3 and 5, respectively.

The questions and concerns raised in the October 7, 2014 letter have been addressed in the revised report. A copy of the revised report has been transmitted with this letter and resubmitted for additional review and comment. CBP will keep SHPO informed of consultation efforts and responses from the Coronado National Forest and the following tribes: San Carlos Apache Tribe, Tohono O'odham, White Mountain Apache, Pascua Yaqui Tribe, Salt River Pima-Maricopa Indian Community, San Carlos Apache Tribe, Gila River Indian Community, Hopi, Mescalero Apache Tribe, Ak-Chin Indian Community, Fort Sill Apache Tribe, Yavapai-Apache Nation, and Pueblo of Zuni.

We look forward to cooperating with you on this project and welcome your comments. Please do not hesitate to contact me or Mr. Steve Hodapp at any time should you have questions or comments. I can be reached at Paul.Enriquez@cbp.dhs.gov or 949-643-6365, and Mr. Steve Hodapp can be reached at Steve.Hodapp@cbp.dhs.gov or 202-325-4459.

Mr. James Garrison

Page 3

Thank you for your cooperation.

Sincerely,



Paul Enriquez
Environmental Branch Chief
Border Patrol Facilities & Tactical Infrastructure

Enclosure

cc: David Mehalic, USFS

CONCURRENCE WITH THE NO ADVERSE EFFECT DETERMINATION FOR
CORONADO NATIONAL FOREST ROAD PROJECT IN PIMA AND SANTA CRUZ
COUNTIES, ARIZONA

James Carroll
for Mr. James Garrison
Arizona State Historic Preservation Officer
Arizona State Parks

12/19/14
Date

Thank you for addressing my previous concerns.