United States Department of Agriculture

Coronado National Forest

Potential Wilderness Area Evaluation Report

Forest Service Southwestern Region Coronado National Forest July 2017

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Chapter 1: Introduction

As part of the forest plan revision process, the Coronado National Forest is required to undergo an assessment of areas that meet the criteria for potential wilderness. We followed the wilderness evaluation process as outlined in Forest Service Handbook 1909.12, Chapter 70. This process consists of three steps: identification of potential areas, evaluation of potential areas, and recommendation of potential areas. Documentation of the inventory process may be located in the Forest Plan Revision project record. This document covers the second step in the process, the evaluation of the potential areas. The recommendations that result from this evaluation are included in the Coronado National Forest revised forest plan. All three steps in the process are outlined in more detail below.

Identification of Potential Wilderness

The Forest Service handbook provides the following instructions for identifying potential wilderness:

> The first step in the evaluation of potential wilderness is to identify and inventory all areas within National Forest System (NFS) lands that satisfy the definition of wilderness found in section 2(c) of the 1964 Wilderness Act. (FSH 1909.12, Chapter 71)

The conditions for meeting the first step of the process on the Coronado National Forest are:

1. The area must be at least 5,000 acres in size or meet at least one of the following conditions:
    a. Can be preserved due to physical terrain and natural conditions
    b. Self-contained ecosystems, such as an island, that can be effectively managed as a separate unit of the National Wilderness Preservation System
    c. Contiguous to existing wilderness, primitive areas, Administration-endorsed wilderness, or potential wilderness in other Federal ownership, regardless of their size
2. The area must not contain forest roads (36 CFR 212.1) or other permanently authorized roads.
3. The area does not have any improvements beyond the scope allowed per FSH 1909.12 Ch. 71.11.
4. The area meets the criteria for dealing with roaded areas, fingers, and other extrusions developed by the Southwestern Region Wilderness Evaluation Working Group.
5. The area meets the statutory definition of wilderness as outlined in Section 2(c) of the Wilderness Act.

The Coronado National Forest lands were thoroughly analyzed to determine which areas met the above criteria for identification of potential wilderness. Thirty-three areas resulted from the analysis, as shown in appendix A. The potential wilderness areas under consideration include three wilderness study areas, nine additions to existing wilderness, one addition to a wilderness study area, and 20 new wilderness areas. Boundaries originally generated through a GIS exercise were adjusted using local knowledge to remove conflicts and to make the boundaries more easily locatable on the ground.

Evaluation of Potential Wilderness

Capability

The Forest Service handbook defines capability as:

> The capability of a potential wilderness is the degree to which that area contains the basic characteristics that make it suitable for wilderness recommendation without regard to its availability for or need as wilderness. (FSH 1909.12 Chapter 72.1)

During this stage, the 33 potential wilderness areas (PWAs) that were inventoried were evaluated for their capability. The PWAs were rated on 15 criteria, and a score for each area was determined. The criteria from FSH 1909.12 Chapter 72.1 relate to naturalness, opportunities for solitude or primitive and unconfined recreation, undeveloped, special features, and manageability. These criteria, listed in appendix B, were developed by the Southwestern Region Wilderness Evaluation Working Group for use in the Forest Service Southwestern Region (Arizona and New Mexico).

During the capability assessment process, each PWA was assigned a high, medium, or low rating on each criterion. A breakdown of these scores by PWA can be found in appendix E. An overall rating for each area was determined by the number of high, medium, or low ratings an area received. The number of high, medium, and low ratings was totaled and an overall average was determined for each area. If an area had eight or more high ratings for the 15 criteria, the area got a high rating for capability. Similarly, an area that received eight or more medium criterion ratings received an overall rating of medium, and eight or more low ratings was given a low rating overall.

According to Southwestern Region Special Area Guidance, “if an area is determined to have medium to low capability, it may be dropped from further evaluation.” Within the context of our evaluation, any area that received a low rating for capability was not evaluated for availability or need. After the capability evaluation was complete, two of the 33 PWAs were not considered for further evaluation, because they scored low for capability. These areas did not proceed to the availability and need assessments. These areas are listed in appendix J and a breakdown of the score for each area is available in appendix E. All of the PWAs that rated medium or high were analyzed for both availability and need—there were no further eliminations during those stages of the process.

Availability

The Forest Service handbook provides the following direction on the availability of an area as potential wilderness:

> All National Forest System lands determined to meet wilderness capability requirements are considered potentially available for wilderness designation. However, the determination of availability is conditioned by the value of and need for the wilderness resource compared to the value of and need for other resources. (FSH 1909.12 Chapter 72.2)

The availability of an area for wilderness designation is based on the tradeoffs involved in managing the area for wilderness character versus current and potential future uses. During this step, the remaining 31 PWAs were analyzed to determine their potential for other resource uses including:

- recreation, including tourism
- wildlife species, population, and management needs,
- water availability and use,
- livestock operations,
- timber,
- minerals,
- cultural resources,
- authorized and potential uses, and
- management considerations including fire, insects, disease, and presence of non-Federal lands.[1]

Wilderness management imposes restrictions on the use of motorized equipment in the wilderness, on motorized and mechanized travel within the wilderness, and on the construction of new roads. Additionally, some management actions require the approval of the regional forester before they can be implemented in designated wilderness. These factors must be considered when determining the availability of an area for wilderness designation.

In some areas, the management of a particular resource or program may benefit from the wilderness restrictions. In that case, the availability for wilderness designation is rated high with regard to the resource. However, if the wilderness restrictions negatively affect management of a resource, then the area is rated low for availability with regard to the resource. Often wilderness designation has a mixed impact on other resources, both positive and negative effects. If there is no net positive or net negative impact, or if the balance between the positive and negative effects is unclear, the availability is rated as medium. Areas with few or no conflicting uses are ranked high for availability. The criteria are listed in appendix C, along with an explanation of the rating process. A breakdown of the score for each area is available in appendix F.

Need

Forest Service handbook direction regarding need for wilderness:

> Determine the need for an area to be designated as wilderness through an analysis of the degree to which it contributes to the overall National Wilderness Preservation System. … Deal with "need" on a regional basis and evaluate such factors as the geographic distribution of areas and representations of landforms and ecosystems. (FSH 1909.12 Chapter 72.3)

The need assessment rated the PWAs on six factors that can be found in FSH 1909.12 Chapter 72.31. These factors consider the following:

- wilderness lands in the vicinity
- visitor pressure
- nonwilderness lands in the vicinity[2]
- primitive sanctuary for plants and wildlife

[1] (Source: FSH 1909.12, Chapter 74)

[2] The need assessment considers nonwilderness lands in the vicinity that are likely to provide opportunities for unconfined outdoor recreation experiences

- capacity of established wilderness areas
- wilderness areas with similar landforms and vegetation

The criteria and procedures for rating the PWAs according to these factors can be found in appendix D. Public review and comment must also be considered in the need assessment, although there are no ratings associated with this component. A separate report entitled Coronado National Forest Wilderness Need Evaluation has been prepared discussing the need evaluation in detail and is available at http://www.fs.usda.gov/detail/coronado/landmanagement/planning/?cid=fswdev7_018673. This report includes a detailed analysis of each of the above factors and findings for each potential wilderness area. The information provided for need discussions in this report is a summary of the findings in that report.

Public Involvement and Alternative Development

Public involvement and input is an essential component of the evaluation process. Beginning in March 2010, six open-house events were held in geographic locations across the Forest's service area to present the draft revised forest plan and plan-related documents to the public. Initial evaluations of ten potential wilderness areas were shared to elucidate public input on the need for new wilderness areas. These ten potential wilderness areas include the Chiricahua Addition South (formerly Chiricahua Addition), Dragoon, East Catalina, Galiuro Addition, Mount Wrightson Addition, Ku Chish (formerly North Chiricahua), Samaniego Ridge, Tumacacori, Whetstone, and Winchester Potential Wilderness Areas. Approximately 200 individuals attended, representing 54 groups and organizations. Each open house was structured to provide flexibility to attendees, in that they did not need to commit a specific or large block of time to participate. However, many people stayed for two hours or more, engaging in discussions with the resource specialists and other participants.

From 2011 to 2012, the Coronado National Forest planning team completed a second inventory of potential wilderness areas on the forest. This additional step was completed in an effort to obtain a more comprehensive inventory of potential wilderness areas, and in response to public commentary. The Coronado National Forest lands were thoroughly analyzed to determine which areas met the criteria for identification of potential wilderness. A total of thirty-three areas resulted from the secondary analysis, as shown in appendix A.

In March 2012, after considering internal input and the information in the evaluation report, the Forest Leadership Team recommended to include the following areas in alternatives for the revised Forest Plan: Ku Chish, Mount Graham WSA, Chiricahua Addition North, Chiricahua Addition West, Whetstone, Bunk Robinson WSA, Whitmire Canyon WSA, Mount Wrightson Addition, Mount Fagan, Tumacacori, Dragoon, Winchester, Santa Teresa Addition North, Santa Teresa Addition South, Galiuro Addition, and Jhus Canyon. Collectively, these areas represent the following categories of potential wilderness on the Coronado National Forest: wilderness study areas, high interest areas according to public commentary, additions to existing wilderness that present manageable land areas, areas with minimal or no motorized use due to rugged terrain and remoteness, and areas that rate highly for both capability and need. The procedure for assembling a comprehensive selection of additional wilderness areas appropriately considered the management concerns and availability issues that come with a large expansion of recommended wilderness on national forest lands.

In November 2013, the draft potential wilderness area evaluation report was shared with the public for feedback, in conjunction with the 90-day public comment period for the revised forest plan and draft environmental impact statement (DEIS). The formal 90-day comment period was extended to 104 days to provide additional opportunities for public involvement in the environmental review and plan revision processes. During the comment period, the planning team hosted public meetings in Arizona at the following locations: Douglas on December 2, 2013, Rio Rico on December 3, 2013, Sierra Vista on December 17, 2013, Safford on January 9, 2014 and Tucson on January 13, 2014.

In May of 2014, the Forest invited individuals and organizations to attend a "Wilderness Workshop" to specifically discuss and prioritize those areas under consideration for recommendation for wilderness designation. Public feedback regarding potential wilderness areas was considered and later incorporated into the revised forest plan, as appropriate.

Recommendation of Potential Wilderness

This document, the report on potential wilderness evaluation, was used by the leadership of the Coronado National Forest to determine if any of the candidate areas would be forwarded to the regional forester (the deciding official) for consideration. The forest supervisor's recommendations to the regional forester are documented in the proposed revised Coronado National Forest Land and Resource Management Plan (also known as the forest plan), and public comments were accepted and considered throughout the plan revision process. There are no recommendations contained within this document, only an analysis of the potential wilderness areas.

This document does analyze potential outcomes of recommending or not recommending each area, given the range of alternatives considered in the forest plan revision. The Effects of Recommendation analysis evaluates: (1) the interim management direction in the proposed action and Alternative 1 as the basis for a recommended wilderness scenario in each area and (2) the impact on the area if it were designated by Congress. This is appropriate because the amount of time between an agency recommendation and final action by Congress has been highly variable, taking between a few months and several decades to complete. For the nonwilderness scenario, the potential outcomes of plan alternatives that do not recommend that potential wilderness area are evaluated. This analysis synthesizes the findings from the Environmental Impact Statement (EIS) and associated specialist reports, and considers site-specific issues that were evaluated as part of the capability, availability and need analysis. Any areas analyzed in this report are eligible for recommendation in the revised forest plan. This means that even if the areas are not part of the proposed action for the revised forest plan, it does not mean their recommendation cannot be part of the final plan that is approved in the record of decision. Likewise, even though an area is in the proposed action, it may not be carried forward in the final decision.

All of the potential wilderness areas recommended by the regional forester in the forest plan will receive further review by the Chief of the Forest Service. If the Chief intends to move forward with a wilderness recommendation, the Forest Service will complete a detailed analysis of the tradeoffs in accordance with the National Environmental Policy Act. Although the Chief can recommend areas for inclusion in the National Wilderness Preservation System, it takes an act of Congress to designate a wilderness area.

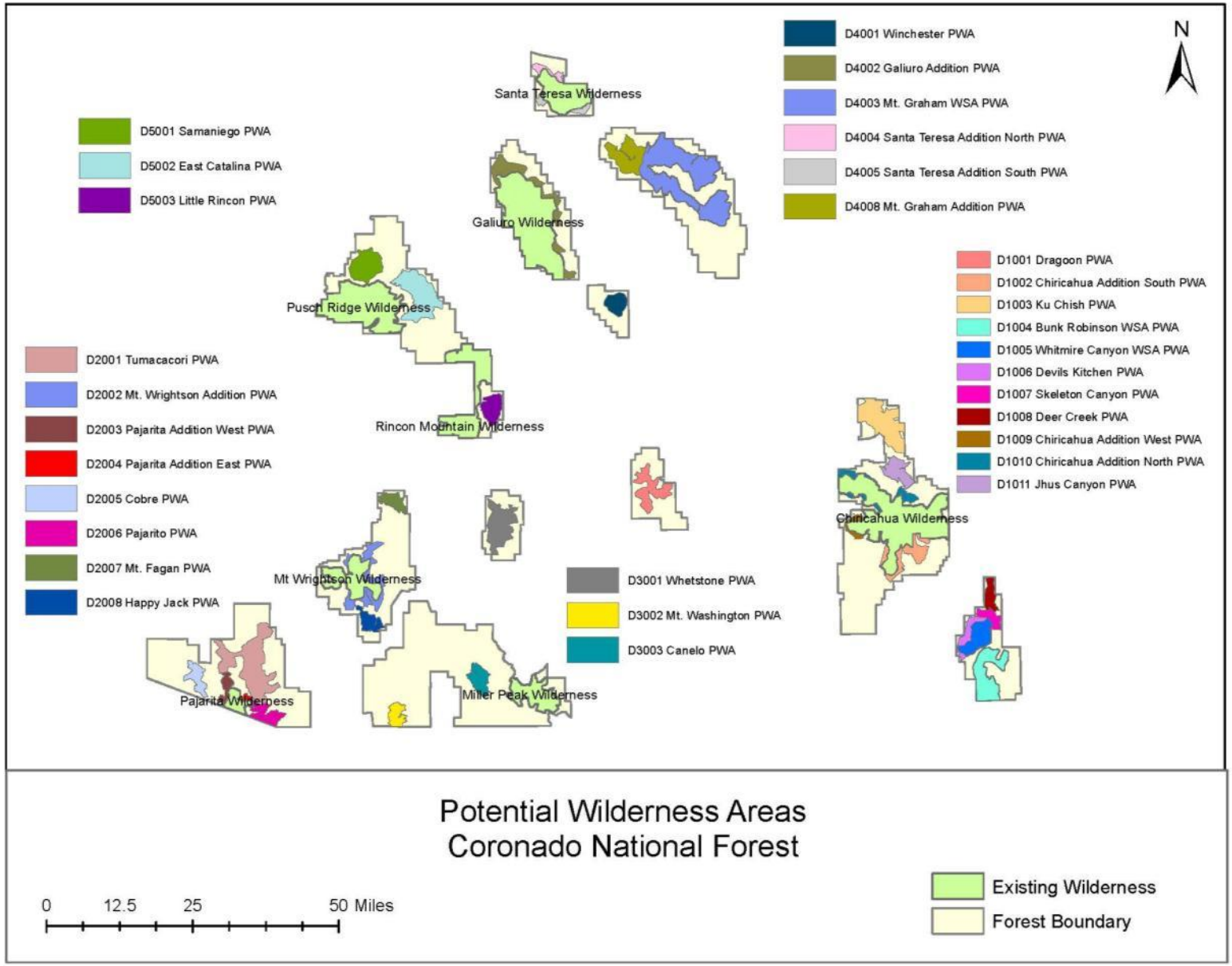


Figure 1. Areas evaluated for potential wilderness on the Coronado National Forest

Chapter 2: Individual Potential Wilderness Area Evaluations

Potential wilderness areas are displayed in Figure 1.

Dragoon Potential Wilderness Area Evaluation [PW-05-03-D1-001]

Area Overview

Size and Location: The Dragoon Potential Wilderness Area encompasses 14,251 acres. This area is located in the Dragoon Mountain Range that is part of the Douglas Ranger District of the Coronado National (see Map 1 at the end of this document). The Dragoon PWA is overlapped by 8,897 acres of the Middle Dragoon Inventoried Roadless Area, comprising 62 percent of the PWA.

Vicinity, Surroundings and Access: The potential wilderness area is approximately 92 miles east of Tucson, Arizona in the Cochise Stronghold area of the Dragoon Mountains. There are three small incorporated communities (Benson, Tombstone and Willcox) near the Dragoon Mountain Range and four unincorporated communities (Dragoon, St. David, Pearce, and Sunsites) that are in close proximity. Interstate Highway 10 connects the Tucson metropolitan area to the Benson, Dragoon and Willcox and to U.S. Highway 191, the primary north-south artery on the east side of the Dragoon Mountains.

The primary motorized access route into the National Forest on the east side of the Dragoon Mountains is via Ironwood Road, a Cochise County-maintained road that runs from U.S. Highway 191 and the community of Sunsites to the proclaimed Forest boundary. Ironwood Road becomes Cochise Stronghold Road (NFS[3] Road 84) at the proclaimed Forest boundary and continues to the Cochise Stronghold Campground and the trailhead for Cochise Trail (NFS Trail 279) in East Stronghold Canyon. Cochise Trail provides nonmotorized trail access through the potential wilderness area; it also connects East and West Stronghold Canyons and connects to Middlemarch Canyon Trail (NFS Trail 278).

Primary motorized access into the national forest from the south into the Dragoon Mountains is via Middlemarch Road, a Cochise County-maintained road, which connects State Route 80 and U.S. Highway 191. The Middlemarch Road becomes Middlemarch Pass Road (NFS Road 345) within the proclaimed Forest boundary. From Middlemarch Pass Road there are three roads that head north and that provide access further into the Dragoon Mountains and the potential wilderness area. China Peak Road (NFS Road 697) provides motorized access that requires a high-clearance four-wheel-drive vehicle to Gordon Camp, which is within approximately 2,000 feet of the potential wilderness area. Sorin Road (NFS Road 345A) provides motorized access that requires a high-clearance four-wheel-drive vehicle that ends within several hundred feet of the potential wilderness area. Slavin Road (NFS Road 687) also provides motorized access to the mouth of West Stronghold Canyon and West Stronghold Road (NFS Road 688). West Stronghold Road continues into West Stronghold Canyon to Cochise Trail. Cochise Trail also connects to Middlemarch Canyon Trail (NFS Trail 277). Also accessible from Slavin Road is the Slavin

[3] NFS = National Forest System

Gulch Trail (NFS Trail 332), which provides nonmotorized trail access into and through the potential wilderness area.

Primary motorized access into the National Forest on the northwestern side of the Dragoon Mountains was historically via Fourr Ranch Road, a Cochise County-maintained road, to Fourr Canyon Road (NFS road 4236) and Cave Spring Road (NFS road 4235). Cave Spring Road had provided motorized access that required a high-clearance four-wheel-drive vehicle to within half a mile of the of the potential wilderness area. However, the Fourr Ranch Road and Fourr Canyon Road are now gated and locked on the private land adjoining the proclaimed Forest boundary at the mouth of Fourr Canyon.

Although there appears to be adequate motorized road and nonmotorized trail access to the east, west and south sides of the potential wilderness area, permanent legal public access to Middlemarch Pass Road could become an issue in the future. In addition, there is no motorized road or nonmotorized trail access to the portion of the potential wilderness area north of Cochise Trail.

Boundaries: The boundary of this PWA largely follows natural features, such as ridgelines and high points, in the Dragoon Mountains. A portion of the northern boundary follows Fourr Canyon Road (NFS Road 4236) and Cave Spring Road (NFS Road 4235).

Geography and Topography: The Dragoon Potential Wilderness Area (PWA) is located in the north-northwest-trending Dragoon Mountains, which is bounded on the east by the Sulphur Springs Valley and on the west by the San Pedro River Valley. Covering an area of 14,251 acres, the Dragoon PWA is situated along the steep, western flank of the north-central portion of the range, extending from Mount Glenn in the north to Sheepshead Peak in the south. It rises from 5,000 feet above sea level at Slaven Gulch along the western range front to a maximum elevation of 7,519 feet at Mount Glenn along the crest of the range. The precipitous granitic cliffs along the east-central boundary of the PWA are locally known as Cochise Stronghold, the rugged natural fortress where the famous Chiricahua Apache chief Cochise and his followers sought refuge from their foes during the 1860s.

The Dragoon mountain range is typical of the fault-bounded, structurally uplifted blocks within the Mexican Highlands Subprovince of the Southern Basin and Range Province in southeastern Arizona. Its geology is characterized by Precambrian age schist and granite overlain by a sedimentary package ranging from Cambrian to Cretaceous in age. These rock units were intensely folded and faulted prior to being cut by a strongly altered, fine-grained granitic stock of late Cretaceous to early Tertiary age at the northeast end of the range and engulfed by two generations of middle Tertiary granitic intrusive rocks in the north-central portion of the range. The large, coarse-grained granitic body exposed at Cochise Stronghold contains anomalous amounts of fluorite and is the principal rock unit exposed within the Dragoon WPA.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland communities. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Q. emoryi*), gray oak (*Q. grisea*), Mexican blue oak (*Q. oblongifolia*), and Toumey oak (*Q. toumeyi*). Other tree species, including border pinyon (*Pinus discolor*), Arizona cypress (*Hesperocyparis arizonica*), alligator juniper (*Juniperus deppeana*) and interior chaparral species including manzanita spp. (*Arctostaphylos* spp.), desert ceanothus (*Ceanothus greggii*), mountain mahogany (*Cercocarpus montanus*), silktassles (*Garrya wrightii*), Stansbury cliffrose (*Purshia stansburiana*), shrub live oak (*Quercus turbinella*) and sumacs (*Rhus* spp.), may be present but do not codominate. Rosette

scrub species are also common such as agaves (*Agave* spp.), yuccas (*Yucca* spp.) and sotol (*Dasylirion wheeleri*). The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) or Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and obligate riparian species, including velvet ash (*Fraxinus velutina*), Arizona walnut (*Juglans major*) and willow (*Salix* spp.). Historically, some areas near canyon bottoms were logged to provide wood for nearby mines, but second growth has matured. Fire suppression has allowed for more dense stands than may have been present historically. In addition to the woodlands, over 15 percent of this potential wilderness is sparsely vegetated due to rock outcrops.

Current Uses: Visitors use this PWA for a variety of recreational activities. The four trails running through the area are used for hiking and horseback riding. Adjacent roads are used for motorized touring and dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. Two National Forest System roads are currently in use and located within the PWA, but are recommended for decommissioning. Approximately ¼ mile from the east boundary, there is a developed recreation area, Cochise Stronghold Campground (which includes a campground, a nature trail, and an interpretive trail), and visitors to this area sometimes wander into the PWA. West Cochise Stronghold, on the west side of the PWA, is a very popular dispersed recreation area, and visitors in this area may cross into the PWA. Topography is rugged, so there is very limited cross-country travel through the PWA. There are five grazing allotments within the Dragoon Potential Wilderness Area. All of these allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

The ruggedness of the Dragoon Potential Wilderness Area has allowed it to retain a semiprimitive setting. There is moderate diversity of vegetation within the PWA boundary, with the area having five of the nine major vegetation communities identified on the Coronado National Forest. The area is habitat for leopard frogs and peregrine falcons. This area of the Dragoon Mountains does not have perennial rivers or streams and there are no know water quality issues. However, there has been mining activity in the past that may impact water quality, but no water samples have been tested. Night skies can be clearly seen and light pollution is not evident. The riparian area is currently dominated by invasive, nonnative plants including Lehmann lovegrass, which detract from the area's wilderness capability.

Undeveloped

The Dragoon Potential Wilderness Area also has had a long history of human use and settlement, as is evident in its historic and prehistoric sites and structures. Historically the area has had several mining activities and there are obvious signs of this activity within the area.

Opportunities for Solitude or Primitive and Unconfined Recreation

A person could find a short-term experience of solitude, serenity, self-reliance and hiking and climbing away from the main roads within this potential wilderness area. However, the sights and sounds from activities surrounding the roads, trails and developed facilities in close proximity to the area detract from the primitive and challenging nature of recreation in the area. The small size of the area limits opportunities for long backpacking trips. It is possible to experience both visible and audible signs of civilization adjacent to the PWA boundary, which may detract from feelings of isolation.

Special Features

The unique rock formations found here are important as a wilderness characteristic. The area is important to several Native American tribes and has several historic and prehistoric archeological sites. The area is home to a pair of nesting falcons.

Manageability

The boundary of the Dragoon Potential Wilderness Area is irregular in its interior due to the exclusion of the Cochise Stronghold Campground and NFS Roads 688, 84, 345A and 697. The four-wheel-drive roads that are in close proximity to the area are heavily used, but the terrain prevents vehicles from driving into the PWA. There are no additional boundary changes that would enhance the area's wilderness character. Given these conditions, this area holds some challenges in managing it for wilderness characteristics.

The Dragoon Potential Wilderness Area overall was rated as **medium** for capability (for individual scores, see appendix E).

Availability

In the Dragoon Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. One activity that does conflict with wilderness management is the annual wildlife survey done with the use of helicopters flying over the area. There are four threatened or endangered species that may be located in the PWA that may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Watersheds within the area are properly functioning and there are no water impoundments or need at this time to install impoundments. There are no ecosystem restoration activities currently planned for the area. However, the area is in need of vegetation treatments and there is the potential for such activities in the future. Mastication of Manzanita every 15 years has been proposed, with planned ignitions introduced every 10 years, in accordance with Chiricahua FireScape. The area is committed through contracts and permits for livestock grazing and outfitter guides. These current authorizations do not conflict with wilderness management or detract from wilderness qualities. There is no potential for timber extraction. There is little or no potential for extraction of locatable minerals. There are no cultural resources that will be affected by wilderness management. The Dragoon Potential Wilderness Area is entirely National Forest

System lands, as is the adjacent land. The closest private land is approximately 0.1 mile from the PWA boundary, but likely won't impact the wilderness character of the area.

The Dragoon Potential Wilderness Area overall was rated as **high** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of this potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Dragoon Potential Wilderness Area, there are 19 designated wilderness areas totaling about 510,000 acres (see Table 1).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 1. Designated wilderness within 100 miles of the Dragoon Potential Wilderness Area

Wilderness Area	Acres
Aravaipa Canyon Wilderness	19,790
Baboquivari Peak Wilderness	2,040
Chiricahua National Monument Wilderness	10,290
Chiricahua Wilderness	87,700
Coyote Mountains Wilderness	5,100
Dos Cabezas Mountains Wilderness	11,700
Fishhooks Wilderness	10,500
Galiuro Wilderness	76,317
Miller Peak Wilderness	20,191
Mount Wrightson Wilderness	25,260
Needle's Eye Wilderness	8,760
North Santa Teresa Wilderness	5,800
Pajarita Wilderness	7,422
Peloncillo Mountains Wilderness	19,440
Pusch Ridge Wilderness	56,933
Redfield Canyon Wilderness	6,600
Rincon Mountain Wilderness	38,950
Saguaro Wilderness	70,950
Santa Teresa Wilderness	26,780
TOTAL	510,523

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about three times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Dragoon Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Dragoon Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Dragoon Potential Wilderness Area includes 5 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 2). Of these five vegetation communities, the Dragoon PWA would only contribute an additional 0.1 percent to wilderness in the following vegetation types: Interior Chaparral and Madrean Encinal Woodland. The vegetation communities in the Dragoon PWA consist of 83.80 percent regionally underrepresented vegetation types, therefore the PWA rates in the medium range (50-90 percent) for this factor.

Table 2. Southwestern Region underrepresented vegetation communities found in the Dragoon Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Dragoon PWA	Percent of Dragoon PWA	Percent Addition to Wilderness with Dragoon PWA
Interior Chaparral	1,116	16.0	0.1
Madrean Encinal Woodland	4,267	61.1	0.1
Madrean Pine Oak Woodland	385	5.5	0.0
Mixed Conifer Forest	2	0.0	0.0
Riparian Areas	81	1.2	0.0
Grand Total	**5,851**	**83.8%**	**0.2%**

The Dragoon Potential Wilderness Area overall was rated as **low** for Need (for individual scores, see appendix G).

Chiricahua Addition South (formerly Chiricahua Addition) Potential Wilderness Area Evaluation [PW-03-05-D1-002]

Area Overview

Size and Location: The Chiricahua Addition South Potential Wilderness Area encompasses 11,684 acres. This area is located in the southern Chiricahua Mountains and is adjacent to the existing Chiricahua Wilderness. The Chiricahua Mountains are part of the Douglas Ranger District of the Coronado National Forest in Southeastern Arizona (see Map 2 at the end of this document). The Chiricahua Addition South PWA is overlapped by 7,397 acres of the Chiricahua Inventoried Roadless Area, comprising 63 percent of the PWA.

Vicinity, Surroundings and Access: This potential wilderness area is approximately 110 miles southeast of Tucson, Arizona in the Blind and Price Canyons of the southeastern corner of the Chiricahua Mountains. The potential wilderness area adjoins the Chiricahua Wilderness Area and is completely surrounded by National Forest System (NFS) lands. Nearby on the eastern side of the Chiricahua Mountain Range are the incorporated community of Douglas and several unincorporated communities (Apache, Chiricahua, Pearce and Sunsites).

State Route 80, located on the eastern side of the Chiricahua Mountains, connects Douglas, Arizona with several small unincorporated southeastern Arizona and southwestern New Mexico communities as well as with Interstate 10 near Road Forks, New Mexico. U.S. Highway 191, located on the western side of the Chiricahua Mountains, is the primary north-south artery from Interstate 10 south to Douglas and the international boundary with Mexico.

One of the two primary motorized access routes into and through the national forest at the southern end of the Chiricahua Mountains is the Tex Canyon Road/Rucker Canyon Road (NFS Road 74). This road is a Cochise County-maintained road, except for the portion within the proclaimed national forest boundary from State Route 80 (Tex Canyon Road) and U.S. Highway 191 (Rucker Canyon Road).

Tex Canyon Road (NFS Road 74) provides motorized access to Pine Gulch Road (NFS Road 719), which connects to NFS Trail 235 (Pine Gulch Trail). Pine Gulch Trail provides nonmotorized trail access into the designated Chiricahua Wilderness and to Cottonwood Trail (NFS Trail 233). Cottonwood Trail provides nonmotorized trail access through the Chiricahua Wilderness into and through the adjoining potential wilderness area into Price Canyon and to Price Canyon Road (NFS Road 317). Tex Canyon Road (NFS Road 74) also provides motorized access to NFS Road 4248, which provides motorized access for high–clearance, four-wheel-drive vehicles to Cottonwood Trail (NFS Trail 233).

The second primary access route into the National Forest at the southern end of the Chiricahua Mountains is Price Canyon Road. The Price Canyon Road becomes NFS Road 317 at the proclaimed national forest boundary and provides motorized access to Cottonwood Trail (NFS Trail 233).

Although there appears to be adequate motorized and trail access to the Chiricahua Addition South Potential Wilderness Area, permanent legal public access via Tex Canyon Road/Rucker Canyon Road and Price Canyon Road may become an issue in the future.

It is unknown if any documented right-of-way for the existing road system exists across the non-Federal lands outside the proclaimed national forest boundary. Permanent legal public access to

the National Forest System lands and the potential wilderness area in the southeastern corner of the Chiricahua Mountains will continue to be issue.

Boundaries: The boundary of the Chiricahua Addition South Potential Wilderness Area is located at the most southern portion of the Chiricahua Wilderness. A portion of the northeast boundary follows Horseshoe Canyon Road (NFS Road 314). A small section of the southern boundary was redrawn to exclude an area that was recently masticated. The majority of the boundary is recognizable through natural features, such as ridgelines and high points, in the Chiricahua Mountain Range. The entire northern boundary is made up of the existing Chiricahua Wilderness.

Geography and Topography: Adjoining the southeastern edge of the existing Chiricahua Wilderness, the Chiricahua Addition South PWA is a narrow, north-trending arc-shaped area covering 11,684 acres. The PWA rises from a low point of 5,550 feet above sea level along the eastern range front to a maximum elevation of 7,810 feet at Dobson Peak along the ridge crest that forms the common boundary between the existing Chiricahua Wilderness and the PWA.

The Chiricahua Addition South PWA lies along the eastern range front of the north-south-trending Chiricahua Range, which is typical of the Mexican Highlands Subprovince of the Southern Basin and Range Province in southeastern Arizona. This range is bounded by San Simon and San Bernardino Valleys to the east and Sulphur Springs Valley to the west. Located in the west-central portion of the Chiricahua Mountains, the Turkey Creek volcanic center was the site of a series of massive volcanic eruptions approximately 22 to 32 million years ago. This volcanic event produced the voluminous outcrops of silica-rich volcanic rocks, mostly rhyolite, which dominate the central portion of this range, where it locally attains thicknesses up to 1,400 feet. Older geological units consisting of Precambrian granite and schist and sedimentary strata of early Paleozoic to Cretaceous age are exposed in the northern and southern portions of the range where erosional windows have developed within the overlying volcanic cover. This PWA overlooks one of the youngest volcanic fields in Arizona, which lies in the San Bernardino Valley to the southeast. Widespread silica-poor (i.e., basaltic) volcanism occurred in this area three to 0.3 million years ago, forming a moon-like landscape characterized by 135 cinder cones and five huge craters.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland communities. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), gray oak (*Quercus grisea*), Mexican blue oak (*Quercus oblongifolia*) and Toumey oak (*Quercus toumeyi*). Other tree species [including border pinyon (*Pinus discolor*), Chihuahua pine (*Pinus leiophylla*) Arizona cypress (*Hesperocyparis arizonica*) and alligator juniper (*Juniperus deppeana*)] and interior chaparral species [including manzanita spp. (*Arctostaphylos* spp.), desert ceanothus (Ceanothus *greggii*), mountain mahogany (*Cercocarpus montanus*), silktassles (*Garrya wrightii*), Stansbury cliffrose (*Purshia stansburiana*), shrub live oak (*Quercus turbinella*) and sumacs (*Rhus* spp.)] may be present but do not codominate. The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*) and willows (*Salix* spp.). Historically, some

areas near canyon bottoms and in the more gentle terrain were logged to provide wood for nearby mines, but second growth has largely matured. The Horse2 fire burned most if not all of this area, much of it was classified as a high severity burn during the BAER assessment.

Current Uses: Visitors use this PWA for a variety of recreational activities. These lands lie adjacent to the Chiricahua Wilderness. Two trailheads and four trails lie within the area, and trails are used for hiking and horseback riding. There are no roads within the area or adjacent to the area. The Rucker-Tex Canyon scenic drive is less than ½ mile away from the PWA, and visitors along this road may camp or hike within the PWA. Approximately ½ mile from the boundary are three developed recreation areas (Rucker Trailhead, Rucker Lake Campground, and Rucker Forest Camp), and visitors to these areas may occasionally venture into the PWA. Topography is rugged, so there is very limited cross-country travel through the PWA. There are two grazing allotments within the Chiricahua Addition South Potential Wilderness Area. Both of these allotments are active with valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

The location of the Chiricahua Addition South Potential Wilderness Area has allowed it to retain a semiprimitive setting. Diversity of vegetation within the potential wilderness area boundary includes grasslands, shrubs and rocky slopes. The area of the Chiricahua Addition South does not have perennial rivers or streams. There may be water quality issues due to the proximity of the area to a past wildfire and Manzanita mastication project, but no water quality sampling has been done. Night skies can be clearly seen and light pollution is not evident. However, one feature detracts from the area's wilderness capability, the presence of isolated spots of Lehmann lovegrass.

Undeveloped

The Chiricahua Addition South Potential Wilderness Area has had a history of human use, but currently the area does not have noticeable evidence of human activity.

Opportunities for Solitude or Primitive and Unconfined Recreation

A person could find an experience of solitude, serenity, self-reliance and hiking and backpacking within this potential wilderness area. Individuals venturing into this remote and steep country would find and experience challenging opportunities.

Special Features

The unique rock formations found here are important as a wilderness characteristic. The area consists of Mexican spotted owl habitat. However, opportunities for education or research are limited.

Manageability

The boundary of the Chiricahua Addition South Potential Wilderness Area is located at the most southern portion of the Chiricahua Wilderness, with limited influence from the surrounding land. There is a dude ranch operation in close proximity that could have a moderate influence. The area is adjacent to NFS Roads 317 and 4353, but these roads are not heavily used. Given these conditions, this area holds some challenges in managing it for wilderness characteristics. An adjustment to the boundary was made to exclude a southern portion of the initially proposed PWA due to mastication treatments in the area up to 20 percent slope. This adjustment enhances wilderness character and improves manageability by removing an area where mechanized equipment has been both historically and presently used in abundance. The majority of the boundary is recognizable through natural features.

The Chiricahua Addition South Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Chiricahua Addition South Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. The Chiricahua Mountains contain eight threatened or endangered species that may be located in the PWA that may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Watersheds within the area are properly functioning and there are no water impoundments or need at this time to install impoundments. The area is committed through contracts and permits for livestock grazing and outfitter guides. These current authorizations do not conflict with wilderness management or detract from wilderness qualities. Vegetation treatments include planned and unplanned ignitions every 10 years, in accordance with Chiricahua FireScape. There is no potential for timber extraction. There is little or no potential for extraction of locatable minerals. There are no cultural resources that will be affected by wilderness management. The Chiricahua Addition South Potential Wilderness Area is composed entirely of National Forest System lands, as is the land adjacent to the potential boundary. The closest private land is approximately a third of a mile from the potential wilderness area boundary and may impact the wilderness character of the area.

The Chiricahua Addition South Potential Wilderness Area overall was rated as **high** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of this potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles, there are 14 designated wilderness areas totaling just over one million acres (see Table 3).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 3. Designated wilderness within 100 miles of the Chiricahua Addition Potential Wilderness Area

Wilderness Area	Acres
Chiricahua National Monument Wilderness	10,290
Chiricahua Wilderness	87,700
Dos Cabezas Mountains Wilderness	11,700
Galiuro Wilderness	76,317
Gila Wilderness	558,014
Miller Peak Wilderness	20,191
Mount Wrightson Wilderness	25,260
North Santa Teresa Wilderness	5,800
Peloncillo Mountains Wilderness	19,440
Pusch Ridge Wilderness	56,933
Redfield Canyon Wilderness	6,600
Rincon Mountain Wilderness	38,950
Saguaro Wilderness	70,950
Santa Teresa Wilderness	26,780
TOTAL	1,014,925

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas,

surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the high range (more than 60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Chiricahua Addition South Potential Wilderness Area (PWA) might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Chiricahua Addition South Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Chiricahua Addition South Potential Wilderness Area includes 4 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 4). Of these four vegetation communities, the Chiricahua Addition South PWA would only contribute an additional 0.1 percent to wilderness in the Interior Chaparral community. The vegetation communities in this PWA consist of 84.20 percent regionally underrepresented vegetation types, therefore the PWA rates in the medium range (50-90 percent) for this factor.

Table 4. Southwestern Region underrepresented vegetation communities found in the Chiricahua Addition South Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Chiricahua Addition South PWA	Percent of Chiricahua Addition South PWA	Percent Addition to Wilderness with Chiricahua Addition South PWA
Interior Chaparral	540	21.3	0.1
Madrean Encinal Woodland	1,523	60.0	0.0
Madrean Pine Oak Woodland	62	2.4	0.0
Mixed Conifer Forest	13	0.5	0.0
Grand Total	**2,138**	**84.2**%	**0.1**%

The Chiricahua Addition South Potential Wilderness Area overall was rated as **medium** for Need (for individual scores, see appendix G).

Ku Chish (formerly North Chiricahua) Potential Wilderness Area Evaluation [PW-05-03-D1-003]

Area Overview

Size and Location: The Ku Chish Potential Wilderness Area encompasses 26,266 acres. This area is located in the Chiricahua Mountains, which is part of the Douglas Ranger District of the Coronado National Forest in southeastern Arizona (see Map 2 at the end of this document). The Ku Chish PWA is overlapped by 22,447 acres of the Chiricahua Inventoried Roadless Area, comprising 85 percent of the PWA.

Vicinity, Surroundings and Access: The Ku Chish Potential Wilderness Area is approximately 100 miles southeast of Tucson, Arizona, within the Douglas Ranger District in the Cochise Head area at the northern end of the Chiricahua Mountains.

There is one small incorporated community (Willcox) and several unincorporated communities (Dos Cabezas, Bowie, San Simon and Portal) near the northern end of the Chiricahua Mountains and the PWA. Interstate 10 connects the Tucson metropolitan area to Willcox, Bowie and San Simon. In addition, the Chiricahua National Monument and Fort Bowie National Historic Site are also located nearby.

The primary motorized access route into and through the National Forest at the north end of the Chiricahua Mountains is Pinery Canyon Road (NFS Road 42). Pinery Canyon Road is a Cochise County-maintained road, except for the portion within the proclaimed Forest boundary. It is accessed from State Route 181 at the entrance to Chiricahua National Monument on the east side of the Chiricahua Mountains and from Portal, Arizona on the west side.

From the south, North Fork Road (NFS Road 356) accesses the PWA; it provides motorized access that requires a high–clearance, four-wheel-drive vehicle to Indian Creek Trail (NFS Trail 253). Indian Creek Trail provides nonmotorized trail access into and through the PWA, and also connects with Emigrant Canyon Trail (NFS Trail 255) in Bitter Creek.

At the north end of the Chiricahua Mountains from San Simon and Interstate 10 is Wood Canyon Road, a Cochise County-maintained road. Wood Canyon Road becomes Wood Canyon Road (NFS Road 700) at the proclaimed national forest boundary and provides motorized access into Wood Canyon and to Indian Creek Trail, which provides access to Emigrant Canyon Trail.

Mulkins Ranch Road, a Cochise County-maintained road, also provides motorized access into the National Forest and Emigrant Canyon at the northwest end of the Chiricahua Mountains. Mulkins Ranch Road becomes NFS Road 701 at the proclaimed national forest boundary and provides motorized access that requires a high–clearance, four-wheel-drive vehicle to Emigrant Canyon Road (NFS Road 255). Emigrant Canyon Road provides motorized access to Emigrant Canyon Trail (NFS Trail 255).

Although there appears to be adequate motorized and trail access to the PWA, other than Wood Canyon Road, permanent legal public access may be a future concern. There is little, if any, documented right-of-way for the existing road system across the non-Federal lands within and outside the proclaimed national forest boundary. Permanent legal public access to the NFS lands and the PWA in the northern end of the Chiricahua Mountains will continue to be an issue.

Boundaries: The majority of the boundary is recognizable through natural features, such as ridgelines and high points, in the Chiricahua Mountain Range. In areas where no prominent features can be identified, the boundary follows the national forest boundary, as well as the Chiricahua National Monument boundary.

Geography and Topography: Situated at the northern end of the Chiricahua Mountains, the Ku Chish Potential Wilderness Area lies along the eastern flank of the range, extending from Emigrant Canyon in the northwest to Oak Creek in the southeast. Covering an area of 26,266 acres, it rises from a low point of 4,800 feet above sea level in Wood Canyon to a maximum elevation of 8,113 feet at Cochise Head. It is located approximately six miles southeast of Apache Pass, where Fort Bowie was established in 1862 to pave the way for the taming of the western frontier. A magnificent forest of rock spires is developed within silica-rich volcanics (i.e., rhyolite) that are exposed in the steep, narrow canyons of the Chiricahua National Monument, located immediately southwest of the southern portion of the Ku Chish PWA.

The north-south trending Chiricahua Range is typical of the Mexican Subprovince of the Southern Basin and Range Province in southeastern Arizona. At the northern end of the range, it is bounded by the San Simon Valley to the east and Sulphur Springs Valley to the west. The southwestern edge of this PWA is underlain by complexly deformed slivers of Precambrian granite and schist and sedimentary strata of Paleozoic and Cretaceous age caught up in the west-northwest trending Apache Pass fault zone. This narrow, structurally controlled erosional window is bounded on the northwest and southwest by Oligocene rhyolitic volcanics, which were produced by a series of massive eruptions at the Turkey Creek volcanic center located in the west-central portion of the Chiricahua Mountains.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland communities. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), gray oak (*Quercus grisea*), Mexican blue oak (*Quercus oblongifolia*) and Toumey oak (*Quercus toumeyi*). Other tree species [including border pinyon (*Pinus discolor*), Chihuahua pine (*Pinus leiophylla*) Arizona cypress (*Hesperocyparis arizonica*) and alligator (*Juniperus deppeana*) and redberry juniper (*J. coahuilensis*)] and interior chaparral species [including manzanita spp. (*Arctostaphylos* spp.), desert ceanothus (*Ceanothus greggii*), mountain mahogany (*Cercocarpus montanus*), silktassles (*Garrya wrightii*), Stansbury cliffrose (*Purshia stansburiana*), shrub live oak (*Quercus turbinella*) and sumacs (*Rhus* spp.)] may be present but do not codominate. Rosette scrubs such as Agaves (*Agave* spp.) yuccas (*Yucca* spp.) sotol (*Dasylirion wheeleri*) and beargrass (*Nolina microcarpa*).The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis* intermedia), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*) and willows (*Salix* spp.). Historically, some areas near canyon bottoms and in the more gentle terrain were logged to provide wood for nearby mines, but second growth has largely matured. The Horseshoe2 fire burned most if not all of this area, much of it was classified as a high severity burn during the BAER assessment.

Current Uses: Visitors use this PWA for a variety of recreational activities. These lands lie adjacent to the Chiricahua Wilderness and Chiricahua National Monument. The two trails running through the area are used for hiking and horseback riding. One NFS road within the PWA is currently in use, although it has been recommended for decommissioning. There are no roads adjacent to the boundary and no developed recreation sites nearby. Topography is rugged, so there is very limited cross-country travel through the PWA. This PWA lies along the Coronado national forest boundary, and uses on adjacent BLM, state, and private lands may result in recreation and other uses within the PWA. There are four grazing allotments within the Ku Chish Potential Wilderness Area. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

The remoteness of the Ku Chish PWA has allowed it to retain a semiprimitive setting. The area does not have any known nonnative species. The area serves as habitat for bats and Mexican spotted owls. This area of the Northern Chiricahua Mountains does not have perennial rivers or streams and there are no know water quality issues. However, there has been mining activity in the past that may impact water quality, but water samples have not been tested. Night skies can be clearly seen and light pollution is not evident.

Undeveloped

The Northern Chiricahua Potential Wilderness Area also has had a long history of human use and settlement, as evident in its historic and prehistoric sites and structures. The area has had mining activity and there are obvious signs of this activity within the area, including the old Taylor Place homestead.

Opportunities for Solitude or Primitive and Unconfined Recreation

A person could experience solitude, serenity, self-reliance and hiking and backpacking within this PWA. The area has challenging recreational opportunities. With no roads leading up to the PWA boundary and access only by foot, the ability to experience solitude is high.

Special Features

The most unique natural feature in the Ku Chish Potential Wilderness Area is Cochise Head. The area has several historic and prehistoric archeological sites that provide opportunities for research and education. The area is habitat for Mexican spotted owls and bats.

Manageability

The boundary of the Ku Chish Potential Wilderness Area was delineated to exclude adjacent private land and Forest Service roads that provide access to the area. The area is isolated, with limited motorized access. Given these conditions, this area has minimal challenges in managing it for wilderness characteristics. An adjustment to the boundary was made to exclude the southernmost portion of the initially proposed PWA boundary, which contains several homesteads with private mineral claims that could potentially diminish wilderness management capabilities in

the area. In addition, the boundary was adjusted to follow natural features and prominent ridgelines, including high points. Roads within the area were granted a 300 foot buffer on either side to facilitate road maintenance and visitor parking. This adjustment enhances wilderness character and improves manageability by utilizing natural features to delineate the management boundaries.

The Ku Chish Potential Wilderness Area overall was rated as **high** for Capability (for individual scores, see appendix E).

Availability

In the Ku Chish Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. There are eight Threatened and Endangered species that may be located in the PWA that may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Watersheds within the area are properly functioning. There are spring developments and water impoundments that require maintenance that could have a moderate effect on wilderness character. There are no ecosystem restoration activities currently planned for the area. However, the area is in need of vegetation treatments and there is the potential for such activities in the future. Planned and unplanned ignitions are introduced every 10 years, in accordance with Chiricahua FireScape. The area is committed through contracts and permits for livestock grazing and outfitter guides. These current authorizations do not conflict with wilderness management or detract from wilderness qualities. There is no potential for timber extraction. There is little or no potential for extraction of locatable minerals. There are no cultural resources that will be affected by wilderness management. The Ku Chish PWA is composed entirely of National Forest System lands, as is the adjacent land. The closest private land is a tenth of a mile from the PWA boundary and could impact the wilderness character of the area.

The Ku Chish Potential Wilderness Area overall was rated as **high** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Ku Chish PWA, there are 14 designated wilderness areas totaling just over one million acres (see Table 5).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study

areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 5. Designated wilderness within 100 Miles of the Ku Chish Potential Wilderness Area

Wilderness Area	Acres
Chiricahua National Monument Wilderness	10,290
Chiricahua Wilderness	87,700
Dos Cabezas Mountains Wilderness	11,700
Galiuro Wilderness	76,317
Gila Wilderness	558,014
Miller Peak Wilderness	20,191
Mount Wrightson Wilderness	25,260
North Santa Teresa Wilderness	5,800
Peloncillo Mountains Wilderness	19,440
Pusch Ridge Wilderness	56,933
Redfield Canyon Wilderness	6,600
Rincon Mountain Wilderness	38,950
Saguaro Wilderness	70,950
Santa Teresa Wilderness	26,780
TOTAL	1,014,925

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes

255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the high range (more than 60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area, and includes the Pusch Ridge and Mount Wrightson Wildernesses. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Ku Chish Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Ku Chish Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Ku Chish Potential Wilderness Area includes 5 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 6). Of these five vegetation communities, the Ku Chish PWA would only contribute an additional 0.1 percent to wilderness in the following vegetation types: Interior Chaparral, Madrean Encinal Woodland and Madrean Pine Oak Woodland. The vegetation communities in this PWA consist of 88.50 percent regionally underrepresented vegetation types, therefore the PWA rates in the medium range (50-90 percent) for this factor.

Table 6. Southwestern Region underrepresented vegetation communities found in the Ku Chish Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Ku Chish PWA	Percent of Ku Chish PWA	Percent Addition of Ku Chish PWA to Wilderness
Interior Chaparral	1,502	10.9	0.1
Madrean Encinal Woodland	8,661	62.6	0.1
Madrean Pine Oak Woodland	1,823	13.2	0.1
Mixed Conifer Forest	198	1.4	0.0
Riparian Areas	58	0.4	0.0
Grand Total	**12,242**	**88.5%**	**0.3%**

The Ku Chish Potential Wilderness Area overall was rated as **medium** for Need (for individual scores, see appendix G).

Bunk Robinson WSA Potential Wilderness Area Evaluation [PW-05-03-D1-004]

Area Overview

Size and Location: The Bunk Robinson Wilderness Study Area (WSA) Potential Wilderness Area encompasses 19,052 acres. This area is located in the Peloncillo Mountains, which are part of the Douglas Ranger District of the Coronado National Forest in southeastern Arizona and southwestern New Mexico (see Map 3 at the end of this document). The Bunk Robinson WSA PWA is overlapped by 17,476 acres of the Peloncillo Inventoried Roadless Area, comprising 92 percent **of the PWA.**

Vicinity, Surroundings and Access: The Bunk Robinson WSA Potential Wilderness Area is approximately 125 miles southeast of Tucson, Arizona, within the Douglas Ranger District at the southern end of the Peloncillo Mountains.

The small incorporated community of Rodeo, New Mexico is located approximately 22 miles north of the PWA, and the small town of Douglas, Arizona can be found approximately 30 miles southwest of the PWA. The town of Apache is located approximately 10 miles from the PWA. The PWA straddles the Arizona-New Mexico border, with the Cloverdale Ranger Station located near the boundary.

The primary motorized access route into and through the National Forest at the southern end of the Peloncillo Mountains is Cloverdale Road (NFS Road 707). This road provides access into and through the PWA itself. State Highway 338 leads up to the Forest boundary on the southeastern side of the Peloncillos. The PWA may be accessed from Cochise County, Arizona on the western side and Hidalgo County, New Mexico on the eastern side. Private lands extend into the southeastern portion of the National Forest and the PWA, and can be accessed via the following roads: Cloverdale (NFS Road 707), Bunk Robertson Saddle (NFS Road 708), Robinson (NFS Road 4335), Coldwell (NFS Road 4339), and Cowan Roads (NFS Road 4340).

The primary trails located throughout the PWA include Miller Creek, Guadalupe, Swaggery, Baker and Chuck Tank Trails. These trails provide nonmotorized access into and through the PWA, and also connect with various motorized Forest roads just outside of the PWA boundaries.

Although there appears to be adequate motorized and trail access to the PWA, permanent legal public access may be a future concern. There is little, if any, documented right-of-way for the existing road system across the non-Federal lands within and outside the proclaimed national forest boundary. Permanent legal public access to the National Forest System lands and the PWA in the southern end of the Peloncillo Mountains will continue to be an issue.

Boundaries: The boundary of this PWA was congressionally designated in the New Mexico Wilderness Act of 1980, which created the Bunk Robinson Wilderness Study Area. The southern portion of the PWA follows the national forest boundary and the state line between New Mexico and Arizona. The remainder of the boundary follows natural features, such as ridgelines and high points, in the Peloncillo Mountain Range.

Geography and Topography: The Bunk Robinson Wilderness Study Area (WSA) Potential Wilderness Area (PWA) consists of an irregularly hook-shaped area in the southern part of the north-trending Peloncillo Mountains. This mountain range is bounded on the east by the Animas Valley in New Mexico and on the west by the San Simon Valley in Arizona. The Bunk Robinson

WSA PWA is one to two miles wide in an east-west direction in the center and four to eight miles wide in a north-south direction. Encompassing an area of 19,052 acres, the Bunk Robinson WSA PWA consists of the western part of the southern Peloncillo Mountains that is west of Kilmer Peak and Cloverdale Creek road. The Bunk Robinson WSA PWA is located entirely within the Douglas Ranger District, Coronado National Forest (CNF) and is located in Hidalgo County, New Mexico, and Cochise County, Arizona.

The Bunk Robinson WSA PWA is situated in the southern part of the CNF that encompasses the southern Peloncillo Mountains. Details of the topography are shown on the Skeleton Canyon and Guadalupe Spring, N. Mex.-Ariz., and the Black Point and Clanton Draw, New Mexico 7 ½ minute U.S. Geological Survey quadrangles. The western boundary of the Bunk Robinson WSA PWA is the western boundary of the southern part of the CNF and a line about two to three miles east of the central part of the CNF, slightly west of the Arizona-New Mexico border. The eastern boundary extends from a line south from Kilmer Peak, around and excluding the four-wheel drive roads up Cloverdale Creek, then north along the four-wheel drive that extends south from Clanton Draw. The north boundary is just south of the road up Clanton Draw. Jeep trails in Miller Creek, Lion Creek, and Guadalupe Canyon are included in the Bunk Robinson WSA PWA.

The minimum elevation in the Bunk Robinson WSA PWA is at approximately 5,400 feet above sea level at the northeastern edge of the PWA adjacent to the valley north of Foster Draw. The maximum elevation is 6,444 feet at Guadalupe Mountain at the east boundary of the PWA near the center of the hook. Numerous peaks reach 5,400 to 6,200 feet. The topography is rugged with only a few canyons that are suitable for jeep trails.

The southern Pinaleño Mountains contain primarily mid-Tertiary volcanic (mostly rhyolitic ash flow tuff) rocks of Miocene age (23 to 30 million years old [Ma]). The Pinaleño Mountains are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona.

No active mining claims are located in the Bunk Robinson WSA PWA and the area does not have historic production of metals. As no historic mining has occurred there, the likelihood of future mineral exploration is minor.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland and desert grassland communities. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), gray oak (*Quercus grisea*), Mexican blue oak (*Quercus oblongifolia*) and Toumey oak (*Quercus toumeyi*). Other tree species [including border pinyon (*Pinus discolor*), Chihuahua pine (*Pinus leiophylla*) and alligator (*Juniperus deppeana*) and redberry juniper (*J. coahuilensis*)] and interior chaparral species [including manzanita spp. (*Arctostaphylos* spp.), desert ceanothus (*Ceanothus greggii*), mountain mahogany (*Cercocarpus montanus*), silktassles (*Garrya wrightii*), Stansbury cliffrose (*Purshia stansburiana*), and sumacs (*Rhus* spp.)] may be present but do not codominate. Rosette scrubs such as Agaves (*Agave* spp.), yuccas (*Yucca* spp.), sotol (*Dasylirion wheeleri*) and beargrass (*Nolina microcarpa*) as well as desert scrub species such as acacias (*Acacia* spp.), mimosa (*Mimosa* spp.) mesquite (*Prosopis* spp.) dominate to the lower elevation shrub component. Cactus species such as cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia* spp.), hedgehog (*Echinocereus* spp.), and barrel cactus (*Ferocactus* spp.) are also common component of the vegetative community. The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop

(*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*) and willows (*Salix* spp.). Historically, woody species have been removed as a source of firewood where they are accessible. Many if not most of the woody species resprout after harvesting and remain on the landscape. This practice probably reduced the number of large hardwood trees and snags that would have historically occurred.

Current Uses: Visitors use this PWA for a dispersed recreation activities such as camping and hunting. The five trails running through the area are used for hiking and horseback riding. There are two NFS roads within the PWA with restricted access, but visitors may use these roads as trails. Topography is mostly rugged, so there is limited cross-country travel through the PWA. There are four grazing allotments within the Bunk Robinson WSA Potential Wilderness Area. All of these allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

Within the Bunk Robinson WSA PWA, nonnative species are not clearly evident, with the exception of limited amounts of Lehmann's lovegrass. Cement dams are present on Guadalupe Canyon and Blackwater Hole, although much of the WSA lies in the upper reaches of the watershed and therefore impoundments are few. As many waterways have not yet been sampled, no known water quality issues are apparent in the area. However, the presence of human waste and trash is common and threatens water quality. Night skies can be clearly seen and light pollution is not evident. The biological diversity in the area includes a mixture of habitats and ecological conditions. Unique wildlife present in the area include the Gould's turkey, New Mexico ridge-nosed rattlesnakes, and Chiricahua leopard frog. The WSA may also exist as a potential corridor for jaguars. The area contains a moderately diverse amount of natural resources, including a variety of plant and animal communities.

Undeveloped

The Bunk Robinson WSA has had a long history of human activity, including mining and ranching. Obvious historic evidence of human use detracts from the wilderness capability of the area. Smuggling and illegal activities, along with the associated need for enforcement, are ongoing human activities that detract from the capability of the area.

Opportunities for Solitude or Primitive and Unconfined Recreation

The rugged terrain within this PWA provides an opportunity for challenging recreation and a sense of remoteness, although the sights and sounds of border-related enforcement activities encumber the feeling of solitude. A person could experience hiking and hunting in this PWA, with moderate access to northern portions of the area.

Special Features

The Bunk Robinson WSA contains some distinct features, including rock formations, and also has the potential for scientific research of the native wildlife. Unique species, such as the Chiricahua leopard frog and the NM ridge-nosed rattlesnake, serve as special features in the area that add value to the potential wilderness character.

Manageability

The boundary of the Bunk Robinson WSA lies along the U.S.-Mexico border, therefore significant illegal activity has been recorded in the area. Resource conflicts would also make management difficult for enforcement purposes, although the northern portion of the area may be accessible via the Geronimo Trail Road. Similarly, the area has known motorized vehicle use, which subtracts from the wilderness quality. There are no identified boundary changes that would enhance the area's wilderness character.

The Bunk Robinson WSA Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Bunk Robinson WSA Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. There are four threatened or endangered species located in the PWA that may require habitat restoration and/or monitoring, which could impact the availability of the PWA. There are intermittent drainages and some water impoundments within the area, and planned pipelines for grazing purposes in Clanton-Cloverdale and Guadalupe Rim could have a moderate impact on wilderness character. Dirt tanks require maintenance in 15 to 20 year intervals using large equipment, which may also affect wilderness character. There are no ecosystem restoration activities currently planned for the area. However, the area requires maintenance of natural vegetation with planned and unplanned ignitions over a 15-year period to reach restoration goals. The area is committed through contracts and permits for livestock grazing on four allotments. These current authorizations do not conflict with wilderness management or detract from wilderness qualities. There is no potential for timber extraction. There is little or no potential for extraction of locatable minerals. There are extensive arch sites on this PWA, but they will not be affected by wilderness management. The Bunk Robinson WSA Potential Wilderness Area is composed almost entirely of National Forest System lands, with the exception of a small portion of private land on the southeastern side of the PWA. These private lands extend into the southeastern portion of the National Forest and also breach the PWA boundary, which may impact the wilderness character of the area.

The Bunk Robinson WSA Potential Wilderness Area overall was rated as **medium** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The

Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Bunk Robinson WSA PWA, there are six designated wilderness areas totaling about 191,000 acres (see Table 7).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 7. Designated wilderness within 100 miles of the Bunk Robinson Wilderness Study Area Potential Wilderness Area

Wilderness Area	Acres
Chiricahua National Monument Wilderness	12,161
Chiricahua Wilderness	88,793
Dos Cabezas Mountains Wilderness	11,855
Miller Peak Wilderness	20,381
Peloncillo Mountains Wilderness	19,244
Rincon Mountain Wilderness	38,611
TOTAL	191,045

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Bunk Robinson WSA Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Bunk Robinson WSA Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Bunk Robinson WSA Potential Wilderness Area includes 4 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 8). Of these four vegetation communities, the Bunk Robinson WSA PWA would contribute to wilderness in the following vegetation types: Interior Chaparral (0.1 percent) and Madrean Encinal Woodland (2.7 percent). The vegetation communities in this PWA consist of 63.80 percent regionally underrepresented vegetation types, therefore the PWA rates in the medium range (50-90 percent) for this factor.

Table 8. Southwestern Region underrepresented vegetation communities found in the Bunk Robinson Wilderness Study Area Potential Wilderness Area

Underrepresented Vegetation Communities	Acres within Bunk Robinson WSA PWA	Percent of Bunk Robinson WSA PWA	Percent Addition of Bunk Robinson WSA PWA to Wilderness
Interior Chaparral	512	2.7	0.1
Madrean Encinal Woodland	11,619	61.0	2.7
Madrean Pine Oak Woodland	25	0.1	0.0
Riparian Areas	4	0.0	0.0
Grand Total	**12,160**	**63.8%**	**2.8%**

The Bunk Robinson WSA Potential Wilderness Area overall was rated as **low** for Need (for individual scores, see appendix G)

Whitmire Canyon WSA Potential Wilderness Area Evaluation [PW-05-03-D1-005]

Area Overview

Size and Location: The Whitmire Canyon Wilderness Study Area (WSA) Potential Wilderness Area encompasses 12,163 acres. This area is located in the Peloncillo Mountains, which is part of the Douglas Ranger District of the Coronado National Forest in southeastern Arizona and southwestern New Mexico (see Map 3 at the end of this document). The Whitmire Canyon WSA PWA is overlapped by 10,889 acres of the Peloncillo Inventoried Roadless Area, comprising 89 percent of the PWA.

Vicinity, Surroundings and Access: The Whitmire Canyon WSA Potential Wilderness Area is approximately 125 miles southeast of Tucson, Arizona, within the Douglas Ranger District at the center of the Peloncillo Mountains.

The small incorporated community of Rodeo, New Mexico is located approximately 22 miles north of the PWA, and the small town of Douglas, Arizona can be found approximately 30 miles southwest of the PWA. The town of Apache is located approximately 10 miles from the PWA. The PWA straddles the Arizona-New Mexico border.

The primary motorized access route into and through the National Forest located south of the Whitmire Canyon WSA PWA boundary is Geronimo Trail Road (NFS Road 63). This road provides access up to the southern portion of the PWA. State Highway 338 leads up to the Forest boundary on the southeastern side of the Peloncillos. The PWA may be accessed from Cochise County, Arizona on the western side and Hidalgo County, New Mexico on the eastern side. The closet private lands are located approximately one mile from the PWA boundary on the western side. Skeleton Canyon Road (NFS Road 702) extends north of the PWA boundary, eventually reaching the PWA as Pine Canyon Trail. Dutchmen Road (NFS Road 705) leads just outside the PWA boundary on the northeastern side.

Pine Canyon Trail serves as the only trail located directly in the PWA, although Smith Tank Trail and Skeleton Canyon Trail are located nearby. These trails provide nonmotorized access into and through the PWA, and also connect with various motorized Forest roads just outside of the PWA boundaries.

Although there appears to be adequate motorized and trail access to the PWA, permanent legal public access may be a future concern. There is little, if any, documented right-of-way for the existing road system across the non-Federal lands within and outside the proclaimed national forest boundary. Permanent legal public access to the NFS lands and the PWA in the southern end of the Peloncillo Mountains will continue to be an issue.

Boundaries: The boundary of this PWA was congressionally designated in the New Mexico Wilderness Act of 1980, which created the Whitmire Canyon Wilderness Study Area. The southern portion of the PWA runs parallel to Geronimo Trail Road (NFS Road 63). The remainder of the boundary follows natural features, such as ridgelines and high points, in the Peloncillo Mountain Range.

Geography and Topography: The Whitmire Canyon Wilderness Study Area (WSA) Potential Wilderness Area (PWA) consists of an oval, northwest-trending area in the northern part of the central part of the north-trending Peloncillo Mountains. This mountain range is bounded on the

east by the Animas Valley in New Mexico and on the west by the San Simon Valley in Arizona. The Whitmire Canyon WSA PWA is an oval area that is approximately two to three miles wide in a north-south direction and two to four miles wide in and east-west direction. Encompassing an area of 12,163 acres, the Whitmire Canyon WSA PWA consists of the central part of the southern Peloncillo Mountain range that is south of the Skeleton Canyon PWA and east of the Devil's Kitchen PWA. The Whitmire Canyon WSA PWA is located entirely within the Douglas Ranger District, Coronado National Forest (CNF) and is located in Hidalgo County, New Mexico, and Cochise County, Arizona.

The Whitmire Canyon WSA PWA is situated in the central part of the CNF that encompasses the southern Peloncillo Mountains. Details of the topography are shown on the Skeleton Canyon, N. Mex.-Ariz., and the Guadalupe Spring, N. Mex.-Ariz., and Clanton Draw, New Mexico 7 ½ minute U.S. Geological Survey quadrangles. The western boundary of the Whitmire Canyon WSA is the irregularly arcuate-shaped Devil's Kitchen PWA approximately one to four miles west of the Arizona-New Mexico border. The Whitmire Canyon WSA is bounded on the south by the road up the northeast-trending Clanton Draw. The northern border is the east-trending road through Skeleton Canyon. The Whitmire Canyon WSA is bounded on the east by the road up the northwest trending Whitmire Canyon and the south-trending road from the Skeleton Canyon road.

The minimum elevation in the Whitmire Canyon PWA is approximately 5,000 feet above sea level (ft asl) at the northwestern edge of the PWA adjacent to the Devils Kitchen PWA. The maximum elevation is 5,730 feet at an unnamed peak near the northwest corner just west of Dutchman Tank. The topography is rugged with no canyons suitable for jeep trails.

The southern Pinaleño Mountains contain primarily mid-Tertiary volcanic (mostly rhyolitic ash flow tuff) rocks of Miocene age (23 to 30 million years old [Ma]). The Pinaleño Mountains are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona.

No active mining claims are located in the Whitmire Canyon WSA and the area does not have historic production of metals. As no historic mining has occurred there, the likelihood of future exploration is minor.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland and desert grassland communities. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), gray oak (*Quercus grisea*), Mexican blue oak (*Quercus oblongifolia*) and Toumey oak (*Quercus toumeyi*). Other tree species [including border pinyon (*Pinus discolor*), Chihuahua pine (*Pinus leiophylla*) and alligator (*Juniperus deppeana*) and redberry juniper (*J. coahuilensis*)] and interior chaparral species [including manzanita spp. (*Arctostaphylos* spp.), desert ceanothus (*Ceanothus greggii*), mountain mahogany (*Cercocarpus montanus*), silktassles (*Garrya wrightii*), Stansbury cliffrose (*Purshia stansburiana*), and sumacs (*Rhus* spp.)] may be present but do not codominate. Rosette scrubs such as Agaves (*Agave* spp.), yuccas (*Yucca* spp.), sotol (*Dasylirion wheeleri*) and beargrass (*Nolina microcarpa*) as well as desert scrub species such as acacias (*Acacia* spp.), mimosa (*Mimosa* spp.) mesquite (*Prosopis* spp.) dominate to the lower elevation shrub component. Cactus species such as cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia* spp.), hedgehog (*Echinocereus* spp.), and barrel cactus (Ferocactus spp.) are also common component of the vegetative community. The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*),

plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*) and willows (*Salix* spp.). Historically, woody species have been removed as a source of firewood where they are accessible. Many if not most of the woody species resprout after harvesting and remain on the landscape. This practice probably reduced the number of large hardwood trees and snags that would have historically occurred.

Current Uses: This area has limited recreational activity. There is one trail running through the area that is used for hiking and horseback riding. There are very few roads nearby. Topography is rugged, so there is very limited cross-country travel through the PWA. There are four grazing allotments within the Whitmire Canyon WSA Potential Wilderness Area. All of these allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

Diversity of vegetation within the Whitmire Canyon WSA Potential Wilderness Area boundary includes oak woodlands and chaparral, as well as some grasslands. Rivers and streams within the area are free-flowing without obstruction or diversion by impoundments. The shallow soils that comprise the area prevent the growth of common nonnative species, such as lovegrasses. Night skies can be clearly seen and light pollution is not evident. The biological diversity in the area includes a mixture of habitats and ecological conditions. Unique wildlife present in the area includes New Mexico ridge-nosed rattlesnakes; the area also serves as a habitat for Gould's turkeys, with seven identifiable roosts. Ecological conditions may also support potential jaguar and ocelot communities. The area contains a limited amount of diverse natural resources, as local plant species are commonly repeated throughout the forest. There may be water quality issues due to the presence of human body waste and trash from recreationalists, but no water quality sampling has been conducted.

Undeveloped

The Whitmire Canyon WSA Potential Wilderness Area has had a limited history of human use, therefore the area currently does not have noticeable evidence of human activity except for minimal fences.

Opportunities for Solitude or Primitive and Unconfined Recreation

This PWA consists of multiple canyons that boast a rugged landscape, thus providing an opportunity for challenging recreation and a sense of remoteness. However, the sights and sounds from border-related enforcement activities encumber the feeling of solitude. A person could experience hiking, hunting, and backpacking in this PWA.

Special Features

The unique rock formations found here are important as a wilderness characteristic. The Outlaw mountainside and the northern end of the area provide rocky cliffs with panoramic views. The NM ridge-nosed rattlesnake located within this PWA may allow for scientific research opportunities in the future. This unique species, as well as the Gould's turkey, serve as special features in the area that add value to the potential wilderness character.

Manageability

The Whitmire Canyon WSA Potential Wilderness Area is located near the U.S.-Mexico border, therefore management would be influenced by the U.S. Border Patrol. Illegal activity in the area may also impact the manageability, although the southern portion may be accessible via the Geronimo Trail Road. The area currently does not have any motorized vehicle use. There are no identified boundary changes that would enhance the area's wilderness character.

The Whitmire Canyon WSA Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Whitmire Canyon WSA Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. There are four threatened or endangered species that may be located in the PWA that may require habitat restoration and/or monitoring, which could impact the availability of the PWA. There are seasonal drainages and some water impoundments within the area. The Hog Canyon Spring redevelopment needs repair, and may have a moderate effect on wilderness character. There are no ecosystem restoration activities currently planned for the area. Planned ignitions, including aerial ignitions, are introduced once every 10 years into the area. The area is committed through contracts and permits for livestock grazing on four allotments. These current authorizations do not conflict with wilderness management or detract from wilderness qualities. There is no potential for timber extraction. There is little or no potential for extraction of locatable minerals. There are likely some arch sites throughout the canyon, but they will not be affected by wilderness management. The Whitmire Canyon WSA Potential Wilderness Area is entirely National Forest System lands, as is the adjacent land. The closest private land is approximately one mile from the PWA boundary, but likely will not impact the wilderness character of the area.

The Whitmire Canyon WSA Potential Wilderness Area overall was rated as **high** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Whitmire Canyon WSA PWA, there are 7 designated wilderness areas totaling about 197,000 acres (see Table 9).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 9. Designated wilderness within 100 miles of the Whitmire Canyon Wilderness Study Area Potential Wilderness Area

Wilderness Area	Acres
Chiricahua National Monument Wilderness	12,161
Chiricahua Wilderness	88,793
Dos Cabezas Mountains Wilderness	11,855
Miller Peak Wilderness	20,381
Peloncillo Mountains Wilderness	19,244
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
TOTAL	197,251

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Whitmire Canyon WSA Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Whitmire Canyon WSA Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Whitmire Canyon WSA Potential Wilderness Area includes 3 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 10). Of these three vegetation communities, the Whitmire Canyon WSA PWA would contribute to wilderness in the following vegetation types: Madrean Encinal Woodland (2.3 percent) and Madrean Pine Oak Woodland (0.1 percent). The vegetation communities in this PWA consist of 81.60 percent regionally underrepresented vegetation types, therefore the PWA rates in the medium range (50-90 percent) for this factor.

Table 10. Southwestern Region underrepresented vegetation communities found in the Whitmire Canyon Wilderness Study Area Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Whitmire Canyon WSA PWA	Percent of Whitmire Canyon WSA PWA	Percent Addition of Whitmire Canyon WSA PWA to Wilderness
Interior Chaparral	152	1.2	0.0
Madrean Encinal Woodland	9,674	79.5	2.3
Madrean Pine Oak Woodland	110	0.9	0.1
Grand Total	**9,936**	**81.6%**	**2.4%**

The Whitmire Canyon WSA Potential Wilderness Area overall was rated as **low** for Need (for individual scores, see appendix G).

Devil's Kitchen Potential Wilderness Area Evaluation [PW-05-03-D1-006]

Area Overview

Size and Location: The Devil's Kitchen Potential Wilderness Area encompasses 5,700 acres. This area is located in the Peloncillo Mountains, which is part of the Douglas Ranger District of the Coronado National Forest in southeastern Arizona (see Map 3 at the end of this document). The Devil's Kitchen PWA is overlapped by 4,028 acres of the Peloncillo Inventoried Roadless Area, comprising 71 percent of the PWA.

Vicinity, Surroundings and Access: The Devil's Kitchen Potential Wilderness Area is approximately 120 miles southeast of Tucson, Arizona, within the Douglas Ranger District at the center of the Peloncillo Mountains.

The small incorporated community of Rodeo, New Mexico is located approximately 16 miles north of the PWA, and the small town of Bisbee, Arizona can be found approximately 31 miles west of the PWA. The town of Apache is located approximately 10 miles from the PWA. The PWA straddles the Arizona-New Mexico border, and reaches the edge of the National Forest System boundary on the western side.

The primary motorized access route into the National Forest from the north is Skeleton Canyon Road (NFS Road 702). This road branches off into South Fork Road (NFS Road 703), which runs along the northern border of the Devil's Kitchen PWA. State Highway 80 provides major access to the north of the Forest boundary. The PWA may be accessed from Cochise County, Arizona on the western side and Hidalgo County, New Mexico on the eastern side. The closet private lands are located approximately 0.1 miles from the PWA boundary on both the western and southern sides. South Fork Road transitions into Smith Tank Trail, which runs through the PWA. Geronimo Trail Road (NFS Road 63) runs south of the PWA and provides primary access from this direction.

Smith Tank Trail and a small portion of Pine Canyon Trail traverse the Devil's Kitchen PWA. These trails provide nonmotorized access into and through the PWA, and also connect with various motorized Forest roads just outside of the PWA boundaries.

Although there appears to be adequate motorized and trail access to the PWA, permanent legal public access may be a future concern. There is little, if any, documented right-of-way for the existing road system across the non-Federal lands within and outside the proclaimed national forest boundary. Permanent legal public access to the NFS lands and the PWA in the southern end of the Peloncillo Mountains will continue to be an issue.

Boundaries: The boundary of this PWA was established along Skeleton Canyon Road (NFS Road 702) and South Fork Road (NFS Road 703) on the northern side. The remainder of the boundary follows natural features, such as ridgelines and high points, in the Peloncillo Mountain Range.

Geography and Topography: The Devil's Kitchen Potential Wilderness Area (PWA) consists of an arcuate, north to northeast- trending area in the northern part of the central part of the north-trending Peloncillo Mountains. This mountain range is bounded on the east by the Animas Valley in New Mexico and on the west by the San Simon Valley in Arizona. The Devil's Kitchen PWA is an arcuate area that is approximately two miles wide in an east-west direction and twelve miles

long in a north south direction. Encompassing an area of 5,700 acres, the Devil's Kitchen PWA consists of the northern part of the southern Peloncillo Mountain range that is south of the Skeleton Canyon PWA and west of the Whitmire Canyon Wilderness Study Area. The Devil's Kitchen PWA is located entirely within the Douglas Ranger District, Coronado National Forest (CNF) and is located in Hidalgo County, New Mexico, and Cochise County, Arizona.

The Devil's Kitchen PWA is situated in the north central part of the CNF that encompasses the southern Peloncillo Mountains. Details of the topography are shown on the Skeleton Canyon, N. Mex.-Ariz., and the Guadalupe Spring, N. Mex.-Ariz. 7 ½ minute U.S. Geological Survey quadrangles. The western boundary of the irregularly arcuate-shaped area is very near the western border of the northern CNF in the southern Peloncillo Mountains. It is bounded on the south by the northeast-trending Cottonwood Creek and on the north by the Skeleton Canyon road. The eastern border of the Devil's Kitchen PWA is the Whitmire Canyon Wilderness Study Area.

The minimum elevation in the Devil's Kitchen PWA is at approximately 5,000 feet above sea level (ft asl) at the northwestern edge of the PWA west of Devils Kitchen near Skeleton Canyon. The maximum elevation is 5,868 feet at an unnamed peak approximately at the southwesternmost point of the Devil's Kitchen PWA just north of Cottonwood Creek. The topography is rugged with no canyons suitable for jeep trails.

The southern Pinaleño Mountains contain primarily mid-Tertiary volcanic (mostly rhyolitic ash flow tuff) rocks of Miocene age (23 to 30 million years old [Ma]). The Pinaleño Mountains are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona.

No active mining claims are located in the Devil's Kitchen PWA and the area does not have historic production of metals. As no historic mining has occurred there, the likelihood of future exploration is minor.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland and desert grassland communities. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), gray oak (*Quercus grisea*), Mexican blue oak (*Quercus oblongifolia*) and Toumey oak (*Quercus toumeyi*). Other tree species [including border pinyon (*Pinus discolor*), Chihuahua pine (*Pinus leiophylla*) and alligator (*Juniperus deppeana*) and redberry juniper (*J. coahuilensis*)] and interior chaparral species [including manzanita spp. (*Arctostaphylos* spp.), desert ceanothus (*Ceanothus greggii*), mountain mahogany (*Cercocarpus montanus*), , silktassles (*Garrya wrightii*), Stansbury cliffrose (*Purshia stansburiana*), and sumacs (*Rhus* spp.)] may be present but do not codominate. Rosette scrubs such as Agaves (*Agave* spp.), yuccas (*Yucca* spp.), sotol (*Dasylirion* wheeleri) and beargrass (*Nolina microcarpa*) as well as desert scrub species such as acacias (*Acacia* spp.), mimosa (*Mimosa* spp.) mesquite (*Prosopis* spp.) dominate to the lower elevation shrub component. Cactus species such as cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia* spp.), hedgehog (*Echinocereus* spp.), and barrel cactus (*Ferocactus* spp.) are also common component of the vegetative community. The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore

(*Platanus wrightii*), Arizona walnut (*Juglans major*) and willows (*Salix* spp.). Historically, woody species have been removed as a source of firewood where they are accessible. Many if not most of the woody species resprout after harvesting and remain on the landscape. This practice probably reduced the number of large hardwood trees and snags that would have historically occurred.

Current Uses: Visitors use this PWA for dispersed recreation activities such as camping and hunting. These lands lie adjacent to the Whitmire Canyon WSA. Two trails running through the area are used for hiking and horseback riding. Topography is mostly rugged, so there is limited cross-country travel through the PWA. There are four grazing allotments within the Devil's Kitchen Potential Wilderness Area. All of these allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

Diversity of vegetation within the Devil's Kitchen Potential Wilderness Area boundary includes oak woodlands and grasslands. Rivers and streams within the area are heavily impacted by cement dams and tanks on the west side, as well as drainages on the north slope. Night skies can be clearly seen and light pollution is not evident. The biological diversity in the area includes a mixture of habitats and ecological conditions. Unique species in the area include the New Mexico ridge-nosed rattlesnakes and Gould's turkey. Ecological conditions may also serve as potential jaguar corridors. The area contains a limited variety of natural resources, and recreational opportunities are few due to lack of access from the north and west sides. There may be water quality issues due to the presence of human body waste and trash from recreationalists, but no water quality sampling has been conducted. However, the prevalence of Lehmann's lovegrass detracts from the area's wilderness capability.

Undeveloped

The Devil's Kitchen Potential Wilderness Area has obvious signs of human activity, including the Skeleton Canyon roadbed, cement dams, two homesteads in Skeleton Canyon, pipelines, and dirt tanks. Mining, ranching, and illegal activities have also left evidence of human impacts on the potential wilderness area.

Opportunities for Solitude or Primitive and Unconfined Recreation

The rugged terrain provides challenging recreational opportunities, and the limited access to the land creates an adventurous environment that promotes self-reliance. The area provides solitude from communities and other recreationalists, although the sights and sounds from illegal activities along the border may encumber any complete feeling of solitude. A person could experience hiking and hunting with limited access in this PWA.

Special Features

The unique rock formations and panoramic views found in the main Skeleton Canyon add an important component to the wilderness character. The Geronimo Surrender site within the

northwestern edge of the PWA may have the potential for historic and cultural research opportunities. The area contains unique species such as the NM ridge-nosed rattlesnake, lesser long-nosed bat, and potentially jaguars, all of which add to the wilderness character.

Manageability

The Devil's Kitchen Potential Wilderness Area is located near the U.S.-Mexico border, therefore management would be influenced by the U.S. Border Patrol. Illegal activity in the area may also detract from the wilderness character of the area. Potential recreational motorized use within the Skeleton Canyon area would also subtract from the wilderness capability. There are no identified boundary changes that would enhance the area's wilderness character.

The Devil's Kitchen Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Devil's Kitchen Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. There are three threatened or endangered species that may be located in the PWA that may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Tanks and cement dams are located on seasonal streams, and a pipeline may potentially be installed in the area from Starvation Canyon, which may have a moderate effect on wilderness character. There are no ecosystem restoration activities currently planned for the area. Planned ignitions, including aerial ignitions, are introduced once every 10 years into the area (for the next 30 years). The area is committed through contracts and permits for livestock grazing on four allotments. These current authorizations do not conflict with wilderness management or detract from wilderness qualities. Wilderness character may be compromised if air support must be used to repair degraded range fences. There is no potential for timber extraction. There is little or no potential for extraction of locatable minerals. The Geronimo Surrender site and arch sites are found within the PWA, but do not require maintenance and therefore will not impact wilderness management. The Devil's Kitchen Potential Wilderness Area is entirely National Forest System lands, as is the adjacent land. The closest private land is approximately 0.1 miles from the PWA boundary, but most likely will not impact the wilderness character of the area.

The Devil's Kitchen Potential Wilderness Area overall was rated as **high** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Devil's Kitchen PWA, there are 8 designated wilderness areas totaling about 260,500 acres (see Table 11).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 11. Designated wilderness within 100 miles of the Devil's Kitchen Potential Wilderness Area

Wilderness Area	Acres
Chiricahua National Monument Wilderness	12,161
Chiricahua Wilderness	88,793
Dos Cabezas Mountains Wilderness	11,855
Miller Peak Wilderness	20,381
Peloncillo Mountains Wilderness	19,244
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
Saguaro Wilderness	63,258
TOTAL	260,510

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Devil's Kitchen Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Devil's Kitchen Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Devil's Kitchen Potential Wilderness Area includes 4 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 12). Of these four vegetation communities, the Devil's Kitchen PWA would contribute to wilderness in the following vegetation types: Interior Chaparral (0.1 percent), Madrean Encinal Woodland (0.9 percent), and Riparian Areas (0.1 percent). The vegetation communities in this PWA consist of 69.60 percent regionally underrepresented vegetation types, therefore the PWA rates in the medium range (50-90 percent) for this factor.

Table 12. Southwestern Region underrepresented vegetation communities found in the Devil's Kitchen Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Devil's Kitchen PWA	Percent of Devil's Kitchen PWA	Percent Addition of Devil's Kitchen PWA to Wilderness
Interior Chaparral	221	3.9	0.1
Madrean Encinal Woodland	3,727	65.4	0.9
Madrean Pine Oak Woodland	4	0.1	0.0
Riparian Areas	13	0.2	0.1
Grand Total	**3,965**	**69.6%**	**1.1%**

The Devil's Kitchen Potential Wilderness Area overall was rated as **low** for Need (for individual scores, see appendix G).

Skeleton Canyon Potential Wilderness Area Evaluation [PW-05-03-D1-007]

Area Overview

Size and Location: The Skeleton Canyon Potential Wilderness Area encompasses 5,056 acres. This area is located in the Peloncillo Mountains, which is part of the Douglas Ranger District of the Coronado National Forest in southeastern Arizona (see Map 3 at the end of this document). The Skeleton Canyon PWA is overlapped by 2,060 acres of the Peloncillo Inventoried Roadless Area, comprising 41 percent of the PWA.

Vicinity, Surroundings and Access: The Skeleton Canyon Potential Wilderness Area is approximately 120 miles southeast of Tucson, Arizona, within the Douglas Ranger District at the center of the Peloncillo Mountains.

The small incorporated community of Rodeo, New Mexico is located approximately 14 miles north of the PWA, and the small town of Douglas, Arizona can be found approximately 35 miles west of the PWA. The town of Apache is located approximately 10 miles from the PWA. The PWA is located entirely in the state of New Mexico, approximately one mile from the Arizona border.

The primary motorized access route into the National Forest from the north is Skeleton Canyon Road (NFS Road 702). This road branches off into Deer Creek Road (NFS Road 704), which runs along the northern border of the Skeleton Canyon PWA. State Highway 80 provides major access to the north of the Forest boundary. The PWA may be accessed from Hidalgo County, New Mexico on all sides. The closet private lands are located approximately 0.1 miles from the PWA boundary on the eastern side. Skeleton Canyon Road transitions into Skeleton Canyon Trail, which runs through the PWA. The Geronimo Trail Road (NFS Road 63) provides access to the eastern portion of the area. Large sections of private land border the eastern side of the national forest boundary, which also shares a portion of the PWA boundary.

Skeleton Canyon Trail runs across the Skeleton Canyon PWA, and the Pine Canyon Trail extends from the boundary of the PWA into the southern portion of the Peloncillo Ecosystem Management Area. These trails provide nonmotorized access into and through the PWA, and also connect with various motorized Forest roads just outside of the PWA boundaries.

Although there appears to be adequate motorized and trail access to the PWA, permanent legal public access may be a future concern. There is little, if any, documented right-of-way for the existing road system across the non-Federal lands within and outside the proclaimed national forest boundary. Permanent legal public access to the NFS lands and the PWA in the southern end of the Peloncillo Mountains will continue to be an issue.

Boundaries: The southern portion of the PWA boundary was established along Skeleton Canyon Road (NFS Road 702) from the East and Dutchman Road (NFS Road 705) from the West. The northern boundary of this PWA follows Deer Creek Road (NFS Road 704). The remainder of the boundary follows natural features, such as ridgelines and high points, in the Peloncillo Mountain Range.

Geography and Topography: The Skeleton Canyon Potential Wilderness Area (PWA) consists of an arcuate, north to west trending area in the northern part of the Coronado National Forest (CNF) of the central part of the north-trending Peloncillo Mountains. This mountain range is

bounded on the east by the Animas Valley in New Mexico and on the west by the San Simon Valley in Arizona. The Skeleton Canyon PWA is an arcuate area that is approximately four miles wide in an east-west direction and two miles wide in a north south direction on the west and four miles wide in a north-south direction on the east side of the PWA. Encompassing an area of 5,056 acres, the Skeleton Canyon PWA consists of the northern part of the southern Peloncillo Mountain range that is south of the Deer Creek PWA. The Skeleton Canyon PWA is located entirely within the Douglas Ranger District, Coronado National Forest (CNF) and is located in Hidalgo County, New Mexico.

The Skeleton Canyon PWA is situated in the north central part of the CNF that encompasses the southern Peloncillo Mountains. Details of the topography are shown on the Skeleton Canyon, N. Mex.-Ariz., and the Clanton Draw, New Mexico 7 ½ minute U.S. Geological Survey quadrangles. The western boundary of the irregularly arcuate-shaped area is very near the western border of the northern CNF in the southern Peloncillo Mountains. It is bounded on the south by the east-trending Skeleton Canyon road and on the north by the east-trending Deer Creek Road. The eastern border of the Skeleton Canyon PWA is within one-half mile of the eastern border of the CNF. On the east side, it is bounded on the north by the road to Irishman Tank and is bounded on the south by the Skeleton Canyon road.

The minimum elevation in the Skeleton Canyon PWA is at approximately 5,000 feet above sea level (ft asl) at the northwestern edge of the PWA west of New Tank. The maximum elevation is 5,730 feet at an unnamed peak approximately one mile west of Dutchman Tank. The topography is rugged with no canyons suitable for jeep trails.

The southern Pinaleño Mountains contain primarily mid-Tertiary volcanic (mostly rhyolitic ash flow tuff) rocks of Miocene age (23 to 30 million years old [Ma]). The Pinaleño Mountains are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona.

No active mining claims are located in the Skeleton Canyon PWA and the area does not have historic production of metals. As no historic mining has occurred there, the likelihood of future exploration is minor.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland and desert grassland communities. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), gray oak (*Quercus grisea*), Mexican blue oak (*Quercus oblongifolia*) and Toumey oak (*Quercus toumeyi*). Other tree species [including border pinyon (*Pinus discolor*), Chihuahua pine (*Pinus leiophylla*) and alligator (*Juniperus deppeana*) and redberry juniper (*J. coahuilensis*.)] and interior chaparral species [including manzanita spp. (*Arctostaphylos* spp.), desert ceanothus (*Ceanothus greggii*), mountain mahogany (*Cercocarpus montanus*), , silktassles (*Garrya wrightii*), Stansbury cliffrose (*Purshia stansburiana*), and sumacs (*Rhus* spp.)] may be present but do not codominate. Rosette scrubs such as Agaves (*Agave* spp.), yuccas (*Yucca* spp.), sotol (*Dasylirion wheeleri*) and beargrass (*Nolina microcarpa*) as well as desert scrub species such as acacias (*Acacia* spp.), mimosa (*Mimosa* spp.) mesquite (*Prosopis* spp.) dominate to the lower elevation shrub component. Cactus species such as cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia* spp.), hedgehog (*Echinocereus* spp.), and barrel cactus (*Ferocactus* spp.) are also common component of the vegetative community. The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green

sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*) and willows (*Salix* spp.). Historically, woody species have been removed as a source of firewood where they are accessible. Many if not most of the woody species resprout after harvesting and remain on the landscape. This practice probably reduced the number of large hardwood trees and snags that would have historically occurred.

Current Uses: These lands lie adjacent to the Whitmire Canyon WSA. One trail runs through the area and is used for hiking and horseback riding. Adjacent roads are used for motorized touring and dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. Topography is mostly rugged, so there is limited cross-country travel through the PWA. There are three grazing allotments within the Skeleton Canyon Potential Wilderness Area. All of these allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

Diversity of vegetation within the Skeleton Canyon Potential Wilderness Area boundary includes oak woodlands and grasslands. Although no impoundments are present in Skeleton Canyon, multiple dirt tanks and concrete dams on Deer Creek affect the free-flowing character of the waterways. Night skies can be clearly seen and light pollution is not evident. The biological diversity in the area includes a mixture of habitats and ecological conditions. Unique species in the area include the New Mexico ridge-nosed rattlesnakes and Gould's turkey. Ecological conditions may also serve as potential jaguar corridors. The area contains a limited variety of natural resources, and recreational opportunities are few due to lack of access from the east and west sides. There may be water quality issues due to the presence of human body waste and trash from recreationalists, but no water quality sampling has been conducted. The prevalence of Lehmann's lovegrass on the east and west sides, as well as the north slope of Skeleton Canyon, detracts from the area's wilderness capability. Nonnative fish species and bullfrogs may be present in Deer Creek and in the Irishman tank.

Undeveloped

The Skeleton Canyon Potential Wilderness Area has obvious signs of human activity, including the Ranger station, Skeleton Canyon roadbed, and a cement dam on Deer Creek. Mining, ranching, and illegal activities have also left evidence of human impacts on the potential wilderness area.

Opportunities for Solitude or Primitive and Unconfined Recreation

The rugged terrain provides challenging recreational opportunities, and the limited access to the land creates an adventurous environment that promotes self-reliance. The area provides solitude

from communities and other recreationalists, although the sights and sounds from illegal activities along the border may encumber any complete feeling of solitude. A person could experience hiking and hunting with limited access in this PWA.

Special Features

The unique rock formations and panoramic views found in the main Skeleton Canyon add an important component to the wilderness character. The Tony Homestead on the north side of Skeleton Canyon may have the potential for historic and cultural research opportunities. The area contains unique species such as the NM ridge-nosed rattlesnake, lesser long-nosed bat, and potentially jaguars, all of which add to the wilderness character.

Manageability

The Skeleton Canyon Potential Wilderness Area is located near the U.S.-Mexico border, therefore management would be influenced by the U.S. Border Patrol. Illegal activity in the area may also encumber the wilderness character of the area. Potential motorized use on Skeleton Canyon Trail may also subtract from the wilderness capability. There are no identified boundary changes that would enhance the area's wilderness character.

The Skeleton Canyon Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Skeleton Canyon Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. There are three threatened or endangered species that may be located in the PWA that may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Several tanks and one cement dam are located on seasonal streams, but the area demonstrates no need for future water storage or impoundments. There are no ecosystem restoration activities currently planned for the area. Planned ignitions, including aerial ignitions, are introduced once every 10 years into the area (for the next 30 years). The area is committed through contracts and permits for livestock grazing on three allotments. These current authorizations do not conflict with wilderness management or detract from wilderness qualities. There is no potential for timber extraction. There is little or no potential for extraction of locatable minerals. Maintenance of the Ranger Station and Tony Homestead may affect the wilderness character. The Skeleton Canyon Potential Wilderness Area is entirely National Forest System lands, as is the adjacent land. The closest private land is approximately 0.1 mile from the PWA boundary, but likely will not impact the wilderness character of the area.

The Skeleton Canyon Potential Wilderness Area overall was rated as **high** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Skeleton Canyon PWA, there are 7 designated wilderness areas totaling about 197,000 acres (see Table 13).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 13. Designated wilderness within 100 miles of the Skeleton Canyon Potential Wilderness Area

Wilderness Area	Acres
Chiricahua National Monument Wilderness	12,161
Chiricahua Wilderness	88,793
Dos Cabezas Mountains Wilderness	11,855
Miller Peak Wilderness	20,381
Peloncillo Mountains Wilderness	19,244
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
TOTAL	197,251

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands,

the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Skeleton Canyon Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Skeleton Canyon Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Skeleton Canyon Potential Wilderness Area includes 3 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 14). Of these three vegetation communities, the Skeleton Canyon PWA would contribute to wilderness in the following vegetation types: Madrean Encinal Woodland (0.5 percent). The vegetation communities in this PWA consist of 49.00 percent regionally underrepresented vegetation types, therefore the PWA rates in the low range (less than 50 percent) for this factor.

Table 14. Southwestern Region underrepresented vegetation communities found in the Skeleton Canyon Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Skeleton Canyon PWA	Percent of Skeleton Canyon PWA	Percent Addition of Skeleton Canyon PWA to Wilderness
Interior Chaparral	169	3.3	0.0
Madrean Encinal Woodland	2,299	45.5	0.5
Riparian Areas	10	0.2	0.0
Grand Total	**2,478**	**49.0%**	**0.5%**

The Skeleton Canyon Potential Wilderness Area overall was rated as **low** for Need (for individual scores, see appendix G).

Deer Creek Potential Wilderness Area Evaluation [PW-05-03-D1-008]

Area Overview

Size and Location: The Deer Creek Potential Wilderness Area encompasses 5,639 acres. This area is located in the Peloncillo Mountains, which is part of the Douglas Ranger District of the Coronado National Forest in southeastern Arizona (see Map 3 at the end of this document). The Deer Creek PWA is overlapped by 4,718 acres of the Peloncillo Inventoried Roadless Area, comprising 84 percent of the PWA.

Vicinity, Surroundings and Access: The Deer Creek Potential Wilderness Area is approximately 120 miles southeast of Tucson, Arizona, within the Douglas Ranger District at the northern end of the Peloncillo Mountains.

The small incorporated community of Rodeo, New Mexico is located approximately 10 miles north of the PWA, and the small town of Douglas, Arizona can be found approximately 36 miles west of the PWA. The town of Apache is located approximately 10 miles from the PWA. The PWA is located entirely in the state of New Mexico, approximately 1.5 miles from the Arizona border.

The primary motorized access route into the northern portion of the National Forest and into the PWA is Skeleton Canyon Road (NFS Road 702). This road branches off into Deer Creek Road (NFS Road 704), which then turns into North Deer (NFS Road 4313). This road runs through the boundary of the PWA, turning into the North Deer Creek Trail. State Highway 80 provides major access to the north of the Forest boundary. The PWA may be accessed from Hidalgo County, New Mexico on all sides. The closet private lands are located approximately 0.1 miles from the PWA boundary on both the eastern and western sides. The eastern side of the PWA can be accessed via Juniper Basin Road (NFS Road 4332) and Bowers Road (NFS Road 4331). The southern portion may be reached on Herrige Road (NFS Road 4329). Large sections of private land border the eastern side of the national forest boundary, which also touches a small section of the PWA boundary.

North Deer Creek Trail serves as the only trail that runs across the Deer Creek PWA. This trail provide nonmotorized access into and through the PWA, and also connect with North Deer Road on the western side of the PWA.

Although there appears to be adequate motorized and trail access to the PWA, permanent legal public access may be a future concern. There is little, if any, documented right-of-way for the existing road system across the non-Federal lands within and outside the proclaimed national forest boundary. Permanent legal public access to the NFS lands and the PWA in the southern end of the Peloncillo Mountains will continue to be an issue.

Boundaries: The southern portion of the PWA boundary was established along Deer Creek Road (NFS Road 704). The remainder of the boundary uses natural features, such as ridgelines and high points, to establish the border lines, although the boundary also loosely follows the Forest boundary itself.

Geography and Topography: The Deer Creek Potential Wilderness Area (PWA) consists of a rectangular-shaped area in the northern part of the Coronado National Forest (CNF) of the central part of the north-trending Peloncillo Mountains. This mountain range is bounded on the east by

the Animas Valley in New Mexico and on the west by the San Simon Valley in Arizona. The Deer Creek PWA is a rectangular area that is approximately two miles wide in an east-west direction and six miles long in a north-south direction. Encompassing an area of 5,639 acres, the Deer Creek PWA consists of the northern part of the southern Peloncillo Mountain range. This PWA is located entirely within the Douglas Ranger District, Coronado National Forest (CNF) and is located in Hidalgo County, New Mexico.

The Deer Creek PWA is situated in the northern part of the CNF that encompasses the southern Peloncillo Mountains. Details of the topography are shown on the Skeleton Canyon and Skull Canyon, N. Mex.-Ariz., and the Clanton Draw, and Mount Baldy, New Mexico 7 ½ minute U.S. Geological Survey quadrangles. The boundaries of the irregularly rectangular-shaped area are very near the western, northern, and eastern borders of the northern part of the CNF in the southern Peloncillo Mountains. It is bounded on the south by the east-trending South Deer Creek Road on the southwest side and by a road near Irishman Tank on the southeast side of the Deer Creek PWA.

The minimum elevation in the Deer Creek PWA is approximately 5,025 feet above sea level (ft asl) at the southwestern edge of the PWA near Allen Tank and at 5,600 feet at Irishman Tank on the southeast side of the PWA. The maximum elevation is 6,363 feet at an unnamed peak near the northwest corner of the Deer Creek PWA. The topography is rugged with no canyons suitable for jeep trails.

The southern Pinaleño Mountains contain primarily mid-Tertiary volcanic (mostly rhyolitic ash flow tuff) rocks of Miocene age (23 to 30 million years old [Ma]). The Pinaleño Mountains are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona.

No active mining claims are located in the Deer Creek PWA and the area does not have historic production of metals. As no historic mining has occurred there, the likelihood of future exploration is minor.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland and desert grassland communities. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), gray oak (*Quercus grisea*), Mexican blue oak (*Quercus oblongifolia*) and Toumey oak (*Quercus toumeyi*). Other tree species [including border pinyon (*Pinus discolor*), Chihuahua pine (*Pinus leiophylla*) and alligator (*Juniperus deppeana*) and redberry juniper (*J. coahuilensis*)] and interior chaparral species [including manzanita spp. (*Arctostaphylos* spp.), desert ceanothus (*Ceanothus greggii*), mountain mahogany (*Cercocarpus montanus*), silktassles (*Garrya wrightii*), Stansbury cliffrose (*Purshia stansburiana*), and sumacs (*Rhus* spp.)] may be present but do not codominate. Rosette scrubs such as Agaves (*Agave* spp.), yuccas (*Yucca* spp.), sotol (*Dasylirion wheeleri*) and beargrass (*Nolina microcarpa*) as well as desert scrub species such as acacias (*Acacia* spp.), mimosa (*Mimosa* spp.) mesquite (*Prosopis* spp.) dominate to the lower elevation shrub component. Cactus species such as cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia* spp.), hedgehog (*Echinocereus* spp.), and barrel cactus (*Ferocactus* spp.) are also common component of the vegetative community. The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community.

Riparian areas have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*) and willows (*Salix* spp.). Historically, woody species have been removed as a source of firewood where they are accessible. Many if not most of the woody species resprout after harvesting and remain on the landscape. This practice probably reduced the number of large hardwood trees and snags that would have historically occurred.

Current Uses: This area has limited recreational activity. One trail runs through the area and is used for hiking and horseback riding. One adjacent road is used for motorized touring and dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. One existing road within the PWA is currently in use, although it has been recommended for decommissioning. Topography is mostly rugged, so there is limited cross-country travel through the PWA. There are four grazing allotments within the Deer Creek Potential Wilderness Area. All of these allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

Diversity of vegetation within the Deer Creek Potential Wilderness Area boundary includes oak woodlands and grasslands. Fourteen dirt tanks and dams are located on Deer Creek, which heavily impacts the free-flowing condition of the waterways. Storage tanks, troughs, and a pipeline to Rainbow pasture are also present. Night skies can be clearly seen and light pollution is not evident. The biological diversity in the area has limited habitats and ecological conditions. The PWA likely houses the New Mexico ridge-nosed rattlesnake, but it has not yet been surveyed. Ecological conditions may serve as potential jaguar corridors. The area contains a limited variety of natural resources, and recreational opportunities are few due to lack of access from the east and west sides. There may be water quality issues due to the presence of human body waste and trash from recreationalists, but no water quality sampling has been conducted. The prevalence of Lehmann's lovegrass throughout the PWA detracts from the area's wilderness capability. Nonnative bullfrogs have been located in Woodchoppers Spring, Rainbow dam, Bower tank, and Owl Creek tank.

Undeveloped

The Deer Creek Potential Wilderness Area has obvious signs of human activity, including old mining roadbeds and several water impoundments. Mining, ranching, and illegal activities have also left evidence of human impacts on the potential wilderness area.

Opportunities for Solitude or Primitive and Unconfined Recreation

The rugged terrain provides challenging recreational opportunities, and the limited access to the land creates an adventurous environment that promotes self-reliance. The area provides solitude from communities and other recreationalists, although the sights and sounds from illegal activities along the border may encumber any complete feeling of solitude. A person could experience hiking and hunting with limited access in this PWA.

Special Features

The unique rock formations and cliff-dominated country in the northern end of this PWA add an important component to the wilderness character. Historical study opportunities may be found at the old dam sites, some of which were built by the Civilian Conservation Corps. The area may potentially contain unique species such as the NM ridge-nosed rattlesnake, lesser long-nosed bat, and jaguars, all of which would add to the wilderness character.

Manageability

The Deer Creek Potential Wilderness Area is located near the U.S.-Mexico border, therefore management may be somewhat influenced U.S. Border Patrol activity. Illegal activity in the area may also encumber the wilderness character of the area. The PWA currently does not have any motorized vehicle use. There are no identified boundary changes that would enhance the area's wilderness character.

The Deer Creek Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Deer Creek Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. There are three threatened or endangered species that may be located in the PWA that may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Fourteen dirt tanks, dams, troughs, and a pipeline to Rainbow pasture are present on this PWA. Concrete dams are needed and planned for North Deer Creek and Middle Deer Creek, which could impact the wilderness character. There are no ecosystem restoration activities currently planned for the area. Planned ignitions, including aerial ignitions, are introduced into the area once every 10 years for the next 30 years. The area is committed through contracts and permits for livestock grazing on four allotments. Maintenance on dirt tanks require cross country access with mechanized equipment, which may conflict with wilderness management or detract from wilderness qualities. There is no potential for timber extraction. There is little or no potential for extraction of locatable minerals. There are no cultural resources that will be affected by wilderness management. The Deer Creek Potential Wilderness Area is entirely National Forest System lands, as is the adjacent land. The closest private land is approximately 0.1 mile from the PWA boundary, but likely will not impact the wilderness character of the area.

The Deer Creek Potential Wilderness Area overall was rated as **high** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Deer Creek PWA, there are 7 designated wilderness areas totaling about 197,000 acres (see Table 15).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 15. Designated wilderness within 100 miles of the Deer Creek Potential Wilderness Area

Wilderness Area	Acres
Chiricahua National Monument Wilderness	12,161
Chiricahua Wilderness	88,793
Dos Cabezas Mountains Wilderness	11,855
Miller Peak Wilderness	20,381
Peloncillo Mountains Wilderness	19,244
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
TOTAL	197,251

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Deer Creek Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Deer Creek Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Deer Creek Potential Wilderness Area includes 3 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 16). Of these three vegetation communities, the Deer Creek PWA would contribute to wilderness in the following vegetation types: Interior Chaparral (0.1 percent) and Madrean Encinal Woodland (0.6 percent). The vegetation communities in this PWA consist of 50.30 percent regionally underrepresented vegetation types, therefore the PWA rates in the medium range (50-90 percent) for this factor.

Table 16. Southwestern Region underrepresented vegetation communities found in the Deer Creek Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Deer Creek PWA	Percent of Deer Creek PWA	Percent Addition of Deer Creek PWA to Wilderness
Interior Chaparral	245	4.3	0.1
Madrean Encinal Woodland	2,588	45.9	0.6
Madrean Pine Oak Woodland	7	0.1	0.0
Grand Total	**2,840**	**50.3%**	**0.7%**

The Deer Creek Potential Wilderness Area overall was rated as **low** for Need (for individual scores, see appendix G).

Chiricahua Addition West Potential Wilderness Area Evaluation [PW-05-03-D1-009]

Area Overview

Size and Location: The Chiricahua Addition West Potential Wilderness Area encompasses 2,731 acres. The area is located adjacent to the existing Chiricahua Wilderness. This area would be an expansion of the Chiricahua Wilderness that is now 87,700 acres, bringing the overall acres to 90,431 if recommended. This area is located in the Chiricahua Mountains, which is part of the Douglas Ranger District of the Coronado National Forest in southeastern Arizona (see Map 2 at the end of this document). The Chiricahua Addition West PWA is overlapped by 594 acres of the Chiricahua Inventoried Roadless Area, comprising 22 percent of the PWA.

Vicinity, Surroundings and Access: This potential wilderness area is approximately 100 miles southeast of Tucson, Arizona in the southeastern corner of the Chiricahua Mountains. The potential wilderness area adjoins the Chiricahua Wilderness Area and is completely surrounded by National Forest System (NFS) lands. Nearby on the eastern side of the Chiricahua Mountain Range are the incorporated community of Douglas and several unincorporated communities (Apache, Sunizona, Chiricahua, Webb, and Elfrida).

State Route 80, located on the eastern side of the Chiricahua Mountains, connects Douglas, Arizona with several small unincorporated southeastern Arizona and southwestern New Mexico communities as well as with Interstate 10 near Road Forks, New Mexico. U.S. Highway 191, located on the western side of the Chiricahua Mountains, is the primary north-south artery from Interstate 10 south to Douglas and the International Boundary with Mexico.

One of the two primary motorized access routes into and through the National Forest at the southern end of the Chiricahua Mountains is the Tex Canyon Road/Rucker Canyon Road (NFS Road 74). This road is a Cochise County-maintained road, except for the portion within the proclaimed national forest boundary from State Route 80 (Tex Canyon Road) and U.S. Highway 191 (Rucker Canyon Road). The closet private lands are located approximately 0.5 miles from the PWA boundary on the western side, although it is likely this factor will not impact wilderness management.

Tex Canyon Road (NFS Road 74) provides motorized access into the western side of the National Forest, branching into Rusty Road (NFS Road 4249) and Dart Road (NFS Road 4251). These roads run south of the PWA boundary, providing possible access. Pridham Road (NFS Road 4253) and Marion Road (NFS Road 4254) extend up to the southwestern boundary of the PWA, with Stanford (NFS Road 4255), Larry (NFS Road 4814), Fred (NFS Road 4272), and Rudy Roads (NFS Road 4811) providing entry points to the entire western side of the area.

While no existing National Forest System Trails run though the Chiricahua Addition West PWA, the Cottonwood Canyon Trail, Turtle Mountain Trail, John Long Trail, and Pole Bridge Trail may all be accessed within one mile of the PWA boundary. These trails provide nonmotorized trail access into the designated Chiricahua Wilderness.

Although there appears to be adequate motorized and trail access to the Chiricahua Addition West Potential Wilderness Area, permanent legal public access may become an issue in the future. There is limited documented right-of-way for the existing road system exists across the non-Federal lands outside the proclaimed national forest boundary. Permanent legal public access to

the National Forest System lands and the potential wilderness area in the Chiricahua Mountains will continue to be issue.

Boundaries: The northern boundary of this PWA was established following the line where Fred Road (NFS Road 4274) and Rudy Road (NFS Road 4811) meet. The area is bounded by the existing Chiricahua Wilderness, with the remainder of the boundary following natural features, such as ridgelines and high points, in the Chiricahua Mountain Range.

Geography and Topography: The Chiricahua Addition West Potential Wilderness Area (PWA) consists of a U-shaped area surrounding the westward protruding arm of the Chiricahua Wilderness Area in the central part of the arcuate, north- to northwest-trending Chiricahua Mountains. This mountain range is bounded on the east by the San Simon Valley and on the west by the Sulphur Spring Valley. The Chiricahua Addition West PWA is an irregularly shaped area that is approximately one-half to one mile wide surrounding the Chiricahua Wilderness Area with each arm of the U-shape approximately three to four miles long in an east-west direction. Encompassing an area of 2,731 acres, the Chiricahua Addition West PWA consists of parts of the west central Chiricahua Mountain range. This PWA is located entirely within the Douglas Ranger District, Coronado National Forest (CNF) and is located in Cochise County.

The Chiricahua Addition West PWA is situated in the west central part of the Chiricahua Mountains and is bounded on the south, north, and east by the Chiricahua Wilderness Area. Details of the topography are shown on the Chiricahua Peak and Stanford Canyon 7 ½ minute U.S. Geological Survey quadrangles. The western boundary of the U-shaped area is within one-half to one mile of the CNF boundaries and is bounded on the north by the east-trending road up Cottonwood Canyon and is bounded on the south by the east-trending road up John Long Canyon.

The minimum elevation in the Chiricahua Addition West PWA is at approximately 5,400 feet above sea level at the northwestern edge of the PWA in the northern arm and at Pridham Canyon in the southern arm. The maximum elevation is 8,841 feet at an unnamed peak north of John Long Canyon in the southern arm. The topography is rugged with no canyons suitable for jeep trails.

The western Chiricahua Mountains contain primarily mid-Tertiary volcanic and intrusive rocks, underlying Cretaceous-Jurassic sedimentary rocks, and Paleozoic sedimentary rocks, and some Proterozoic granite. The Middle Proterozoic (1400 Ma) porphyritic biotite granite to granodiorite (similar to Oracle Granite) crops out in the northern part of the central Chiricahua Mountains. The majority of the Chiricahua Addition West PWA is primarily Tertiary volcanic rocks (Tv) with some outcrops of Tertiary intrusive granite (Ti) on the fringes of the area. The Chiricahua Mountains are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona.

No active mining claims are located in the parts of the Chiricahua Addition West PWA and the area does not have historic production of metals. The California mining district is located northeast of these areas and the same geology is present in the Chiricahua Addition West PWA, but as no historic mining has occurred within the PWA, the likelihood of future mineral exploration is minor.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland communities. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), gray oak

(*Quercus grisea*), Mexican blue oak (*Quercus oblongifolia*) and Toumey oak (*Quercus toumeyi*). Other tree species [including border pinyon (*Pinus discolor*), Chihuahua pine (*Pinus leiophylla*) Arizona cypress (*Hesperocyparis arizonica*) and alligator juniper (*Juniperus deppeana*)] and interior chaparral species [including manzanita spp. (Arctostaphylos spp.), desert ceanothus (Ceanothus *greggii*), mountain mahogany (*Cercocarpus montanus*), silktassles (*Garrya wrightii* .), Stansbury cliffrose (*Purshia stansburiana*), shrub live oak (*Quercus turbinella*) and sumacs (*Rhus* spp.)] may be present but do not codominate. The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*) and willows (*Salix* spp.). Historically, some areas near canyon bottoms and in the more gentle terrain were logged to provide wood for nearby mines, but second growth has largely matured. The Horse2 fire burned most if not all of this area, much of it was classified as a high severity burn during the BAER assessment.

Current Uses: This area has very limited recreational activity. There are no trails or roads on these lands. One road and one trail lie along the boundary, and several roads end at the PWA boundary, and visitors in these areas likely venture into the PWA for camping and hunting. Topography is rugged, so there is very limited cross-country travel through the PWA. There are two grazing allotments within the Chiricahua Addition West Potential Wilderness Area. Both of these allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

Diversity of vegetation within the Chiricahua Addition West Potential Wilderness Area boundary includes oak savannah throughout, bordering similar vegetation within the existing Chiricahua Wilderness. Several dirt tanks are present in the Oak allotment, which moderately affects the free-flowing condition of the waterways. Night skies can be clearly seen and light pollution is not evident. The biological diversity in the area has a mixture of habitats and ecological conditions. The area provides habitats for jaguar and ocelot, agaves for bat forage, reptiles, Chiricahua leopard frogs, and migratory birds. The area contains a limited variety of natural resources, with vegetative communities that largely mirror the surrounding communities. Recreational opportunities are limited throughout the PWA. Although no rivers or streams have been sampled, there are no suggested or known water quality issues. Lehmann’s lovegrass can be found in isolated spots at lower elevations, a feature that detracts somewhat from the area’s wilderness capability. Nonnative bullfrogs have been located in tanks on the Oak allotment.

Undeveloped

The only evidence of human activity on the Chiricahua Addition West Potential Wilderness Area may be found on the range improvement sites, therefore the area remains largely undeveloped.

Opportunities for Solitude or Primitive and Unconfined Recreation

The Chiricahua Addition West PWA proves fairly navigable in most areas, although the terrain becomes steeper and more difficult to traverse closer to the existing Chiricahua Wilderness Boundary. While the northern aspect faces Sunglow Ranch and private lands, a person could experience a greater sense of solitude on the southern aspect, which offers more opportunities for isolation. Primitive recreation opportunities include hunting and limited cross-country hiking and backpacking.

Special Features

This PWA does not contain any outstanding or distinct features, although there are some potential arch sites and some potential rare plants. Unique wildlife includes jaguars and ocelots, Chiricahua leopard frogs and migratory birds.

Manageability

The Chiricahua Addition West Potential Wilderness Area may prove difficult to manage due to possible resource conflicts from motor vehicle use on National Forest System Roads 4813 and 4814. Access to this area is blocked on NFS Road 4255, but available in multiple other locations. The boundaries of this PWA might improve manageability of the existing Chiricahua Wilderness because they are more easily locatable. The PWA currently does not have any motorized vehicle use, but the potential for use does exist. There are no identified boundary changes that would enhance the area's wilderness character.

The Chiricahua Addition West Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Chiricahua Addition West Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. The Forest Service has a high degree of control over the land, although water rights exist in Pridham and Standford. The Chiricahua Mountains contain eight threatened or endangered species that may be located in the PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Vegetation treatments include planned and unplanned ignitions introduced once every 10 years into the area under the Chiricahua FireScape. Some thinning and mastication of Manzanita may take place in Upper Pridham. Watersheds within the area are properly functioning, although several springs are developed just outside the PWA boundary. The area is committed through permits for livestock grazing on two allotments, the Oak and the Rak. These current authorizations do not conflict with wilderness management or detract from wilderness qualities. There is no potential for timber extraction. There is little or no potential for extraction of locatable minerals. There are no cultural resources that will be affected by wilderness management. The Chiricahua Addition West Potential Wilderness Area is composed entirely of National Forest System lands, as is the land adjacent to the potential boundary. The closest private land is approximately one half mile from the potential wilderness area boundary and will not likely impact the wilderness character of the area.

The Chiricahua Addition West Potential Wilderness Area overall was rated as **high** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Chiricahua Addition West PWA, there are 14 designated wilderness areas totaling about 473,000 acres (see Table 17).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 17. Designated wilderness within 100 Miles of the Chiricahua Addition West Potential Wilderness Area

Wilderness Area	Acres
Aravaipa Canyon Wilderness	19,790
Chiricahua National Monument Wilderness	12,161
Chiricahua Wilderness	88,793
Dos Cabezas Mountains Wilderness	11,855
Galiuro Wilderness	75,585
Miller Peak Wilderness	20,381
Mount Wrightson Wilderness	25,596
North Santa Teresa Wilderness	5,733
Peloncillo Mountains Wilderness	19,244
Pusch Ridge Wilderness	56,743
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
Saguaro Wilderness	63,258
Santa Teresa Wilderness	28,769
TOTAL	472,726

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the high range (more than 60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Chiricahua Addition West Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Chiricahua Addition West Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Chiricahua Addition West Potential Wilderness Area includes 5 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 18). Of these five vegetation communities, the Chiricahua Addition West PWA would contribute to wilderness in the following vegetation types: Interior Chaparral (0.1 percent), Madrean Encinal Woodland (0.4 percent), Madrean Pine Oak Woodland (0.2 percent), and Riparian Areas (0.1 percent). The vegetation communities in this PWA consist of 94.20 percent regionally underrepresented vegetation types, therefore the PWA rates in the high range (more than 90 percent) for this factor.

Table 18. Southwestern Region underrepresented vegetation communities found in the Chiricahua Addition West Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Chiricahua Addition West PWA	Percent of Chiricahua Addition West PWA	Percent Addition of Chiricahua Addition West PWA to Wilderness
Interior Chaparral	289	10.6	0.1
Madrean Encinal Woodland	1,847	67.6	0.4
Madrean Pine Oak Woodland	415	15.2	0.2
Mixed Conifer Forest	7	0.3	0.0
Riparian Areas	14	0.5	0.1
Grand Total	**2,572**	**94.2%**	**0.8%**

The Chiricahua Addition West Potential Wilderness Area overall was rated as **high** for Need (for individual scores, see appendix G).

Chiricahua Addition North Potential Wilderness Area Evaluation [PW-05-03-D1-010]

Area Overview

Size and Location: The Chiricahua Addition North Potential Wilderness Area encompasses 6,881 acres. The area is located adjacent to the existing Chiricahua Wilderness. This area would be an expansion of the Chiricahua Wilderness that is now 87,700 acres, bringing the overall acres to 94,581 if recommended. This area is located in the Chiricahua Mountains, which is part of the Douglas Ranger District of the Coronado National Forest in southeastern Arizona (see Map 2 at the end of this document). The Chiricahua Addition North PWA is overlapped by 1,828 acres of the Chiricahua Inventoried Roadless Area, comprising 26 percent of the PWA.

Vicinity, Surroundings and Access: This potential wilderness area is approximately 100 miles southeast of Tucson, Arizona in the center of the Chiricahua Mountains. The potential wilderness area adjoins the Chiricahua Wilderness Area and is completely surrounded by National Forest System (NFS) lands, with the exception of the northwestern polygon. The closet private lands are located approximately 0.1 miles from the PWA boundary on the northwestern side, bordering the entire northwestern boundary of the National Forest. Nearby on the eastern side of the Chiricahua Mountain Range are the incorporated community of Douglas and several unincorporated communities (Apache, Sunizona, Chiricahua, Webb, and Elfrida).

State Route 80, located on the eastern side of the Chiricahua Mountains, connects Douglas, Arizona with several small unincorporated southeastern Arizona and southwestern New Mexico communities as well as with Interstate 10 near Road Forks, New Mexico. U.S. Highway 191, located on the western side of the Chiricahua Mountains, is the primary north-south artery from Interstate 10 south to Douglas and the International Boundary with Mexico.

Extending from Highway 181 on the western side, the Chiricahua Addition North PWA may be accessed via West Turkey Creek Road (NFS Road 41), Rock Canyon Road (NFS Road 4277), and Witch Canyon Road (NFS Road 4267). The easternmost polygon in the Chiricahua Addition North PWA may be accessed through Misfire Road (NFS Road 4854), which runs along the polygon's boundary.

National Forest System Trails that run through the six polygons that comprise the Chiricahua Addition North PWA include the Middle Witch Trail, Rock Creek Trail, Saulsbury Trail, Green Canyon Trail, Hoovey Canyon Trail, and Basin Trail. Several additional trails run through the existing Chiricahua Wilderness and connect these polygons. These trails provide nonmotorized trail access into the PWA and the designated Chiricahua Wilderness.

Although there appears to be adequate motorized and trail access to the Chiricahua Addition North Potential Wilderness Area, permanent legal public access may become an issue in the future. There is limited documented right-of-way for the existing road system exists across the non-Federal lands outside the proclaimed national forest boundary. Permanent legal public access to the NFS lands and the potential wilderness area in the Chiricahua Mountains will continue to be issue.

Boundaries: The PWA is composed of six individual polygons that are bound to the existing Chiricahua Wilderness. The northeastern polygon border was established along the Forest boundary and Pine Canyon Road (NFS Road 357). The boundary of the easternmost polygon

follows Onion Saddle Cave Creek Road (NFS Road 42). The remaining outer boundary lines follow natural features, such as ridgelines and high points, in the Chiricahua Mountain Range.

Geography and Topography: The Chiricahua Addition North Potential Wilderness Area (PWA) consists of six small areas adjacent to the Chiricahua Wilderness Area in the central part of the arcuate, north- to northwest-trending Chiricahua Mountains. This mountain range is bounded on the east by the San Simon Valley and on the west by the Sulphur Spring Valley. The Chiricahua Addition North PWA is six irregularly shaped areas that are each approximately one to four miles wide in east-west direction and one to two miles wide in a north-south direction. Encompassing an area of 6,881 acres, the Chiricahua Addition North PWA consists of parts of the central Chiricahua Mountain range. This PWA is located entirely within the Douglas Ranger District, Coronado National Forest (CNF) and is located in Cochise County.

The six pieces of the Chiricahua Addition North PWA are situated in the central part of the Chiricahua Mountains and are bounded on the south and north by the Chiricahua Wilderness Area. Details of the topography are shown on the Fife Peak, Chiricahua Peak, Rustler Park, Portal, Stanford Canyon, and Portal Peak 7 ½ minute U.S. Geological Survey quadrangles. The northwest area extends from the Chiricahua Wilderness Area border at North Witch Canyon northward across Trunk Canyon to near the north border of the CNF at Crescent Tank. The southwest area extends from near Rock Canyon northward across a peak near Madrona Spring to the Chiricahua Wilderness Area southern border and extends eastward to near Rock Spring. The southeast area extends from Turkey Creek in the south to the Chiricahua Wilderness Area across Saulsbury Canyon and Ward Canyon, including Mormon Spring in Mormon Canyon northward to the southern border of the Chiricahua Wilderness area at the indentation along Turkey and Mormon Canyon. The south area extends across Rock Canyon to the north and east at the western border of the indentation in the Chiricahua Wilderness Area. The north area extends northward from the north border of the Chiricahua Wilderness Area to near the jeep trail up the west-trending Pine Canyon and crosses the northwest trending Green Canyon and the southern border of Hoovey Canyon. The northeast area extends from the road up Cave Creek near John Hands Campground at the northern boundary of the Chiricahua Wilderness Area northward to near the road that runs south from Pinery Canyon up to Rustler Park and beyond to near Long Park.

The minimum elevation in the various parts of the Chiricahua North Addition PWA is at 5,126 feet above sea level at the northwestern edge of the northwest area at Trunk Canyon Tank. The maximum elevation is 8,608 feet at an unnamed peak west of Madrona Spring in the southwest area. The topography is rugged with no canyons suitable for jeep trails.

The northern and central Chiricahua Mountains contain primarily mid-Tertiary volcanic and intrusive rocks, underlying Cretaceous-Jurassic sedimentary rocks, and Paleozoic sedimentary rocks, and some Proterozoic granite. The Middle Proterozoic (1400 Ma) porphyritic biotite granite to granodiorite (similar to Oracle Granite) crops out in the northern part of the central Chiricahua Mountains. The majority of the Chiricahua Addition North PWA is primarily Tertiary volcanic rocks (Tv) with some outcrops of Tertiary intrusive granite (Ti) in the southwest, south, southeast, and western part of the northeast areas. Cretaceous-Jurassic sedimentary rocks (KJs) crop out in the central and eastern parts of the northeast area. A small amount of Paleozoic sedimentary rocks (Pz) crop out in the north of the PWA. The Chiricahua Mountains are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona.

No active mining claims are located in the parts of the Chiricahua Addition North PWA and the area does not have historic production of metals. The California mining district is located northeast of these areas and the same geology is present in the Chiricahua Addition North PWA, but as no historic mining has occurred here, the likelihood of future exploration is minor.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland communities. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), gray oak (*Quercus grisea*), Mexican blue oak (*Quercus oblongifolia*) and Toumey oak (*Quercus toumeyi*). Other tree species [including border pinyon (*Pinus discolor*), Chihuahua pine (*Pinus leiophylla*) Arizona cypress (*Hesperocyparis arizonica*) and alligator juniper (*Juniperus deppeana*)] and interior chaparral species [including manzanita spp. (Arctostaphylos spp.), desert ceanothus (*Ceanothus greggii*), mountain mahogany (*Cercocarpus montanus*), silktassles (*Garrya wrightii*), Stansbury cliffrose (*Purshia stansburian*a), shrub live oak (*Quercus turbinella*) and sumacs (*Rhus* spp.)] may be present but do not codominate. The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (Eragrostis intermedia), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*) and willows (*Salix* spp.). Historically, some areas near canyon bottoms and in the more gentle terrain were logged to provide wood for nearby mines, but second growth has largely matured. The Horse2 fire burned most if not all of this area, much of it was classified as a high severity burn during the BAER assessment.

Current Uses: Visitors use this PWA for a variety of recreational activities. These lands lie adjacent to the Chiricahua Wilderness. The eight trails running through the area are used for hiking and horseback riding. Adjacent roads are used for motorized touring and dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. Several existing roads within the PWA are currently in use, although they have been recommended for decommissioning. Crystal Cave, a popular spelunking site, lies within this PWA. Approximately ¼ mile from the PWA boundary there are two developed recreation sites, Sycamore Campground and Rustler Park Campground, and visitors to this area sometimes venture into the PWA. Topography is rugged, so there is very limited cross-country travel through the PWA. There are six grazing allotments within the Chiricahua Addition North Potential Wilderness Area. All of these allotments are active and valid permitted uses. This PWA lies along the Coronado National Forest boundary, and uses on adjacent BLM, state, and private lands may result in recreation and other uses within the PWA. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

Diversity of vegetation within the Chiricahua Addition North Potential Wilderness Area boundary ranges from desert grasslands to pinyon pine forests. Waterways within the area are considered free-flowing, although small impoundments possibly exist in some of the drainages. Night skies can be clearly seen and light pollution is not evident. The biological diversity in the area includes critical habitats and unique ecological conditions. The area provides habitats for jaguar and ocelot, lesser long-nosed bats, and Chiricahua leopard frogs. Mexican spotted owl Protected Activity Centers (PACs) and riparian vegetation communities are also located in this PWA. The area contains a diverse amount of natural resources, including desert grasslands, oak trees, pinyon pines, and junipers. Given the variety of natural resources located within this area, the PWA provides numerous additive values to the existing Chiricahua Wilderness. Although no rivers or streams have been sampled, there are no suggested or known water quality issues. Lehmann's lovegrass can be found in isolated spots on the far northwest corner of the PWA, a feature that detracts somewhat from the area's wilderness capability. Nonnative bullfrogs have been located in West Turkey Creek.

Undeveloped

The only signs of human activity on the Chiricahua Addition North Potential Wilderness Area are evidenced by fences and system trails, therefore the area appears largely undeveloped.

Opportunities for Solitude or Primitive and Unconfined Recreation

The Chiricahua Addition North PWA provides physically challenging recreation that includes hunting, hiking and backpacking. A person may experience a high degree of solitude and isolation from human activities while recreating in this area, a characteristic that greatly contributes to the area's wilderness capability.

Special Features

The northeast portion of this PWA contains several unique rock features and vistas. Opportunities for research include the study of plants and wildlife at Turkey Creek, and environmental education in the Herb Martyr and Turkey Creek areas. Unique wildlife includes rare birds, jaguars and ocelots, Chiricahua leopard frogs, lesser long-nosed bats, and Mexican spotted owl.

Manageability

The Chiricahua Addition North Potential Wilderness Area has adequate access opportunities and no known resource conflicts or encumbrances. Although somewhat isolated from areas of activity, some developed recreation areas are located nearby. The PWA currently does not have any motorized vehicle use, including ATVs. There are no identified boundary changes that would enhance the area's wilderness character.

The Chiricahua Addition North Potential Wilderness Area overall was rated as **high** for Capability (for individual scores, see appendix E).

Availability

In the Chiricahua Addition North Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. The Forest Service has a high degree of control over the land, although Customs and Border Patrol also operate on the land. The Chiricahua Mountains contain eight threatened or endangered species that may be located in the PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Vegetation treatments include planned and unplanned ignitions introduced once every 10 years in accordance with the Chiricahua FireScape. Watersheds within the area are properly functioning, although several springs developments may be found throughout the PWA. The area is committed through permits for livestock grazing on six allotments: Turkey Creek, Upper and Lower Rock Creeks, Pine, Paradise, and Cave Creek. These current authorizations do not conflict with wilderness management or detract from wilderness qualities. There is no potential for timber extraction. There is little or no potential for extraction of locatable minerals. There are no cultural resources that will be affected by wilderness management. The Chiricahua Addition North Potential Wilderness Area is composed entirely of National Forest System lands, as is the majority of land adjacent to the potential boundary. The closest private land is approximately 0.1 miles from the potential wilderness area boundary and may impact the wilderness character of the area.

The Chiricahua Addition North Potential Wilderness Area overall was rated as **high** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Chiricahua Addition North PWA, there are 15 designated wilderness areas totaling about 484,000 acres (see Table 19).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness Areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 19. Designated wilderness within 100 miles of the Chiricahua Addition North Potential Wilderness Area

Wilderness Area	Acres
Aravaipa Canyon Wilderness	19,790
Chiricahua National Monument Wilderness	12,161
Chiricahua Wilderness	88,793
Dos Cabezas Mountains Wilderness	11,855
Fishhooks Wilderness	11,400
Galiuro Wilderness	75,585
Miller Peak Wilderness	20,381
Mount Wrightson Wilderness	25,596
North Santa Teresa Wilderness	5,733
Peloncillo Mountains Wilderness	19,244
Pusch Ridge Wilderness	56,743
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
Saguaro Wilderness	63,258
Santa Teresa Wilderness	28,769
TOTAL	484,126

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these

species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the high range (more than 60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Chiricahua Addition North Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Chiricahua Addition North Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Chiricahua Addition North Potential Wilderness Area includes 5 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 20). Of these five vegetation communities, the Chiricahua Addition North PWA would contribute to wilderness in the following vegetation types: Interior Chaparral (0.2 percent), Madrean Encinal Woodland (1.2 percent), Madrean Pine Oak Woodland (0.3 percent), Mixed Conifer Forest (0.1 percent), and Riparian Areas (0.2 percent). The vegetation communities in this PWA consist of 95.30 percent regionally underrepresented vegetation types, therefore the PWA rates in the high range (more than 90 percent) for this factor.

Table 20. Southwestern Region underrepresented vegetation communities found in Chiricahua Addition North Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Chiricahua Addition North PWA	Percent of Chiricahua Addition North PWA	Percent Addition of Chiricahua Addition North PWA to Wilderness
Interior Chaparral	642	9.3	0.2
Madrean Encinal Woodland	4,963	72.1	1.2
Madrean Pine Oak Woodland	502	7.3	0.3
Mixed Conifer Forest	400	5.8	0.1
Riparian Areas	54	0.8	0.2
Grand Total	**6,561**	**95.3%**	**2.0%**

The Chiricahua Addition North Potential Wilderness Area overall was rated as **high** for Need (for individual scores, see appendix G).

Jhus Canyon Potential Wilderness Area Evaluation [PW-05-03-D1-011]

Area Overview

Size and Location: The Jhus Canyon Potential Wilderness Area encompasses 10,219 acres. This area is located in the Chiricahua Mountains, which is part of the Douglas Ranger District of the Coronado National Forest in southeastern Arizona (see Map 2 at the end of this document). The Jhus Canyon PWA is overlapped by 4,650 acres of the Chiricahua Inventoried Roadless Area, comprising 45 percent of the PWA.

Vicinity, Surroundings and Access: This potential wilderness area is approximately 100 miles southeast of Tucson, Arizona in the center of the Chiricahua Mountains. The potential wilderness area is located north of the designated Chiricahua Wilderness and is completely surrounded by National Forest System (NFS) lands. A small block of private land is located within the PWA, which may cause conflicts in wilderness management and wilderness qualifications. The closest private lands outside the boundary are located approximately 0.1 miles from the perimeter of the PWA on the southeastern side. In addition, a plot of Game and Fish land can be found in the northern part of the PWA. National Park Service lands are located northeast of the PWA border, with additional private lands bordering he northern perimeter. Nearby on the eastern side of the Chiricahua Mountain Range is the incorporated community of Douglas, along with several unincorporated communities (Sunizona, Webb, and Elfrida).

State Route 80, located on the eastern side of the Chiricahua Mountains, connects Douglas, Arizona with several small unincorporated southeastern Arizona and southwestern New Mexico communities as well as with Interstate 10 near Road Forks, New Mexico. U.S. Highway 191, located on the western side of the Chiricahua Mountains, is the primary north-south artery from Interstate 10 south to Douglas and the International Boundary with Mexico. The small, unincorporated communities of Paradise and Hilltop, Arizona are located on private lands within the National Forest System boundary, approximately 0.1 miles from the PWA boundary.

The PWA may be accessed using several National Forest System Roads, including North Fork East Whitetail Road from the north (NFS Road 356) and the Onion Saddle Cave Creek Road along the southern perimeter (NFS Road 42). Several NFS Roads run into the PWA itself, although the boundary follows these lines so as to exclude these roads from the potential wilderness area. These roads include Horsefall Canyon (NFS Road 709), Silver Prince (NFS Road 4262), Jhus Canyon (NFS Road 341), Chiricahua Tank (NFS Road 4303), and Misfire (NFS Road 4854) Roads.

National Forest System Trails provide nonmotorized trail access into the PWA and the designated Chiricahua Wilderness. The Jhus-Horse Saddle Trail and the Shaw Peak Trail may be travelled through the PWA. Some recreation may be restricted within the private lands that are located within the northeast corner of the PWA.

Although there appears to be adequate motorized and trail access to the Jhus Canyon Potential Wilderness Area, permanent legal public access may become an issue in the future. There is limited documented right-of-way for the existing road system exists across the non-Federal lands outside the proclaimed national forest boundary. Permanent legal public access to the NFS lands and the potential wilderness area in the Chiricahua Mountains will continue to be issue.

Boundaries: The boundary of this PWA was established by Forest Service roads on the east, west, and southern sides. Roads along the boundary include Onion Saddle Cave Creek (NFS Road 42), Jhus Canyon (NFS Road 341), Horsefall Canyon (NFS Road 709), Silver Prince (NFS Road 4262), Chiricahua Tank (NFS Road 4303), and Misfire (NFS Road 4854) Roads. The northern portion of the boundary parallels adjacent private lands.

Geography and Topography: The Jhus Canyon Potential Wilderness Area (PWA) encompasses the north central part of the arcuate, north- to northwest-trending Chiricahua Mountains. This mountain range is bounded on the east by the San Simon Valley and on the west by the Sulphur Spring Valley. The Jhus Canyon PWA is an irregularly oval area that is approximately four miles wide in an east-west direction and four miles wide in a north-south direction. Encompassing an area of 10,219 acres, the Jhus Canyon PWA consists of most of northeastern part of the Chiricahua Mountain range. This PWA is located entirely within the Douglas Ranger District, Coronado National Forest (CNF) and is located in Cochise County.

The Jhus Canyon PWA is situated along the northeastern part Chiricahua Mountains and is bounded on the west by Chiricahua National Monument. Details of the topography are shown on the Rustler Park and Portal 7 ½ minute U.S. Geological Survey quadrangles. The area extends from the northeast-trending Turkey Creek in the eastern portion of the area to near Whitetail Creek in the northern part of the area. The area is drained by numerous northwest or northeast-trending canyons from the central peak at Shaw Peak. The northwest-trending canyons include Pinery Canyon and Horsetail Canyon on the southwest side. The north or northeast-trending canyons include Mackay Canyon on the north side, Jhus Canyon on the northwest side. The Jhus Canyon PWA rises from 5,600 feet above sea level at Turkey Creek Canyon on the northeastern edge to a maximum elevation of approximately 7,730 feet at Shaw Peak in the central northern part of the Jhus Canyon PWA.

The northern Chiricahua Mountains contain primarily mid-Tertiary volcanic and intrusive rocks, underlying Cretaceous-Jurassic sedimentary rocks, Paleozoic sedimentary rocks, and some Proterozoic granite. The Middle Proterozoic (1400 Ma) porphyritic biotite granite to granodiorite (similar to Oracle Granite) crops out in the northernmost edges of the Jhus Canyon PWA. The majority of the Jhus Canyon PWA is Cretaceous-Jurassic sedimentary rocks (KJs) throughout the central part of the PWA. The southwestern border of the PWA along Pinery Canyon is mid-Tertiary volcanic rocks (Tv) or mid Tertiary granite or intrusive rocks (Tg or Ti). A small amount of Paleozoic sedimentary rocks (Pz) crop out in the northern part of the PWA. The Chiricahua Mountains are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona.

No active mining claims are located in the Jhus Canyon PWA and the area does not have historic production of metals. However, immediately to the east of the Jhus Canyon PWA is the California mining district, which is an historic lead-zinc-silver mining districts. Historic production from the California district from 1903 through 1970 consisted of 30,000 tons of ore containing 338,000 pounds copper, 8,263,000 pounds lead, 1,132,000 pounds zinc, 100 oz gold, and 137,500 oz silver (Keith and others, 1983). The California district in the Chiricahua Mountains produced base metal sulfides and precious metals from veins along strong silicified fault zones, replacement pipes and lenses along quartz dikes, and in disseminated deposits in Paleozoic limestone and Cretaceous sedimentary and volcanic rocks (Keith, 1973). The same geology is present in the north side of the Jhus Canyon PWA.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland communities. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), gray oak (*Quercus grisea*), Mexican blue oak (*Quercus oblongifolia*) and Toumey oak (*Quercus toumeyi*). Other tree species [including border pinyon (*Pinus discolor*), Chihuahua pine (*Pinus leiophylla*) Arizona cypress (*Hesperocyparis arizonica*) and alligator juniper (*Juniperus deppeana*)] and interior chaparral species [including manzanita spp. (*Arctostaphylos* spp.), desert ceanothus (*Ceanothus greggii*), mountain mahogany (*Cercocarpus montanus*), silktassles (*Garrya wrightii*), Stansbury cliffrose (*Purshia stansburiana*), shrub live oak (*Quercus turbinella*) and sumacs (*Rhus* spp.)] may be present but do not codominate. The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (Eragrostis intermedia), curly-mesquite (Hilaria belangeri), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*) and willows (*Salix* spp.). Historically, some areas near canyon bottoms and in the more gentle terrain were logged to provide wood for nearby mines, but second growth has largely matured. The Horse2 fire burned most if not all of this area, much of it was classified as a high severity burn during the BAER assessment.

Current Uses: Visitors use this PWA for a variety of recreational activities. The three trails running through the area are used for hiking and horseback riding. Adjacent roads and "cherry stemmed" roads into the area are used for motorized touring and dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. Several existing roads within the PWA are currently in use, but have been recommended for decommissioning. The Pinery Canyon and Cave Creek/Portal/Paradise scenic drives lie adjacent to the area, and visitors from these areas likely venture into the PWA. Topography is rugged, so there is very limited cross-country travel through the PWA. There are three grazing allotments within the Jhus Canyon Potential Wilderness Area. All of these allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

Diversity of vegetation within the Jhus Canyon Potential Wilderness Area boundary stretches from pinyon pine forests into juniper-oak woodlands and grassland-desert shrubs. Many running springs within this area are developed and several dirt tanks are present. Night skies can be clearly seen and light pollution is not evident. The biological diversity in the area includes critical habitats and unique ecological conditions. The varied vegetation types provide forage for the lesser long-nosed bats and the Mexican spotted owl. Mexican Sspotted owl protected activity centers (PACs) are also located in this PWA. The area contains a diverse amount of natural resources on both the east and west aspects of the range, along with perennial water and riparian

vegetation. Numerous recreation opportunities exist across this PWA. Although no rivers or streams have been sampled, there are no known water quality issues. A possible detriment to water quality may surface in the form of heavy metals from mining activity. Lehmann's lovegrass can be found in isolated spots, and nonnative bullfrogs are likely in Jhus Canyon Spring.

Undeveloped

The Jhus Canyon Potential Wilderness Area has obvious evidence of human activity, including historical mining sites and homesteads throughout the area.

Opportunities for Solitude or Primitive and Unconfined Recreation

The rugged terrain and challenging topography provides challenging recreational opportunities. Available water in the area increases opportunities for recreation, although feelings of isolation may be hindered by the sights and sounds of activities in the surrounding communities. Primitive recreation on the Jhus Canyon PWA may include hiking, backpacking, hunting, and some horseback riding. Amateur prospectors may also have an opportunity to engage with the land.

Special Features

Panoramic views and unique rock features serve as an outstanding feature on this PWA. Good opportunities for historical and cultural research exist throughout the area, including the Galeyville buried community. Unique wildlife such as the lesser long-nosed bat and Mexican spotted owl live on this PWA. Unique rush grows within limestone springs and multiple sensitive plant species can be found in the area.

Manageability

Access to the Jhus Canyon Potential Wilderness Area exists across the entire perimeter of the area, with the communities of Paradise and East Whitetail adjacent to the boundary. Vehicle traffic on NFS Road 42 may also conflict with the wilderness character. Arizona Game and Fish lands are within the potential wilderness area boundary and private lands lie adjacent to the area. The PWA currently does not have any motorized vehicle use, although NFS Road 4250 borders the west boundary of the PWA. There are no identified boundary changes that would enhance the area's wilderness character.

The Jhus Canyon Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Jhus Canyon Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. The Forest Service has a high degree of control over the land, with some occasional military overflights. The area contains eight threatened or endangered species that may be located in the PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Vegetation treatments include planned and unplanned ignitions introduced once every 10 years in accordance with the Chiricahua FireScape. Watersheds within the area are properly functioning, with several perennial streams including Jhus, MacKey, Onion and Iron Springs. Several tanks are present throughout the PWA, with a demonstrated need for future water storage installations. The area is committed through permits for livestock grazing on three allotments: East Whitetail, Paradise and Pinery. These current authorizations do not conflict with wilderness management or detract from

wilderness qualities. Some fences and tanks are in poor condition and may require future maintenance. There is no potential for timber extraction. The Silver Price mine development exists on the PWA, although trends in mining activity have decreased due to access and output. There are no cultural resources that require protection or maintenance that may interfere with wilderness management. The Jhus Canyon Potential Wilderness Area is primarily composed of National Forest System lands, although the area contains a small parcel of private land with another section belonging to Arizona Game and Fish. The closest private land outside the PWA boundary is approximately 0.1 miles from the potential wilderness area border and may impact the wilderness character of the area.

The Jhus Canyon Potential Wilderness Area overall was rated as **high** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Jhus Canyon PWA, there are 15 designated wilderness areas totaling about 484,000 acres (see Table 21).

Table 21. Designated wilderness within 100 Miles of the Jhus Canyon Potential Wilderness Area

Wilderness Area	Acres
Aravaipa Canyon Wilderness	19,790
Chiricahua National Monument Wilderness	12,161
Chiricahua Wilderness	88,793
Dos Cabezas Mountains Wilderness	11,855
Fishhooks Wilderness	11,400
Galiuro Wilderness	75,585
Miller Peak Wilderness	20,381
Mount Wrightson Wilderness	25,596
North Santa Teresa Wilderness	5,733
Peloncillo Mountains Wilderness	19,244
Pusch Ridge Wilderness	56,743
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
Saguaro Wilderness	63,258
Santa Teresa Wilderness	28,769
TOTAL	484,126

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the high range (more than 60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are

limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Jhus Canyon Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Jhus Canyon Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Jhus Canyon Potential Wilderness Area includes 5 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 22). Of these five vegetation communities, the Jhus Canyon PWA would contribute to wilderness in the following vegetation types: Interior Chaparral (0.4 percent), Madrean Encinal Woodland (1.4 percent), Madrean Pine Oak Woodland (1.1 percent), Mixed Conifer Forest (0.1 percent), and Riparian Areas (0.1 percent). The vegetation communities in this PWA consist of 95.90 percent regionally underrepresented vegetation types, therefore the PWA rates in the high range (more than 90 percent) for this factor.

Table 22. Southwestern Region underrepresented vegetation communities found in the Jhus Canyon Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Jhus Canyon PWA	Percent of Jhus Canyon PWA	Percent Addition of Jhus Canyon PWA to Wilderness
Interior Chaparral	1,217	11.9	0.4
Madrean Encinal Woodland	6,051	59.2	1.4
Madrean Pine Oak Woodland	2,224	21.8	1.1
Mixed Conifer Forest	300	2.9	0.1
Riparian Areas	13	0.1	0.1
Grand Total	**9,805**	**95.9%**	**3.1%**

The Jhus Canyon Potential Wilderness Area overall was rated as **high** for Need (for individual scores, see appendix G).

Tumacacori Potential Wilderness Area Evaluation [PW-05-03-D2-001]

Area Overview

Size and Location: The Tumacacori Potential Wilderness Area (PWA) encompasses 37,330 acres. This area is located in the Tumacacori and Atacosa Mountains, which are part of the Nogales Ranger District of the Coronado National Forest in southeastern Arizona (see Map 4 at the end of this document). The Tumacacori PWA is overlapped by 30,305 acres of the Tumacacori Inventoried Roadless Area, comprising 81 percent of the PWA.

Vicinity, Surroundings and Access: The Tumacacori Potential Wilderness Area is approximately 50 miles southeast of Tucson, Arizona. The Tumacacori PWA is centrally located within the mountain range and encompasses an area from Sardina and Tumacacori Peaks at the northern end to Ruby Road at the southern end and from the El Paso Natural Gas Line on the eastern side to Arivaca Lake on its western side. The PWA is adjacent to the Pajarita Wilderness Area, Arivaca Lake and Peña Blanca Lake. Both Pena Blanca and Arivaca Lakes are managed by the Arizona Game and Fish Department.

Interstate 19 (I-19) connects the Tucson metropolitan area to the City of Nogales and the incorporated community of Sahuarita. The unincorporated communities of Green Valley, Arivaca Junction-Amado, Tubac, Tumacacori-Carmen and Rio Rico, Arizona and Sonora, Mexico are within close proximity to the eastern side of the Tumacacori Mountains and the PWA.

State Highway 289 provides access from I-19 across private and National Forest System lands into the Tumacacori Ecosystem Management Area to Peña Blanca Lake and Ruby Road (NFS Road 39). Ruby Road is a major arterial and primary access road into and through the ecosystem management area and connects State Highway 289 to Arivaca Road (a Pima County road). The portion of Ruby Road outside the proclaimed Forest boundary is maintained by Pima and Santa Cruz Counties. Arivaca Road connects to State Highway 286 to the west and to I-19.

The primary motorized access route into the Tumacacori Ecosystem Management Area at the northern and northwestern end and into the PWA is Sardina Canyon Road. Sardina Canyon Road provides access for high-clearance four-wheel-drive vehicles and is also called Red Springs Road (NFS Road 684). Sardina Canyon Road provides access to the National Forest from both I-19 at the Chaves Interchange and Arivaca Road through Pima County's Sopori Ranch. Red Springs Road also provides motorized vehicular access to Sardina Well Road (NFS Road 4138). Sardina Well Road provides access for high-clearance four-wheel-drive vehicles into Lobo Canyon at the PWA and to NFS Road 4874. NFS Road 4874, a high-clearance four-wheel-drive road, provides access to within ½ mile of the PWA.

Bear Grass Road (NFS Road 4128) provides motorized access from South Arivaca Ranch Road (a Pima County Maintained Road) into the western side of the ecosystem management area and the PWA to East Fork Road (NFS Road 4133). East Fork Road provides motorized access to Apache Peak Road (NFS Road 4134) and to within a quarter mile of the PWA. NFS Road 4134 provides motorized access into the PWA.

Apache Well Road (NFS Road 4857) provides motorized access from Bear Grass Road into the National Forest on the western side of the PWA to Apache Peak Road. Jalisco Canyon Road (NFS Road 4143) provides motorized access from Bear Grass Road into the National Forest to the western side of the PWA. There is no documented right-of-way (written title) for the portions of

Apache Well Road and Jalisco Canyon Road across State Trust and private lands from Bear Grass Road to the proclaimed national forest boundary.

The primary access points to the southern end of the PWA are from Ruby Road (NFS Road 39) and State Highway 286. Ruby Peak Road (NFS Road 4178) provides motorized access from Ruby Road to the southern side the PWA. Corral Nuevo Road (NFS Road 4186) provides motorized access from Ruby Road to the Apache Pass Dam that is within half a mile of the PWA and to Oak Tank Road (NFS Road 4187). Oak Tank Road provides motorized access within a quarter mile of the PWA and to Red Rock Tank (NFS Road 4114). Red Rock Tank provides motorized access to within a quarter mile of the PWA.

On the eastern side of the PWA, Wise Mesa Road (NFS Road 4191) provides access for high-clearance four-wheel-drive vehicles from Camino Ramanote Road, a Santa Cruz County road in the Rio Rico Subdivision, and to Castle Tank Road (NFS Road 4193) and Lost Tank Road (NFS Road 4198). NFS Roads 4193 and 4198 provide access for high-clearance four-wheel-drive vehicles within a quarter mile of the PWA. Also providing access for high-clearance four-wheel-drive vehicles to within a quarter mile of the PWA are Pipeline Road (NFS Road 4151) and Fresno Road (NFS Road 4148). Rock Corral Road (NFS Road 4145) provides access for high-clearance four-wheel-drive vehicles to within a half mile of the eastern side of the PWA.

Atascosa Trail is the only nonmotorized NFS trail into the PWA. Atascosa Trail goes north from Ruby Road (NFS Road 39) to the Atascosa Lookout.

Although there appears to be adequate motorized road access to the Tumacacori PWA, permanent legal public access from the northern, eastern and western sides of the PWA are a concern. Many roads that provide physical access into the ecosystem management area and to the PWA from Arivaca Road and other roads that are currently open and used by public land users through the adjacent non-Federal land do not have legal right-of-ways. Therefore, because no legal right of public access exists for these roads, permanent legal public access to the National Forest System lands and the PWA will continue to be an issue.

Boundaries: The boundary of the PWA follows Chiminea Road (NFS Road 4131) and Ruby Peak Road (NFS Road 4178) on the southwestern side. The remainder of the boundary follows natural features, such as ridgelines and high points, in the Tumacacori Mountain Range.

Geography and Topography: The Tumacacori Potential Wilderness Area is characterized by a large irregular area encompassing the southern portion of the Tumacacori Range, the Atascosa Mountains, Bartolo Mountain and Ruby Peak. Covering an area of 37,330 acres, this PWA rises from a low point of 3,720 feet above sea level in Peck Canyon to a maximum elevation of 6,422 feet at Atascosa Peak.

Lying near the western edge of the Mexican Highlands Subprovince, the north-south-trending structural block that forms the Tumacacori, Atascosa and Pajarito Mountains is atypical of the Southern Basin and Range Province in southeastern Arizona, being only bounded by the Santa Cruz River Basin along its eastern flank. Its western flank is characterized by the partial development of several small basins separating it from uplifted areas in the Cerro Colorado Mountains, Las Guijas Mountains, San Luis Mountains and Cobre Ridge. The geological setting of the Tumacacori PWA is primarily characterized by a thick sequence of silica-rich volcanics (i.e., rhyolite) of middle Tertiary age which overlie more complexly deformed older Mesozoic volcanics, sediments and intrusive rocks exposed along its western boundary and several miles north of its northern boundary. Located south of the Tumacacori PWA, the Pajarito Mountains

occur within a structurally controlled erosional window which exposes Mesozoic volcanics along the Arizona-Sonora border.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland and desert grassland communities, upper elevation reach the lower Madrean Pine-oak woodlands. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), silverleaf oak (*Q. hypoleucoides*), Mexican blue oak (*Quercus oblongifolia*), Sonoran scrub oak (*Q. turbinella*) and Toumey oak (*Quercus toumeyi*). Other tree species include border pinyon (*Pinus discolor*), Chihuahua pine (*Pinus leiophylla*), alligator (*Juniperus deppeana*) and redberry juniper (*J. coahuilensis*). Interior chaparral species [including manzanita spp. (*Arctostaphylos* spp.), mountain mahogany (*Cercocarpus montanus*), silktassel (*Garrya wrightii*), and sumacs (*Rhus* spp.) may be present but do not codominate. Rosette scrubs such as Agaves (*Agave* spp.), yuccas (*Yucca* spp.), sotol (*Dasylirion wheeleri*) and beargrass (*Nolina microcarpa*) as well as desert scrub species such as acacias (*Acacia* spp.), mimosa (*Mimosa* spp.) mesquite (*Prosopis* spp.) dominate to the lower elevation desert scrub component. Cactus species such as cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia* spp.), hedgehogs (*Echinocereus* spp.), and barrel cactus (*Ferocactus* spp.) are also common component of this lower vegetative community. The ground cover is dominated by a very diverse community of mostly warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria* californica), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*) and numerous willows (*Salix* spp.). Historically, woody species have been removed as a source of firewood where they are accessible. Many if not most of the woody species resprout after harvesting and remain on the landscape. This practice probably reduced the number of large hardwood trees and snags that would have historically occurred.

Current Uses: Visitors use this PWA for a variety of recreational activities. The Atascosa Trail is used for hiking. Ruby Road (a popular sightseeing route) and one other road lie adjacent to the boundary, and several roads end at the boundary. Use along roads includes motorized touring and dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. Five other existing roads within the PWA are currently in use, but have been recommended for decommissioning. Topography is rugged, so there is limited cross-country travel through the PWA. There are active grazing allotments within the Tumacacori Potential Wilderness Area, all of which have valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

The ruggedness of the Tumacacori Potential Wilderness Area has allowed it to retain a semiprimitive setting. The area is habitat for Mexican spotted owl, northern gray hawk, Chiricahua leopard frogs, lesser long-nosed bat, jaguar and rare plants. The area of the Tumacacori Mountains does not have perennial rivers or streams and there are no know water quality issues. However, there has been mining activity in the past that may impact water quality, but no water samples have been tested. Some rivers and streams within the area have impoundments affecting their free-flowing character. Night skies have moderate light pollution from the communities of Rio Rico and Nogales. One feature that detracts from the area's wilderness capability is the presence of nonnative plants scattered throughout, including Lehmann lovegrass, Boers lovegrass and natal grass.

Undeveloped

The Tumacacori Potential Wilderness Area also has had a long history of human use and settlement as evident in its historic and prehistoric sites and structures. The area has had several mining activities and there are obvious signs of this activity within the area. There are also signs of ongoing illegal activity, Border Patrol enforcement and infrastructure within the PWA, which collectively detract from the capability of the area.

Opportunities for Solitude or Primitive and Unconfined Recreation

A person could experience challenging recreation opportunities within this potential wilderness area, including hunting, hiking and backpacking. However, the opportunity to experience solitude and isolation while engaging in challenging recreation activity is minimal due to the sights and sounds from illegal activities along the border. Disturbances from solitude may subsequently occur in these areas from enforcement activities conducted by Border Patrol.

Special Features

The Tumacacori Potential Wilderness Area has unique rock formations and panoramic views that are important as a wilderness characteristic. The area is important to several Native American tribes and has several historic and prehistoric archeological sites that create opportunities for research and education. The area is habitat for numerous species, including Mexican spotted owl, jaguar, lesser long-nosed bat and Chiricahua leopard frog.

Manageability

The boundary of the Tumacacori Potential Wilderness Area excludes numerous Forest Service roads that surround the area. These roads are in close proximity to the PWA and are heavily used, but the terrain prevents vehicles from driving into the PWA. However, there is illegal all-terrain vehicle use within the PWA. The close proximity of this area to the international border with the Republic of Mexico creates many challenges. The combination of illegal activity and U.S. Border Patrol activities and infrastructure make it difficult to manage for wilderness characteristics. There are no additional boundary changes that would enhance the area's wilderness character.

The Tumacacori Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Tumacacori Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. There are eight threatened or endangered species that may be located in the PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Watersheds within the area are properly functioning. There are numerous water impoundments and continued maintenance of the impoundments. There are ecosystem restoration activities currently planned for the area, which will include the use of chainsaws and all-terrain vehicles. The area is committed through permits for livestock grazing. This current authorization does not conflict with wilderness management or detract from wilderness qualities. There is no potential for timber extraction. There is little or no potential for extraction of locatable minerals. There are no cultural resources that will be affected by wilderness management. The Tumacacori Potential Wilderness Area is entirely composed of National Forest System lands, as is the adjacent land. The closest private land is approximately a half mile from the PWA boundary and may impact the wilderness character of the area.

The Tumacacori Potential Wilderness Area overall was rated as **medium** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Tumacacori Potential Wilderness Area there are 17 designated wilderness areas totaling about 813,000 acres (see Table 23).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 23. Designated wilderness within 100 miles of the Tumacacori Potential Wilderness Area

Wilderness Area	Acres
Aravaipa Canyon Wilderness	19,700
Baboquivari Peak Wilderness	2,040
Chiricahua National Monument Wilderness	10,290
Chiricahua Wilderness	87,700
Coyote Mountains Wilderness	5,100
Dos Cabezas Mountains Wilderness	11,700
Galiuro Wilderness	76,317
Miller Peak Wilderness	20,228
Mount Wrightson Wilderness	25,260
Organ Pipe Cactus Wilderness	312,600
Pajarita Wilderness	7,553
Pusch Ridge Wilderness	56,933
Redfield Canyon Wilderness	6,600
Rincon Mountain Wilderness	38,590
Saguaro Wilderness	70,905
Santa Teresa Wilderness	26,780
Table Top Wilderness	34,400
TOTAL	812,696

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are

known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSAs range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems within wilderness areas range from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area, including the Pusch Ridge and Mount Wrightson Wildernesses. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Tumacacori Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Tumacacori Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Tumacacori Potential Wilderness Area includes 4 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 24). Of these four vegetation communities, the Tumacacori PWA would contribute an additional 0.3 percent to wilderness in Madrean Encinal Woodland and 0.1 percent in Interior Chaparral. The vegetation communities in this PWA consist of 50.50 percent regionally underrepresented vegetation types, therefore the PWA rates in the medium range (50-90 percent) for this factor.

Table 24. Southwestern Region underrepresented vegetation communities found in the Tumacacori Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Tumacacori PWA	Percent of Tumacacori PWA	Percent Addition of Tumacacori PWA to Wilderness
Interior Chaparral	331	1.0	0.1
Madrean Encinal Woodland	16,484	48.4	0.3
Madrean Pine Oak Woodland	245	0.7	0.0
Riparian Areas	130	0.4	0.0
Grand Total	**17,190**	**50.5%**	**0.4%**

The Tumacacori Potential Wilderness Area overall was rated as **low** for Need (for individual scores, see appendix G).

Mount Wrightson Addition Potential Wilderness Area Evaluation [PW-05-03-D2-002]

Area Overview

Size and Location: The Mount Wrightson Addition Potential Wilderness Area (PWA) encompasses 14,395 acres. The area is located in the eastern Santa Rita Mountain Range and is adjacent to the existing Mount Wrightson Wilderness (see Map 5 at the end of this document). This area would be an expansion of the Mount Wrightson Wilderness that is now 25,260 acres, bringing the overall acres to 39,655 if recommended. This area is located in the Santa Rita Mountains, which is part of the Nogales Ranger District of the Coronado National Forest in southeastern Arizona. There are no inventoried roadless areas that overlap the Mount Wrightson Addition PWA.

Vicinity, Surroundings and Access: The Mount Wrightson Addition Potential Wilderness Area is approximately 37 miles southeast of Tucson, Arizona and approximately 9 miles northwest of Sonoita, Arizona within the Nogales Ranger District. This area is in the Cave Creek and Gardner Canyon area on the west side of the Santa Rita Mountains. The PWA adjoins the Mount Wrightson Wilderness and is completely surrounded by National Forest System (NFS) lands.

Arizona State Highway 83 connects Interstate 10 to Sonoita and State Highway 82 as well as providing access to Gardner Canyon and Santa Rita Roads. Gardner Canyon Road, maintained by Santa Cruz County, is the primary motorized access route from State Highway 83 to the potential wilderness area and Cave Canyon Trail (NFS Trail 149). Cave Canyon Trail provides nonmotorized trail access through the PWA into the Mount Wrightson Wilderness, to Florida Saddle and to the intersection of several trails (NFS Trails 144, 145 and 146).

Although Santa Cruz County maintains Gardner Canyon Road to the Apache Springs Ranch (approximately 4.5 miles into the National Forest), Gardner Canyon Road becomes National NFS Road 92 at the proclaimed national forest boundary. Gardner Canyon Road also provides motorized access to Upper Gardner Canyon Road (NFS Road 785) and Gardner Canyon Trail (NFS Trail 143). Upper Gardner Canyon Road provides motorized access to the PWA. Gardner Canyon Trail provides nonmotorized trail access through the PWA into the Mount Wrightson Wilderness Area, ending at Super Trail (NFS Trail 134).

Santa Rita Road provides motorized access to the PWA from Highway 83. Santa Rita Road becomes Douglas Ranch Road (NFS Road 4104) once it reaches NFS lands and is approximately three miles within the proclaimed boundary. Douglas Ranch Road provides motorized access to Hog/Gardner Road (NFS Road 4111), which provides motorized access to upper Gardner Canyon Road (NFS Road 785).

There appears to be adequate motorized and trail access to the PWA. There is little, if any, documented right-of-way for Gardner Canyon Road across Federal and non-Federal lands from State Highway 83 to the proclaimed national forest boundary. Permanent legal public access may be a future concern in this area.

Boundaries: The boundary of this PWA is formed by the existing Mount Wrightson Wilderness and several Forest Service roads. The PWA is composed of five individual polygons that are bound to the existing wilderness. The northeastern polygon border was established partially along the Florita Road (NFS Road 776) and the northernmost polygon follows along West Sawmill Canyon Road (NFS Road 4037) and Melendrez Pass Road (NFS Road 165). The mideastern

polygon has its northern boundary established along Gardner Canyon Road (NFS Road 785), while the two southern polygon follow along Temporal Canyon Road (NFS Road 72). The western boundary of the southwestern polygon was formed from the Josephine Canyon Road (NFS Road 4082). The remaining outer boundary lines follow natural features, such as ridgelines and high points, in the Santa Rita Mountain Range.

Geography and Topography: The Mount Wrightson Addition Potential Wilderness Area is characterized by a narrow, north-south elongated, hour-glass-shaped area located in the steep, rugged headwaters of Gardiner Canyon and Cave Creek, where it occupies a small enclave along the eastern boundary of the existing wilderness area. Covering an area of 14,395 acres, this PWA rises from a low point of 5,920 feet above sea level in Gardiner Canyon to a maximum elevation of 6,752 feet along its western boundary with the existing Mount Wrightson wilderness area.

The Mount Wrightson Addition PWA is located in the north-south trending Santa Rita mountain range, which is typical of the Southern Basin and Range Province in southeastern Arizona. Lying immediately east of the boundary separating the Mexican Highlands Subprovince from the Sonoran Desert Subprovince, the Santa Rita Mountains are bounded by the Santa Cruz River Basin to the west and the Cienega Creek Basin to the east. A major northwest-trending strike-slip fault zone, locally known as the Sawmill Canyon Fault, subdivides the Santa Rita Range into two distinct geological settings. North of the Sawmill Canyon fault zone, the geology of the range is similar to many mountain ranges located in southeastern Arizona. It consists of a moderate to steeply east-tilted structural block that exposes Precambrian granite along its steep, precipitous western flank. The Precambrian granite is overlain by a strongly deformed section of Paleozoic to early Cretaceous sediments, mainly outcropping along the more gentle eastern flank of the range. Southwest of the Sawmill Canyon fault zone, the geological setting is characterized by a shallow to moderately east-tilted, relatively undeformed structural block containing a thick sequence of Mesozoic volcanics and related sediments that have been cut by numerous, very large intrusive bodies of similar age and chemical composition. Silica-rich volcanics (i.e., rhyolite) of middle Tertiary age overlie these Mesozoic units along the western flank of the range. Located south of the Sawmill Canyon fault zone, the Mount Wrightson Addition PWA is entirely underlain by the Mesozoic volcanic package.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland and desert grassland communities. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), gray oak (*Quercus grisea*), Mexican blue oak (*Quercus oblongifolia*) and Toumey oak (*Quercus toumeyi*). Other tree species including border pinyon (*Pinus discolor*), Chihuahua pine (*Pinus leiophylla*), Arizona pine (*P. arizonic*a), ponderosa pine (*P. ponderosa*) and alligator (*Juniperus deppeana*) and redberry juniper (*J. coahuilensis*). Chaparral species include manzanita spp. (*Arctostaphylos* spp.), ceanothus species (*Ceanothu*s spp.), mountain mahogany (*Cercocarpus montanus*), silktassel (*Garrya wrightii*), Stansbury cliffrose (*Purshia stansburiana*), and sumacs (*Rhus* spp.) may be present but do not codominate. Rosette scrubs such as Agaves (*Agave* spp.), yuccas (*Yucca* spp.), sotol (*Dasylirion wheeleri*) and beargrass (*Nolina microcarpa*) as well as desert scrub species such as acacias (*Acacia* spp.), mimosa (*Mimosa* spp.) and mesquite (*Prosopis* spp.) dominate to the lower elevation desert scrub component. Cactus species such as cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia* spp.), hedgehog (*Echinocereus* spp.), and barrel cactus (*Ferocactus* spp.) are also common component of this lower vegetative community. The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis*

intermedia), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*) and willows (*Salix* spp.). Historically, woody species have been removed as a source of firewood and mining construction material where they are accessible. Except for most pines, many of the woody species resprout after harvesting and remain on the landscape. This practice probably reduced the number of large hardwood trees and snags that would have historically occurred.

Current Uses: Visitors use this PWA for a variety of recreational activities. These lands lie adjacent to the existing Mount Wrightson Wilderness. Five trails lie within the area (all leading into Mount Wrightson Wilderness), and trails are used for hiking and horseback riding. One of the trails is the Arizona National Scenic Trail, a route that stretches across the entire state. Some roads are adjacent to the boundary and there is one "cherry stemmed" road into the area, and uses along roads include motorized touring and dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. Most roads around this PWA are part of the Santa Rita Backcountry Touring Area, an area where motorized touring and OHV use is encouraged. The Gardner and Cave Creek OHV trailhead is approximately 1/10 of a mile away from the boundary. Eight roads within the PWA are currently in use, but have been recommended for decommissioning or restricted access. Madera Canyon, a popular recreation area with numerous developed picnic areas and a campground, lies approximately ¼ mile away from the boundary, and visitors to these areas likely venture into the PWA. Topography is mostly rugged, so there is limited cross-country travel through the PWA. There are two grazing allotments within the Mount Wrightson Addition PWA. Both of these allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

The ruggedness and location of the Mount Wrightson Addition Potential Wilderness Area has allowed it to retain a semiprimitive setting, as it is a potential addition to the existing Mount Wrightson Wilderness. The area is habitat for Mexican spotted owl, elegant trogon, and Chiricahua leopard frog. The rivers and streams within this area of the Santa Rita Mountains do not have water year-round. There are no known water quality issues. However, in the past there has been mining activity above the area that may impact water quality, but water samples have not been tested. Night skies can be clearly seen and light pollution is not evident. One feature that detracts from the area's wilderness capability is the presence of invasive, nonnative plants, including Lehmann lovegrass.

Undeveloped

The Mount Wrightson Addition Potential Wilderness Area also has had a long history of human use. In the past the area has had mining activity, a logging mill and roads, and there is evidence of

these activities and structures. Currently there are livestock grazing improvements maintained within the PWA.

Opportunities for Solitude or Primitive and Unconfined Recreation

A person could find a short-term experience of solitude, serenity, self-reliance and hiking and birding within this PWA. However, the area is adjacent to an existing wilderness and as a whole would provide a greater experience of solitude. This area has good recreational opportunities, but these opportunities are not very challenging. The Mount Wrightson Addition PWA is impacted by international border crossers, which increases the chance of encountering signs of civilization.

Special Features

The Mount Wrightson Addition Potential Wilderness Area has unique rock formations and panoramic views that are important as a wilderness characteristic. The area has had historic logging and mining, which create opportunities for historic research and education. The area is habitat for numerous species including Mexican spotted owl, Chiricahua leopard frog and rare plants.

Manageability

The Mount Wrightson Addition Potential Wilderness Area shares a boundary with the established Mount Wrightson Wilderness on three sides. However, the area does have signs of civilization from past activities and there is the potential for active mining claims. Given these conditions, this area holds some challenges in managing it for wilderness characteristics. There are no identified boundary changes that would enhance the area's wilderness character.

The Mount Wrightson Addition Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Mount Wrightson Addition Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. There are six threatened or endangered species that may be located in the PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Management activity for Chiricahua leopard frog habitat is needed, but mechanized equipment will not be used. Watersheds within the area are properly functioning, but there are water impoundments that affect the wilderness character. There are no ecosystem restoration activities currently planned for the area. The area is committed through contracts and permits for livestock grazing. This current authorization does not conflict with wilderness management or detract from wilderness qualities. There is no potential for timber extraction. There has been mining activity in the past, but at this time there is little or no potential for extraction of locatable minerals. There are no cultural resources that will be affected by wilderness management. The Mount Wrightson Addition PWA consists entirely of National Forest System lands, as is the adjacent land. The closest private land is approximately 3 miles from the PWA boundary and likely won't impact the wilderness character of the area.

The Mount Wrightson Addition Potential Wilderness Area overall was rated as **high** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Mount Wrightson Addition PWA, there are 18 designated wilderness areas, totaling about 486,000 acres (see Table 25).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 25. Designated wilderness within 100 miles of the Mount Wrightson Addition Potential Wilderness Area

Wilderness Area	Acres
Aravaipa Canyon Wilderness	19,700
Baboquivari Peak Wilderness	2,040
Chiricahua National Monument Wilderness	10,290
Chiricahua Wilderness	87,700
Coyote Mountains Wilderness	5,100
Dos Cabezas Mountains Wilderness	11,700
Galiuro Wilderness	76,317
Miller Peak Wilderness	20,228
Mount Wrightson Wilderness	25,260
Needle's Eye Wilderness	8,760
North Santa Teresa Wilderness	5,800
Pajarita Wilderness	7,553
Pusch Ridge Wilderness	56,933
Redfield Canyon Wilderness	6,600
Rincon Mountain Wilderness	38,590
Saguaro Wilderness	70,905
Santa Teresa Wilderness	26,780
White Canyon Wilderness	5,790
TOTAL	486,046

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the high range (more than 60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSAs range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wildernesses. Encounters with other wilderness visitors in both areas are high. For these two areas, there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Mount Wrightson Addition Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Mount Wrightson Addition Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Mount Wrightson Addition Potential Wilderness Area includes 4 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 26). Of these four vegetation communities, the Mount Wrightson Addition PWA would only contribute an additional 0.1 percent to wilderness in the Interior Chaparral community. The vegetation communities in this PWA consist of 96.30 percent regionally underrepresented vegetation types, therefore the PWA rates in the high range (more than 90 percent) for this factor.

Table 26. Southwestern Region underrepresented vegetation communities found in the Mount Wrightson Addition Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Mount Wrightson Addition PWA	Percent of Mount Wrightson Addition PWA	Percent Addition of Mount Wrightson Addition PWA to Wilderness
Interior Chaparral	176	21.4	0.1
Madrean Encinal Woodland	395	48.1	0.0
Madrean Pine Oak Woodland	184	22.4	0.0
Riparian Areas	36	4.4	0.0
Grand Total	**791**	**96.3%**	**0.1%**

The Mount Wrightson Addition Potential Wilderness Area overall was rated as **high** for Need (for individual scores, see appendix G).

Pajarita Addition West Potential Wilderness Area Evaluation [PW-05-03-D2-003]

Area Overview

Size and Location: The Pajarita Addition West Potential Wilderness Area (PWA) encompasses 4,126 acres. The area is adjacent to the existing Pajarita Wilderness (see Map 4 at the end of this document). This area would be an expansion of the Pajarita Wilderness that is now 7,420 acres, bringing the overall acres to 11,546 if recommended. This area is located in the Tumacacori Mountains, which is part of the Nogales Ranger District of the Coronado National Forest in southeastern Arizona. There are no inventoried roadless areas that overlap the Pajarita Addition West PWA.

Vicinity, Surroundings and Access: The Pajarita Addition West Potential Wilderness Area is approximately 50 miles southwest of Tucson, Arizona. The Pajarita Addition West PWA is located within the southwestern region of the mountain range. The PWA is adjacent to the Pajarita Wilderness Area, Arivaca Lake and Peña Blanca Lake. Both Pena Blanca and Arivaca Lakes are managed by the Arizona Game and Fish Department.

Interstate 19 (I-19) connects the Tucson metropolitan area to the City of Nogales and the incorporated community of Sahuarita. The unincorporated communities of Green Valley, Arivaca Junction-Amado, Tubac, Tumacacori-Carmen and Rio Rico, Arizona and Sonora, Mexico are within close proximity to the eastern side of the Tumacacori Mountains and the PWA. The unincorporated community of Oro Blanco is located on the national forest boundary, and Ruby, Arizona is located within National Forest lands and within 0.1 mile of the PWA boundary.

State Highway 289 provides access from I-19 across private and National Forest System lands into the Tumacacori Ecosystem Management Area to Peña Blanca Lake and Ruby Road (NFS Road 39). Ruby Road is a major arterial and primary access road into and through the ecosystem management area and connects State Highway 289 to Arivaca Road (a Pima County road). The portion of Ruby Road outside the proclaimed Forest boundary is maintained by Pima and Santa Cruz Counties. Arivaca Road connects to State Highway 286 to the west and to I-19.

The primary motorized access route into the Tumacacori Ecosystem Management Area at the northern and northwestern end and into the PWA is Sardina Canyon Road. Sardina Canyon Road provides access for high-clearance four-wheel-drive vehicles and is also called Red Springs Road (NFS Road 684). Sardina Canyon Road provides access to the National Forest from both I-19 at the Chaves Interchange and Arivaca Road through Pima County's Sopori Ranch

Chiminea Road (NFS Road 4131) provides northern access into the PWA, and Alto Schumaker (NFS Road 4176) runs across the western boundary. Hidden Tank Road (NFS Road 4173) runs along the southern perimeter and Tinaja Spring Road (NFS Road 4180) follows on the eastern side. There are no nonmotorized NFS trails leading into the PWA, although Sycamore Canyon Trail runs parallel to the eastern boundary, approximately 0.5 miles from the perimeter.

Although there appears to be adequate motorized road access to the Pajarita Addition West PWA, permanent legal public access from the northern, eastern and western sides of the PWA are a continued concern. Many roads that provide physical access into the ecosystem management area and to the PWA from Arivaca Road and other roads that are currently open and used by public land users through the adjacent non-Federal land do not have legal right-of-ways. Therefore,

because no legal right of public access exists for these roads, permanent legal public access to the National Forest System lands and the PWA will continue to be an issue.

Boundaries: The boundary of this PWA is formed by the existing Pajarita Wilderness, private land and Forest Service roads. The northern boundary was formed along Chiminea Road (NFS Road 4131), and the western boundary was established along Alto Schumaker Road (NFS Road 4176). Hidden Tank Road (NFS Road 4173) runs along the southern perimeter and Tinaja Spring Road (NFS Road 4180) follows on the eastern side.

Geography and Topography: The Pajarita Addition West Potential Wilderness Area (PWA) adjoins the Pajarita Wilderness Area on the western side. This PWA is bounded on the east by the Pajarita Wilderness Area and on the north by the Ruby highway. The Pajarita Addition West PWA is an irregularly oval area with some inroads to avoid the roads to the nearby ranches. The PWA is approximately two miles wide east to west and five miles wide north to south. This PWA is located in Santa Cruz County and is entirely within the Nogales Ranger District, Coronado National Forest (CNF).

Encompassing an area of 4,126 acres, the Pajarita Addition West PWA consists of the western portion of Mule Ridge. Jeep trails in the area are avoided by drawing the boundaries of the Pajarita Addition West PWA inside of these roads. The Pajarito Addition West PWA is shown on the U. S. Geological Survey, 7 ½ minute topographic map of the Ruby quadrangle. The area extends from the roads or jeep trails along the northeast-draining intermittent streams along the east boundary to the road up the northeast-draining intermittent stream between Sycamore Canyon and California Gulch.

The Pajarita Addition West PWA consists of less rugged terrain than the Pajarita Wilderness Area, but still contains mountain slopes that are mostly above 4,200 feet in elevation. The low elevations are approximately 4,000 feet above sea level at the southwest edge. The maximum elevation is at a peak just south of the northern part of the PWA at 4,612 feet.

The Pajarita Addition West PWA contains primarily mid-Tertiary volcanic rocks, with some Cretaceous-Jurassic sedimentary rocks (KJs) on the far eastern edge, and some younger Tertiary sedimentary rocks (Tsy) in the far western portion of the PWA. These mountains are a continuation of the Atascosa Mountains, which are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona.

Numerous recent mining claims are on record, but no active mining claims are located within the Pajarita Addition West PWA. The nearest mines are those in the Pajarito mining district north of the Pajarito PWA. Mines to the immediate north of the central part of the Pajarito PWA, which are included in the Pajarito mining district, are historic lead-zinc-silver producers. Production from this mining district from 1910 to 1969 was 1,400 tons of ore containing 4,000 pounds copper, 139,000 pounds lead, 300 pounds zinc, 160 oz gold, 21,000 oz silver, and minor amounts of uranium and vanadium ore (Keith and others, 1983). This district consisted of irregular and lensing fissure veins containing copper, lead, zinc, gold, silver, and locally pitchblende in quartz latite volcanics (Keith, 1975). The Pajarita Addition West PWA contains the same rock types and geological features as are at the mined areas north of the Pajarito PWA, but there is less probability of exploration in the Pajarita Addition West PWA.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland and desert grassland communities, upper elevation

reach the lower Madrean Pine-oak woodlands. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), silverleaf oak (*Q. hypoleucoides*), Mexican blue oak (*Quercus oblongifolia*), Sonoran scrub oak (*Q. turbinella*) and Toumey oak (*Quercus toumeyi*). Other tree species include border pinyon (*Pinus discolor*), Chihuahua pine (*Pinus leiophylla*), alligator (*Juniperus deppeana*) and redberry juniper (*J. coahuilensis*). Interior chaparral species [including manzanita spp. (*Arctostaphylos* spp.), mountain mahogany (*Cercocarpus montanus*), silktassel (*Garrya wrightii*), and sumacs (*Rhus* spp.) may be present but do not codominate. Rosette scrubs such as Agaves (Agave spp.), yuccas (Yucca spp.), sotol (*Dasylirion wheeleri*) and beargrass (*Nolina microcarp*a) as well as desert scrub species such as acacias (*Acacia* spp.), mimosa (Mimosa spp.) mesquite (*Prosopis* spp.) dominate to the lower elevation desert scrub component. Cactus species such as cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia* spp.), hedgehogs (*Echinocereus* spp.), and barrel cactus (*Ferocactus* spp.) are also common component of this lower vegetative community. The ground cover is dominated by a very diverse community of mostly warm-season grasses such as threeawns (Aristida spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*) and numerous willows (*Salix* spp.). Historically, woody species have been removed as a source of firewood where they are accessible. Many if not most of the woody species resprout after harvesting and remain on the landscape. This practice probably reduced the number of large hardwood trees and snags that would have historically occurred.

Current Uses: Visitors use this PWA for a variety of recreational activities, though use may be relatively light due to the proximity of the International Border with Mexico (and its associated risks). These lands lie adjacent to the existing Pajarita Wilderness. There are no trails within the PWA. Ruby Road (a popular sightseeing route) and other roads lie adjacent to the boundary, and uses along roads include motorized touring and dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. One existing road within the PWA is currently in use, but has been recommended for decommissioning. Topography is rugged, so there is limited cross-country travel through the PWA. There are two grazing allotments within the Pajarita Addition West Potential Wilderness Area. Both of these allotments are active and valid permitted uses. This PWA is located within Fire Management Units 1 and 2 (FMU 1 and 2). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities, while FMU 2 indicates nonfire-adapted vegetation communities (desert communities). Current fire management in FMU 1 includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits. In those areas located in FMU 2, the fire management objective is resource protection.

Capability

Naturalness

Diversity of vegetation within the Pajarita Addition West Potential Wilderness Area boundary includes true Sonoran and Saguaro thornscrub. Limited perennial flow exists on this PWA, except during wet periods near the boundaries toward Warsaw Canyon and California Gulch. Dirt tanks and concrete dams are also present within this area. Night skies can be clearly seen and light pollution is not evident. The biological diversity in the area includes critical habitats and unique ecological conditions ideal for the lesser long-nosed bat, Chiricahua leopard frog, jaguar, and ocelot. Sonora chub can be found in California Gulch. The area contains a diverse amount of natural resources similar to the existing Pajarita Wilderness, but contributes additional acreage of unique habitats. Mineral resources are also available on the potential wilderness area lands. Although no rivers or streams have been sampled, there are no known water quality issues. However, impacts from mining and human traffic may contribute to water quality concerns. The prevalence of Lehmann's lovegrass within the PWA boundary and buffelgrass nearby subtracts from the area's wilderness capability. Nonnative bullfrogs and fish species, including bass and green sunfish, are located at the Ruby Townsite.

Undeveloped

The Pajarita Addition West Potential Wilderness Area has obvious evidence of human activity, including trail networks, historical mining sites, undocumented alien and Border Patrol activity, and a repeater.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area boasts moderately rugged terrain with hills and canyons that provide mentally challenging conditions for recreationists. Limited water availability increases the physical difficulties with recreating in this area. The opportunity to experience solitude may be hindered by possible signs of civilization, including range improvements, mining infrastructure, wildlife improvements, and border-related activity. Primitive recreation on the Pajarita Addition West PWA may include hiking, hunting, bird and wildlife-watching, rock-hounding, and some fishing.

Special Features

Panoramic views and unique rock features serve as an outstanding feature on this PWA. These rocky areas contrast with interesting vegetation types across the area. Good opportunities for cultural study and scientific research exist throughout the area, including areas utilized by bird-watchers for five-striped sparrow and buff-collared nightjar. Unique wildlife such as the lesser long-nosed bat, Chiricahua leopard frog, jaguar, and ocelot may be found within this PWA.

Manageability

Extensive access to the Pajarita Addition West Potential Wilderness Area exists across more than half of the perimeter of the area. The influence of mining and border activities are apparent throughout the area, serving as a conflict to management. Illegal motorized vehicle use by Border Patrol and recreationists in the area east of the ridge may interfere with the potential wilderness character. However, the rugged terrain in the remaining areas of the PWA prevents further vehicular use. There are no identified boundary changes that would enhance the area's wilderness character.

The Pajarita Addition West Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Pajarita Addition West Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. The degree of Forest Service control over land surface may be influenced by U.S. Customs and Border Protection, as well as the use of airspace over Ruby Road as a flight corridor. Some mining claims may exist, which may also conflict with wilderness management. There are five threatened or endangered species that may be located in the PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Watersheds within the area are properly functioning. A pipeline is located at Schumaker, along with multiple dirt tanks in other areas of the PWA that may require maintenance. There are no ecosystem restoration activities currently planned for the areas. Planned ignitions are introduced once every 10-15 years into the area, and buffelgrass treatment using chemical and physical removal techniques will occur annually for at least three years. The area is committed through permits for livestock grazing on two allotments. This current authorization does not conflict with wilderness management or detract from wilderness qualities. There is no potential for timber extraction. Some potential for extraction of locatable minerals, particularly gold and silver, may exist in the nearby area. There are no cultural resources that will be affected by wilderness management. The Pajarita Addition West Potential Wilderness Area is entirely composed of National Forest System lands, although sections of the adjacent area are private lands. The closest private land immediately touches the boundary of the PWA, which may potentially impact the wilderness character of the area.

The Pajarita Addition West Potential Wilderness Area overall was rated as **medium** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Pajarita Addition West PWA, there are 11 designated wilderness areas totaling about 415,000 acres (see Table 27).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness

within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 27. Designated wilderness within 100 miles of the Pajarita Addition West Potential Wilderness Area

Wilderness Area	Acres
Baboquivari Peak Wilderness	2,776
Coyote Mountains Wilderness	5,795
Galiuro Wilderness	75,585
Miller Peak Wilderness	20,381
Mount Wrightson Wilderness	25,596
Organ Pipe Cactus Wilderness	98,088
Pajarita Wilderness	7,897
Pusch Ridge Wilderness	56,743
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
Saguaro Wilderness	77,119
TOTAL	414,797

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive

environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Pajarita Addition West Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Pajarita Addition West Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Pajarita Addition West Potential Wilderness Area includes 3 of the 16 major vegetation communities in the Southwestern Region of the Forest Service (see Table 28). Of these three vegetation communities, the Pajarita Addition West PWA would contribute to wilderness in the following vegetation types: Madrean Encinal Woodland (0.3 percent) and Riparian Areas (0.1 percent). The vegetation communities in this PWA consist of 29.40 percent regionally underrepresented vegetation types, therefore the PWA rates in the low range (less than 50 percent) for this factor.

Table 28. Underrepresented vegetation communities found in the Pajarita Addition West Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Pajarita Addition West PWA	Percent of Pajarita Addition West PWA	Percent Addition of Pajarita Addition West PWA to Wilderness
Interior Chaparral	3	0.1	0.0
Madrean Encinal Woodland	1,170	28.4	0.3
Riparian Areas	37	0.9	0.1
Grand Total	**1,210**	**29.4%**	**0.4%**

The Pajarita Addition West Potential Wilderness Area overall was rated as **low** for Need (for individual scores, see appendix G).

Pajarita Addition East Potential Wilderness Area Evaluation [PW-05-03-D2-004]

Area Overview

Size and Location: The Pajarita Addition East Potential Wilderness Area (PWA) encompasses 1,150 acres. The area is adjacent to the existing Pajarita Wilderness (see Map 4 at the end of this document). This area would be an expansion of the Pajarita Wilderness that is now 7,420 acres, bringing the overall acres to 8,570 if recommended. This area is located in the Tumacacori Mountains, which is part of the Nogales Ranger District of the Coronado National Forest in southeastern Arizona. There are no inventoried roadless areas that overlap the Pajarita Addition East PWA.

Vicinity, Surroundings and Access: The Pajarita Addition East Potential Wilderness Area is approximately 50 miles southwest of Tucson, Arizona. The Pajarita Addition East PWA is located within the southern region of the mountain range. The PWA is adjacent to the Pajarita Wilderness Area, Arivaca Lake and Peña Blanca Lake. Both Pena Blanca and Arivaca Lakes are managed by the Arizona Game and Fish Department.

Interstate 19 (I-19) connects the Tucson metropolitan area to the City of Nogales and the incorporated community of Sahuarita. The unincorporated communities of Green Valley, Arivaca Junction-Amado, Tubac, Tumacacori-Carmen and Rio Rico, Arizona and Sonora, Mexico are within close proximity to the eastern side of the Tumacacori Mountains and the PWA. The unincorporated community of Oro Blanco is located on the national forest boundary, and Ruby, Arizona is located within National Forest lands and within 0.1 mile of the PWA boundary. The boundary of the PWA is located approximately 0.5 mile from the U.S.-Mexico border.

State Highway 289 provides access from I-19 across private and National Forest System lands into the Tumacacori Ecosystem Management Area to Peña Blanca Lake and Ruby Road (NFS Road 39). Ruby Road is a major arterial and primary access road into and through the ecosystem management area and connects State Highway 289 to Arivaca Road (a Pima County road). The portion of Ruby Road outside the proclaimed Forest boundary is maintained by Pima and Santa Cruz Counties. Arivaca Road connects to State Highway 286 to the west and to I-19.

The primary motorized access route into the Tumacacori Ecosystem Management Area at the northern and northwestern end and into the PWA is Sardina Canyon Road. Sardina Canyon Road provides access for high-clearance four-wheel-drive vehicles and is also called Red Springs Road (NFS Road 684). Sardina Canyon Road provides access to the National Forest from both I-19 at the Chaves Interchange and Arivaca Road through Pima County's Sopori Ranch.

State Highway 289 borders the northeastern side of the PWA, transitioning into the Atascosa Trail. Bear Valley Road (NFS Road 115) and Bluff Tank Road (NFS Road 4883) also extend into the PWA from the northern side. A small block of private land touches the PWA boundary on the northwestern side. Sycamore Canyon Trail is located approximately one mile from the perimeter of the PWA.

Although there appears to be adequate motorized road access to the Pajarita Addition East PWA, permanent legal public access from the northern, eastern and western sides of the PWA are a continued concern. Many roads that provide physical access into the ecosystem management area and to the PWA from Arivaca Road and other roads that are currently open and used by public land users through the adjacent non-Federal land do not have legal right-of-ways. Therefore,

because no legal right of public access exists for these roads, permanent legal public access to the National Forest System lands and the PWA will continue to be an issue.

Boundaries: The boundary of this PWA is formed by the existing Pajarita Wilderness, private land and two National Forest System roads. The northern boundary follows Bear Valley Road (NFS Road 115) and State Highway 289 after the road enters into the national forest.

Geography and Topography: The Pajarita Addition East Potential Wilderness Area (PWA) encompasses the area between the Pajarita Wilderness Area and the Ruby highway. This PWA is bounded on the east by the road to Armada Tank, on the south by the Pajarita Wilderness Area, on the west by the road up Atascosa Canyon to Atascosa Springs and the Bear Valley Ranch, and on the northeast by the Ruby highway. The Pajarita Addition East PWA is an irregularly oval area with some inroads to avoid the roads to the nearby ranches. The PWA is approximately two to three miles wide east to west and one mile wide north to south. This PWA is located in Santa Cruz County and is entirely within the Nogales Ranger District, Coronado National Forest (CNF).

Encompassing an area of 1,150 acres, the Pajarita Addition East PWA consists of the southernmost portion of the Atascosa Mountains that is south of the Ruby road. The northern border of the Pajarita Addition East PWA is indented to the south along Atascosa Canyon to avoid the road to the Bear Valley Ranch. Additional jeep trails in the area are avoided by drawing the boundaries of the Pajarita Addition East PWA inside of these roads. The Pajarito Addition East PWA is shown on the U. S. Geological Survey, 7 ½ minute topographic map of the Ruby quadrangle. The area extends from the roads or jeep trails along the northeast-draining intermittent streams along the east boundary to the road up the northeast-draining intermittent stream along Atascosa Canyon on the west boundary.

The Pajarita Addition East PWA consists of less rugged terrain than the Pajarita Wilderness Area, but still contains mountain slopes that are mostly above 4,200 feet in elevation. The low elevations are approximately 4,000 feet above sea level at the southwest edge near Penasco Canyon. The maximum elevation is at a peak just south of the northern part of the PWA at 4,612 feet.

The Pajarita Addition East PWA contains primarily mid-Tertiary volcanic rocks, with some Cretaceous-Jurassic sedimentary rocks (KJs) on the far eastern edge, and some younger Tertiary sedimentary rocks (Tsy) in the far western portion of the PWA. These mountains are a continuation of the Atascosa Mountains, which are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona.

Numerous recent mining claims are on record, but no active mining claims are located within the Pajarita Addition East PWA. The nearest mines are those in the Pajarito mining district north of the Pajarito PWA. Mines to the immediate north of the central part of the Pajarito PWA, which are included in the Pajarito mining district, are historic lead-zinc-silver producers. Production from this mining district from 1910 to 1969 was 1,400 tons of ore containing 4,000 pounds copper, 139,000 pounds lead, 300 pounds zinc, 160 oz gold, 21,000 oz silver, and minor amounts of uranium and vanadium ore (Keith and others, 1983). This district consisted of irregular and lensing fissure veins containing copper, lead, zinc, gold, silver, and locally pitchblende in quartz latite volcanics (Keith, 1975). The Pajarita Addition East PWA contains the same rock types and geological features as are at the mined areas north of the Pajarito PWA, but there is less probability of exploration in the Pajarita Addition East PWA.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland and desert grassland communities, upper elevation reach the lower Madrean Pine-oak woodlands. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), silverleaf oak (*Q. hypoleucoides*), Mexican blue oak (*Quercus oblongifolia*), Sonoran scrub oak (*Q. turbinella*) and Toumey oak (*Quercus toumeyi*). Other tree species include border pinyon (*Pinus discolor*), Chihuahua pine (*Pinus leiophylla*), alligator (*Juniperus deppeana*) and redberry juniper (*J. coahuilensis*). Interior chaparral species [including manzanita spp. (*Arctostaphylos* spp.), mountain mahogany (*Cercocarpus montanus*), silktassel (*Garrya wrightii*), and sumacs (*Rhus* spp.) may be present but do not codominate. Rosette scrubs such as Agaves (*Agave* spp.), yuccas (*Yucca* spp.), sotol (*Dasylirion wheeleri*) and beargrass (*Nolina microcarpa*) as well as desert scrub species such as acacias (*Acacia* spp.), mimosa (*Mimosa* spp.) mesquite (*Prosopis* spp.) dominate to the lower elevation desert scrub component. Cactus species such as cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia* spp.), hedgehogs (*Echinocereus* spp.), and barrel cactus (*Ferocactus* spp.) are also common component of this lower vegetative community. The ground cover is dominated by a very diverse community of mostly warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*) and numerous willows (*Salix* spp.). Historically, woody species have been removed as a source of firewood where they are accessible. Many if not most of the woody species resprout after harvesting and remain on the landscape. This practice probably reduced the number of large hardwood trees and snags that would have historically occurred.

Current Uses: Visitors use this PWA for a variety of recreational activities, though use may be relatively light due to the proximity of the International Border with Mexico (and its associated risks). These lands lie adjacent to the existing Pajarita Wilderness. There are no trails within the PWA, though the Atascosa Trailhead lies adjacent to the boundary. Ruby Road (a popular sightseeing route) and other roads lie adjacent to the boundary, and uses along roads include motorized touring and dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. Topography is generally rugged, so there is limited cross-country travel through the PWA. There is one grazing allotment within the Pajarita Addition East Potential Wilderness Area. This allotment has active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

Vegetation within the Pajarita Addition East Potential Wilderness Area boundary consists mostly of Sonoran desert grasslands with scattered oak and oak woodlands. This limited amount of vegetative diversity does not constitute a significant addition to the diversity of the existing Pajarita Wilderness. Rattlesnake Tank and Summit Tank on the perimeter of the PWA boundary affect the free-flowing character of waterways in the PWA. While some stars are visible in the area, the nearby communities of Rio Rico, Nogales, and Sonora, Mexico contribute to some light pollution. The biological diversity in the area includes a mixture of habitats and unique ecological conditions. Unique species near Sycamore Canyon include the lesser long-nosed bat, Chiricahua leopard frog in Summit Tank, potential jaguars and ocelots, and rare plant species. The area contains a limited amount of natural resource diversity, given the widespread Sonoran desert grasslands. Although no rivers or streams have been sampled, there are no known water quality issues. The prevalence of Lehmann's, William's, and Boer's lovegrasses spread throughout the PWA significantly detracts from the area's wilderness capability. Isolated patches of natal grass can also be found in the southern section of the PWA.

Undeveloped

The Pajarita Addition East Potential Wilderness Area has obvious evidence of human activity, including trash, undocumented alien and Border Patrol activity, and trail networks.

Opportunities for Solitude or Primitive and Unconfined Recreation

Only a few portions of the area provide challenging recreation opportunities, as the terrain proves easily navigable in the absence of obstructive vegetation. Limited to no water exists on the PWA. The opportunity to experience solitude may be hindered by possible encounters with Border Patrol and illegal aliens. Primitive recreation on the Pajarita Addition East PWA may include hiking, hunting, wildlife-watching, and backpacking.

Special Features

The Pajarita Addition East PWA does not contain any distinct features, aside from some nice views. The area possesses some potential for scientific research and many cultural opportunities, including a branch of the prehistoric Yaqui Trail. Unique wildlife such as the lesser long-nosed bat, Chiricahua leopard frog, jaguar and ocelot may be found within this PWA.

Manageability

Adequate access opportunities exist from Ruby Road and Summit Motorway into the Pajarita Addition East Potential Wilderness Area. The PWA currently does not have any known motorized vehicle use. There are no identified boundary changes that would enhance the area's wilderness character.

The Pajarita Addition East Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Pajarita Addition East Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. There are four threatened or

endangered species that may be located in the PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Watersheds within the area are properly functioning. There are three or four dirt tanks that require maintenance that could have a moderate effect on wilderness character. There are no ecosystem restoration activities currently planned for the areas. The area has potential for low-intensity burning of grasslands every 7-12 years. The area is committed through permits for livestock grazing on one allotment. This current authorization does not conflict with wilderness management or detract from wilderness qualities. One activity that does conflict with wilderness management is the potential helicopter landing zones within the area that will soon be requested by U.S. Customs and Border Protection. There is no potential for timber extraction. There is no potential for extraction of locatable minerals. There are no cultural resources that will be affected by wilderness management. The Pajarita Addition East Potential Wilderness Area is entirely composed of National Forest System lands, although one section of the adjacent land is privately owned. The closest private land immediately touches the boundary of the PWA, which may potentially impact the wilderness character of the area.

The Pajarita Addition East Potential Wilderness Area overall was rated as **high** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Pajarita Addition East PWA, there are 11 designated wilderness areas totaling about 415,000 acres (see Table 29).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 29. Designated Wilderness Within 100 Miles of the Pajarita Addition East Potential Wilderness Area

Wilderness Area	Acres
Baboquivari Peak Wilderness	2,776
Coyote Mountains Wilderness	5,795
Galiuro Wilderness	75,585
Miller Peak Wilderness	20,381
Mount Wrightson Wilderness	25,596
Organ Pipe Cactus Wilderness	98,088
Pajarita Wilderness	7,897
Pusch Ridge Wilderness	56,743
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
Saguaro Wilderness	77,119
TOTAL	414,797

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Pajarita Addition East Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Pajarita Addition East Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Pajarita Addition East Potential Wilderness Area includes 2 of the 16 major vegetation communities in the Southwestern Region of the Forest Service (see Table 30). Of these two vegetation communities, the Pajarita Addition East PWA would contribute to wilderness in the following vegetation types: Madrean Encinal Woodland (0.1 percent). The vegetation communities in this PWA consist of 25.50 percent regionally underrepresented vegetation types, therefore the PWA rates in the low range (less than 50 percent) for this factor.

Table 30. Underrepresented vegetation communities found in the Pajarita Addition East Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Pajarita Addition East PWA	Percent of Pajarita Addition East PWA	Percent Addition of Pajarita Addition East PWA to Wilderness
Interior Chaparral	2	0.2	0.0
Madrean Encinal Woodland	291	25.3	0.1
Grand Total	**293**	**25.5%**	**0.1%**

The Pajarita Addition East Potential Wilderness Area overall was rated as **low** for Need (for individual scores, see appendix G).

Cobre Potential Wilderness Area Evaluation [PW-05-03-D2-005]

Area Overview

Size and Location: The Cobre Potential Wilderness Area (PWA) encompasses 7,364 acres. This area is located in the Tumacacori Ecosystem Management Area, directly west of Cobre Ridge. The PWA is a part of the Nogales Ranger District of the Coronado National Forest in southeastern Arizona (see Map 4 at the end of this document). There are no inventoried roadless areas that overlap the Cobre PWA.

Vicinity, Surroundings and Access: The Cobre Potential Wilderness Area is approximately 50 miles southwest of Tucson, Arizona. The Cobre PWA is located within the southern region of the mountain range. Interstate 19 (I-19) connects the Tucson metropolitan area to the City of Nogales and the incorporated community of Sahuarita. The unincorporated communities of Green Valley, Arivaca Junction-Amado, Tubac, Tumacacori-Carmen and Rio Rico, Arizona and Sonora, Mexico are within close proximity to the Tumacacori Mountains and the PWA. The unincorporated communities of Oro Blanco and Ruby, Arizona area located within 1-2 miles of the PWA boundary. The boundary of the PWA is located approximately 0.5 miles from the U.S.-Mexico border.

State Highway 289 provides access from I-19 across private and National Forest System lands into the Tumacacori Ecosystem Management Area to Peña Blanca Lake and Ruby Road (NFS Road 39). Ruby Road is a major arterial and primary access road into and through the ecosystem management area and connects State Highway 289 to Arivaca Road (a Pima County road). The portion of Ruby Road outside the proclaimed Forest boundary is maintained by Pima and Santa Cruz Counties. Arivaca Road connects to State Highway 286 to the west and to I-19.

From the community of Arivaca, Alto Schumaker Road (NFS Road 4176 provides access into the PWA. Several additional NFS roads branch off Alto Schumaker Road and provide multiple access routes into the eastern side of the PWA. Carrizo Road (NFS Road 4129) and Agua Cercada Road (NFS Road 4166) lead up to the western boundary of the PWA, while Sierra Canyon (NFS Road 4168) and Saucito Roads (NFS Road 4169) follow the southern boundary. The nearest private land touches the southeastern boundary of the PWA, with National Forest System lands surrounding the rest of the PWA. There are no nonmotorized Forest System Trails leading into or through the PWA.

Although there appears to be adequate motorized road access to the Cobre PWA, permanent legal public access from the northern, eastern and western sides of the PWA are a continued concern. Many roads that provide physical access into the ecosystem management area and to the PWA that are currently open and used by public land users through the adjacent non-Federal land do not have legal right-of-ways. Therefore, because no legal right of public access exists for these roads, permanent legal public access to the National Forest System lands and the PWA will continue to be an issue.

Boundaries: The boundary of this PWA was established from Forest Service roads and natural features, such as ridgelines and high points. Saucito Roads (NFS Road 4169) forms the southern boundary, El Oro Mine Road (NFS Road 4165) forms a portion of the eastern boundary, and Yellow Jacket (NFS Road 4157) and Skunk Spring Roads (NFS Road 4158) make up the northern

boundary. A section of the western boundary was established along Agua Cercada Tank Road (NFS Road 4166). The remainder of the boundary follows Cobre Ridge and various peaks.

Geography and Topography: The Cobre Potential Wilderness Area (PWA) encompasses the northwestern part of the northwest-trending Cobre Ridge between the Arizona-Mexico international border and the Ruby-Arivaca highway. This ridge is bounded on the east by the Ruby to Oro Blanco to Arivaca road and on the west by the Santa Cruz-Pima County border. The Cobre PWA is a northwest-trending, irregularly oval area that is approximately two to three miles wide in an east-west direction and five to six miles long in a north-south direction. It is located in Santa Cruz County and is located entirely within the Nogales Ranger District, Coronado National Forest (CNF).

Encompassing an area of 7,364 acres, the Cobre PWA consists of most of the western part of Cobre Ridge. Details of the topography are shown on the Bartlett Mtn., Ariz., 7 ½ minute U.S. Geological Survey quadrangle. The Cobre PWA is bounded on all sides by roads or jeep trails. The east side is bounded by the roads from the Ruby-Oro Blanco-Arivaca highway to the mines in Warsaw Canyon southeast of the PWA. The northeast side is bounded by the ends of roads to the Saint Christopher mine and Grapevine Spring and the north side is bounded by the road to the Yellow Jacket mine. The west side of the PWA is bounded by the ends of roads up the northeast-trending Canoncito, Cercada, Sierra, and Bonita Canyons and Alamo Wash with their southwest-draining intermittent streams. The Cobre PWA is situated along the northwest-trending crest of Cobre Ridge. The northwestern part of the area is drained by small northwest-trending canyons, including Old Glory, Warsaw, and Holden Canyons in the southeastern part of the ridge.

The Cobre PWA rises from approximately 4,100 feet above sea level at the northeast part of the area near the Oro Blanco Wash and approximately 4,200 feet on the west side of the PWA near Agua Cercada Tank. The maximum elevation is 5,086 feet at Black Peak and much of Cobre Ridge is 4,400 to 4,800 feet in elevation. The topography is very rugged with steep canyons and ridges.

Cobre Ridge contains primarily Jurassic volcanics, with intrusions of Jurassic granite (Jg), and these are overlain by younger Tertiary sedimentary rocks (Tsy). The Cobre PWA is primarily underlain by Jurassic volcanics, with the southwestern edges composed of the younger Tertiary sedimentary rocks. The mountains in this area are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona.

Numerous recent mining claims are on record, but no active mining claims are located in the Cobre PWA. However, nearby areas have had historic production of metals. In particular, immediately to the north and southeast of the Cobre PWA, the Oro Blanco mining district are historic lead-zinc-silver mining districts. Production from the Oro Blanco district from 1903 through 1976 was 880,000 tons of ore containing 3,851,000 labs copper, 56,946,000 pounds lead, 47,757,000 pounds zinc, 43,500 oz gold, and 4,340,000 oz silver (Keith and others, 1983). The mines were in irregular and lensing quartz veins containing gold- and silver-rich base metal sulfides in fractures or replacements along faults in Cretaceous sedimentary rocks or Jurassic volcanic tuffs (Keith, 1975). This same geological situation is present in the Cobre PWA, particularly in the north and east portions.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland and desert grassland communities, upper elevation reach the lower Madrean Pine-oak woodlands. Species include Madrean evergreen oaks such as

Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), silverleaf oak (*Q. hypoleucoides*), Mexican blue oak (*Quercus oblongifolia*), Sonoran scrub oak (*Q. turbinella*) and Toumey oak (*Quercus toumeyi*). Other tree species include border pinyon (Pinus discolor), Chihuahua pine (*Pinus leiophylla*), alligator (*Juniperus deppeana*) and redberry juniper (*J. coahuilensi*s). Interior chaparral species [including manzanita spp. (*Arctostaphylos* spp.), mountain mahogany (*Cercocarpus montanus*), silktassel (*Garrya wrightii*), and sumacs (*Rhus* spp.) may be present but do not codominate. Rosette scrubs such as Agaves (*Agave* spp.), yuccas (*Yucca* spp.), sotol (*Dasylirion* wheeleri) and beargrass (*Nolina microcarpa*) as well as desert scrub species such as acacias (*Acacia* spp.), mimosa (*Mimosa* spp.) mesquite (*Prosopis* spp.) dominate to the lower elevation desert scrub component. Cactus species such as cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia* spp.), hedgehogs (*Echinocereus* spp.), and barrel cactus (*Ferocactus* spp.) are also common component of this lower vegetative community. The ground cover is dominated by a very diverse community of mostly warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*) and numerous willows (*Salix* spp.). Historically, woody species have been removed as a source of firewood where they are accessible. Many if not most of the woody species resprout after harvesting and remain on the landscape. This practice probably reduced the number of large hardwood trees and snags that would have historically occurred.

Current Uses: Visitors use this PWA for a variety of recreational activities, though use may be relatively light due to the proximity of the International Border with Mexico (and its associated risks). There are no trails within the PWA. Roads lie adjacent to many areas on the boundary of this PWA, and uses along roads include motorized touring and dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. One existing road within the PWA is currently in use, but has been recommended for decommissioning. Topography is generally rugged, so there is limited cross-country travel through the PWA. There are three grazing allotments within the Cobre Potential Wilderness Area. All of these allotments are active and valid permitted uses. This PWA is located within Fire Management Units 1 and 2 (FMU 1 and 2). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities, while FMU 2 indicates nonfire adapted vegetation communities (desert communities). Current fire management in FMU 1 includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits. In those areas located in FMU 2, the fire management objective is resource protection.

Capability

Naturalness

Diversity of vegetation within the Cobre Potential Wilderness Area boundary includes Sonoran thornscrub, oak woodlands, grasslands and desert. Waterways within the area are heavily

impacted by dams, tanks and a pipeline. The remoteness and distance from communities allows for night skies to be clearly seen without interference from light pollution. The biological diversity in the area includes critical habitats and unique ecological conditions. California Gulch lies adjacent to the Cobre PWA, providing high ecological diversity that includes Sonoran thornscrub. These habitats support Saguaro and other unique plants and animals. The area contains a diverse amount of natural resources in the form of varying vegetative communities. Although no rivers or streams have been sampled, there are no known water quality issues. The prevalence of buffelgrass on Bartlett Mountain and Sentinel Peak detract from the wilderness capability. Lehmann's, William's, and Boer's lovegrasses are also spread throughout the PWA, with isolated patches of natal grass. Nonnative bullfrogs and fish species can be found in California Gulch.

Undeveloped

The Cobre Potential Wilderness Area has obvious evidence of human activity, including trail networks, undocumented aliens, trash, Border Patrol presence, and the Yellow Jacket, St. Christopher, and Old Glory historic mining sites.

Opportunities for Solitude or Primitive and Unconfined Recreation

Remote, diverse topography within the PWA includes steep ridges, canyons, rolling hills, and outcrops, although water availability is minimal. Many parts of the area provide opportunities for physically and mentally challenging recreation. The opportunity to experience solitude may be hindered by possible encounters with Border Patrol and illegal aliens. Primitive recreation on the Cobre PWA may include hiking, hunting, wildlife-watching, and backpacking.

Special Features

Distinct vegetation types create unique views across the Cobre PWA, including some vistas and panoramas. Good potential for cultural study and scientific research exist throughout the area. Unique species such as the lesser long-nosed bat, jaguar and ocelot may be found within this PWA. Foraging habitats for other rare species may exist near California Gulch.

Manageability

Adequate access opportunities into the Cobre Potential Wilderness Area may be found through Warsaw Canyon, Tres Bellotas, and California Gulch. The border of this PWA is contiguous with the international border, therefore outside activities may interfere with management efforts. Motorized vehicle use by Border Patrol and illegal use by recreationists from the Tres Bellotas side may negatively impact the potential wilderness character. There are no identified boundary changes that would enhance the area's wilderness character.

The Cobre Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Cobre Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. One activity that does conflict with wilderness management is the cross-country ATV use in the area, which has increased over the past decade. There are four threatened or endangered species that may be located in the PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA.

Watersheds within the area have suffered from drought conditions over the past several years. There are ten stock tanks, cements dams, and a pipeline from Nogalito Spring to a trough that need to be maintained with motorized equipment every 15-20 years. The area demonstrates a need for new wells and pipelines in the future, which may require more frequent maintenance. These maintenance plans may have a moderate effect on wilderness character. There are no ecosystem restoration activities currently planned for the areas. The area has potential for low-intensity burning of grasslands every 7-12 years. The area is committed through permits for livestock grazing on three allotments. This current authorization does not conflict with wilderness management or detract from wilderness qualities. One activity that does conflict with wilderness management is the potential helicopter landing zones within the area that will soon be requested by U.S. Customs and Border Protection. A repeater site on Cobre Ridge has also been permitted, and may interfere with wilderness management. There is no potential for timber extraction. While some historic mines are present on the PWA, there is no potential for extraction of locatable minerals. There are no cultural resources that will be affected by wilderness management. The Cobre Potential Wilderness Area is entirely composed of National Forest System lands, although one section of the adjacent land is privately owned. The closest private land immediately touches the boundary of the PWA, which may potentially impact the wilderness character of the area.

The Cobre Potential Wilderness Area overall was rated as **medium** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Cobre PWA, there are 11 designated wilderness areas totaling about 419,000 acres (see Table 31).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 31. Designated wilderness within 100 miles of the Cobre Potential Wilderness Area

Wilderness Area	Acres
Baboquivari Peak Wilderness	2,776
Coyote Mountains Wilderness	5,795
Galiuro Wilderness	75,585
Miller Peak Wilderness	20,381
Mount Wrightson Wilderness	25,596
Organ Pipe Cactus Wilderness	102,159
Pajarita Wilderness	7,897
Pusch Ridge Wilderness	56,743
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
Saguaro Wilderness	77,119
TOTAL	418,867

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Cobre Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Cobre Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Cobre Potential Wilderness Area includes 3 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 32). Of these three vegetation communities, the Cobre PWA would contribute to wilderness in the following vegetation types: Madrean Encinal Woodland (0.6 percent). The vegetation communities in this PWA consist of 32.50 percent regionally underrepresented vegetation types, therefore the PWA rates in the low range (less than 50 percent) for this factor.

Table 32. Southwestern Region underrepresented vegetation communities found in the Cobre Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Cobre PWA	Percent of Cobre PWA	Percent Addition of Cobre PWA to Wilderness
Interior Chaparral	13	0.2	0.0
Madrean Encinal Woodland	2,373	32.2	0.6
Riparian Areas	6	0.1	0.0
Grand Total	**2,392**	**32.5%**	**0.6%**

The Cobre Potential Wilderness Area overall was rated as **low** for Need (for individual scores, see appendix G).

Pajarito Potential Wilderness Area Evaluation [PW-05-03-D2-006]

Area Overview

Size and Location: The Pajarito Potential Wilderness Area (PWA) encompasses 8,435 acres. This area is located in the Pajarito Mountains within the larger Tumacacori Ecosystem Management Area, which are part of the Nogales Ranger District of the Coronado National Forest in southeastern Arizona (see Map 4 at the end of this document). The Pajarito PWA is overlapped by 3,020 acres of the Tumacacori Inventoried Roadless Area, comprising 36 percent of the PWA.

Vicinity, Surroundings and Access: The Pajarito Potential Wilderness Area is approximately 50 miles southwest of Tucson, Arizona. The Pajarito PWA is located within the southern region of the mountain range. Interstate 19 (I-19) connects the Tucson metropolitan area to the City of Nogales and the incorporated community of Sahuarita. The unincorporated communities of Green Valley, Arivaca Junction-Amado, Tubac, Tumacacori-Carmen and Rio Rico, Arizona and Sonora, Mexico are within close proximity to the Tumacacori Mountains and the PWA. The unincorporated communities of Oro Blanco and Ruby, Arizona are located within 10 miles of the PWA, and are also found within the national forest boundary. The PWA shares the U.S.-Mexico border as its southern boundary.

State Highway 289 provides access from I-19 across private and National Forest System lands into the Tumacacori Ecosystem Management Area to Peña Blanca Lake and Ruby Road (NFS Road 39). Ruby Road is a major arterial and primary access road into and through the ecosystem management area and connects State Highway 289 to Arivaca Road (a Pima County road). The portion of Ruby Road outside the proclaimed Forest boundary is maintained by Pima and Santa Cruz Counties. Arivaca Road connects to State Highway 286 to the west and to I-19.

State Highway 289 borders the northern side of the PWA, transitioning into the Atascosa Trail. Upper Walker Canyon Road (NFS Road 221) and Castle Rock Road (NFS Road 4195) also make up a portion of the northern boundary, while Alamo Canyon Road (NFS Road 4182) extends along the western boundary. Calabasas Ridge Road (NFS Road 222) runs alongside the eastern border of the PWA. The PWA is surrounded on three sides by National Forest System lands, while the southern portion shares a border with Mexico. Sycamore Canyon Trail traverses the entire southern portion of the PWA, providing nonmotorized access to the area.

Although there appears to be adequate motorized road access to the Pajarito PWA, permanent legal public access from the northern, eastern and western sides of the PWA are a continued concern. Many roads that provide physical access into the ecosystem management area and to the PWA from Arivaca Road and other roads that are currently open and used by public land users through the adjacent non-Federal land do not have legal right-of-ways. Therefore, because no legal right of public access exists for these roads, permanent legal public access to the National Forest System lands and the PWA will continue to be an issue.

Boundaries: The boundary of this PWA was established based on the U.S.-Mexico Border and several Forest Service roads. The International Border acts as the southern boundary, while State Highway 289 makes up the northern boundary of the PWA. Upper Walker Canyon Road (NFS Road 221) and Castle Rock Road (NFS Road 4195) also make up a portion of the northern boundary, while Alamo Canyon Road (NFS Road 4182) extends along the western boundary. Calabasas Ridge Road (NFS Road 222) runs alongside the eastern border of the PWA.

Geography and Topography: The Pajarito Potential Wilderness Area (PWA) encompasses the northern part of the Pajarito Mountains between the Arizona-Mexico international border and the Ruby highway. This mountain range is bounded on the east by Pesqueria Canyon, on the north by Walker Canyon and the Ruby highway, and on the west by the road up Alamo Canyon. The Pajarito PWA is an oval area with some inroads to avoid the roads to the nearby mines; the PWA is approximately six miles wide east to west and three miles wide north to south. This PWA is located in Santa Cruz County and is entirely within the Nogales Ranger District, Coronado National Forest (CNF).

Encompassing an area of 8,435 acres, the Pajarito PWA consists of most of northern part of the Pajarito Mountains, which are a southern extension of the Atascosa Mountains. The northern border of the Pajarito PWA is indented to the south along Walker Canyon and Pena Blanco Canyon to avoid the mines and roads in those areas. Additional jeep trails in the Pajarito Mountains are avoided by drawing the boundaries of the PWA inside of these roads.

The Pajarito PWA is situated along the northeast-trending ridges of the northern Pajarito Mountains. The area extends from the Arizona-Mexico international border on the south to the Ruby Highway on the north, with some excluded areas to avoid the roads in Pena Blanca and Walker Canyons. The Pajarito PWA is shown on the U. S. Geological Survey, 7 ½ minute topographic maps of the Pajarito Peak, Alamo Spring, Pena Blanca Lake, and Ruby quadrangles. The area extends from the roads or jeep trails along the northeast-draining intermittent streams in Pesqueria and Calabasas Canyons on the east to the road up the northeast-draining intermittent streams along Alamo Canyon on the west.

The Pajarito PWA consists of rugged terrain with steep canyons and rugged mountain slopes that are mostly above 4,500 feet in elevation. The low elevations are approximately 4,200 feet above sea level at the northeast corner near Calabasas Tank and approximately 3,900 feet in Pena Blanca Canyon at the northwestern corner. The maximum elevation is a peak north of Monument Tank in the southern part of the Pajarito PWA at approximately 6,052 feet. The area is named for Pajarito Peak in the north central part of the area, which is at an elevation of 5,236 feet. Other higher elevations include Castle Rock at 4,505 feet in the northern part of the area near Pena Blanca Canyon and a peak near the Arizona-Mexico border at 5,197 feet and a peak north of Armada Tank also near the border at an elevation of 4,975 feet.

The Pajarito PWA contains primarily Jurassic volcanics, with some Cretaceous-Jurassic sedimentary rocks (KJs) on the far western edges, which are overlain by mid-Tertiary volcanics (Tv) on the northern edges of the PWA. These mountains are a continuation of the Atascosa Mountains, which are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona.

Numerous mining claims are on record in the area, but no active mining claims are located within the Pajarito PWA, even though the nearby area has had historic production of metals. Mines to the immediate north of the central part of the Pajarito PWA, which are included in the Pajarito mining district, are historic lead-zinc-silver producers. Production from this mining district from 1910 to 1969 was 1,400 tons of ore containing 4,000 pounds of copper, 139,000 pounds of lead, 300 pounds of zinc, 160 ounces of gold, 21,000 ounces of silver, and minor amounts of uranium and vanadium ore (Keith et al. 1983). This district consisted of irregular and lensing fissure veins containing copper, lead, zinc, gold, silver, and locally pitchblende in quartz latite volcanics (Keith 1975). Although the boundaries of the Pajarito PWA have been drawn to exclude the historic

mines, the PWA contains the same rock types and geological features as are at the mined areas and are likely to experience mineral exploration in the future.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland and desert grassland communities, upper elevation reach the lower Madrean Pine-oak woodlands. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), silverleaf oak (*Q. hypoleucoides*), Mexican blue oak (*Quercus oblongifolia*), Sonoran scrub oak (*Q. turbinella*) and Toumey oak (*Quercus toumeyi*). Other tree species include border pinyon (*Pinus discolor*), Chihuahua pine (*Pinus leiophylla*), alligator (*Juniperus deppeana*) and redberry juniper (*J. coahuilensis*). Interior chaparral species [including manzanita spp. (*Arctostaphylos* spp.), mountain mahogany (*Cercocarpus montanus*), silktassel (*Garrya wrightii*), and sumacs (*Rhus* spp.) may be present but do not codominate. Rosette scrubs such as Agaves (*Agave* spp.), yuccas (*Yucca* spp.), sotol (*Dasylirion wheeleri*) and beargrass (*Nolina microcarpa*) as well as desert scrub species such as acacias (*Acacia* spp.), mimosa (*Mimosa* spp.) mesquite (*Prosopis* spp.) dominate to the lower elevation desert scrub component. Cactus species such as cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia* spp.), hedgehogs (*Echinocereus* spp.), and barrel cactus (*Ferocactus* spp.) are also common component of this lower vegetative community. The ground cover is dominated by a very diverse community of mostly warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis* intermedia), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and obligate riparian species, including Fremont cottonwood (Populus fremontii), velvet ash (*Fraxinus* velutina), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*) and numerous willows (*Salix* spp.). Historically, woody species have been removed as a source of firewood where they are accessible. Many if not most of the woody species resprout after harvesting and remain on the landscape. This practice probably reduced the number of large hardwood trees and snags that would have historically occurred.

Current Uses: Visitors use this PWA for a variety of recreational activities, though use may be relatively light due to the proximity of the International Border with Mexico (and its associated risks). This PWA lies between Ruby Road (a popular sightseeing route) and the International Border. Ruby Road and other roads along the boundary are used for motorized touring and dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. White Rock Campground, a developed recreation site, lies along the boundary, and visitors here may venture into the PWA. There is one trail through this area which meanders along the International Border, and is used for hiking, horseback riding, and mountain biking. One existing road within the PWA is currently in use, but has been recommended for decommissioning. Topography is mostly rugged, so there is limited cross-country travel through the PWA. There are two grazing allotments within the Pajarito Potential Wilderness Area. Both of these allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

Diversity of vegetation within the Pajarito Potential Wilderness Area boundary consists of Sonoran desert grasslands, oak woodlands, and riparian vegetation. Waterways within the PWA are heavily impacted by thirteen impoundments (concrete dams and tanks), plus a sediment dam. While some stars are visible in the area, the nearby communities of Rio Rico, Nogales, and Sonora, Mexico contribute to light pollution. The biological diversity in the area includes critical habitats and unique ecological conditions. Unique species found within the PWA are the Mexican spotted owl, Northern gray hawk, lesser long-nosed bat, potential jaguar and ocelot, and rare plant species. The area contains a variety of natural resources that include varied vegetation communities and geologic diversity. Although no rivers or streams have been sampled, there are no known water quality issues. Potential water quality concerns surround the mercury remnants from old mines. The prevalence of Lehmann's, William's, and Boer's lovegrasses, as well as natal grasses, spread throughout the PWA significantly detracts from the area's wilderness capability. Buffelgrass may also be present within the southern portion of the PWA.

Undeveloped

The Pajarito Potential Wilderness Area has obvious evidence of human activity, including trash, undocumented alien and Border Patrol activity, and trail networks.

Opportunities for Solitude or Primitive and Unconfined Recreation

Physically challenging travel may be experienced on the Pajarito PWA given the steep topography and remoteness of the area. The opportunity to experience solitude may be hindered by possible encounters with Border Patrol and illegal aliens. Primitive recreation on the Pajarito PWA may include some hunting and backpacking.

Special Features

The Pajarito PWA contains some distinct rock features that contribute to the wilderness capability. The area possesses some potential for scientific research and many cultural opportunities along the Screwworm Border Trail 40 and in Alamo Canyon. Unique wildlife such as the Mexican spotted owl, Northern gray hawk, lesser long-nosed bat, jaguar and ocelot may be found within this PWA.

Manageability

Management of the area may be difficult given the multiple access points along a large, unprotected portion of the U.S.-Mexico border. Interference by the U.S. Border Patrol, illegal activity, and unauthorized livestock may also subtract from the ability to manage this area as a wilderness area. Motorized vehicle use by Border Patrol and illegal HOV use by recreationists from Calabasas, Pena Blanca, and Walker Canyons may negatively impact the potential wilderness character. There are no identified boundary changes that would enhance the area's wilderness character.

The Pajarito Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Pajarito Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. One activity that does conflict with wilderness management is the cross-country ATV use in the area, which is projected to increase in the future. There are six threatened or endangered species that may be located in the PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Watersheds within the area are properly functioning. There are thirteen dirt tanks and cement dams that need to be maintained with motorized equipment every 15-20 years. These maintenance plans may have a moderate effect on wilderness character. There are no ecosystem restoration activities currently planned for the areas. However, the area is in need of vegetation treatments and there is the potential for such activities in the future. The area has potential for low-intensity burning of grasslands every 7-12 years. The area is committed through permits for livestock grazing on two allotments. This current authorization does not conflict with wilderness management or detract from wilderness qualities. One activity that does conflict with wilderness management is the potential helicopter landing zones within the area that will soon be requested by U.S. Customs and Border Protection. There is no potential for timber extraction. There is no potential for extraction of locatable minerals. An old mining town called Noonville is located near Pena Blanca Spring; however, this cultural resource will not be affected by wilderness management. The Pajarito Potential Wilderness Area is entirely composed of National Forest System lands, although the southern boundary of the PWA lies along the United States-Mexico border. Conflicts over management of the bordering lands in Mexico may potentially impact the wilderness character of the area.

The Pajarito Potential Wilderness Area overall was rated as **medium** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, Wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Pajarito PWA, there are 10 designated wilderness areas totaling about 317,000 acres (see Table 33).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 33. Designated wilderness within 100 miles of the Pajarito Potential Wilderness Area

Wilderness Area	Acres
Baboquivari Peak Wilderness	2,776
Coyote Mountains Wilderness	5,795
Galiuro Wilderness	75,585
Miller Peak Wilderness	20,381
Mount Wrightson Wilderness	25,596
Pajarita Wilderness	7,897
Pusch Ridge Wilderness	56,743
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
Saguaro Wilderness	77,119
TOTAL	316,708

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Pajarito Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Pajarito Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Pajarito Potential Wilderness Area includes 3 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 34). Of these three vegetation communities, the Pajarito PWA would contribute to wilderness in the following vegetation types: Madrean Encinal Woodland (1.1 percent). The vegetation communities in this PWA consist of 55.60 percent regionally underrepresented vegetation types, therefore the PWA rates in the medium range (50-90 percent) for this factor.

Table 34. Southwestern Region underrepresented vegetation communities found in the Pajarito Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Pajarito PWA	Percent of Pajarito PWA	Percent Addition of Pajarito PWA to Wilderness
Interior Chaparral	33	0.4	0.0
Madrean Encinal Woodland	4,651	55.1	1.1
Riparian Areas	8	0.1	0.0
Grand Total	**4,692**	**55.6%**	**1.1%**

The Pajarito Potential Wilderness Area overall was rated as **low** for Need (for individual scores, see appendix G).

Mount Fagan Potential Wilderness Area Evaluation [PW-05-03-D2-007]

Area Overview

Size and Location: The Mount Fagan Potential Wilderness Area (PWA) encompasses 6,256 acres. This area is located in the Santa Rita Mountains, which are part of the Nogales Ranger District of the Coronado National Forest in southeastern Arizona (see Map 5 at the end of this document). The Mount Fagan PWA is overlapped by 4,303 acres of the Santa Rita Inventoried Roadless Area, comprising 69 percent of the PWA.

Vicinity, Surroundings and Access: The Mount Fagan Potential Wilderness Area is approximately 25 miles southeast of Tucson, Arizona and approximately 39 miles northwest of Douglas, Arizona within the Nogales Ranger District. This area lies east of the Santa Rita Experimental Range and Wildlife Area, and can be found in the northeastern section of the Santa Rita Mountains. The PWA is located north of the existing Mount Wrightson Wilderness and is completely surrounded by National Forest System (NFS) lands. The closest private land is located 0.1 miles from the boundary of the PWA, with several other private plots located approximately one mile from the boundary.

Arizona State Highway 83 connects Interstate 10 to Sonoita and State Highway 82 as well as providing access to Gardner Canyon and Santa Rita Roads. Lake Road (NFS Road 2852) is the primary motorized access route from State Highway 83 to the potential wilderness area. Copper Cut Road (NFS Road 4851) provides access from the north into the PWA, while Sycamore Road (NFS Road 4050) and Helvetia Road (NFS Road 170) join to allow entry into the western side of the PWA. This road borders a small western portion of the PWA boundary, with Hidden Valley Road (NFS Road 4062) and NFS Road 4879 (unnamed) bordering the southeastern boundary. There are no nonmotorized, National Forest System trails that run through the Mount Fagan PWA.

There appears to be adequate motorized and trail access to the PWA. There is little, if any, documented right-of-way for these roads across Federal and non-Federal lands from State Highway 83 to the proclaimed national forest boundary. Permanent legal public access may be a future concern in this area.

Boundaries: The boundary of this PWA was established based on natural features, such as ridgelines and high points, in the Santa Rita Mountain Range. The southern boundary was formed along Helvetia Road (NFS Road 170) and Hidden Valley Road (NFS Road 4062).

Geography and Topography: The Mount Fagan Potential Wilderness Area (PWA) encompasses the northern part of the Santa Rita Mountains. This mountain range is bounded on the east by the Davidson Canyon and the Empire Mountains and on the west by the Santa Cruz Valley. The Mount Fagan PWA is an oval area that is approximately four miles wide in an east-west direction by three miles wide in a north-south; it is located in Pima County. Encompassing an area of 6,256 acres, the Mount Fagan PWA consists of most of Mount Fagan and surrounding areas within the Coronado National Forest in the northern part of the Santa Rita Mountain range. This PWA is located entirely within the Nogales Ranger District, Coronado National Forest (CNF).

The Mount Fagan PWA is centered around the east-west to northwest-trending crest of the northern Santa Rita Mountains and includes all of Mount Fagan. The area extends from the CNF boundary on the east at Mulberry Canyon and Papago Canyon in the eastern portion of the area and extends to the northwest-draining intermittent stream in Sycamore Canyon and Sycamore Spring in the western part of the area. Access is gained from Arizona Highway 83 in Davidson Canyon westward through Mulberry Canyon on a jeep trail into the PWA to the Helena mine in Papago Canyon.

The Mount Fagan PWA rises from 4,400 feet above sea level at Mulberry Canyon on the east side and from 3,800 feet in Sycamore Canyon on the west side to the maximum elevation of approximately 8,188 feet at Mount Fagan in the central part of the PWA. Details of the topography are shown on the Empire Ranch, Mount Fagan, and Corona de Tucson, Ariz., 7 ½ minute U.S. Geological Survey quadrangles.

The Mount Fagan PWA contains primarily Cretaceous volcanics and Cretaceous-Jurassic sedimentary rocks. The Santa Rita Mountains are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona. The geology of the northern Santa Rita Mountains is characterized by Cretaceous volcanic and sedimentary rocks and Paleozoic sedimentary rocks, intruded by Laramide (Tertiary-Cretaceous) granite (shown as TKg). This granite is similar to the ore-bringing plutonic rocks in the porphyry copper districts in Pima County.

No active mining claims are located in the Mount Fagan PWA, but the area has recorded historic production of metals. A mile to the north of the Mount Fagan PWA is the Cuprite mining district with the Cuprite, Dimple, and Pauline mines. To the south of the Mount Fagan PWA is the Helvetia-Rosemont mining district, which is currently undergoing mining exploration and development. The Helena mine in the Mount Fagan PWA and the Cuprite district were included in the Helvetia-Rosemont mining district (Keith, 1974). There has been significant mining exploration in this district and the geology in the Mount Fagan PWA is very similar to that in the Helvetia-Rosemont area.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland and desert grassland communities. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), gray oak (*Quercus grisea*), Mexican blue oak (*Quercus oblongifolia*) and Toumey oak (*Quercus toumeyi*). Other tree species including border pinyon (*Pinus discolor*), Chihuahua pine (*Pinus leiophylla*), Arizona pine (*P. arizonica*), ponderosa pine (*P. ponderos*a) and alligator (*Juniperus deppeana*) and redberry juniper (*J. coahuilensis*). Chaparral species include manzanita spp. (*Arctostaphylos* spp.), ceanothus species (*Ceanothus* spp.), mountain mahogany (*Cercocarpus montanus*), silktassel (*Garrya wrightii*), Stansbury cliffrose (*Purshia stansburiana*), and sumacs (*Rhus* spp.) may be present but do not codominate. Rosette scrubs such as Agaves (*Agave* spp.), yuccas (*Yucca* spp.), sotol (*Dasylirion wheeleri*) and beargrass (*Nolina microcarpa*) as well as desert scrub species such as acacias (*Acacia* spp.), mimosa (*Mimosa* spp.) and mesquite (*Prosopis* spp.) dominate to the lower elevation desert scrub component. Cactus species such as cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia* spp.), hedgehog (*Echinocereus* spp.), and barrel cactus (*Ferocactus* spp.) are also common component of this lower vegetative community. The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly

grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*) and willows (*Salix* spp.). Historically, woody species have been removed as a source of firewood and mining construction material where they are accessible. Except for most pines, many of the woody species resprout after harvesting and remain on the landscape. This practice probably reduced the number of large hardwood trees and snags that would have historically occurred.

Current Uses: Visitors use this PWA for a variety of recreational activities. The Arizona National Scenic Trail, a route that stretches across the entire state, runs through the area and is used for hiking, horseback riding, and mountain biking. Two roads adjacent to this PWA are part of the Santa Rita Backcountry Touring Area, an area where motorized touring and OHV use is encouraged. Use along these roads also includes dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. One existing road within the PWA is currently in use, but has been recommended for decommissioning. Topography is moderately rugged, so there is limited cross-country travel through the PWA. There are two grazing allotments within the Mount Fagan Potential Wilderness Area. Both of these allotments are active and valid permitted uses. This PWA is located within Fire Management Units 1 and 2 (FMU 1 and 2). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities, while FMU 2 indicates nonfire adapted vegetation communities (desert communities). Current fire management in FMU 1 includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits. In those areas located in FMU 2, the fire management objective is resource protection.

Capability

Naturalness

Diversity of vegetation within the Mount Fagan Potential Wilderness Area boundary consists of Sonoran desert grasslands and succulent scrub. Few perennial waters exist on this PWA, including pools in Sycamore Canyon and Mulberry Spring. Some dirt tanks affect the free-flowing character of waterways in the Mount Fagan PWA. While some stars are visible in the area, Tucson urban and suburban areas create significant light pollution. The biological diversity in the area includes critical habitats and unique ecological conditions. Unique plant and animal species found within the PWA are the Saguaro desert shrub, chaparral species, Arizona rosewood, Sandpaper plant, jaguar, ocelot, lesser long-nosed bat and many other bat species. The area contains a variety of natural resources that include many limestone features and varied vegetation communities. Although no rivers or streams have been sampled, there are no known water quality issues. The prevalence of Lehmann's, William's, and Boer's lovegrasses spread throughout the PWA significantly detracts from the area's wilderness capability. Nearby ponds and stock tanks also house nonnative fish species including bass.

Undeveloped

The Mount Fagan Potential Wilderness Area has some evidence of human activity, although the signs are unnoticeable and do not significantly impact the wilderness character. Scattered mining remains and range improvements may be observed on this PWA.

Opportunities for Solitude or Primitive and Unconfined Recreation

Physically challenging travel may be experienced on the Mount Fagan PWA given the steep, rugged terrain. The area offers limited water sources and navigating the landscape may be difficult. The opportunities to experience solitude and isolation from human society are few given the evidence of mankind through views of Sahuarita, Green Valley, Tucson, and mining infrastructure. The sights and sounds from these activities may detract from the capability of the area. Primitive recreation on the Mount Fagan PWA may include hunting, wildlife-viewing, equestrian use, and backpacking.

Special Features

The Mount Fagan PWA offers panoramic views from ridgelines and peaks. Limestone formations and lava flows are visible in the Helvetica area. Mount Fagan itself serves as the central feature within the area. The area possesses some potential for geologic education opportunities throughout the area. Unique wildlife such as the lesser long-nosed bat, jaguar and ocelot, other bat species, and several rare plant species may be found within this PWA.

Manageability

Management of the area may be difficult given the abundant access opportunities along the southern perimeter. Northern perimeter access would be difficult to control due to adjacent landowners. Mining poses the primary resource conflict, as ongoing exploration and potential development may ensue. Illegal intrusions occur through the northern boundary where Forest Service access is restricted. Adjacent private landowners also create proprietary access routes through the potential wilderness area. There are no identified boundary changes that would enhance the area's wilderness character.

The Mount Fagan Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Mount Fagan Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. There are four threatened or endangered species that may be located in the PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Watersheds within the area are properly functioning. There are five dirt tanks and a pipeline located in Sycamore Canyon, as well as a wildlife trick tank at Mount Fagan. These dirt tanks, along with springs and well developments need to be maintained with motorized equipment every 15-20 years, which may have a moderate effect on wilderness character. There are no ecosystem restoration activities currently planned for the areas. However, the need for range improvements has been identified on the Debaud allotment. The area has potential for low-intensity burning of grasslands every 10-15 years, with buffelgrass treatment occurring annually for at least three years. The area is committed through permits for livestock grazing on two allotments. This current authorization does not conflict with wilderness management or detract from wilderness qualities. One activity that does conflict with wilderness management is the USFS helicopter landing spot located on Mount Fagan. There is no potential for timber extraction. Mining claims currently exist on the PWA, with recent increase in demand for locatable minerals. There are no cultural resources that will be affected by wilderness management. The Mount Fagan Potential Wilderness Area is entirely composed of National

Forest System lands, as is the adjacent land. The closest private land is approximately 0.1 miles from the PWA boundary and may impact the wilderness character of the area.

The Mount Fagan Potential Wilderness Area overall was rated as **high** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Mount Fagan PWA, there are 20 designated wilderness areas totaling about 528,000 acres (see Table 35).

Table 35. Designated wilderness within 100 miles of the Mount Fagan Potential Wilderness Area

Wilderness Area	Acres
Aravaipa Canyon Wilderness	19,790
Baboquivari Peak Wilderness	2,776
Chiricahua National Monument Wilderness	12,161
Chiricahua Wilderness	88,793
Coyote Mountains Wilderness	5,795
Dos Cabezas Mountains Wilderness	11,855
Fishhooks Wilderness	11,400
Galiuro Wilderness	75,585
Miller Peak Wilderness	20,381
Mount Wrightson Wilderness	25,596
Needle's Eye Wilderness	6,277
North Santa Teresa Wilderness	5,733
Pajarita Wilderness	7,897
Peloncillo Mountains Wilderness	19,244
Pusch Ridge Wilderness	56,743
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
Saguaro Wilderness	77,119
Santa Teresa Wilderness	28,769
White Canyon Wilderness	6,981
TOTAL	527,713

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are

limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Mount Fagan Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Mount Fagan Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Mount Fagan Potential Wilderness Area includes 4 of the 16 underrepresented vegetation communities in the Southwestern Region (see Table 36). Of these four vegetation communities, the Mount Fagan PWA would contribute to wilderness in the following vegetation types: Madrean Encinal Woodland (0.6 percent) and Riparian Areas (0.1 percent). The vegetation communities in this PWA consist of 40.90 percent regionally underrepresented vegetation types, therefore the PWA rates in the low range (less than 50 percent) for this factor.

Table 36. Southwestern Region underrepresented vegetation communities found in the Mount Fagan Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Mount Fagan PWA	Percent of Mount Fagan PWA	Percent Addition of Mount Fagan PWA to Wilderness
Interior Chaparral	129	2.1	0.0
Madrean Encinal Woodland	2,408	38.5	0.6
Madrean Pine Oak Woodland	4	0.1	0.0
Riparian Areas	13	0.2	0.1
Grand Total	**2,554**	**40.9%**	**0.7%**

The Mount Fagan Potential Wilderness Area overall was rated as **medium** for Need (for individual scores, see appendix G).

Happy Jack Potential Wilderness Area Evaluation [PW-05-03-D2-008]

Area Overview

Size and Location: The Happy Jack Potential Wilderness Area (PWA) encompasses 6,835 acres. This area is located in the Santa Rita Mountains, which are part of the Nogales Ranger District of the Coronado National Forest in southeastern Arizona (see Map 5 at the end of this document). There are no inventoried roadless areas that overlap the Happy Jack PWA.

Vicinity, Surroundings and Access: The Happy Jack Potential Wilderness Area is approximately 41 miles southeast of Tucson, Arizona and approximately 10 miles southwest of Sonoita, Arizona within the Nogales Ranger District. This area is also located approximately 18 miles from Nogales, and can be found in the Mansfield Canyon and Temporal Gulch area on the southern end of the Santa Rita Mountains. The PWA can be found directly south of the existing Mount Wrightson Wilderness and is surrounded mostly by National Forest System (NFS) lands. A portion of the PWA lands is privately owned, which may interfere with wilderness management. Private lands also border a section of the northern and southern boundary of the PWA.

Arizona State Highway 83 connects Interstate 10 to Sonoita and State Highway 82 as well as providing access to Gardner Canyon and Santa Rita Roads. Temporal Canyon Road (NFS Road 72) is the primary motorized access route from State Highway 82 into the potential wilderness area. There are no nonmotorized, National Forest System trails that provide access through the PWA.

There appears to be adequate motorized and trail access to the PWA. There is little, if any, documented right-of-way for roads across Federal and non-Federal lands from State Highway 82 to the proclaimed national forest boundary. Permanent legal public access may be a future concern in this area.

Boundaries: The boundary of this PWA follows established Forest Service roads on all sides, including Hosey Mine (NFS Road 4091) and Victor Mine Roads (NFS Road 4097) on the eastside, Piper Gulch (NFS Road 4092) and Temporal Canyon Roads (NFS Road 72) on the north side, and Johnson (NFS Road 4100) and NFS Road 4873 (unnamed) on the south side. Temporal Canyon Road extends into the PWA itself, although the boundary line follows this road in order to exclude it from the PWA.

Geography and Topography: The Happy Jack Potential Wilderness Area (PWA) encompasses the southern part of the north-trending Santa Rita Mountains. This mountain range is bounded on the southeast by the Sonoita Creek, by Cienega Creek on the east, and by the Santa Cruz Valley on the west. The Happy Jack PWA is a northwest-trending oval area that is approximately three miles wide in an east-west direction and two to four miles long in a north-south direction. It is located in Santa Cruz County and is entirely within the Nogales Ranger District, Coronado National Forest (CNF).

Encompassing an area of 6,835 acres, the Happy Jack PWA consists of most of the southern Santa Rita Mountains between Temporal Gulch on the east and Squaw Gulch on the west. The Happy Jack PWA is situated along the northwest-trending crest of the southernmost Santa Rita Mountains, just north of the town of Patagonia along Arizona State Highway 82. The area extends from Johnson Spring two miles north of the CNF boundary at Johnson Spring to just north of Mansfield Canyon at the northern boundary. The area is drained by several south-draining

intermittent streams, such as Squaw Gulch and Smith Gulch. The northern part of the PWA is drained by east-draining intermittent streams, such as Mansfield Canyon into the north-draining Temporal Gulch and Gringo Gulch on the eastern border of the PWA. The four-wheel drive road up Temporal Gulch is cherry-stemmed to exclude the road from the PWA. Several other jeep trails within the PWA lead to the Victor, Happy Jack, Last Chance, and Dixie mines.

The Happy Jack PWA rises from approximately 4,600 feet above sea level at the south end of Gringo Gulch on the southeastern edge to a maximum elevation of approximately 6,467 ft at an unnamed peak north of the Victor mine in the western part of the PWA. Details of the topography are shown on the Patagonia and Mount Wrightson, Ariz., 7 ½ minute U.S. Geological Survey quadrangles.

The southern Santa Rita Mountains contain north-northwest-trending belts of Laramide (Tertiary-Cretaceous) granite, Jurassic granite, Jurassic volcanics, Cretaceous-Jurassic sedimentary rocks, and Tertiary sedimentary rocks. These mountains are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona. The geology of the Happy Jack PWA is characterized by Jurassic granite on the west and by Jurassic volcanics on the northeast and by Cretaceous-Jurassic sedimentary rocks on the east side of the PWA.

Active mining claims and historic mines, such as the Happy Jack, Victor, Last Chance, and Dixie mines are located in the Happy Jack PWA. Numerous mines are located to the east of the PWA along Temporal Gulch (Little Joker, Double Heads, Philadelphia, Ultimo, Armada mines and the Mansfield group) in the Wrightson mining district. In and to the west of the PWA is the Tyndall mining district (Viceroy, Rosario, and Mohawk mines, as well as Salero mine, Eureka mine, Jefferson, Royal Blue, Burro, Alto group, Jefferson, San Ramon, and Hosey mines and Wandering Jew Group, plus numerous others). South of the PWA is the Ivanhoe mining district.

All of these mining districts have produced copper, lead, zinc, silver, and gold. The Wrightson mining district from 1913 to 1968 produced 600 tons of ore containing 55,000 pounds copper, 49,000 pounds lead, 30,000 pounds zinc, and 3,600 oz silver. The Tyndall mining district from 1908 to 1976 produced 41,000 tons of ore containing 161,000 pounds copper, 14,754,000 pounds lead, 6,805,000 pounds zinc, 200 oz gold, and 238,000 oz silver. The Ivanhoe mining district from 1903 to 1949 produced 900 tons of ore containing 37,000 pounds copper, 157,000 pounds lead, 60 oz gold, 23,000 oz silver, and 19,000 pounds manganese from 34 long tons of manganese ore (Keith and others, 1973). This is a currently active exploration area and the Happy Jack mine and other mines in the center of the Happy Jack PWA and the presence of favorable geology indicate that there will be future demand for exploration in this PWA.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland and desert grassland communities. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), gray oak (*Quercus grise*a), Mexican blue oak (*Quercus oblongifolia*) and Toumey oak (*Quercus toumeyi*). Other tree species including border pinyon (*Pinus discolor*), Chihuahua pine (*Pinus leiophylla*), Arizona pine (*P. arizonica*), ponderosa pine (*P. ponderosa*) and alligator (*Juniperus deppeana*) and redberry juniper (*J. coahuilensis*). Chaparral species include manzanita spp. (*Arctostaphylos* spp.), ceanothus species (*Ceanothus* spp.), mountain mahogany (*Cercocarpus montanus*), silktassel (*Garrya wrightii*), Stansbury cliffrose (*Purshia stansburiana*), and sumacs (*Rhus* spp.) may be present but do not codominate. Rosette scrubs such as Agaves (*Agave* spp.), yuccas (*Yucca* spp.), sotol (*Dasylirion wheeleri*) and beargrass (*Nolina microcarpa*) as well as desert scrub species such as acacias (*Acacia* spp.), mimosa (*Mimosa* spp.) and mesquite

(*Prosopis* spp.) dominate to the lower elevation desert scrub component. Cactus species such as cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia* spp.), hedgehog (*Echinocereus* spp.), and barrel cactus (Ferocactus spp.) are also common component of this lower vegetative community. The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua* rothrockii), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*) and willows (*Salix* spp.). Historically, woody species have been removed as a source of firewood and mining construction material where they are accessible. Except for most pines, many of the woody species resprout after harvesting and remain on the landscape. This practice probably reduced the number of large hardwood trees and snags that would have historically occurred.

Current Uses: Visitors use this PWA for a variety of recreational activities. The Arizona National Scenic Trail, a route that stretches across the entire state, runs adjacent to the boundary and is used for hiking, horseback riding, and mountain biking. Many roads along the boundary and one "cherry stemmed" road that runs into the PWA are part of the Santa Rita Backcountry Touring Area, an area where motorized touring and OHV use is encouraged. Uses along these roads include motorized touring and dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. Five other existing roads within the PWA are currently in use, but have been recommended for decommissioning. Topography is rugged, so there is very limited cross-country travel through the PWA. There are two grazing allotments within the Happy Jack Potential Wilderness Area. Both of these allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

Vegetation within the Happy Jack Potential Wilderness Area consists mostly of desert and mesquite grasslands, along with oak woodlands. Some riparian areas exist although water and soil quality are degraded. Seasonal drainages exist on this PWA with permanent pools in Mansfield Canyon. Dirt tanks, concrete dams, and troughs are located at Fresno, Dripping, and Johnson Springs. Minimal light pollution comes from Nogales and Patagonia, but does not significantly impact the quality of the night sky. The area contains only limited ecological conditions and habitats. Wildlife may include potential jaguars and ocelots, bats, and longfin dace in Mansfield. The area contains a limited amount of natural resource diversity, given the widespread desert grasslands. Water quality issues have been identified in Mansfield and Temporal Canyon, where mining activity has acidified the water supply. The prevalence of Lehmann's, Boer's, and Weeping lovegrasses spread throughout the PWA significantly detracts from the area's wilderness capability. Tree of Heaven may be located along National Forest System Road 4100.

Undeveloped

The Happy Jack Potential Wilderness Area has obvious signs of human presence, including extensive mining activity and range improvements. Significant mining infrastructure can be seen on the interior of the PWA and on adjacent private property.

Opportunities for Solitude or Primitive and Unconfined Recreation

A recreationist may have moderate difficulty navigating the terrain on the Happy Jack PWA, but not nearly so much as other areas within the Ecosystem Management Area. Limited water sources are available on the PWA. The opportunity to experience solitude while recreating within this PWA may be hindered by motorized recreation activities in Temporal Canyon. The sights and sounds from activities at the nearby Patagonia city landfill may interfere with feelings of solitude on multiple portions of the PWA. Primitive recreation on the Happy Jack PWA may include hiking, hunting, and some equestrian use.

Special Features

The Happy Jack PWA contains some panoramic views, canyons, ridges, rock formations and pleasing vegetation that all contribute to the potential wilderness character. The area currently does not have any potential for scientific, cultural, or educational opportunities. Unique wildlife such as bats, jaguar and ocelot may be found within this PWA, although no unique habitats exist.

Manageability

Management of the area may be difficult given the abundant access opportunities along all portions of the boundary, except at private land. Resource conflicts may surface with mining and off-highway vehicles. Illegal activity within this area has been proportionally higher than in other parts of the Ecosystem Management Area. The PWA currently does not have any known motorized vehicle use, but the potential exists due to high demand for off-highway vehicle opportunities nearby. There are no identified boundary changes that would enhance the area's wilderness character.

The Happy Jack Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Happy Jack Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. There are four threatened or endangered species that may be located in the PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Watersheds within the area include seasonal drainages with permanent pools. Mansfield and Temporal Canyons have recorded high acidity waters due to nearby mine tailings. Pipelines from Fresno Spring into the PWA and at Dripping Springs are both in need of repair, potentially replacing the pipelines and adding troughs. These repairs may require large machinery, which would have a moderate impact on wilderness character. Some potential for habitat improvement may exist on Mansfield and Temporal Canyon, although no plans currently exist. There are no other ecosystem restoration activities currently planned for the areas. Anticipated treatments in the area follow plans to maintain the fire return interval of every 10-15 years. The area is committed through permits for livestock grazing on two allotments. This current authorization does not conflict with wilderness management or detract from wilderness qualities. There is no potential for timber extraction. Mining claims currently

exist on the PWA, with recent increase in demand for locatable minerals. There are no cultural resources that will be affected by wilderness management. The Happy Jack Potential Wilderness Area is composed primarily of National Forest System lands, with the exception of a small private allotment within the northwestern portion of the PWA. The closest private land outside the PWA boundary is approximately 0.1 miles away, which may impact the wilderness character of the area.

The Happy Jack Potential Wilderness Area overall was rated as **high** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Happy Jack PWA, there are 15 designated wilderness areas totaling about 478,000 acres (see Table 37).

Table 37. Designated wilderness within 100 miles of the Happy Jack Potential Wilderness Area

Wilderness Area	Acres
Aravaipa Canyon Wilderness	19,790
Baboquivari Peak Wilderness	2,776
Chiricahua Wilderness	88,793
Chiricahua National Monument Wilderness	12,161
Coyote Mountains Wilderness	5,795
Dos Cabezas Mountains Wilderness	11,855
Galiuro Wilderness	75,585
Miller Peak Wilderness	20,381
Mount Wrightson Wilderness	25,596
Pajarita Wilderness	7,897
Pusch Ridge Wilderness	56,743
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
Saguaro Wilderness	77,119
Santa Teresa Wilderness	28,769
TOTAL	478,077

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are

limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Happy Jack Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Happy Jack Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Happy Jack Potential Wilderness Area includes 4 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 38). Of these four vegetation communities, the Happy Jack PWA would contribute to wilderness in the following vegetation types: Madrean Encinal Woodland (0.8 percent) and Madrean Pine Oak Woodland (0.1 percent). The vegetation communities in this PWA consist of 56.40 percent regionally underrepresented vegetation types, therefore the PWA rates in the medium range (50-90 percent) for this factor.

Table 38. Southwestern Region underrepresented vegetation communities found in the Happy Jack Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Happy Jack PWA	Percent of Happy Jack PWA	Percent Addition of Happy Jack PWA to Wilderness
Interior Chaparral	130	1.9	0.0
Madrean Encinal Woodland	3,617	52.9	0.8
Madrean Pine Oak Woodland	108	1.6	0.1
Mixed Conifer Forest	3	0.0	0.0
Grand Total	**3,858**	**56.4%**	**0.9%**

The Happy Jack Potential Wilderness Area overall was rated as **low** for Need (for individual scores, see appendix G).

Whetstone Potential Wilderness Area Evaluation [PW-05-03-D3-001]

Area Overview

Size and Location: The Whetstone Potential Wilderness Area encompasses 19,213 acres. This area is located in the Whetstone Mountain Range, which is part of the Sierra Vista Ranger District of the Coronado National Forest in southeastern Arizona (see Map 7 at the end of this document). The Whetstone PWA is overlapped by 14,579 acres of the Whetstone Inventoried Roadless Area, comprising 76 percent of the PWA.

Vicinity, Surroundings and Access: The Whetstone Potential Wilderness Area (PWA) is located approximately 40 miles southeast of Tucson, Arizona and approximately 10 miles southwest of Benson, Arizona within the Sierra Vista Ranger District in the middle of the Whetstone Mountains.

There are two incorporated communities (Benson and Sierra Vista) and several small unincorporated communities (Whetstone, Huachuca, Sonoita and Vail) surrounding the Whetstone Mountains and the PWA. In addition, Kartchner Caverns State Park on the east side adjoins the National Forest.

Interstate 10 connects the Tucson metropolitan area to State Highway 83 near Vail and State Highway 90 near Benson. State Highway 82 connects to State Highway 83 at Sonoita and State Highway 90 at Whetstone. Interstate 10 and State Highways 82, 83 and 90 are within close proximity to the Whetstone Mountains and the PWA.

From the east, Dry Canyon Road (NFS Road 4014) is the only permanent legal motorized access route into the National Forest and the Whetstone Mountains. Dry Canyon Road provides motorized access from State Highway 90 across State Trust lands to the proclaimed national forest boundary. Dry Canyon Road continues into Dry Canyon on National Forest System (NFS) lands to a point approximately 1¼ mile from the PWA.

On the east side of the Whetstone Mountains, French Joe Canyon Road (NFS Road 4018) provides motorized access from State Highway 90 into French Joe Canyon approximately 1 mile from the PWA.

Also on the east side (from Kartchner Caverns State Park), Middle Canyon Road (NFS Road 208) provides motorized access into Middle Canyon and the South Fork of Middle Canyon to approximately ¾ mile from the PWA. There is nonmotorized trail access from Kartchner Caverns State Park to Guindani Trail (NFS Trail 398) and Cottonwood Saddle Trail (NFS Trail 386). Cottonwood Saddle Trail passes approximately ½ mile east of the PWA from Guindani Canyon to Cottonwood Saddle and connects to Cottonwood Canyon Road (NFS Road 4012) at the north end of the Whetstone Mountains. Kartchner Caverns State Park requires an entrance fee to access the National Forest roads and trails.

Post Ranch Road (NFS Road 4596) provides motorized access from State Highway 90 into the National Forest on the northeast side of the Whetstone Mountains to Cottonwood Canyon Road (NFS Road 4012). Cottonwood Canyon Road provides motorized access to Cottonwood Saddle Trail.

J-6 Ranch Road provides motorized access from Interstate 10 to the proclaimed national forest boundary at the north end of the Whetstone Mountains. J-6 Ranch Road becomes Williams Road (NFS Road 212) at the proclaimed national forest boundary and continues to an area approximately ¾ mile north of Upper Wakefield Canyon and the PWA.

East Mescal Road (NFS Road 369) provides motorized access to the south end of the Whetstone Mountains from State Highway 82 to Dry Canyon Road and Mine Canyon Road (NFS Road 778). East Mescal Road also provides motorized access to the Mormon Tank Road (NFS Road 4843). Mormon Tank Road provides motorized access that requires a high-clearance four-wheel-drive vehicle to Mine Canyon Road that ends approximately ¾ mile from the PWA.

Also from State Highway 82 on the south side of the Whetstone Mountains is Sands West Camp Road (NFS Road 779/4590) that provides motorized access from to the proclaimed national forest boundary and Coal Mine Road (NFS Road 4589). Coal Mine Road provides access to the Bear Springs area approximately ¾ mile west of the PWA and into Apache Canyon to a point approximately 1 mile west of the PWA.

There is both motorized road and nonmotorized trail access to areas near the potential wilderness area. However, there is no motorized road or nonmotorized trail access to or into the PWA. In addition, although there appears to be adequate motorized and trail access to the NFS lands near the PWA, other than Dry Canyon Road on the east side of the PWA, there is no documented right-of-way for the existing road system across the State Trust and private lands adjacent to the proclaimed national forest boundary. Public access to the north end of the Whetstone Mountains from French Joe Canyon to Apache Canyon is currently blocked. Permanent legal public access to the NFS lands and the PWA in the Whetstone Mountains will continue to be issue.

Boundaries: The boundary of this PWA was established based on natural features, such as ridgelines and high points, in the Whetstone Mountain Range. A small portion of the northern boundary runs parallel to Williams Road (NFS Road 212A).

Geography and Topography: Covering an area of 19,213 acres, the Whetstone Potential Wilderness Area straddles the crest of the Whetstone Range. It extends from Wakefield Canyon in the north to Granite Peak in the south. The topography of this PWA rises from 5,160 feet above sea level in Montosa Canyon along its western flank to a maximum elevation of 7,711 feet at Apache Peak near the center of the range. Located along Guindani Wash approximately three miles east of the Whetstone PWA, Kartchner Caverns is a world-class cavern system. It was formed within the Mississippian Escabrosa Limestone, which occurs in a down-dropped fault block along the eastern flank of the Whetstone mountain range. This PWA is entirely located within the Whetstone Mountains Unit of the Sierra Vista Ranger District, Coronado National Forest.

Typical of the Mexican Highlands Subprovince of the Southern Basin and Range Province of southeastern Arizona, the north-south elongated structural uplift that forms the Whetstone Range is bounded on the east by the San Pedro River Valley and on the west by the Cienega Creek Basin. This range is a relatively undeformed, moderately southwest-tilted structural block, which exposes the entire sequence of rocks ranging from Precambrian-age granite and Pinal Schist exposed along its northern and northeastern flanks through lower Cretaceous sediments and silica-rich volcanics (i.e., rhyolite) of the Bisbee Group along its southern and southwestern flanks. The Whetstone PWA is primarily underlain by the intervening Paleozoic section, which forms spectacular cliff faces along the northern and eastern flanks of the range, clearly illustrating classic layer-cake bedding structure of the various sedimentary units. A major west-northwest-

trending range front fault juxtaposes lower Cretaceous sediments of the Bisbee Group against Precambrian granite along the northern edge of this range. Sedimentary rocks exposed along the east flank of this range have been cut by small late-Cretaceous granitic stocks in French Joe Canyon and at Granite Peak.

Appearance and Vegetation: Due to steep topography, the vegetation consists largely of unmodified pinyon, juniper and evergreen oak woodland communities. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), gray oak (*Quercus grisea*), Mexican blue oak (*Quercus oblongifolia*) and Toumey oak (*Quercus toumeyi*). Other tree species [including pinyon pines (*Pinus cembroides* and *Pinus monophylla*), Chihuahua pine (*Pinus leiophylla*), Arizona cypress (*Cupressus arizonica*) and alligator juniper (*Juniperus deppeana*)] and interior chaparral species [including manzanita spp. (*Arctostaphylos* spp.), crucifixion thorn (*Canotia holacantha*), desert ceanothus (*Ceanothus greggii*), mountain mahogany (*Cercocarpus montanus*), little-leaved mountain mahogany (*Cercocarpus intricatus*), antelope bushes (*Purshia* spp.), silktassles (*Garrya* spp.), Stansbury cliffrose (*Purshia stansburiana*), shrub live oak (*Quercus turbinella*) and sumacs (*Rhus* spp.)] may be present but do not codominate. The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) or Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Historically, some areas near canyon bottoms were logged to provide wood for nearby mines, but second growth has matured.

Current Uses: Visitors use this PWA for a variety of recreational activities. The four trails running through the area are used for hiking, horseback riding, and mountain biking. Three roads that end at the PWA boundary are used for motorized touring and dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. There are two existing roads within the PWA that are currently in use; one is recommended for conversion to a nonmotorized trail and the other recommended for decommissioning. Topography is rugged, so there is very limited cross-country travel through the PWA. There are five grazing allotments within the Whetstone Potential Wilderness Area. All of these allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

The ruggedness of the Whetstone Potential Wilderness Area has allowed it to retain a semiprimitive setting. Diversity of vegetation within the PWA boundary ranges from Madrean Evergreen woodland with several small stands of ponderosa pine (Pinus ponderosa) at the highest elevations. There are no known nonnative species within the area. The Whetstone Mountains are noted for having a high diversity of vegetation types, wildlife, plants and insects. The area is habitat for several Forest Service sensitive species and three federally listed species, the Mexican

spotted owl and the lesser long-nosed bat. The area of the Whetstone Mountains does not have perennial rivers or streams and there are no know water quality issues. Night skies can be clearly seen and light pollution is not evident.

Undeveloped

The Whetstone Potential Wilderness Area has had a limited history of human use. The steep, rugged terrain of the area has restricted human settlement and land use. Currently the potential wilderness area is experiencing use by illegal border crossers passing through as evidenced by the creation of trails and trash piles.

Opportunities for Solitude or Primitive and Unconfined Recreation

A person could find a short-term experience of solitude, serenity, self-reliance, hiking, camping and hunting within this potential wilderness area. The small size of the area limits opportunities for long back-packing trips. The steep and rugged terrain creates an opportunity for challenging recreation. Illegal borders crossers passing within the boundary of the potential wilderness area may interference with the primitive experience.

Special Features

The unique rock formations and spectacular views are important wilderness characteristics of the Whetstone Potential Wilderness Area. The area is home to several unique species that make it attractive for environmental research and education.

Manageability

The Whetstone Potential Wilderness Area is located in the higher elevations of the Whetstone Mountains away from roads. There is no immediately adjacent land that is not managed by the Forest Service. However, the current use of the area by undocumented aliens and the U.S. Border Patrol in the lower elevations of the Whetstone Mountains creates challenges in managing it for wilderness characteristics. There are no identified boundary changes that would enhance the area's wilderness character.

The Whetstone Potential Wilderness Area overall was rated as **high** for Capability (for individual scores, see appendix E).

Availability

In the Whetstone Potential Wilderness Area the current recreational uses and tourism could continue if the area was designated as wilderness. There are three threatened or endangered species that may be located in this PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Watersheds within the area are properly functioning and there are no water impoundments or need at this time to install impoundments. There are no ecosystem restoration activities currently planned for the area. The area is committed through contracts and permits for livestock grazing. This current authorization does not conflict with wilderness management or detract from wilderness qualities. However, one activity that may conflict with wilderness management is the need for site-specific aquatic restoration activities. According to the FireScape Analysis, the area will receive a single treatment across the landscape within a 15 to 20 year period to achieve restoration goals. There is no potential for timber extraction. There has been mining activity in the past, but at this time there is little or no potential for extraction of locatable minerals. There are currently no cultural resources

that will be affected by wilderness management, although there has been some suggestions for potential protection projects that may impact future management efforts. The Whetstone Potential Wilderness Area is composed entirely of National Forest System lands, as is the adjacent land. The closest private land is approximately a half mile from the PWA boundary and could impact the wilderness character of the area.

The Whetstone Potential Wilderness Area overall was rated as **high** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, Wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Whetstone PWA there are 20 designated wilderness areas totaling about 516,000 acres (Table 39).

Table 39. Designated wilderness within 100 miles of the Whetstone Potential Wilderness Area

Wilderness Area	Acres
Aravaipa Canyon Wilderness	19,700
Baboquivari Peak Wilderness	2,040
Chiricahua National Monument Wilderness	10,290
Chiricahua Wilderness	87,700
Coyote Mountains Wilderness	5,100
Dos Cabezas Mountains Wilderness	11,700
Fishhooks Wilderness	10,500
Galiuro Wilderness	76,317
Miller Peak Wilderness	20,228
Mount Wrightson Wilderness	25,260
Needle's Eye Wilderness	8,760
North Santa Teresa Wilderness	5,800
Pajarita Wilderness	7,553
Peloncillo Mountains Wilderness	19,440
Pusch Ridge Wilderness	56,933
Redfield Canyon Wilderness	6,600
Rincon Mountain Wilderness	38,590
Saguaro Wilderness	70,905
Santa Teresa Wilderness	26,780
White Canyon Wilderness	5,790
TOTAL	515,986

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study Areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the low range (less than 30 species) for this factor.

Capacity of Established Wildernesses

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSAs range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems within wilderness areas range from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area, and includes the Pusch Ridge and Mount Wrightson Wildernesses. Encounters with other wilderness visitors in both areas are high. For these two areas there are

limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Whetstone Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Whetstone Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Whetstone PWA includes 5 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 40). Of these five vegetation communities, the Whetstone PWA would only contribute to an additional 0.1 percent to wilderness in the following vegetation types: Interior Chaparral and Madrean Encinal Woodland. The vegetation communities in this PWA consist of 47.00 percent regionally underrepresented vegetation types, therefore the PWA rates in the low range (less than 50 percent) for this factor.

Table 40. Southwestern Region underrepresented vegetation communities found in the Whetstone Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Whetstone PWA	Percent of Whetstone PWA	Percent Addition of Whetstone PWA to Wilderness
Interior Chaparral	1,803	2.1	0.1
Madrean Encinal Woodland	4,751	44.5	0.1
Madrean Pine Oak Woodland	1,047	0.1	0.0
Mixed Conifer Forest	45	0.0	0.0
Riparian Areas	162	0.3	0.0
Grand Total	**7,808**	**47.0%**	**0.2%**

The Whetstone Potential Wilderness Area overall was rated as **medium** for Need (for individual scores, see appendix G).

Mount Washington Potential Wilderness Area Evaluation [PW-05-03-D3-002]

Area Overview

Size and Location: The Mount Washington Potential Wilderness Area (PWA) encompasses 6,208 acres. This area is located in the Patagonia Mountains, which are part of the Huachuca Ecosystem Management Area in the Sierra Vista Ranger District of the Coronado National Forest, located in southeastern Arizona (see Map 6 at the end of this document). There are no inventoried roadless areas that overlap the Mount Washington PWA.

Vicinity, Surroundings and Access: The Mount Washington Potential Wilderness Area is approximately 59 miles southeast of Tucson, Arizona. The Mount Washington PWA is located within the southern region of the Patagonia Mountains. Interstate 19 (I-19) connects the Tucson metropolitan area to the City of Nogales, located directly west of the PWA. The town of Sierra Vista can be found approximately 27 miles from the PWA. The unincorporated communities of Washington Camp, Duquesne, and Harshaw are found within five miles of the PWA boundary, and are located within the national forest boundary. The small communities of Lochiel and Patagonia are also within close proximity to the Patagonia Mountains and the PWA. The PWA shares the U.S.-Mexico border as its southern boundary.

State Highway 82 provides access into the National Forest System lands from the West. The PWA itself can be accessed via several National Forest System Roads, including Italian Canyon Road (NFS Road 4671) from the West and Benton Mine Road (NFS Road 4719) from the East. Four roads extend into and through the boundary of the PWA: NFS Road 5543 (unnamed), Santo Nino Road (NFS Road 4721), Sycamore Canyon Road (NFS Road 4674) and Texas Road (NFS Road 4720).

The PWA is surrounded on three sides by National Forest System lands, while the southern portion shares a border with Mexico. Private lands are located within 0.1 miles of the PWA's eastern boundary. There are no nonmotorized National Forest System Trails running through the Mount Washington PWA. San Antonio Road (NFS Road 4711) provides primary access through Washington Camp and Duquesne into the PWA.

Although there appears to be adequate motorized road access to the Mount Washington PWA, permanent legal public access from the northern, eastern and western sides of the PWA are a continued concern. Many roads that provide physical access into the ecosystem management area and to the PWA are currently open and used by public land users through the adjacent non-Federal land do not have legal right-of-ways. Therefore, because no legal right of public access exists for these roads, permanent legal public access to the National Forest System lands and the PWA will continue to be an issue.

Boundaries: The boundary of this PWA was established based on the U.S.-Mexico border and several Forest Service roads. The International Border acts as the southern boundary, while Washington Montezuma Pass Road (NFS Road 61) makes up the northern boundary of the PWA. Texas Road (NFS Road 4720) and NFS Roads 5503 and 4718 (unnamed) extend along the eastern boundary. Italian Canyon Road (NFS Road 4671) runs along the western border of the PWA. The remaining boundary line follows natural features, such as Mount Washington Peak.

Geography and Topography: The Mount Washington Potential Wilderness Area (PWA) encompasses the southern part of the north-trending Patagonia Mountains. This mountain range is

bounded on the east by the San Rafael Valley and on the west by the Santa Cruz Valley. The Mount Washington PWA is bordered on the south by the Arizona-Mexico international border and is bordered on the north by the Duquesne road through Sycamore Canyon. The Mount Washington PWA is an oval area that is approximately two miles wide from east to west and four miles from north to south and is located in Santa Cruz County. Encompassing an area of 6,208 acres, the Mount Washington PWA consists of most of the southern part of the Patagonia Mountain range. The Mount Washington PWA is bisected by the road to the Santo Nino mine. Surrounding the PWA are abundant roads and trails to the nearby mines and prospects. The Mount Washington PWA is located entirely within the Sierra Vista Ranger District, Coronado National Forest (CNF).

The Mount Washington PWA is situated along the north-trending crest of the southern Patagonia Mountains. The area extends from the Arizona-Sonora border on the south to Sycamore Canyon on the north. The western part of the area is drained by several west-draining canyons, such as Italian Canyon. The area is bounded on the east by the road to the Little Boy mine and the San Antonio Canyon.

The Mount Washington PWA rises from 4,482 feet above sea level at Sycamore Canyon on the northwestern side of the PWA, from the Sierra Todilla well at 4,500 feet on the southwestern side, and from an elevation of 5,200 feet on the northeastern side near San Antonio Canyon. The maximum elevation of approximately 7,221 feet is at Mount Washington in the center of the area and adjacent to a mine shaft and the Santo Nino mine. Details of the topography are shown on the Duquesne, Kino Springs, Cumero Canyon, and Harshaw, Ariz., 7 ½ minute U.S. Geological Survey quadrangles.

The Patagonia Mountains contain a core of Tertiary (Laramide) granite to granodiorite, as the Patagonia granodiorite near Harshaw was dated at approximately 59 Ma. These mountains are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona. The geology is characterized by a small outcrop of possible Middle Proterozoic (1400 Ma) porphyritic biotite granite to granodiorite (Oracle Granite) and a larger area of Jurassic granite. The majority of the Mount Washington PWA is Patagonia granodiorite and a few western tips are Jurassic granite. This Tertiary granite is the same type that is found near the porphyry copper deposits as at the Pima mining district or the lead-zinc-silver deposits at Tombstone.

Several active mining claims are located in or near the Mount Washington PWA and the southern Patagonia Mountains has historic production of metals and has many active mining claims. To the immediate north and east of the Mount Washington PWA, there are abundant active mines, such as the Maine, Pride, Dudley, Empire, Duquesne, New York, Kansas mines and the famous Washington Camp mining area. The historic Washington Camp lead-zinc-silver mining district immediately to the northwest of the Mount Washington PWA produced 573,000 tons of ore containing 33,133,000 pounds copper, 38,137,000 pounds lead, 74,643 pounds Zn, 9,000 oz gold, and 2,994,000 oz silver from 1875 to 1970. The Querces mining district to the immediate south of the Mount Washington PWA (Benton mine) produced 18,000 tons of ore containing 2,604,000 pounds copper, 400 oz gold, and 13,000 oz silver from 1912-1955. There is no current mining activity within the immediate boundaries of the Mount Washington PWA, because the boundaries have been drawn to exclude the historic lead-zinc-silver mines of the Washington Camp and Querces mining districts. The geology of the Mount Washington PWA is favorable for exploration for similar deposits in the future.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland and desert grassland communities, upper elevation reach the lower Madrean Pine-oak woodlands. Species include Madrean evergreen oaks such as Emory oak (*Quercus emoryi*), silverleaf oak (*Q. hypoleucoides*), Mexican blue oak (*Quercus oblongifolia*), Sonoran scrub oak (*Q. turbinella*) and netleaf oak (*Quercus rugosa*). Other tree species include border pinyon (*Pinus discolor*), Chihuahua (*Pinus leiophylla*), Arizona pines (*P. arizonica*), alligator (*Juniperus deppeana*) and redberry juniper (*J. coahuilensis*). Montane shrubs species include manzanita spp. (*Arctostaphylos* spp.), fendlerbush (*Fendlera rupicola*), fendler ceanothus (*Ceanothus fendleri*), common hoptree (*Ptelea trifoliate*) and skunkbush sumac (*Rhus aromatica* var. *trilobata*) are common. Rosette scrubs such as Agaves (*Agave* spp.), yuccas (*Yucca* spp.), sotol (*Dasylirion wheeleri*) and beargrass (*Nolina microcarpa*) as well as desert scrub species such as acacias (*Acacia* spp.), mimosa (*Mimosa* spp.) mesquite (*Prosopis* spp.) dominate to the lower elevation desert scrub component. Cactus species such as cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia* spp.), and hedgehogs (*Echinocereus* spp.) are also common component of this lower vegetative community. The ground cover is dominated by a very diverse community of mostly warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and riparian species, including netleaf hackberry (*Celtis reticulata*), velvet ash (*Fraxinus velutina*), Arizona walnut (*Juglans major*) and numerous willows (*Salix* spp.). Historically, woody species have been removed where they are accessible and used as firewood or materials for mine construction and operation. Many if not most of the woody species resprout after harvesting and remain on the landscape. This practice probably reduced the number of large hardwood trees and snags that would have historically occurred.

Current Uses: Visitors use this PWA for a variety of recreational activities, though use may be relatively light due to the proximity of the International Border with Mexico (and its associated risks). There are no trails within the PWA. Harshaw Road (a popular sightseeing route) and many roads lie adjacent to the boundary are used for motorized touring and dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. There are two existing roads within the PWA that are currently in use, but have been recommended for decommissioning. Topography is moderately rugged, so there is limited cross-country travel through the PWA. There are four grazing allotments within the Mount Washington Potential Wilderness Area. All of these allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

Diversity of vegetation within the Mount Washington Potential Wilderness Area consists of Madrean-evergreen oak woodlands, remnants of savannah, and brushy Manzanita. All drainages

within this PWA are free-flowing but seasonal, with no known impoundments. The night sky shows no evidence of light pollution, with particularly high visibility and superior star-gazing on the east slope. The biological diversity in the area has a mixture of habitats and ecological conditions, acting as a wildlife movement corridor between the U.S. and Mexico. Jaguar were spotted in this PWA in 1967, therefore this area has been identified as the most likely corridor for jaguar and ocelot movement into the U.S.. The area contains a variety of natural resources that includes the historic grasslands that have converted to woodland over time. High levels of arsenic have been identified in Sycamore Canyon on the west slope, although the origin of the pollutants remains uncertain. Sampling has been inconclusive regarding how high in elevation the pollutants will affect water quality, therefore contaminants may not actually reach waters in the PWA. Lehmann's and Boer's lovegrasses can be found in isolated locations at higher elevations. Lovegrasses become more widespread below 1,700 meters, particularly on the west slope. Tree of Heave may be found in lower elevations near or within Sycamore Canyon.

Undeveloped

The Mount Washington Potential Wilderness Area has obvious evidence of human activity, including illegal trails, trash, historic mines and cultural resources.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area provides rough, rocky and steep terrain that provides physically and mentally challenging recreation opportunities. Trails on this PWA are limited to user-created trails. Scarce water resources and brushy vegetation make this PWA difficult to traverse. Although civilizations are visible on the west slope, recreationists may still have the opportunity to experience solitude on the Mount Washington PWA. Both Border Patrol and drug trafficking surveillance may be conducted on this area, which may interfere with any feelings of isolation. Many opportunities are presented for recreationists to engage in backpacking, hiking, hunting, bird-watching, and photography.

Special Features

The Mount Washington PWA offers many panoramic views and distinctive rock features, particularly on Mount Washington. The area possesses some potential for scientific research opportunities, particularly regarding wildlife. Environmental education opportunities may be limited due to the rough terrain and border activity. Although the area has not been surveyed, the PWA most likely contains multiple rare plant species, ocelots, jaguars, trogons, and other subtropical species.

Manageability

The area is somewhat isolated but adequate access exists at the lower elevations near the U.S.-Mexico border. Management may experience interference from outside activities, such as Border Patrol, drug trafficking and immigrant movement. The area currently does not have any on-ground motorized vehicle use, although helicopters often travel overhead. There are no identified boundary changes that would enhance the area's wilderness character.

The Mount Washington Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Mount Washington Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. One activity that may conflict with wilderness management is the adjacent Washington Camp, which has year-round residents. Plans to designate motorized trails for off-highway vehicle use in Sycamore Canyon would also affect wilderness management and character. There are four threatened or endangered species that may be located in the PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Fish and Wildlife Services has a proposal request to mitigate the impacts of the border, while also demonstrating a need to install game cameras and track stations. These activities, as well as potential for wildlife gates and overflights for monitoring, may conflict with wilderness management. Watersheds within the area are properly functioning with seasonal, monsoonal flows. A 250 gallon trough located at Benches Spring requires regular maintenance, although this can usually be accomplished on horseback and foot. According to the FireScape Analysis, the area will receive a single treatment across the landscape within a 5 to 20 year period to achieve restoration goals. The area is committed through permits for livestock grazing on four allotments. This current authorization does not conflict with wilderness management or detract from wilderness qualities. Landscape restoration projects have been suggested to restore a higher proportion of grasslands and increase livestock grazing capacity. Activities that may conflict with wilderness management include five proposed Border Patrol helispots, a permitted repeater, and the use of unmanned aerial vehicles over the PWA. The area also demonstrates a need for scientific permits for jaguar research, although this should not interfere with wilderness management. Some potential for timber extraction exists in the form of dead and downed fuelwood collection at lower elevations. High mining potential exists due to proximity of mines, particularly copper. There are no cultural resources that will be affected by wilderness management. The Mount Washington Potential Wilderness Area is entirely composed of National Forest System lands, with private lands bordering a portion of the eastern side of the PWA. The closest private land is approximately 0.1 miles from the PWA boundary and may impact the wilderness character of the area.

The Mount Washington Potential Wilderness Area overall was rated as **medium** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Mount Washington PWA, there are 13 designated wilderness areas totaling about 430,000 acres (see Table 41).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1

million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 41. Designated wilderness within 100 miles of the Mount Washington Potential Wilderness Area

Wilderness Area	Acres
Baboquivari Peak Wilderness	2,776
Chiricahua Wilderness	88,793
Chiricahua National Monument Wilderness	12,161
Coyote Mountains Wilderness	5,795
Dos Cabezas Mountains Wilderness	11,855
Galiuro Wilderness	75,585
Miller Peak Wilderness	20,381
Mount Wrightson Wilderness	25,596
Pajarita Wilderness	7,897
Pusch Ridge Wilderness	56,743
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
Saguaro Wilderness	77,119
TOTAL	429,517

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Mount Washington Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Mount Washington Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Mount Washington Potential Wilderness Area includes 3 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 42). Of these three vegetation communities, the Mount Washington PWA would contribute to wilderness in the following vegetation types: Interior Chaparral (0.2 percent), Madrean Encinal Woodland (0.8 percent), and Madrean Pine Oak Woodland (0.1 percent). The vegetation communities in this PWA consist of 73.70 percent regionally underrepresented vegetation types, therefore the PWA rates in the medium range (50-90 percent) for this factor.

Table 42. Southwestern Region underrepresented vegetation communities found in the Mount Washington Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Mount Washington PWA	Percent of Mount Washington PWA	Percent Addition of Mount Washington PWA to Wilderness
Interior Chaparral	858	13.8	0.2
Madrean Encinal Woodland	3,510	56.6	0.8
Madrean Pine Oak Woodland	203	3.3	0.1
Grand Total	**4,571**	**73.7%**	**1.1%**

The Mount Washington Potential Wilderness Area overall was rated as **low** for Need (for individual scores, see appendix G).

Canelo Potential Wilderness Area Evaluation [PW-05-03-D3-003]

Area Overview

Size and Location: The Canelo Potential Wilderness Area (PWA) encompasses 8,488 acres. This area is located in the Huachuca Mountains, which are part of the Sierra Vista Ranger District of the Coronado National Forest in southeastern Arizona (see Map 6 at the end of this document). There are no inventoried roadless areas that overlap the Canelo PWA.

Vicinity, Surroundings and Access: The Canelo Potential Wilderness Area is approximately 57 miles southeast of Tucson, Arizona. The Canelo PWA is located within the southwestern region of the Huachuca Mountains, found in the Canelo Hills. Interstate 19 (I-19) connects the Tucson metropolitan area to the City of Nogales, located west of the PWA. The town of Sierra Vista can be found approximately 11 miles from the PWA. The unincorporated communities of Sunnyside and Canelo are found within four miles of the PWA boundary, and are located within the national forest boundary. Military lands are located within five miles of the PWA, with Fort Huachuca positioned approximately 10 miles from the PWA boundary. Five miles south of the Canelo PWA boundary lies the U.S.-Mexico border.

The Canelo PWA can be accessed via several National Forest System Roads, including Landing Strip Road (NFS Road 4746) from San Rafael Road (NFS Road 813) on the western side of the PWA. Private lands located north of the PWA contain access roads that include Canelo Road (NFS Road 4636) and Cimarron Road (NFS Road 827), both of which extend into the PWA itself.

The PWA is surrounded on all sides by National Forest System lands, with the closest private land located within 0.2 miles of the PWA boundary. There are no nonmotorized National Forest System Trails running through the Canelo PWA.

Although there appears to be adequate motorized road access to the Canelo PWA, permanent legal public access from the northern, eastern and western sides of the PWA are a continued concern. Many roads that provide physical access into the ecosystem management area and to the PWA are currently open and used by public land users through the adjacent non-Federal land do not have legal right-of-ways. Therefore, because no legal right of public access exists for these roads, permanent legal public access to the National Forest System lands and the PWA will continue to be an issue.

Boundaries: The boundary of this PWA was established based on Forest Service roads and natural features, such as ridgelines and high points, in the Canelo Hills. The northern boundary follows Cimarron Road (NFS Road 827) and Short Cut Road (NFS Road 4749). West Canelo Road (NFS Road 4735) makes up a large portion of the southwestern boundary of the PWA.

Geography and Topography: The Canelo Potential Wilderness Area (PWA) encompasses the southern part of the northwest-trending Canelo Hills. This mountain range is bounded on the east by Lyle Canyon and the Huachuca Mountains and on the west by the San Rafael Valley. The Canelo PWA is an oval area that is approximately six miles north to south by 3 miles east to west and is located mainly in Santa Cruz County with a few protrusions a fraction of a mile into Cochise County. It is located entirely in the Sierra Vista Ranger District. Encompassing an area of 8,488 acres, the Canelo PWA consists of the southern third of the Canelo Hills. The Canelo PWA adjoins the Parker Canyon highway on the northeast side and is within one-half mile of Parker

Canyon Lake. A four-wheel drive road is present in the northern portion along Turkey Creek and in the southern portion near Cherry Creek.

The Canelo PWA is situated along the northwest-trending crest of the southeastern Canelo Hills. The area extends from the northeast-trending Parker Canyon in the southeastern portion of the area northwestward to A Bar Draw and Cherry Creek in the western part of the area. The area is drained by several southeast-draining canyons, such as Turkey Creek in the northeastern part of the area, and by several southeast-draining canyons in the south, such as Collins Canyon and Cherry Creek Canyon. Most of these canyons contain jeep trails leading to springs or water tanks, such as the jeep trail to Bear Tank in Section 10. The Parker Canyon highway in Lyle Canyon borders the northeastern side of the Canelo PWA. The southwest-draining Parker Canyon crosses the southern part of the Canelo PWA, continues northeast to the man-made dam across Collins Canyon that created Parker Canyon Lake outside of, but within one-half mile of the southeastern side of the Canelo PWA.

The Canelo PWA rises from a low of 5,230 feet above sea level near Bill Woods Tank on the southwestern edge and Turkey Creek at approximately 5,200 feet on the northern edge of the PWA to a maximum elevation of approximately 6,267 feet at the southern peak of the Canelo Hills. Details of the topography are shown on the Canelo Pass and Huachuca Peak 7 ½ minute U.S. Geological Survey quadrangles.

The Canelo PWA Mountains are primarily composed of Jurassic volcanic rocks with a small portion on the southwestern edge of Cretaceous volcanics. The volcanic rocks have been dated at 148 Ma and 177 Ma. They consist of rhyolitic, dacitic, andesitic volcanic flows, flow breccias, and tuff with local sedimentary rocks. These mountains are typical of the thrust-fault bounded, structurally uplifted blocks in the foothills of the Huachuca Mountains. The Canelo Hills are within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona

Numerous mining claims are recorded in the area, but no active mining claims are located in the Canelo PWA. The nearby Parker Canyon mining district in the Canelo Hills has recorded production from 1933 of 200 pounds copper, 500 pounds lead, and 100 oz silver (Keith and others, 1983). This area is within the southernmost portion of the Canelo PWA, indicating the potential for future mineral exploration.

Appearance and Vegetation: The vegetation is largely unmodified pinyon, juniper and evergreen oak woodland with the upper elevation reaching the lower Madrean Pine-oak woodlands. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Q. emoryi*), grey oak (*Q. grisea*), silverleaf oak (*Q. hypoleucoides*), Sonoran scrub oak (*Q. turbinella*) and netleaf oak (*Quercus rugosa*). Other tree species include border pinyon (*Pinus discolor*), Chihuahua (*Pinus leiophylla*) and Apache pines (*P. engelmannii*), alligator (*Juniperus deppeana*) and redberry junipers (*J. coahuilensis*). Montane shrub species include manzanita spp. (*Arctostaphylos spp*.), mountain mahogany (*Cercocarpus montanus*), fendler ceanothus (C*eanothus fendleri*), and skunkbush sumac (*Rhus aromatica var. trilobata*) are common. Rosette scrubs such as Agaves (*Agave spp.*), yuccas (*Yucca spp.*), sotol (*Dasylirion wheeleri*) and beargrass (*Nolina microcarpa*) as well as desert scrub species such as acacias (Acacia spp.), mimosa (Mimosa spp.) and mesquite (*Prosopis spp.*) are found on the warmer, lower elevations and aspects where the desert scrub grassland communities begin to appear. Cactus species such as cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia spp.*), and hedgehogs (*Echinocereus spp.*) are also common component of this warmer vegetative community. The ground cover is dominated by a very diverse community of mostly warm-season grasses such as threeawns (*Aristida* spp.),

blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*). Riparian areas have a variety of upland and riparian species, including netleaf hackberry (*Celtis reticulata*), velvet ash (*Fraxinus velutina*), Arizona walnut (*Juglans major*) and willows (*Salix spp.*). Historically, woody species have been removed where they are accessible and used as firewood. Many if not most of the woody species resprout after harvesting and remain on the landscape.

Current Uses: Visitors use this PWA for a variety of recreational activities. The Arizona National Scenic Trail, a route that stretches across the entire state, runs through the middle of the PWA and is used for hiking, horseback riding, and mountain biking. There are many roads along the boundary, including State Route 83, a popular sightseeing route that leads to Parker Canyon Lake. These roads are used for motorized touring and dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. Five existing roads within the PWA are currently in use, but have been recommended for decommissioning. Topography varies from rolling hills to rugged, so there is limited cross-country travel through the PWA. There are four grazing allotments within the Canelo Potential Wilderness Area. All of these allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

Diversity of vegetation within the Canelo Potential Wilderness Area consists of oak woodland and grasslands. Intermittent and perennial streams run through this PWA, along many are heavily impacted by impoundments. The impoundments that create Parker Lake directly affect Parker Canyon. The night sky can be clearly seen without any interference from light pollution. The area includes a mixture of ecological conditions, including unique habitats surrounding Parker Lake, which may draw a diversity of species through the PWA. The presence of water catchments in Collins Canyon has also provided habitat for bears. Historically, unique species such as the bald eagle, Sonoran tiger salamanders, and Gould's turkey have been discovered within the boundaries of this PWA. The area provides many recreation opportunities near and around Parker Lake, and along the Arizona Trail. Although no rivers or streams have been sampled, there are no known water quality issues. The prevalence of Lehmann's lovegrass and other nonnative grasses spread throughout the PWA significantly detracts from the area's wilderness character. Nonnative bullfrogs, crayfish, mosquito fish and sport fish in Parker Canyon and Collins Canyon also negatively affect wilderness capability.

Undeveloped

The Canelo Potential Wilderness Area has obvious evidence of human activity, including a road, trail, several water developments, and signs of USDA traffic.

Opportunities for Solitude or Primitive and Unconfined Recreation

Few parts of the Canelo PWA demonstrate the potential for physically challenging recreation. The opportunity to experience solitude may be hindered by possible encounters with Border Patrol and some visible signs of civilization. Primitive recreation on the Canelo PWA may include hunting, hiking, wildlife-watching and backpacking.

Special Features

The Canelo PWA contains some panoramic views, although these views are limited. The area possesses some potential for scientific research, such as vegetation research. Existing research includes a game camera located in Parker Canyon. Some unique species of plants and animals may be present on the Canelo PWA, although none are currently known.

Manageability

Management of the area may be difficult, as the PWA borders Highway 83 for approximately two miles. The boundary of the PWA also borders Parker Canyon Lake and Parker Canyon Subdivisions. Motorized vehicle use has been recorded in the area, as Border Patrol utilizes Collins Canyon roads and other roads in the northern end of the PWA. There are no identified boundary changes that would enhance the area's wilderness character.

The Canelo Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Canelo Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. One activity that may conflict with wilderness management is the increase in traffic on Highway 83 along the northern boundary. There are three threatened or endangered species that may be located in the PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Plans to eradicate aquatic invasive species in the area may impact wilderness management. Watersheds within the area are properly functioning with seasonal, monsoonal flows, with the exception of the perennial reach of Parker Canyon below the lake. Storage troughs and tanks with multiple supplies lines may need to be replaced to facilitate aquatic invasive species control. Arizona Game and Fish Department proposes to construct a turkey drinker in the western portion of the area, which could also interfere with the land's ability to be managed as wilderness. According to the FireScape Analysis, the area will receive a single treatment across the landscape within a 5 to 20 year period to achieve restoration goals. The area is committed through permits for livestock grazing on four allotments. This current authorization does not conflict with wilderness management or detract from wilderness qualities. Landscape restoration projects have been suggested to restore a higher proportion of grasslands and increase livestock grazing capacity. The area has recently been requested for an endurance race and outfitter guides, which do not foreseeably interfere with wilderness management. There is no potential for timber extraction. There are no known high-value mineral deposits within the area. There are no cultural resources that will be affected by wilderness management. The Canelo Potential Wilderness Area is entirely composed of National Forest System lands, as is the adjacent land. The closest private land is approximately 0.2 miles from the PWA boundary and may impact the wilderness character of the area.

The Canelo Potential Wilderness Area overall was rated as **low** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Canelo PWA, there are 15 designated wilderness areas totaling about 478,000 acres (see Table 43).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 43. Designated wilderness within 100 miles of the Canelo Potential Wilderness Area

Wilderness Area	Acres
Aravaipa Canyon Wilderness	19,790
Baboquivari Peak Wilderness	2,776
Chiricahua Wilderness	88,793
Chiricahua National Monument Wilderness	12,161
Coyote Mountains Wilderness	5,795
Dos Cabezas Mountains Wilderness	11,855
Galiuro Wilderness	75,585
Miller Peak Wilderness	20,381
Mount Wrightson Wilderness	25,596
Pajarita Wilderness	7,897
Pusch Ridge Wilderness	56,743
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
Saguaro Wilderness	77,119
Santa Teresa Wilderness	28,769
TOTAL	478,077

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the high range (more than 60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Canelo Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Canelo Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Canelo Potential Wilderness Area includes 4 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 44). Of these four vegetation communities, the Canelo PWA would contribute to wilderness in the following vegetation types: Interior Chaparral (0.3 percent) and Madrean Encinal Woodland (1.3 percent). The vegetation communities in this PWA consist of 80.60 percent regionally underrepresented vegetation types, therefore the PWA rates in the medium range (50-90 percent) for this factor.

Table 44. Southwestern Region Underrepresented Vegetation Communities found in the Canelo Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Canelo PWA	Percent of Canelo PWA	Percent Addition of Canelo PWA to Wilderness
Interior Chaparral	1,063	12.5	0.3
Madrean Encinal Woodland	5,780	68.1	1.3
Madrean Pine Oak Woodland	4	0.0	0.0
Riparian Areas	4	0.0	0.0
Grand Total	**6,851**	**80.6%**	**1.6%**

The Canelo Potential Wilderness Area overall was rated as **medium** for Need (for individual scores, see appendix G).

Winchester Potential Wilderness Area Evaluation [PW-05-03-D4-001]

Area Overview

Size and Location: The Winchester Potential Wilderness Area (PWA) encompasses 7,207 acres. This PWA is located in the Winchester Mountains, which are part of the Safford Ranger District of the Coronado National Forest in southeastern Arizona (see Map 11 at the end of this document). The Winchester PWA is overlapped by 7,101 acres of the Winchester Inventoried Roadless Area, comprising 98 percent of the PWA.

Vicinity, Surroundings and Access: The Winchester Potential Wilderness Area is located in Cochise County approximately 50 miles east of Tucson, Arizona within the Safford Ranger District in the Winchester Mountains. The Galiuro Wilderness Area, the Bureau of Land Management's Redfield Canyon Wilderness Area and the Muleshoe Ranch Cooperative Management Area are within close proximity to the PWA.

Most Federal, State and private land uses surrounding the Winchester Mountains are generally rural and agricultural in nature. Because the Winchester Mountains are remote, other than the incorporated communities of Benson and Willcox along Interstate 10 (I-10), there are no incorporated or unincorporated communities nearby. I-10 connects the Tucson metropolitan area to Benson and Willcox, Arizona.

Ft. Grant Road (a county-maintained road) provides motorized access north from I-10 to County Line Road (a county-maintained road), which provides motorized access to Reiley Canyon Road (NFS Road 690). Reiley Canyon Road provides motorized access to National Forest System lands in Reiley Canyon at the northern end of the Winchester Mountains. However, both County Line and Reiley Canyon Roads are gated and locked in several locations on private land outside the proclaimed Forest boundary and are therefore unavailable for access to NFS lands by the general public.

Sunset Loop Road (Graham County-maintained road) provides motorized access to Ash Creek Road (NFS Road 650), which provides motorized access to the Ash/Mesa Road (NFS Road 659) and NFS lands within the Galiuro Mountains. Ash/Mesa Road is the primary access route across NFS lands in the Galiuro Mountains and State Trust lands to the western side of the Winchester Mountain. The Arizona Game and Fish Department has a public right-of-way for the portion of Ash/Mesa Road across State Trust land from the Galiuro Mountains to the Winchester Mountains and Brushy Well Road (NFS Road 6618). Ash/Mesa Road also provides access for high-clearance four-wheel-drive vehicles from Brushy Well Road across NFS and State Trust lands to the junction of Pine Ridge Road (NFS Road 6620) and N-O Canyon Road (NFS Road 683).

Brushy Well Road provides access for high-clearance four-wheel drive vehicles from Ash/Mesa Road to Rockhouse Canyon Road (NFS Road 6619). Rockhouse Canyon Road provides motorized access across NFS lands from Brushy Well Road to Pine Ridge Road (NFS Road 6620) and into Rockhouse Canyon to Poer Spring (approximately one mile east of the PWA). Pine Ridge Road provides motorized access to Juniper Tank Road (NFS Road 6620B). Juniper Tank Road provides access for high-clearance four-wheel drive vehicles across NFS lands to Juniper Tank, approximately 1.6 miles east of the PWA.

N-O Canyon Road (NFS Road 683) is a primary access route into NFS lands on the western side of the Winchester Mountain. N-O Canyon Road provides access for high-clearance four-wheel-

drive vehicles to Javelina Canyon Road (NFS Road 6628) and to the junction with Ash/Mesa Road and Pine Ridge Road. Javelina Canyon Road provides access for high-clearance four-wheel-drive vehicles across State Trust lands to the proclaimed national forest boundary on the west side of the Winchester Mountains. Javelina Canyon Road continues across State Trust lands within the proclaimed national forest boundary to an area near Javelina Spring in Javelina Canyon on State Trust lands. Javelina Canyon Road ends approximately 300 feet from NFS lands and three-quarters of a mile from the PWA. An Arizona State Land Department (ASLD) "Recreational Use Permit" is required to gain access to State Trust land or to other lands beyond State Trust land (including NFS lands) where no public right-of-way exists. An ASLD "Recreational Use Permit" is not needed when hunting or fishing in-season, but all other recreational activities require an ASLD "Recreational Use Permit."

Although there is physical motorized road access into the Winchester Mountains, there is no permanent legal access to the NFS lands within the proclaimed National Forest System boundary for the entire mountain range. It is unknown whether there is any right-of-way for public access via those portions of roadway across the State Trust and private lands. There are also no known existing motorized road and nonmotorized trail access to or through the PWA. The closest motorized road access is three-quarters of a mile from the PWA in Javelina Canyon. Permanent legal public motorized road and nonmotorized trail access to the NFS lands as well as the PWA in the Winchester Mountains will continue to be a major issue.

Boundaries: The boundary of this PWA was established based on natural features, such as ridgelines and high points, in the Winchester Mountains.

Geography and Topography: Situated in the central portion of the Winchester Mountains, the Winchester Potential Wilderness Area (PWA) straddles the crest of the range, extending from Reiley Peak in the north to the headwaters of Davis Canyon in the south. Covering an area of 7,207 acres, it rises from a low point of approximately 5,000 feet above sea level in Reiley and Rose Canyons to a maximum elevation of 7,631 feet at Reiley Peak.

The northwest-trending Winchester Mountains are typical of the Mexican Highlands Subprovince of the Southern Basin and Range Province in southeastern Arizona. Separated from the Galiuro Range to northwest by a flat plateau known as the Mesas, the Winchester Range is bounded on the northeast by Sulphur Springs Valley and on the southwest by Allen Flat. The Tertiary stratigraphic section of this range is characterized by a basal unit of uncemented conglomeratic sediments of Oligocene age, which is succeeded by up to 1,800 feet of Miocene volcanic rocks. The only pre-Tertiary rocks in the Winchester Mountains are limited exposures of Precambrian granite, Precambrian and early Paleozoic quartzite and Paleozoic limestone which occur in a small erosional window developed in the overlying Tertiary cover at the southeast end of the range.

Appearance and Vegetation: Due to steep topography, the vegetation consists largely of unmodified pinyon, juniper and evergreen oak woodland communities. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), gray oak (*Quercus grisea*), Mexican blue oak (*Quercus oblongifolia*) and Toumey oak (*Quercus toumeyi*). Other tree species [including border pinyon (*Pinus discolor*), Arizona cypress (*Hesperocyparis arizonica*), and alligator (*Juniperus deppeana*) and redberry junipers (*J. coahuilensis*).] and interior chaparral species [including manzanita spp. (*Arctostaphylos spp*.), desert ceanothus (*Ceanothus greggii*), mountain mahogany (*Cercocarpus montanus*), silktassles (*Garrya wrightii.),* Stansbury cliffrose (*Purshia stansburiana*), shrub live oak (*Quercus turbinella*) and sumacs (*Rhus spp.*)] may be present, but do not codominate. Rosette scrub species

such as agaves (*Agave spp.*), yuccas (*Yucca spp.*), sotol (*Dasylirion wheeleri*) and beargrass (*Nolina microcarpa).* The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.), or Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Fire suppression has allowed for more dense stands than may have been present historically.

Current Uses: This isolated area has very limited recreational activity. There are no trails in the area and no roads along the boundaries. Topography is rugged, so there is very limited cross-country travel through the PWA. There are four grazing allotments within the Winchester Potential Wilderness Area. All of these allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

The ruggedness of the Winchester Potential Wilderness Area has allowed it to retain a semiprimitive setting. Diversity of vegetation within the PWA boundary is limited due to the small elevation change of the area and lack of unique or critical habitats. The area of the Winchester Mountains does not have perennial rivers or streams and there are no known water quality issues. Night skies can be clearly seen and light pollution is not evident. However, one feature that detracts from the area's wilderness capability is the presence of invasive, nonnative Lehmann lovegrass throughout the area.

Undeveloped

The Winchester Potential Wilderness Area currently has range developments that show some evidence of human activity within the area.

Opportunities for Solitude or Primitive and Unconfined Recreation

A person could find a short-term experience of solitude, serenity and self-reliance within this potential wilderness area. The rugged topography of the area provides challenging recreation, but access is limited to the area. There are opportunities for hunting, hiking and backpacking. However, the small size of the area limits the opportunity for long backpacking trips.

Special Features

Panoramic views and rugged topography are the distinct features of this area. There is nothing unique or significant enough to warrant research or educational opportunities. The area has the potential for habitat for lesser long-nosed bat, and there are a few unique or rare plants and animals present.

Manageability

The Winchester Potential Wilderness Area is isolated with limited public access due to lack of rights-of-ways across the surrounding private land. This isolation limits the influence of activities on the surrounding land, but also limits the ability to access the area. There is some limited use of the area by ATV drivers. Given these conditions, this area holds some challenges in managing it for wilderness characteristics. There are no identified boundary changes that would enhance the area's wilderness character.

The Winchester Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Winchester Potential Wilderness Area, the current recreational uses and tourism could continue if the area was designated as wilderness. There are three threatened or endangered species that may be located in this PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA. This PWA is in need of intense management for restoration of vegetation and wildlife habitat. Landscape-scale planned ignitions are needed to restore and maintain a healthy ecosystem and the watersheds within the area. The area is committed through permits for livestock grazing, which is compatible with wilderness. This current authorization does not conflict with wilderness management or detract from wilderness qualities. There is no potential for timber extraction. There are no known high-value mineral deposits within the area. There are no cultural resources that will be affected by wilderness management. The Winchester PWA is composed entirely of National Forest System lands, as is the adjacent land. The closest private land is approximately a half mile from the PWA boundary and could impact the wilderness character of the area.

The Winchester Potential Wilderness Area overall was rated as **low** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Winchester Potential Wilderness Area, there are 26 designated wilderness areas totaling almost 1.5 million acres (see Table 45).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated Wilderness Areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness

study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 45. Designated wilderness within 100 miles of the Winchester Potential Wilderness Area

Wilderness Area	Acres
Aravaipa Canyon Wilderness	19,700
Baboquivari Peak Wilderness	2,040
Bear Wallow Wilderness	11,080
Blue Range Primitive Area	166,731
Blue Range Wilderness	29,304
Chiricahua Wilderness	87,700
Chiricahua National Monument Wilderness	10,290
Coyote Mountains Wilderness	5,100
Dos Cabezas Mountains Wilderness	11,700
Fishhooks Wilderness	10,500
Galiuro Wilderness	76,317
Gila Wilderness	558,014
Miller Peak Wilderness	20,228
Mount Wrightson Wilderness	25,260
Needle's Eye Wilderness	8,760
North Santa Teresa Wilderness	5,800
Pajarita Wilderness	7,553
Peloncillo Mountains Wilderness	19,440
Pusch Ridge Wilderness	56,933
Redfield Canyon Wilderness	6,600
Rincon Mountain Wilderness	38,590
Saguaro Wilderness	70,905
Salt River Canyon Wilderness	32,101
Santa Teresa Wilderness	26,780
Superstition Wilderness	159,757
White Canyon Wilderness	5,790
TOTAL	1,472,973

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state’s population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to

provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the low range (less than 30 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness areas. Trail systems within wilderness areas range from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Winchester Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Winchester Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Winchester Potential Wilderness Area includes 5 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 46). Of these five vegetation communities, the Winchester PWA would only contribute an additional 0.1 percent to wilderness in the following vegetation types: Interior Chaparral and Madrean Encinal Woodland.

The vegetation communities in this PWA consist of 83.50 percent regionally underrepresented vegetation types, therefore the PWA rates in the medium range (50-90 percent) for this factor.

Table 46. Southwestern Region underrepresented vegetation communities found in the Winchester Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Winchester PWA	Percent of Winchester PWA	Percent Addition of Winchester PWA to Wilderness
Interior Chaparral	1,279	18.5	0.1
Madrean Encinal Woodland	3,843	55.5	0.1
Madrean Pine Oak Woodland	547	7.9	0.0
Mixed Conifer Forest	53	0.8	0.0
Riparian Areas	54	0.8	0.0
Grand Total	**5,776**	**83.5%**	**0.2%**

The Winchester Potential Wilderness Area overall was rated as **low** for Need (for individual scores, see appendix G).

Galiuro Addition Potential Wilderness Area Evaluation [PW-05-03-D4-002]

Area Overview

Size and Location: The Galiuro Addition Potential Wilderness Area encompasses 16,891 acres. This PWA is located in the northern Galiuro Mountain Range and is adjacent to the existing Galiuro Wilderness. This area would be an expansion of the Galiuro Wilderness that is now 76,317 acres, bringing the overall size to 94,312 acres if recommended. This area is located in the Galiuro Mountains, which is part of the Safford Ranger District of the Coronado National Forest (see Map 10 at the end of this document). The Galiuro Addition PWA is overlapped by 15,333 acres of the Galiuro Inventoried Roadless Area, comprising 91 percent of the PWA.

Vicinity, Surrounding and Access: The Galiuro Addition Potential Wilderness Area addition is approximately 40 miles southwest of Safford, Arizona and approximately 45 miles from Willcox, Arizona within the Safford Ranger District in Graham County, Arizona. The PWA is comprised of five polygons, each piece completely surrounded by National Forest System (NFS) lands within the Forest boundary. The PWA adjoins the northern boundary of the Galiuro Wilderness Area in the Galiuro Mountains. The PWA is also within close proximity to the Aravaipa Wilderness Area.

The northern end of the Galiuro Mountains (near the Aravaipa/Klondyke area) is very isolated and rural in nature. The primary motorized access to the Aravaipa/Klondyke area is provided by Graham County-maintained roads from U.S. Highway 70 between Pima and Ft. Thomas, Arizona and from the end of State Highway 266 at Bonita, Arizona. In addition, Ft. Grant Road, (a Cochise and Graham Counties-maintained road) provides motorized access from Interstate 10 at Willcox, Arizona north to Aravaipa/Klondyke/Bonita Road at Bonita, Arizona.

At the north end of the Galiuro Mountains, Rattlesnake Mesa Road (NFS Road 96) and the Long Hollow Road (NFS Road 6633) are the primary motorized access roads from Aravaipa/Klondyke Road across private and State Trust land into the National Forest. Rattlesnake Mesa Road provides high-clearance four-wheel-drive vehicle access to NFS lands to Powers Hill. At Powers Hill is the Powers Garden Trail Trailhead (NFS Trail 96) and the entrance to the Galiuro Wilderness Area. A portion of the Powers Garden Trail passes within approximately ½ mile of the PWA near the end of the road near Grapevine Springs. A majority of Rattlesnake Mesa Road traverses State Trust lands and private land for approximately a half mile. The Arizona Game and Fish Department currently has a short-term public access agreement with the current landowners for the portions of this road across private land.

Fourmile Canyon Road provides motorized access to Mescal Road (NFS Road 6608), NFS lands and Long Hollow Well Road near Soda Spring within the National Forest. Mescal Road provides high-clearance four-wheel-drive vehicle access to French Gap Road (NFS Road 6608J). French Gap Road provides motorized access to French Gap Spring, which is approximately ¼ mile north of the PWA. However, both Fourmile Canyon and Mescal Roads are gated and locked in several locations on private land outside the proclaimed Forest boundary and are unavailable for access to NFS lands by the general public.

Currently, there are no National Forest System trails within the PWA. However, several Forest trails within the Galiuro Wilderness Area provided nonmotorized access to the PWA.

Although there is physical motorized road access into the northern end of the Galiuro Mountains, there is very limited permanent legal access to the NFS lands within the proclaimed National

Forest System boundary for the entire mountain range. It is unknown whether there is any right-of-way for public access via those portions of roadway across the State Trust and private lands. In addition, the legal status of the county road system in the area has been under dispute for a number of years. Permanent legal public motorized road and nonmotorized trail access to the NFS lands into the northern end of the Galiuro Mountains as well as the PWA will continue to be a major issue.

Boundaries: The boundaries of the five polygons that make up this PWA are formed by the existing Galiuro Wilderness, as well as natural features, such as ridgelines and high points, in the Galiuro Mountains.

Geography and Topography: The Galiuro Addition Potential Wilderness Area (PWA) straddles the crest of the Galiuro Range and covers 16,891 acres of steep, rugged mountainous terrain. The PWA rises from a low point of 4,550 feet above sea level near Horse Camp Coral in a tributary of Bottle Canyon along the eastern flank of the range to a maximum elevation of 7,003 feet at Maverick Mountain along its southern boundary with the existing Galiuro Wilderness, entirely within the Galiuro Unit of the Safford Ranger District, Coronado National Forest.

The Galiuro Mountains are a typical northwest-trending, block-faulted range within the Mexican Highlands Subprovince of the Southern Basin and Range Province. The physiography of the Mexican Highlands is characterized by greater average altitudes, higher local relief and more extensive basin dissection when compared to the broad, undissected valleys and low mountain ranges of the adjacent Sonoran Desert Subprovince. The range is bounded by the San Pedro River Basin to the southwest and Aravaipa Valley to the northeast.

The mountain range is characterized by a gentle, northeast-dipping sequence of middle Tertiary volcanic rock units which range up to several thousand feet in thickness. This unmineralized volcanic pile overlies an older, strongly mineralized assemblage of Cretaceous volcanic and related intrusive rocks, late Precambrian to Paleozoic sediments and Precambrian schist. A significant exposure of these older rock units can be found along the southwestern range front, exposed within a narrow erosional window developed in the younger volcanic sequence located immediately northwest and west of the Galiuro Addition PWA.

Appearance and Vegetation: Due to steep topography, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland communities. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), gray oak (*Quercus grisea*), Mexican blue oak (*Quercus oblongifolia*) and Palmer oak *(Q. palmeri)*. Other tree species [including pinyon pines (*Pinus discolor* and *Pinus monophylla var. fallax*), Arizona cypress (*Hesperocyparis arizonica*) and alligator (*Juniperus deppeana*) and redberry junipers (*J. coahuilensis*)] and interior chaparral species [including manzanita spp. (*Arctostaphylos spp*.), desert ceanothus (*Ceanothus greggii*), mountain mahogany (*Cercocarpus montanus*), silktassles (*Garrya wrightii),* Stansbury cliffrose (*Purshia stansburiana*), shrub live oak (*Quercus turbinella*) and sumacs (*Rhus* spp.)] may be present but do not codominate. Rosette scrubs, such as agaves (*Agaves* spp.), yuccas (*Yucca* spp.), sotols (*Dasylirion wheeleri*) and beargrass (*Nolina microcarpa*) are also common components of the vegetation community. The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) or Texas bluestem (*Schizachyrium cirratum*). Overstory canopy is less than 20 percent in about 60 percent of the community. Riparian areas have a variety of upland and

obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*), Goodding willow (*Salix gooddingii*), yewleaf willow (*Salix taxifolia*) and Arizona cypress (*Hesperocyparis arizonica*). Historically, some areas near canyon bottoms were logged to provide wood for nearby mines, but second growth has matured. Fire suppression has allowed for more dense upland stands than may have been present historically.

Current Uses: Visitors use this PWA for a variety of recreational activities, though its isolated location results in relatively light use. These lands lie adjacent to the existing Galiuro Wilderness. Five trails lie within the area, and trails are used for hiking and horseback riding. There are no roads adjacent to the boundary, and the one road within the boundary is currently in use but has been recommended for restricted access. Topography is rugged, so there is very limited cross-country travel through the PWA. There are six grazing allotments within the Galiuro Addition Potential Wilderness Area. All of these allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

The ruggedness of the Galiuro Addition Potential Wilderness Area has allowed it to retain a semiprimitive setting. Diversity of vegetation within the PWA boundary is high due to the variety of vegetation types and habitats for diverse wildlife populations. The area is critical habitat for Mexican spotted owls. This area of the Galiuro Mountains does not have perennial rivers or streams and there are no known water quality issues. However, there has been mining activity in the past that may impact water quality, but no water samples have been tested. Night skies can be clearly seen and light pollution is not evident. However, one feature that detracts from the area's wilderness capability is the presence throughout the area of the invasive, nonnative plant Lehmann lovegrass.

Undeveloped

The Galiuro Addition Potential Wilderness Area currently has permitted livestock grazing and mining activity that shows evidence of human use through the range improvements and mining.

Opportunities for Solitude or Primitive and Unconfined Recreation

A person could experience solitude, serenity and self-reliance within this potential wilderness area. The ruggedness of the area provides challenging recreation opportunities, including hiking, back-packing, horseback riding and hunting. This area is remote and adjacent to the existing Galiuro Wilderness that allows for a significant feeling of isolation from society.

Special Features

The area has some distinct features, specifically, panoramic views from the mountain peaks. The area is rich in natural resources and history and would provide for scientific research, environmental education and historic opportunities. There are a few unique plant and animal species present.

Manageability

The Galiuro Addition Potential Wilderness Area is adjacent to an existing wilderness, but use within the area creates some conflict. The existing mining and ranching, along with the associated roads, encumber the ability and provides some challenges to manage the area for wilderness character. An adjustment to the boundary was made to exclude the High Creek area in the southeastern portion of the PWA. The Forest Service was recently granted legal access on NFS Road 998 (Knob Tank Road) and plans to establish a developed trailhead at the start of High Creek Trail. The trailhead will include interpretive signs, restrooms, and a parking lot. A similar adjustment was made to exclude the area that houses the East Divide Trailhead, as the Forest Service was recently granted legal access on Ash Creek Canyon Road (NFS Road 660). These adjustments enhance wilderness character and improve manageability by removing two sites that will involve heavy construction activity and man-made structures from within the potential wilderness area. These adjustments increase the manageability and availability of the area without diminishing wilderness character.

The Galiuro Addition Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Galiuro Addition Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. There are six threatened or endangered species that may be located in this PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Watersheds within the area are properly functioning and there are no water impoundments or need at this time to install impoundments. There are no ecosystem restoration activities currently planned for the area. However, the area is in need of vegetation treatments and there is the potential for such activities in the future. The area is committed through permits for livestock grazing. These current authorizations do not conflict with wilderness management. However, motorized equipment is needed to maintain existing livestock water developments and pipelines. There is no potential for timber extraction. There is the potential for extraction of locatable minerals. Mining activity has occurred on adjacent land and exploration drilling has occurred throughout the area. There are no cultural resources that will be affected by wilderness management. The Galiuro Addition Potential Wilderness Area is entirely composed of National Forest System lands, but there are State and private lands adjacent to the area. The closest private land is approximately a third of a mile from the PWA boundary and could impact the wilderness character of the area.

The Galiuro Addition Potential Wilderness Area overall was rated as **low** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Galiuro Addition Potential Wilderness Area there are 31 designated wilderness areas totaling about 1.6 million acres (see Table 47).

Table 47. Designated wilderness within 100 miles of the Galiuro Addition Potential Wilderness Area

Wilderness Area	Acres
Aravaipa Canyon Wilderness	19,700
Baboquivari Peak Wilderness	2,040
Bear Wallow Wilderness	11,080
Blue Range Primitive Area	173,762
Blue Range Wilderness	29,304
Chiricahua National Monument Wilderness	10,290
Chiricahua Wilderness	87,700
Coyote Mountains Wilderness	5,100
Dos Cabezas Mountains Wilderness	11,700
Fishhooks Wilderness	10,500
Four Peaks Wilderness	61,074
Galiuro Wilderness	76,317
Gila Wilderness	558,014
Miller Peak Wilderness	20,228
Mount Baldy Wilderness	7,079
Mount Wrightson Wilderness	25,260
Needle's Eye Wilderness	8,760
North Santa Teresa Wilderness	5,800
Pajarita Wilderness	7,553
Peloncillo Mountains Wilderness	19,440
Pusch Ridge Wilderness	56,933
Redfield Canyon Wilderness	6,600
Rincon Mountain Wilderness	38,590
Saguaro Wilderness	70,905
Salome Wilderness	18,531
Salt River Canyon Wilderness	32,101
Santa Teresa Wilderness	26,780
Sierra Ancha Wilderness	20,850
Superstition Wilderness	159,757
Table Top Wilderness	34,400
White Canyon Wilderness	5,790
TOTAL	1,621,938

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include

primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSAs range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems within wilderness areas range from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wildernesses. Encounters with other wilderness visitors in both areas are high. For these two areas, there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Galiuro Addition Potential Wilderness Area (PWA) might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated Wilderness Areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Galiuro Addition Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occurs in 20 designated wilderness areas.

The Galiuro Addition Potential Wilderness Area includes 3 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 48). Of these three vegetation communities, the Galiuro Addition PWA would only contribute an additional 0.1 percent to wilderness in the following vegetation types: Interior Chaparral, Madrean Encinal Woodland and Madrean Pine Oak Woodland. The vegetation communities in this PWA consist of 91.10 percent regionally underrepresented vegetation types, therefore the PWA rates in the high range (more than 90 percent) for this factor.

Table 48. Southwestern Region underrepresented vegetation communities found in the Galiuro Addition Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Galiuro Addition PWA	Percent of Galiuro Addition PWA	Percent Addition of Galiuro Addition PWA to Wilderness
Interior Chaparral	1,701	19.6	0.1
Madrean Encinal Woodland	4,719	54.4	0.1
Madrean Pine Oak Woodland	1,484	17.1	0.1
Grand Total	**7,904**	**91.1%**	**0.3%**

The Galiuro Addition Potential Wilderness Area overall was rated as **medium** for Need (for individual scores, see appendix G).

Mount Graham WSA Potential Wilderness Area Evaluation [PW-05-03-D4-003]

Area Overview

Size and Location: The Mount Graham Wilderness Study Area (WSA) Potential Wilderness Area encompasses 61,315 acres. This PWA is located in the Pinaleño Mountains, which are part of the Safford Ranger District of the Coronado National Forest in southeastern Arizona (see Map 9 at the end of this document). The Mount Graham WSA PWA is overlapped by 60,755 acres of the Pinaleño Inventoried Roadless Area, comprising 99 percent of the PWA.

Vicinity, Surrounding and Access: The Mount Graham WSA Potential Wilderness Area is approximately 35 miles southwest of Safford, Arizona and approximately 65 miles northeast of Tucson, Arizona within the Safford Ranger District in Graham County, Arizona. The PWA is completely surrounded by National Forest System (NFS) lands within the Forest boundary in the Pinaleño Mountains. The PWA is also within close proximity to the small, unincorporated communities of Turkey Flat, Cactus Flat, and Swift Trail Junction.

The primary motorized access to the Pinaleño Ecosystem Management Area is provided by Graham County-maintained roads from U.S. Highway 70 between Pima and Swift Trail Junction, Arizona and from the end of State Highway 266 at Bonita, Arizona. In addition, Ft. Grant Road, (a Cochise and Graham Counties-maintained road) provides motorized access from Interstate 10 at Willcox, Arizona.

The major access roads branching from U.S. Highway 70 in the north are Tripp Canyon Road (NFS Road 286), Mcenary Tunnel Road (NFS Road 681), Frye Mesa Road (NFS Road 103), Frye Mesa Canyon Road (NFS Road 650), Lebanon Ditch Road (NFS Road 4515) and Swift Trail Road (NFS Road 366). These roads cross through private and State lands to reach the national forest boundary before entering the PWA. While some Forest Service roads enter the PWA from the South, primary access comes from the northern roads. Several of these roads transition into National Forest System Trails. Mcenary Tunnel Road becomes Shingle Mill Trail upon entering the PWA and Frye Mesa Road turns into Frye Canyon Trail. Deadman Road (NFS Road 6629) off Frye Mesay Canyon Road becomes Deadman Trail, and Lebanon Ditch Road transitions into the Rincon Spring Trail. Many additional trails traverse the PWA lands, including Hell's Hole Trail, Jesus Goudy Trail, and Grant Creek Trail. The southeastern portion of the PWA contains Dutch Henry Canyon Trail, Ladybug Trail, Shake Trail, and Bear Canyon Trail. Jesus Babcock Trail, Nuttall Trail, and Deadman Highline Trail also run through the PWA. Nearby trails include Ash Creek Trail, Big Creek Trail, Taylor Trail and Arcadia Trail. These National Forest System Trails provide nonmotorized access to the PWA.

Although there is physical motorized road access into the Pinaleño Mountains, there is limited permanent legal access to the NFS lands within the proclaimed National Forest System boundary for the entire mountain range. It is unknown whether there is any right-of-way for public access via those portions of roadway across the State Trust and private lands. In addition, the legal status of the county road system in the area has been under dispute for a number of years. Permanent legal public motorized road and nonmotorized trail access to the NFS lands into the Pinaleño Mountains as well as the PWA will continue to be a major issue.

Boundaries: The boundary of this PWA was congressionally designated in the Arizona Wilderness Act of 1984, which created the Mount Graham Wilderness Study Area. A small

portion of the northern boundary follows the national forest boundary. The remainder of the boundary follows natural features, such as ridgelines and high points, in the Pinaleño Mountain Range.

Geography and Topography: The Mount Graham WSA Potential Wilderness Area (PWA) in Graham County encompasses the central part of the arcuate, northwest-trending Pinaleño Mountains, except for the populated area near the road along the crest of the range. This PWA is located entirely within the Safford Ranger District, Coronado National Forest (CNF). This mountain range is bounded on the east by the San Simon Valley and on the west by the Sulphur Spring Valley. The Mount Graham WSA PWA is a U-shaped area surrounding a two-mile wide exclusion area along the paved highway to the top of Mount Graham from the San Simon Valley. The northern arm of the U-shaped area is two to five miles wide and approximately 13 miles long and the southern arm is one to three or six miles wide by approximately 18 miles long.

Encompassing an area of 61,315 acres, the Mount Graham WSA PWA consists of most of central part of the Pinaleño Mountain range surrounding the popular camping and recreational area along the highway. The Mount Graham WSA PWA is bisected by the road along the crest of the Pinaleño Mountains and Mount Graham. Additional jeep trails and pack trails follow the various canyons surrounding the range, such as the Frye Canyon jeep trail on the north side, Righthand Canyon on the southeast side, and Grant Canyon 4-wheel drive trail on the south side. The boundaries of the Mount Graham WSA PWA have been drawn to exclude most of the jeep trail, roads, and highways in the Pinaleño Mountains. The road along Carter Canyon has also been excluded by cherry-stemming the boundary of the Mount Graham WSA PWA.

The Mount Graham WSA PWA is situated along either side of the northwest-trending crest of the central Pinaleño Mountains. The area extends from the edge of the CNF on the east to the boundary on the northwest with the Mount Graham Addition PWA. The area is drained by numerous south or southwest-trending canyons on the south side of the crest of the Pinaleño Mountains. These canyons from north to south include: West Babcock Canyon, Babcock Canyon, Jesus Canyon, Boudy Canyon, Grant Creek, Gold Gulch, Grapevine Canyon, Pitchfork Canyon, Stockton Pass, Bear Canyon, Righthand Canyon, and Dutch Henry Canyon. The northern arm of the Mount Graham WSA PWA area is drained by numerous north or northeast-trending canyons on the north side of the crest of the Pinaleño Mountains. These canyons from north to south include: Carter Canyon, Nuttell Canyon, Hell Hole Creek, Lefthand Canyon, Blair Canyon, Shingle Mill Canyon, Ash Creek Hawk Hollow, Frye Canyon, Deadman Canyon, Rincon Canyon, Marijilda Canyon, and Swift Canyon. Most canyons contain pack trails.

The ridge crest of the Pinaleño Mountains contains Heliograph Peak, the highest peak in the range at an elevation of 10,982 with radio facilities and a lookout tower in the area excluded from the Mount Graham WSA PWA. Other high points along the crest of the Pinaleño Mountains that are excluded from the Mount Graham WSA PWA include Mount Graham at 10,720 ft, Hawk Peak at 10,627 ft, Webb Peak at 10,030 feet with a lookout tower, and Merrill Peak at 9,268 feet. Clark Peak at 9,006 feet and Ladybug Peak at 8,780 feet are included in the Mount Graham WSA PWA. The low points in the PWA are on the flanks of the range and include Stockton Pass Wash at 4,400 ft, Gillespie Wash at 4,260 ft, and Jesus Tank at 5,630 feet. The topography is steep and rugged in several of the canyons, such as The Pinnacles in the northern arm. Details of the topography are shown on the Stockton Pass, Webb Peak, and Mount Graham 7 ½ minute U.S. Geological Survey quadrangle.

The Pinaleño Mountains contain primarily Precambrian metamorphic and igneous rocks. These mountains are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona. The geology is characterized by Early Proterozoic (younger Precambrian or 1650 – 1800 million years ago [Ma]) age metamorphic rocks (quartzo-feldspathic gneiss that contains biotite or biotite and hornblende and some amphibolite and schist, probably of sedimentary and volcanic origin, similar to Pinal Schist) intruded by Middle Proterozoic (1400 Ma) granite to granodiorite (similar to Oracle Granite). The majority of the Mount Graham WSA PWA is Pinal Schist and the southern parts of both arms are composed of Oracle Granite.

No active mining claims are located in the Mount Graham WSA PWA, although there are many mining claims recorded in the 1980s and 1990s, but now closed. The area does not have historic production of metals or non-metals. However, immediately to the south of the southwestern edge of the Mount Graham WSA PWA near Jesus Tank, a beryllium adit and opencuts called the Twilight or Grey mine in Section 10, T. 9 S., R. 23 E., was reported to contain 0.27 percent beryllium oxide in pegmatite in Precambrian schist (Richter and Lawrence, 1983, U.S.G.S. map I-1310-B). An unnamed silver gold prospect in Section 20 and 29, T. 9 S., R. 24 E., exhibits numerous shallow shafts and adits associated with small quartz veins and manganese-stained fractures in Precambrian granite gneiss.

Appearance and Vegetation: Due to the steep topography of the Pinaleño Mountains, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland communities, Madrean pine-oak woodlands, ponderosa evergreen forest, and mixed-conifer forests. Portions of the PWA and WSA that are lower in elevation and with warmer topographic aspects will contain vegetative communities more closely aligned with desert grasslands and desert scrub.

Common Madrean evergreen oaks species found include Arizona white oak (*Quercus arizonica*), Emory oak (*Q. emoryi*), gray oak (*Q. grisea*), netleaf oak (*Q. rugosa*) and silverleaf oak (*Q. hypoleucoides*). Conifer tree species include pinyon pine (*Pinus discolor*), Chihuahua (*P. leiophylla*), Arizona (*P. arizonica*), Apache (*P. engelmannii*), ponderosa (*P. ponderosa*) and southwestern white pine (*P. strobiformis*), Arizona cypress (*Hesperocyparis arizonica*), alligator (*Juniperus deppeana*) and redberry juniper (*J. coahuilensis*). Higher elevation forest exist in these areas and trees such as white fir (*Abies concolor*), Douglas-fir (*Pseudotsuga menziesii*), quaking aspen (*Populus tremuloides*), rocky mountain maple (*Acer glabrum*), bigtooth maple (*A. grandidentatum*), box elder (*A. negundo*), Scouler's willow (*Salix scouleriana*) and Gambel oak (*Q. gambelii*) are common. Chaparral and shrub species include manzanita (*Arctostaphylos spp*.), desert ceanothus (*Ceanothus greggii*), mountain mahogany (*Cercocarpus montanus*), silktassles (*Garrya wrightii.),* fendler ceanothus (*C. fendleri*), shrub live oak (*Q. turbinella*), rock spray (*Holodiscus discolor),* and sumacs (*Rhus spp.*). Riparian streams are found throughout these areas and contain cottonwood (*Populus fremontii*), Arizona sycamore (*Platanus wrightii*), willows (*Salix spp.*), Arizona alder (*Alnus oblongifolia*), and ash (*Fraxinus velutina*) among others.

Rosette scrubs such as Agaves (*Agave spp.*), yuccas (*Yucca spp.*), sotol (*Dasylirion wheeleri*) and beargrass (*Nolina microcarpa*) as well as desert scrub species such as acacias (Acacia spp.), mimosa (Mimosa spp.) and mesquite (*Prosopis spp.*) are found on the warmer, lower elevations and aspects where the desert scrub grassland communities begin to appear. Cactus species such as cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia spp.*), and hedgehogs (*Echinocereus spp.*) are also common component of this warmer vegetative community.

The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*B. curtipendula*), Rothrock grama (*B. rothrockii*),

Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*).

Historically, many canyon bottoms were logged to provide wood for nearby communities, but second growth has matured. Fire suppression has allowed for more dense stands than may have been present historically while several large wildfires have since 1995 have burned 40,000 over acres in the Pinaleño Mountains.

Current Uses: Visitors use this PWA for a variety of recreational activities. Eighteen trails lie within the area, and trails are used primarily for hiking and horseback riding. There are no roads adjacent to the boundary, but two roads are “cherry stemmed” into the area. Uses along roads include motorized touring and dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. One road within the PWA is currently in use, but has been recommended for restricted access. The Swift Trail Scenic Parkway cuts into the center of this PWA and along its route are developed campgrounds and picnic areas, summer home areas, numerous trailheads, and a visitor center. The Grant Hill Mountain Bike Area is located adjacent to the boundary, with visitors sometimes entering into the PWA. Topography is rugged, so there is very limited cross-country travel through the PWA. There are ten grazing allotments within the Mount Graham WSA Potential Wilderness Area. All of these allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

The vegetation within the Mount Graham Wilderness Study Area (WSA) Potential Wilderness Area represents habitat diversity from Mexico to Canada. Waterways within the area are mostly free-flowing, although a diversion is present on Grant Creek. The quality of the night skies may be moderately impacted by light pollution from surrounding communities, mines and Fort Grant. The biological diversity in the area includes critical habitats and unique ecological conditions. The area provides habitats for Mount Graham Red Squirrel, Mexican spotted owl, and goshawk. Although no rivers or streams have been sampled, there are no suggested or known water quality issues. Lehmann's lovegrass can be found in isolated spots at lower elevation, a feature that partially subtracts from the area's wilderness capability.

Undeveloped

Historic evidence shows the only sign of human activity on the Mount Graham WSA Potential Wilderness Area, therefore the area appears largely undeveloped.

Opportunities for Solitude or Primitive and Unconfined Recreation

The Mount Graham WSA provides physically challenging recreation that includes fishing, horseback riding, hunting, hiking and backpacking. The steep, rough terrain promotes adventure

and self-reliance for recreationists. A person may solitude and isolation while recreating in this area, although city lights can be seen from several locations on the PWA.

Special Features

The area contains many distinct features, including spruce-fir, waterfalls and ice caves. Opportunities exist for tree ring research and environmental education. Unique wildlife includes the Mount Graham Red Squirrel, the Mexican spotted owl and the goshawk.

Manageability

The Mount Graham WSA Potential Wilderness Area has adequate access opportunities. However, management of this area as wilderness may be challenging due to chainsaw use. The PWA currently does not have any motorized vehicle use. Some boundary adjustments to exclude roads and remove cherry stems could potentially be made to enhance the area's wilderness character. However, due to the area's status as a Wilderness Study Area, these changes would have to be made by an act of Congress.

The Mount Graham WSA Potential Wilderness Area overall was rated as **high** for Capability (for individual scores, see appendix E).

Availability

In the Mount Graham WSA Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. The Forest Service has a high degree of control over the land, although several municipal water rights are present on Grant Creek and Frye Creek. The area contains seven threatened or endangered species that may be located in the PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Ongoing fish introductions for Gila and Yawkee Trout are taking place on the southern side of the PWA. The area demonstrates a need for planned ignitions and vegetation management projects, specifically on the southwest aspect, requiring mechanized and motorized equipment. Planned ignitions are anticipated every 3-8 years on the southern side and every 10-20 years on the northern side. A primary trade-off to limiting treatments is the protection of values at risk, including Endangered species, the Mount Graham telescope, radio towers and summer homes. Watersheds within the area contain some springs, although most are ephemeral. The area demonstrates a need for additional water storage, particularly on the Veach grazing allotment. The area is committed through permits for livestock grazing on ten allotments: Marijilda, Gillespie, Shingle Mill, White Streaks, Stockton Pass, Veach, O-O, Grant Creek, Bonita and Seventy-Six. These current authorizations do not conflict with wilderness management or detract from wilderness qualities. There is minimal potential for fuelwood production in the PWA. There is little or no potential for extraction of locatable minerals. There are no cultural resources that will be affected by or interfere with wilderness management. The Mount Graham WSA Potential Wilderness Area is composed entirely of National Forest System lands, as is the land adjacent to the potential boundary. The closest private land is approximately one half mile from the potential wilderness area boundary and will not likely impact the wilderness character of the area.

The Mount Graham WSA Potential Wilderness Area overall was rated as **medium** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Mount Graham WSA PWA, there are 26 designated wilderness areas totaling about 1.5 million acres (see Table 49).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 49. Designated wilderness within 100 miles of the Mount Graham Wilderness Study Area Potential Wilderness Area

Wilderness Area	Acres
Aravaipa Canyon Wilderness	19,790
Bear Wallow Wilderness	11,113
Blue Range Primitive Area	179,819
Blue Range Wilderness	35,815
Chiricahua National Monument Wilderness	12,161
Chiricahua Wilderness	88,793
Dos Cabezas Mountains Wilderness	11,855
Escudilla Wilderness	5,210
Fishhooks Wilderness	11,400
Galiuro Wilderness	75,585
Gila Wilderness	520,244
Miller Peak Wilderness	20,381
Mount Baldy Wilderness	7,627
Mount Wrightson Wilderness	25,596
Needle's Eye Wilderness	6,277
North Santa Teresa Wilderness	5,733
Peloncillo Mountains Wilderness	19,244
Pusch Ridge Wilderness	56,743
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
Saguaro Wilderness	77,119
Salt River Canyon Wilderness	32,035
Santa Teresa Wilderness	28,769
Sierra Ancha Wilderness	18,198
Superstition Wilderness	158,920
White Canyon Wilderness	6,981
TOTAL	1,480,226

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available

in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Mount Graham WSA Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Mount Graham WSA Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Mount Graham WSA Potential Wilderness Area includes 6 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 50). Of these six vegetation communities, the Mount Graham WSA PWA would contribute to wilderness in the following vegetation types: Interior Chaparral (1.6 percent), Madrean Encinal Woodland (3.1 percent), Madrean Pine Oak Woodland (5.1 percent), Mixed Conifer Forest (1.8 percent), Riparian Areas (0.1 percent) and Spruce Fir Forest (0.2 percent). The vegetation communities in this PWA consist of 56.50 percent regionally underrepresented vegetation types, therefore the PWA rates in the medium range (50-90 percent) for this factor.

Table 50. Southwestern Region underrepresented vegetation communities found in the Mount Graham Wilderness Study Area Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Mount Graham WSA PWA	Percent of Mount Graham WSA PWA	Percent Addition of Mount Graham WSA PWA to Wilderness
Interior Chaparral	5,608	9.1	1.6
Madrean Encinal Woodland	13,468	22.0	3.1
Madrean Pine Oak Woodland	10,089	16.5	5.1
Mixed Conifer Forest	5,216	8.5	1.8
Riparian Areas	27	0.0	0.1
Spruce Fir Forest	248	0.4	0.2
Grand Total	**34,656**	**56.5%**	**11.9%**

The Mount Graham WSA Potential Wilderness Area overall was rated as **low** for Need (for individual scores, see appendix G).

Santa Teresa Addition North Potential Wilderness Area Evaluation [PW-05-03-D4-004]

Area Overview

Size and Location: The Santa Teresa Addition North Potential Wilderness Area encompasses 3,072 acres. This PWA is adjacent to the existing Santa Teresa Wilderness. This area would be an expansion of the Santa Teresa Wilderness that is now 26,780 acres, bringing the overall size to 29,852 acres if recommended. This area is located in the Santa Teresa Mountains, which is part of the Safford Ranger District of the Coronado National Forest in southeastern Arizona (see Map 8 at the end of this document). The Santa Teresa Addition North PWA is overlapped by 494 acres of the Santa Teresa Inventoried Roadless Area, comprising 16 percent of the PWA.

Vicinity, Surrounding and Access: The Santa Teresa Addition North Potential Wilderness Area addition is approximately 30 miles northwest of Safford, Arizona and approximately 60 miles northeast of Tucson, Arizona within the Safford Ranger District in Graham County, Arizona. The PWA is completely surrounded by National Forest System (NFS) lands within the Forest boundary in the Pinaleño Mountains, except for a single private allotment adjoining the PWA boundary on the western side. The south side of the PWA adjoins the existing Santa Teresa Wilderness.

The primary motorized access to the Santa Teresa Ecosystem Management Area is provided by National Forest System Roads, including N. Terrace-Goodwin Wash Road (NFS Road 679) from the East and Landsman Camp Road (NFS Road 277) from the West. Goodwin Canyon Road (NFS Road 284) runs along the northern border of the PWA. Poncho Tank Road (NFS Road 941A) provides access up to the PWA boundary from the South. The only National Forest System Trail to traverse the Santa Teresa Addition North PWA is the Fisher Canyon Trail on the southeastern side. Nearby trails can be accessed on the existing Santa Teresa Wilderness, including Black Rock Trail, Holdout Trail, and Gardner Canyon Trail. These National Forest System Trails provide nonmotorized routes into and around the PWA.

Although there is physical motorized road access into the Santa Teresa Mountains, there is no permanent legal access to the NFS lands within the proclaimed National Forest System boundary for the entire mountain range. It is unknown whether there is any right-of-way for public access via those portions of roadway across the State Trust and private lands. In addition, the legal status of the county road system in the area has been under dispute for a number of years. Permanent legal public motorized road and nonmotorized trail access to the NFS lands into the Santa Teresa Mountains as well as the PWA will continue to be a major issue.

Boundaries: The boundary of this PWA is formed by the existing Santa Teresa Wilderness, a block of private land and a Forest Service road. The northern boundary was established along Goodwin Canyon Road (NFS Road 284).

Geography and Topography: The Santa Teresa Addition North Potential Wilderness Area (PWA) consists of an addition to the Santa Teresa Wilderness on the northwest side of the current Santa Teresa Wilderness Area. This area is in the Santa Teresa Mountains in Graham County and is located entirely within the Safford Ranger District, Coronado National Forest (CNF). This mountain range is bounded on the east by the San Carlos Indian Reservation and the Gila River and on the west by the Aravaipa Canyon and Aravaipa Creek. The Santa Teresa Addition North PWA consists of an irregular area that is approximately one half to two miles north-south and six

miles east-west. Encompassing an area of 3,072 acres, the Santa Teresa Addition North PWA consists of a thin strip encompassing Cobre Grande Mountain on the northwest and adjoining Goodwin Canyon on the northeast in the northern Santa Teresa Mountains.

The Santa Teresa Addition North PWA is situated along the northern portion of the Santa Teresa Mountains. The area extends from just east of the famous Head Center mine and just south of the Cobre Grande mine in Section 29, T5S, R20E, at an elevation of approximately 5,400 feet above sea level in the western part of the area to an east point in Section 31 T5S, R21E. The high point in the area is at an elevation of 7,159 feet at Cobre Grande Mountain near the center of the area. The topography is generally steep and mostly over a mile high. The low point is at 5,000 feet in Section 29 on the western side of the area in Tule Canyon. Jeep trails adjoin the northeastern boundary along South Fork Goodwin Canyon to Cottonwood spring. The topography is steep with several south or westward draining canyons, such as Tule Canyon, Copper Canyon, Cottonwood Canyon, Goat Canyon, and South Fork Goodwin Canyon. Cobre Grande Mountain forms the backbone of the addition, with the jeep trail along the South Fork of Goodwin Canyon forming the northeastern boundary. Details of the topography are shown on the Cobre Grande Mtn. and Jackson Mtn. 7 ½ minute U.S. Geological Survey quadrangles.

The Santa Teresa Mountains contain primarily Tertiary granite (Tg) dated at 22.8 Ma. These mountains are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona. The Santa Teresa granite was intruded into Early Proterozoic (younger Precambrian or 1650 – 1800 million years ago [Ma]) age metamorphic rocks (Pinal Schist) and Middle Proterozoic (1400 Ma) porphyritic biotite granite to granodiorite (Oracle Granite). The Santa Teresa Addition North PWA consists of Pinal Schist, Oracle Granite, and Tertiary Santa Teresa granite with several areas of Paleozoic limestones and sedimentary rocks. The intrusion of the mid-Tertiary granite was the causative pluton for the abundant mineralization in the adjoining Stanley and Aravaipa mining districts. The granitic intrusions into Paleozoic limestones and Pinal Schist are particularly favorable hosts for lead-zinc-silver mineralization.

Although there are many recorded mining claims in the area, no active mining claims are located in the Santa Teresa Addition North PWA and the area does not have historic production of metals or non-metals. However, to the immediate west of the western edge of the southwestern portion is the famous Head Center mine to the immediate north is the Cobre Grande mine. These are part of the Stanley mining district, which has had production of 1,900 tons of ore containing 143,000 pounds copper, 665,000 pounds lead, 200 oz gold, and 9,300 oz silver from 1905 through 1969 (Keith and others, 1983).

Appearance and Vegetation: The vegetation is largely unmodified pinyon, juniper and evergreen oak woodland and interior chaparral with the upper elevation reaching the lower Madrean Pine-oak woodlands. Species include Madrean evergreen oaks such as Emory oak (*Q. emoryi*), grey oak (*Q. grisea*), silverleaf oak (*Q. hypoleucoides*), Sonoran scrub oak (*Q. turbinella*) and netleaf oak (*Quercus rugosa*). Other tree species include border (*Pinus discolor*), twoneedle (*P. edulis*), and Arizona pinyons (*P. edulis var. fallax*), ponderosa pine (*P. ponderosa*), and alligator (*Juniperus deppeana*) and redberry junipers (*J. coahuilensis*). Interior chaparral shrub species include manzanita species (*Arctostaphylos spp*.), mountain mahogany (*Cercocarpus montanus*), fendler ceanothus (C*eanothus fendleri*), desert ceanothus (*C. greggii*), silktassel (*Garrya wrightii*), sugar (*Rhus ovate*) and skunkbush sumacs (*R. aromatica var. trilobata*) and hoptree (*Ptelea trifoliate*).

Rosette scrubs such as Agaves (*Agave spp.*), yuccas (*Yucca spp.*), sotol (*Dasylirion wheeleri*) and beargrass (*Nolina microcarpa*) as well as desert scrub species such as acacias (Acacia spp.), mimosas (Mimosa spp.) and mesquites (*Prosopis spp.*) are found on the warmer, lower elevations and aspects where the desert scrub grassland communities begin to appear. Cactus species such as cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia spp.*), and hedgehogs (*Echinocereus spp.*) are also common component of this warmer vegetative community. The ground cover is dominated by a very diverse community of mostly warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*).

Riparian areas have a variety of upland and riparian species, including netleaf hackberry (*Celtis reticulata*), velvet ash (*Fraxinus velutina*), Arizona walnut (*Juglans major*), cottonwood (*Populus fremontii*), Arizona sycamore (*Platanus wrightii*) and willows (*Salix spp.*). Historically, woody species have been removed where they are accessible and used as firewood or for utilization in the mines. Many if not most of the woody species resprout after harvesting and remain on the landscape. Fire suppression has contributed to plant communities across this landscape that is denser and ecologically older than the historical norm.

Current Uses: This isolated area has very limited recreational activity. These lands lie adjacent to the Santa Teresa Wilderness. There are two trails through the area used for hiking and horseback riding. There is a road along the north boundary, and a portion of this road runs through the northwest corner of the PWA. Roads are used for motorized touring and dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. Topography is rugged, so there is very limited cross-country travel through the PWA. There are three grazing allotments within the Santa Teresa Addition North Potential Wilderness Area. All of these allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

Vegetation within the Santa Teresa Addition North Potential Wilderness Area includes pine trees of varying sizes. Free-flowing waters are not present on this PWA, although stock tanks and dams may be found throughout. Night skies can be clearly seen and light pollution is not evident. The area contains only limited ecological conditions and habitats, with some variety of tree species but no unique wildlife. Although no rivers or streams have been sampled, there are no suggested or known water quality issues. Lehmann's lovegrass may be found in isolated spots on the PWA.

Undeveloped

The Santa Teresa Addition North Potential Wilderness Area has obvious signs of human activity, including Goodwin Road (284) and the Cobra Mine.

Opportunities for Solitude or Primitive and Unconfined Recreation

A recreationist may have moderate difficulty navigating the rough terrain on the Santa Teresa Addition North PWA. The opportunity to experience solitude while recreating within this PWA may be hindered by the sights and sounds from activities on the nearby Goodwin Road. Primitive recreation available on this area includes opportunities for hiking, hunting, horseback riding and backpacking.

Special Features

The Santa Teresa Addition North PWA does not contain any distinct or exceptional features. The area has little potential for scientific research, with no current activities underway. The area does not contain any unique, rare or listed species of plants or wildlife.

Manageability

Management of the area may be difficult due adequate access opportunities and resource conflicts with existing mining activity. As Goodwin Road crosses the PWA boundary, motorized vehicles are used within the area. There are no identified boundary changes that would enhance the area's wilderness character.

The Santa Teresa Addition North Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Santa Teresa Addition North Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. The Forest Service has a high degree of control over the land, with some military training conducted in the airspace. The area contains some sensitive species, such as screech owls, that require unplanned ignitions for habitat improvement. The area demonstrates a need for both unplanned and planned ignitions, which requires frequent entries with chainsaws and helicopters. Watersheds within the area contain some springs, although most are ephemeral. The area demonstrates a need for additional water storage and pipelines. The area is committed through permits for livestock grazing on three allotments: Black Rock, South Goodwin and North Reef. These current authorizations do not conflict with wilderness management or detract from wilderness qualities. There is no potential for timber production in the PWA. The Cobre Grande is an active mine located within the PWA, with potential for production of copper and gold. There are no cultural resources that will be affected by or interfere with wilderness management. The Santa Teresa Addition North Potential Wilderness Area is composed entirely of National Forest System lands, as is the majority of land adjacent to the potential boundary. The closest private land is approximately 0.1 miles from the potential wilderness area boundary and may impact the wilderness character of the area.

The Santa Teresa Addition North Potential Wilderness Area overall was rated as **medium** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Santa Teresa Addition North PWA, there are 28 designated wilderness areas totaling just over one million acres (see Table 51).

Table 51. Designated wilderness within 100 miles of the Santa Teresa Addition North Potential Wilderness Area

Wilderness Area	Acres
Aravaipa Canyon Wilderness	19,790
Bear Wallow Wilderness	11,113
Blue Range Primitive Area	179,819
Blue Range Wilderness	35,815
Chiricahua National Monument Wilderness	12,161
Coyote Mountains Wilderness	5,795
Dos Cabezas Mountains Wilderness	11,855
Escudilla Wilderness	5,210
Fishhooks Wilderness	11,400
Four Peaks Wilderness	60,487
Galiuro Wilderness	75,585
Hellsgate Wilderness	38,845
Mazatzal Wilderness	53,164
Mount Baldy Wilderness	7,627
Mount Wrightson Wilderness	25,596
Needle's Eye Wilderness	6,277
North Santa Teresa Wilderness	5,733
Peloncillo Mountains Wilderness	19,244
Pusch Ridge Wilderness	56,743
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
Saguaro Wilderness	77,119
Salome Wilderness	18,688
Salt River Canyon Wilderness	32,035
Santa Teresa Wilderness	28,769
Sierra Ancha Wilderness	18,198
Superstition Wilderness	158,920
White Canyon Wilderness	6,981
TOTAL	1,027,787

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the low range (less than 30 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are

limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Santa Teresa Addition North Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Santa Teresa Addition North Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Santa Teresa Addition North Potential Wilderness Area includes 3 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 52). Of these three vegetation communities, the Santa Teresa Addition North PWA would contribute to wilderness in the following vegetation types: Interior Chaparral (0.2 percent), Madrean Encinal Woodland (0.3 percent), and Madrean Pine Oak Woodland (0.3 percent). The vegetation communities in this PWA consist of 86.10 percent regionally underrepresented vegetation types, therefore the PWA rates in the medium range (50-90 percent) for this factor.

Table 52. Southwestern Region underrepresented vegetation communities found in the Santa Teresa Addition North Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Santa Teresa Addition North PWA	Percent of Santa Teresa Addition North PWA	Percent Addition of Santa Teresa Addition North PWA to Wilderness
Interior Chaparral	673	21.9	0.2
Madrean Encinal Woodland	1,430	46.5	0.3
Madrean Pine Oak Woodland	544	17.7	0.3
Grand Total	**2,647**	**86.1%**	**0.8%**

The Santa Teresa Addition North Potential Wilderness Area overall was rated as **low** for Need (for individual scores, see appendix G).

Santa Teresa Addition South Potential Wilderness Area Evaluation [PW-05-03-D4-005]

Area Overview

Size and Location: The Santa Teresa Addition South Potential Wilderness Area encompasses 3,217 acres. This PWA is adjacent to the existing Santa Teresa Wilderness. This area would be an expansion of the Santa Teresa Wilderness that is now 26,780 acres, bringing the overall size to 29,997 acres if recommended. This area is located in the Santa Teresa Mountains, which is part of the Safford Ranger District of the Coronado National Forest in southeastern Arizona (see Map 8 at the end of this document). The Santa Teresa Addition South PWA is overlapped by 2,519 acres of the Santa Teresa Inventoried Roadless Area, comprising 78 percent of the PWA.

Vicinity, Surroundings and Access: The Santa Teresa Addition South Potential Wilderness Area addition is approximately 30 miles northwest of Safford, Arizona and approximately 60 miles northeast of Tucson, Arizona within the Safford Ranger District in Graham County, Arizona. The PWA consists of two separate polygons that are completely surrounded by National Forest System (NFS) lands within the Forest boundary in the Santa Teresa Mountains. The PWA adjoins the existing Santa Teresa Wilderness.

The primary motorized access to the Santa Teresa Ecosystem Management Area is provided by National Forest System Roads. The western polygon can be accessed via Laurel Canyon Road (NFS Road 6630) or Reef Tank Road (NFS Road 68) off of Poncho Tank Road (NFS Road 941). Sand Tank Road (677) provides primary access to the eastern polygon. National Forest System Trails that traverse the Santa Teresa Addition South PWA include Cottonwood Mountain Trail and Black Canyon Trail on the eastern polygon and Holdout Trail on the western polygon. Nearby trails can be accessed on the existing Santa Teresa Wilderness, including Black Rock Trail and Gardner Canyon Trail. These National Forest System Trails provide nonmotorized routes into and around the PWA.

Although there is physical motorized road access into the Santa Teresa Mountains, there is no permanent legal access to the NFS lands within the proclaimed national forest boundary for the entire mountain range. It is unknown whether there is any right-of-way for public access via those portions of roadway across the State Trust and private lands. In addition, the legal status of the county road system in the area has been under dispute for a number of years. Permanent legal public motorized road and nonmotorized trail access to the NFS lands into the Santa Teresa Mountains as well as the PWA will continue to be a major issue.

Boundaries: The boundaries of the two polygons that make up this PWA are formed by the existing Santa Teresa Wilderness, as well as natural features, such as ridgelines and high points, in the Santa Teresa Mountains.

Geography and Topography: The Santa Teresa Addition South Potential Wilderness Area (PWA) consists of two additions to the Santa Teresa Wilderness, one on the southwest and one on the southeast. This area is in the Santa Teresa Mountains in Graham County and is located entirely within the Safford Ranger District, Coronado National Forest (CNF). This mountain range is bounded on the east by the San Carlos Indian Reservation and the Gila River and on the west by the Aravaipa Canyon and Aravaipa Creek. The Santa Teresa Addition South PWA consists of two nearly triangular areas that are each about one to one and a half miles wide and one to two miles north to south. Encompassing an area of 3,217 acres, the Santa Teresa Addition

South Addition PWA consists of much of the remaining CNF property in the southern Santa Teresa Mountains

The Santa Teresa Addition South PWA is situated along the southwestern and southeastern flanks of the Santa Teresa Mountains. The southwestern area extends from just north of the Dog Water mine and a prospect in Section 33, T6S, R22E, at an elevation of approximately 4,300 feet above sea level in the southwestern part of the area to a north point in Section 22, T6S, R21E. The high point in the area is at an elevation of 6,365 feet near the center of the southwestern area. The topography is generally steep and mostly over a mile high. The southeastern area extends from Limestone Canyon on the west north part of Section 4, T7S, R 21E, to near Dark Canyon Spring on the north in Section 25, T6S, R21E. The high point in the area is near the center north part at 6,740 feet and the low point is at 4,800 feet in Section 36 on the northeast side of the area. Pack trails cross the southwesternmost and northeasternmost portions of the southeastern Santa Teresa Addition South PWA. The topography is not as steep in Cottonwood Canyon on the east, but is steeper in the eastern portion of the southwestern area. Details of the topography are shown on the Buford Hill, Jackson Mtn., Klondyke, and Cobre Grande 7 ½ minute U.S. Geological Survey quadrangles.

The Santa Teresa Mountains contain primarily Tertiary granite (Tg) dated at 22.8 Ma. These mountains are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona. The Santa Teresa granite was intruded into Early Proterozoic (younger Precambrian or 1650 – 1800 million years ago [Ma]) age metamorphic rocks (Pinal Schist) and Middle Proterozoic (1400 Ma) porphyritic biotite granite to granodiorite (Oracle Granite). The majority of the southwestern Santa Teresa Addition South PWA is Tertiary granite and the southeastern area is Pinal Schist and Oracle Granite. The intrusion of the mid-Tertiary granite was the causative pluton for the abundant mineralization in the adjoining Aravaipa mining district.

Although there are many recorded claims from the 1980s 1990s and 2000, no active mining claims are located in the Santa Teresa Addition South PWA and the area does not have historic production of metals or non-metals. However, to the immediate west of the western edge of the southwestern portion is the very famous Grand Reef mine and the Dog Water mine. These are part of the Aravaipa mining district, which has had production of 280,000 tons of ore containing 1,906,000 pounds copper, 34,392,000 pounds lead, 27,863 pounds zinc, 4,400 oz gold, and 363,000 oz silver from 1901 through 1971. No historic mines are close to the southeastern portion of the Santa Teresa Addition South PWA.

Appearance and Vegetation: The vegetation is largely unmodified pinyon, juniper and evergreen oak woodland and interior chaparral with the upper elevation reaching the lower Madrean Pine-oak woodlands. Species include Madrean evergreen oaks such as Emory oak (*Q. emoryi*), grey oak (*Q. grisea*), silverleaf oak (*Q. hypoleucoides*), Sonoran scrub oak (*Q. turbinella*) and netleaf oak (*Quercus rugosa*). Other tree species include border (*Pinus discolor*), twoneedle (*P. edulis*), and Arizona pinyons (*P. edulis var. fallax*), ponderosa pine (*P. ponderosa*), and alligator (*Juniperus deppeana*) and redberry junipers (*J. coahuilensis*). Interior chaparral shrub species include manzanita species (*Arctostaphylos spp*.), mountain mahogany (*Cercocarpus montanus*), fendler ceanothus (C*eanothus fendleri*), desert ceanothus (*C. greggii*), silktassel (*Garrya wrightii*), sugar (*Rhus ovate*) and skunkbush sumacs (*R. aromatica var. trilobata*) and hoptree (*Ptelea trifoliate*).

Rosette scrubs such as Agaves (*Agave spp.*), yuccas (*Yucca spp.*), sotol (*Dasylirion wheeleri*) and beargrass (*Nolina microcarpa*) as well as desert scrub species such as acacias (Acacia spp.),

mimosas (Mimosa spp.) and mesquites (*Prosopis spp.*) are found on the warmer, lower elevations and aspects where the desert scrub grassland communities begin to appear. Cactus species such as cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia spp.*), and hedgehogs (*Echinocereus spp.*) are also common component of this warmer vegetative community. The ground cover is dominated by a very diverse community of mostly warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*).

Riparian areas have a variety of upland and riparian species, including netleaf hackberry (*Celtis reticulata*), velvet ash (*Fraxinus velutina*), Arizona walnut (*Juglans major*), cottonwood (*Populus fremontii*), Arizona sycamore (*Platanus wrightii*) and willows (*Salix spp.*). Historically, woody species have been removed where they are accessible and used as firewood or for utilization in the mines. Many if not most of the woody species resprout after harvesting and remain on the landscape. Fire suppression has contributed to plant communities across this landscape that is denser and ecologically older than the historical norm.

Current Uses: This isolated area has very limited recreational activity. These lands lie adjacent to the Santa Teresa Wilderness. There is one trail through the area and two trails on the boundary, and trails are used for hiking and horseback riding. One road ends at the boundary, and although this road is currently in use, it has been recommended for conversion to a nonmotorized trail. Topography is rugged, so there is very limited cross-country travel through the PWA. There are five grazing allotments within the Santa Teresa Addition South Potential Wilderness Area. All of these allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

Vegetation within the Santa Teresa Addition South Potential Wilderness Area is limited to one vegetation community. Free-flowing waters are not present on this PWA, although stock tanks and dams may be found throughout. Night skies can be clearly seen and light pollution is not evident. The area contains only limited ecological conditions and habitats, with no unique wildlife or plant species. Although no rivers or streams have been sampled, there are no suggested or known water quality issues. Lehmann's lovegrass may be found in isolated spots on the PWA.

Undeveloped

The Santa Teresa Addition South Potential Wilderness Area has little to no evidence of human activity, therefore the area remains largely undeveloped.

Opportunities for Solitude or Primitive and Unconfined Recreation

A recreationist may face challenging obstacles when navigating the highly rugged terrain on the Santa Teresa Addition South PWA, including traversing over steep country with thick brush. The

opportunity to experience solitude while recreating within this PWA may be hindered by the sights and sounds coming from communities on the eastern side. Primitive recreation available on this area includes opportunities for hiking, hunting, horseback riding and backpacking.

Special Features

The Santa Teresa Addition South PWA does not contain any distinct or exceptional features. The area has little potential for scientific research, with no current activities underway. The area does not contain any unique, rare or listed species of plants or wildlife.

Manageability

The manageability of this area rates highly because the addition lies contiguous with the existing Santa Teresa Wilderness. No encumbrances or resources conflicts exist on the PWA. Motorized vehicle use occurs on the roads in the West polygon. There are no identified boundary changes that would enhance the area's wilderness character.

The Santa Teresa Addition South Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Santa Teresa Addition South Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. The Forest Service has a high degree of control over the land, with some military training conducted in the airspace. The area contains some sensitive species, such as screech owls, that require unplanned ignitions for habitat improvement. The area demonstrates a need for both unplanned and planned ignitions, which requires frequent entries with chainsaws and helicopters. Watersheds within the area contain some springs, including Cottonwood Creek, although most are ephemeral. The area demonstrates a need for additional water storage and pipelines. The area is committed through permits for livestock grazing on five allotments: VJ, Foster, Laurel Canyon, South Grand Reef, and Jakes. These current authorizations do not conflict with wilderness management or detract from wilderness qualities. There is no potential for timber production in the PWA. There is little or no potential for extraction of locatable minerals. There are no cultural resources that will be affected by or interfere with wilderness management. The Santa Teresa Addition South Potential Wilderness Area is composed entirely of National Forest System lands, as is the land adjacent to the potential boundary. The closest private land is approximately 0.2 miles from the potential wilderness area boundary and may impact the wilderness character of the area.

The Santa Teresa Addition South Potential Wilderness Area overall was rated as **medium** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Santa Teresa Addition South PWA, there are 28 designated wilderness areas totaling just over one million acres (see Table 53).

Table 53. Designated wilderness within 100 miles of the Santa Teresa Addition South Potential Wilderness Area

Wilderness Area	Acres
Aravaipa Canyon Wilderness	19,790
Bear Wallow Wilderness	11,113
Blue Range Primitive Area	179,819
Blue Range Wilderness	35,815
Chiricahua National Monument Wilderness	12,161
Chiricahua Wilderness	88,793
Coyote Mountains Wilderness	5,795
Dos Cabezas Mountains Wilderness	11,855
Escudilla Wilderness	5,210
Fishhooks Wilderness	11,400
Four Peaks Wilderness	60,487
Galiuro Wilderness	75,585
Miller Peak Wilderness	20,381
Mount Baldy Wilderness	7,627
Mount Wrightson Wilderness	25,596
Needle's Eye Wilderness	6,277
North Santa Teresa Wilderness	5,733
Peloncillo Mountains Wilderness	19,244
Pusch Ridge Wilderness	56,743
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
Saguaro Wilderness	77,119
Salome Wilderness	18,688
Salt River Canyon Wilderness	32,035
Santa Teresa Wilderness	28,769
Sierra Ancha Wilderness	18,198
Superstition Wilderness	158,920
White Canyon Wilderness	6,981
TOTAL	1,044,952

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness

within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the low range (less than 30 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Santa Teresa Addition South Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Santa Teresa Addition South Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Santa Teresa Addition South Potential Wilderness Area includes 3 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 54). Of these three vegetation communities, the Santa Teresa Addition South PWA would contribute to wilderness in the following vegetation types: Interior Chaparral (0.2 percent), Madrean Encinal Woodland (0.4 percent) and Madrean Pine Oak Woodland (0.2 percent). The vegetation communities in this PWA consist of 87.70 percent regionally underrepresented vegetation types, therefore the PWA rates in the medium range (50-90 percent) for this factor.

Table 54. Southwestern Region underrepresented vegetation communities found in the Santa Teresa Addition South Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Santa Teresa Addition South PWA	Percent of Santa Teresa Addition South PWA	Percent Addition of Santa Teresa Addition South PWA to Wilderness
Interior Chaparral	667	20.7	0.2
Madrean Encinal Woodland	1,780	55.3	0.4
Madrean Pine Oak Woodland	377	11.7	0.2
Grand Total	**2,824**	**87.7%**	**0.8%**

The Santa Teresa Addition South Potential Wilderness Area overall was rated as **low** for Need (for individual scores, see appendix G).

Mount Graham Addition Potential Wilderness Area Evaluation [PW-05-03-D4-008]

Area Overview

Size and Location: The Mount Graham Addition Potential Wilderness Area encompasses 16,728 acres. This PWA is adjacent to the existing Mount Graham Wilderness Study Area (WSA). This area would be an expansion of the Mount Graham Wilderness Study Area that is now 61,315 acres, bringing the overall size to 78,043 acres if recommended. This area is located in the Pinaleño Mountains, which is part of the Safford Ranger District of the Coronado National Forest in southeastern Arizona (see Map 9 at the end of this document). The Mount Graham Addition PWA is overlapped by 12,828 acres of the Pinaleño Inventoried Roadless Area, comprising 77 percent of the PWA.

Vicinity, Surrounding and Access: The Mount Graham Addition Potential Wilderness Area addition is approximately 35 miles southwest of Safford, Arizona and approximately 65 miles northeast of Tucson, Arizona within the Safford Ranger District in Graham County, Arizona. The PWA is completely surrounded by National Forest System (NFS) lands within the Forest boundary in the Pinaleño Mountains. The PWA is also within close proximity to the small, unincorporated communities of Turkey Flat, Bryce, Pima, and Central. The east side of the PWA adjoins the Mount Graham Wilderness Study Area. The closest private land is approximately 0.3 miles from the PWA boundary.

The primary motorized access to the Pinaleño Ecosystem Management Area is provided by Graham County-maintained roads from U.S. Highway 70 between Bryce and Swift Trail Junction, Arizona and from the end of State Highway 266 at Bonita, Arizona. In addition, Ft. Grant Road, (a Cochise and Graham Counties-maintained road) provides motorized access from Interstate 10 at Willcox, Arizona.

The major access road branching from U.S. Highway 70 into the northern portion of the PWA is Tripp Canyon Road (NFS Road 286). North Taylor Road (NFS Road 156), Dead Steer Mesa Road (NFS Road 6611), and Two Troughs Spring Tank Road (NFS Road 6609) provide access points from the North. The primary access road to the South is South Taylor Road (NFS Road 509). These roads cross through private and State lands to reach the national forest boundary before entering the PWA. While some Forest Service roads enter the PWA from the South, primary access comes from the northern roads. Several of these roads transition into National Forest System Trails. North and South Taylor Road join as Taylor Trail in the center of the PWA. Another road entering the PWA from the North, Bellows Canyon Road (NFS Road 675), turns into John's Canyon Trail once it reaches the PWA boundary. Many additional trails traverse the PWA lands, including Blue Jay Ridge Trail and Clark Peak Trail. Nearby trails include Hell's Hole Trail, Nuttall Trail, and Jesus Babcock Trail. These National Forest System Trails provide nonmotorized access to the PWA.

Although there is physical motorized road access into the Pinaleño Mountains, there is limited permanent legal access to the NFS lands within the proclaimed National Forest System boundary for the entire mountain range. It is unknown whether there is any right-of-way for public access via those portions of roadway across the State Trust and private lands. In addition, the legal status of the county road system in the area has been under dispute for a number of years. Permanent legal public motorized road and nonmotorized trail access to the NFS lands into the Pinaleño Mountains as well as the PWA will continue to be a major issue.

Boundaries: The eastern side of the PWA boundary has been formed along the existing Mount Graham Wilderness Study Area. The boundary also buffers around Tripp Canyon Cutoff Road (NFS Road 351) from the North. The remaining boundary lines follow natural features, such as ridgelines and high points, in the Pinaleño Mountains.

Geography and Topography: The Mount Graham Addition Potential Wilderness Area (PWA) encompasses the northwestern part of the arcuate, northwest-trending Pinaleño Mountains. This mountain range is bounded on the east by the San Simon Valley and on the west by the Sulphur Spring Valley and Aravaipa Creek. The Mount Graham Addition PWA is a nearly circular area that is approximately six miles wide in diameter and is located in Graham County. This PWA is located entirely within the Safford Ranger District, Coronado National Forest (CNF). Encompassing an area of 16,728 acres, the Mount Graham Addition PWA consists of most of northwestern part of the Pinaleño Mountain range. The Mount Graham Addition PWA is bisected by the road to the Blue Jay Peak lookout. Additional roads and trails follow the various canyons, such as the Bellows Canyon road and trail to a prospect in Section 10 in the western part of the Mount Graham Addition PWA.

The Mount Graham Addition PWA is situated along the northwest-trending crest of the northwestern Pinaleño Mountains. The area extends from the north-trending Blue Jay Ridge in the eastern portion of the area to Cedar Mountain in the northwestern part of the area. The area is drained by numerous south or southwest-trending canyons on the south side of the ridge. These canyons include South Taylor Canyon on the east, Van Valer Canyon, President Canyon, Lindsey Canyon. Most canyons contain roads and jeep trails that lead to pack trails. The area is drained by numerous north or northeast-trending canyons on the north side of the area. These canyons include North Taylor Canyon, Mexican Canyon, Little Righthand Canyon, Wide Mouth Canyon, and Tripp Canyon, which borders the PWA. Northwest-draining canyons in the north part of the Mount Graham Addition PWA include Sawmill Canyon and Johns Canyon. Most of these canyons contain jeep trails leading to springs, water tanks, or West Peak. On the east side of the Mount Graham Addition PWA, the jeep trail from Colter Spring leads northward up South Taylor Canyon through Taylor Pass to a pack trail northward down North Taylor Canyon.

The Mount Graham Addition PWA rises from 4,465 feet above sea level at Tripp Canyon on the northeastern edge to a maximum elevation of approximately 8,860 feet at Blue Jay Peak, 8,684 feet at the West Peak lookout tower, and 6,690 feet at Cedar Mountain in the western part of the PWA. Details of the topography are shown on the Tripp Canyon and Blue Jay Peak 7 ½ minute quadrangles from the U. S. Geological Survey.

The Pinaleño Mountains contain primarily Precambrian metamorphic and igneous rocks. These mountains are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona. The geology is characterized by Early Proterozoic (younger Precambrian or 1650 – 1800 million years ago [Ma]) age metamorphic rocks (Pinal Schist) intruded by Middle Proterozoic (1400 Ma) porphyritic biotite granite to granodiorite (Oracle Granite). The majority of the Mount Graham Addition PWA is Pinal Schist and the northern tip of the PWA is Oracle Granite.

No active mining claims are located in the Mount Graham Addition PWA and the area does not have historic production of metals or non-metals. However, to the north of the western edge of the Mount Graham Addition PWA, the Clark mining district to the north and the Black Hawk mining district to the northwest are historic lead-zinc-silver mining districts. The historic President mine in Section 22 to the immediate southwest of the PWA had minor tungsten

production. The similar geology to these past producers indicates a potential for future mineral exploration.

Appearance and Vegetation: Due to the steep topography of the Pinaleño Mountains, the vegetation is largely unmodified pinyon, juniper and evergreen oak woodland communities, Madrean pine-oak woodlands, ponderosa evergreen forest, and mixed-conifer forests. Portions of the PWA and WSA that are lower in elevation and with warmer topographic aspects will contain vegetative communities more closely aligned with desert grasslands and desert scrub.

Common Madrean evergreen oaks species found include Arizona white oak (*Quercus arizonica*), Emory oak (*Q. emoryi*), gray oak (*Q. grisea*), netleaf oak (*Q. rugosa*) and silverleaf oak (*Q. hypoleucoides*). Conifer tree species include pinyon pine (*Pinus discolor*), Chihuahua (*P. leiophylla*), Arizona (*P. arizonica*), Apache (*P. engelmannii*), ponderosa (*P. ponderosa*) and southwestern white pine (*P. strobiformis*), Arizona cypress (*Hesperocyparis arizonica*), alligator (*Juniperus deppeana*) and redberry juniper (*J. coahuilensis*). Higher elevation forest exist in these areas and trees such as white fir (*Abies concolor*), Douglas-fir (*Pseudotsuga menziesii*), quaking aspen (*Populus tremuloides*), rocky mountain maple (*Acer glabrum*), bigtooth maple (*A. grandidentatum*), box elder (*A. negundo*), Scouler's willow (*Salix scouleriana*) and Gambel oak (*Q. gambelii*) are common. Chaparral and shrub species include manzanita (*Arctostaphylos spp*.), desert ceanothus (*Ceanothus greggii*), mountain mahogany (*Cercocarpus montanus*), silktassles (*Garrya wrightii.),* fendler ceanothus (*C. fendleri*), shrub live oak (*Q. turbinella*), rock spray (*Holodiscus discolor),* and sumacs (*Rhus spp.*). Riparian streams are found throughout these areas and contain cottonwood (*Populus fremontii*), Arizona sycamore (*Platanus wrightii*), willows (*Salix spp.*), Arizona alder (*Alnus oblongifolia*), and ash (*Fraxinus velutina*) among others.

Rosette scrubs such as Agaves (*Agave spp.*), yuccas (*Yucca spp.*), sotol (*Dasylirion wheeleri*) and beargrass (*Nolina microcarpa*) as well as desert scrub species such as acacias (Acacia spp.), mimosa (Mimosa spp.) and mesquite (*Prosopis spp.*) are found on the warmer, lower elevations and aspects where the desert scrub grassland communities begin to appear. Cactus species such as cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia spp.*), and hedgehogs (*Echinocereus spp.*) are also common component of this warmer vegetative community.

The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*B. curtipendula*), Rothrock grama (*B. rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) and Texas bluestem (*Schizachyrium cirratum*).

Historically, many canyon bottoms were logged to provide wood for nearby communities, but second growth has matured. Fire suppression has allowed for more dense stands than may have been present historically while several large wildfires have since 1995 have burned 40,000 over acres in the Pinaleño Mountains.

Current Uses: Visitors use this PWA for a variety of recreational activities. The five trails running through the area are used for hiking and horseback riding. Roads adjacent to the boundary, and one road "cherry stemmed" into the area, are used for motorized touring and dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. A motorized trail to West Peak Lookout lies within this PWA. Topography is rugged, so there is very limited cross-country travel through the PWA. There are three grazing allotments within the Mount Graham Addition Potential Wilderness Area. All of these allotments are active and valid permitted uses. This PWA is within Fire Management 1

(FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

The Mount Graham Addition Potential Wilderness Area contains diverse plant communities, from Douglas fir to juniper. Stock ponds and water diversions impact the free-flowing condition of waterways on this PWA. Night skies can be clearly seen and light pollution is not evident. The biological diversity in the area includes a mixture of habitats and ecological conditions. Unique wildlife found within the boundaries are the Mexican spotted owl, goshawk, and potentially the Mount Graham Red Squirrel. The area contains a diverse amount of natural resources similar to the existing Mount Graham Wilderness Study Area. Although no rivers or streams have been sampled, there are no known water quality issues. Lehmann's lovegrass may be found in isolated spots at lower elevations on the PWA.

Undeveloped

The Mount Graham Addition Potential Wilderness Area has obvious evidence of human activity, including a tower, repeater, cabin and vehicle activity.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area contains some challenging trails through Taylor Pass, with some opportunities to experience solitude. However, a fair amount of camping takes place within the PWA, which may impact the feeling of isolation. Primitive recreation on the Mount Graham Addition PWA may include hiking, hunting, camping and backpacking.

Special Features

While the area has no distinct rock formations, the diverse vegetation communities serve as an outstanding feature on this PWA. Some opportunities for scientific research exist throughout the area, including tree ring research and fire reconstruction studies. Unique wildlife such as the Mexican spotted owl, goshawk, and possibly Mount Graham Red Squirrel may be found within this PWA.

Manageability

The ability to manage the area for wilderness character might be encumbered by historic use, roads, and push-back from the local community. The area has traditionally served as an excellent fuelwood source, therefore management would be conflicted with this previous use. Motorized vehicles are currently being used to travel the road to the repeater and the mountain lookout. There are no identified boundary changes that would enhance the area's wilderness character.

The Mount Graham Addition Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Mount Graham Addition Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. The Forest Service has a high degree of control over the land, with some military training operations in the airspace. The area contains four threatened or endangered species that may be located in the PWA, which require planned ignitions for habitat improvements. The area demonstrates a need for mechanized, aerial, and motorized vegetation treatments every 2-20 years. Failing to treat using current methods could mean loss of private property downslope. Watersheds within the area contain some springs, although most are ephemeral. Water storage, dirt tanks, and spring developments exist throughout the PWA, with a demonstrated need for additional small developments for livestock and wildlife. The area is committed through permits for livestock grazing on three allotments: Cedar Springs, Shingle Mill and Seventy-Six. These current authorizations do not conflict with wilderness management or detract from wilderness qualities. There is minimal potential for fuelwood production in the PWA. There is little or no potential for extraction of locatable minerals. The West Peak Lookout Cabin qualifies as a Traditional Cultural Property and is eligible as a historic site under the National Historic Preservation Act. Protection and maintenance of this site may interfere with wilderness management. The Mount Graham Addition Potential Wilderness Area is composed entirely of National Forest System lands, as is the land adjacent to the potential boundary. The closest private land is approximately one third of a mile from the potential wilderness area boundary and will not likely impact the wilderness character of the area.

The Mount Graham Addition Potential Wilderness Area overall was rated as **low** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Mount Graham Addition PWA, there are 28 designated wilderness areas totaling just over one million acres (see Table 55).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 55. Designated wilderness within 100 miles of the Mount Graham Addition Potential Wilderness Area

Wilderness Area	Acres
Aravaipa Canyon Wilderness	19,790
Bear Wallow Wilderness	11,113
Blue Range Primitive Area	179,819
Blue Range Wilderness	35,815
Chiricahua National Monument Wilderness	12,161
Chiricahua Wilderness	88,793
Coyote Mountains Wilderness	5,795
Dos Cabezas Mountains Wilderness	11,855
Escudilla Wilderness	5,210
Fishhooks Wilderness	11,400
Four Peaks Wilderness	60,487
Galiuro Wilderness	75,585
Miller Peak Wilderness	20,381
Mount Baldy Wilderness	7,627
Mount Wrightson Wilderness	25,596
Needle's Eye Wilderness	6,277
North Santa Teresa Wilderness	5,733
Peloncillo Mountains Wilderness	19,244
Pusch Ridge Wilderness	56,743
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
Saguaro Wilderness	77,119
Salome Wilderness	18,688
Salt River Canyon Wilderness	32,035
Santa Teresa Wilderness	28,769
Sierra Ancha Wilderness	18,198
Superstition Wilderness	158,920
White Canyon Wilderness	6,981
TOTAL	1,044,952

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands,

the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Mount Graham Addition Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Mount Graham Addition Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Mount Graham Addition Potential Wilderness Area includes 4 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 56). Of these four vegetation communities, the Mount Graham Addition PWA would contribute to wilderness in the following vegetation types: Interior Chaparral (0.4 percent), Madrean Encinal Woodland (0.8 percent), Madrean Pine Oak Woodland (2.5 percent) and Mixed Conifer Forest (0.2 percent). The vegetation communities in this PWA consist of 64.00 percent regionally underrepresented vegetation types, therefore the PWA rates in the medium range (50-90 percent) for this factor.

Table 56. Southwestern Region underrepresented vegetation communities found in the Mount Graham Addition PWA

Underrepresented Vegetation Communities	Acres within Mount Graham Addition PWA	Percent of Mount Graham Addition PWA	Percent Addition of Mount Graham Addition PWA to Wilderness
Interior Chaparral	1,550	9.3	0.4
Madrean Encinal Woodland	3,536	21.1	0.8
Madrean Pine Oak Woodland	4,951	29.6	2.5
Mixed Conifer Forest	667	4.0	0.2
Grand Total	**10,704**	**64.0%**	**3.9%**

The Mount Graham Addition Potential Wilderness Area overall was rated as **low** for Need (for individual scores, see appendix G).

Samaniego Ridge Potential Wilderness Area Evaluation [PW-05-03-D5-001]

Area Overview

Size and Location: The Samaniego Ridge Potential Wilderness Area encompasses 15,156 acres. This area is located in the Santa Catalina Mountains, which is part of the Santa Catalina Ranger District of the Coronado National Forest that is adjacent to the Tucson metropolitan area in southeastern Arizona (see Map 12 at the end of this document). The Samaniego Ridge PWA is overlapped by 11,873 acres of the Oracle Inventoried Roadless Area, comprising 78 percent of the PWA. This PWA is also overlapped by 1,852 acres of the Canada del Oro Inventoried Roadless Area, which makes up 12 percent of the PWA. The entire Samaniego Ridge PWA is composed of 90 percent inventoried roadless areas.

Vicinity, Surroundings and Access: The Samaniego Ridge Potential Wilderness Area (PWA) is approximately 18 miles north of Tucson, Arizona, within the Santa Catalina Ranger District. The PWA is in the Samaniego Ridge/Cañada Del Oro area on the northwest side of the Santa Catalina Mountains. The Pusch Ridge Wilderness Area is located nearby, as well as Mount Lemmon Ski Valley and Catalina State Park.

State Highway 77 connects the Tucson metropolitan area to Oro Valley, Catalina, Oracle Junction and Oracle. This highway is within close proximity to the Santa Catalina Mountains and the west side of the PWA. State Highway 77 also provides motorized access to Catalina State Park, which is located on National Forest System (NFS) lands. Catalina State Park provides motorized access to Sutherland Trailhead (NFS Trail 6). Sutherland Trail provides nonmotorized trail access into Cargodera Canyon and the Pusch Ridge Wilderness Area. Sutherland Trail connects to Cargodera Canyon Road (NFS Road 643), Cañada Del Oro Trail (NFS Trail 4) and Mount Lemmon Trail (NFS Trail 5). Sutherland Trail traverses within a couple hundred feet of the southern end of the PWA. A park entrance fee is required to access the Sutherland Trail from Catalina State Park.

Golder Ranch Road (Pima County-maintained) provides motorized access from State Highway 77 across private and State Trust lands to Cargodera Canyon Road (NFS Road 643) and Lago Del Oro Parkway. Cargodera Canyon Road provides motorized access for high-clearance four-wheel-drive vehicles to within approximately ½ mile of the PWA. Lago Del Oro Parkway (Pima/Pinal County-maintained) provides motorized access from Golder Ranch Road to Charouleau Gap Road (NFS Road 736). Charouleau Gap Road provides motorized access for high-clearance four-wheel-drive vehicles to Deer Park Tank Road (NFS Road 4432), Samaniego Ridge Trail (NFS Trail 7) and Cañada Del Oro Trail (NFS Trail 4). Charouleau Gap Road and Deer Park Tank Road both come within approximately ½ mile of the PWA. The Arizona Game and Fish Department has a perpetual public recreational right-of-way for the portion of Charouleau Gap Road across State Trust land from Lago Del Oro Parkway to the national forest boundary. Samaniego Trail provides nonmotorized trail access from Charouleau Gap Road through the heart of the PWA along Samaniego Ridge to Cañada Del Oro Trail and Sutherland Trail. Cañada Del Oro Trail provides nonmotorized trail access from Charouleau Gap Road through the heart of the PWA along Cañada Del Oro to Red Ridge Trailhead (NFS Trail 2) and Samaniego Trail.

Control Road (NFS Road 38) is the primary motorized access route to the north side of the Santa Catalina Mountains from State Highway 77 and the unincorporated community of Oracle to General Hitchcock Highway (NFS Road 833) and the unincorporated community of Summerhaven. Control Road also provides motorized access to Oracle Ridge Trailhead (NFS

Trail 1). Oracle Ridge Trail provides nonmotorized trail access to Catalina Camp Trail (NFS Trail 401) and the unincorporated community of Oracle. Catalina Camp Trail provides nonmotorized trail access to Red Ridge Trailhead.

General Hitchcock Highway is the primary motorized access route to the south side of the Santa Catalina Mountains from the Tucson metropolitan area to the unincorporated community of Summerhaven. General Hitchcock Highway connects to Ski Run Road (NFS Road 11). Ski Run Road provides motorized access to Red Ridge Trailhead, Mount Lemmon Ski Valley, Mount Lemmon Trailhead (NFS Trail 5) and the top of Mount Lemmon. Mount Lemmon Trail is the primary nonmotorized trail access to Sutherland Trail and Samaniego Trail.

There is no motorized road access into the PWA. Although there appears to be adequate motorized access to the NFS lands near the PWA, the closest motorized road access is approximately ½ mile to the west and north sides of the PWA and can only be traveled by high-clearance four-wheel-drive vehicles. It appears nonmotorized trail access is adequate.

Boundaries: The boundary of this PWA follows natural features, such as ridgelines and high points, in the Santa Catalina Mountains. The northern boundary was established along Charouleau Gap Road (NFS Road 736), while a section of the eastern boundary follows Red Ridge Trail.

Geography and Topography: Located along the western flank of the Santa Catalina Mountains, the Samaniego Ridge Potential Wilderness Area (PWA) occupies the headwaters of Cañada del Oro Wash and straddles the crest of Samaniego Ridge. Covering an area of 15,156 acres, this PWA rises from a low point of 3,280 feet above sea level along the western flank of the range to a maximum elevation of approximately 8,686 feet at an unnamed peak along the southeastern boundary of the PWA. This PWA is located entirely within the Santa Catalina Mountains Unit of the Santa Catalina Ranger District, Coronado National Forest.

The northwest-trending Santa Catalina-Rincon Mountains structural block is typical of the Southern Basin and Range Province in southeastern Arizona. The PWA is located at the western edge of the Mexican Highlands Subprovince from the Sonoran Desert Subprovince. It is bounded by the Santa Cruz River Basin to the southwest and the San Pedro River Valley to the northeast. The Santa Catalina Range is underlain by a large metamorphic core complex, which extends into the Rincon Mountains to the southeast. The mountain is underlain by granitic gneiss, Precambrian Oracle Granite, Wilderness Granite and a very large intrusive body of Eocene age. These rocks were subjected to high temperatures and great pressures prior to being rapidly uplifted during middle Tertiary time to form a northwest-elongated, arcuate domal structure. Intrusive and highly metamorphosed rocks within its core are exposed along the west-southwestern flanks and in central portions of the Santa Catalina and Rincon Mountains. Located along the limbs of this domal structure, variably metamorphosed, folded and faulted remnants of late Precambrian to early Cretaceous sediments are preserved along the northeastern and eastern flanks of the Santa Catalina and Rincon Mountains and the southwestern flank of the Rincon Mountains. The Samaniego Ridge PWA is located along the steep, precipitous western flank of the Santa Catalina Mountains, where a major range-bounding fault has terminated the range. This area is almost entirely underlain by the Catalina Granite, a large stock of late Oligocene age.

Appearance and Vegetation: The vegetation consists of over 70 percent evergreen oak woodland communities. Species include Madrean evergreen oaks, such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), gray oak (*Quercus grisea*), and silverleaf oak (*Quercus hypoleucoides*). Other tree species [including pinyon pines (*Pinus cembroides* and

Pinus monophylla), Chihuahua pine (*Pinus leiophylla*), Arizona cypress (*Hesperocyparis arizonica*) and alligator juniper (*Juniperus deppeana*)] and interior chaparral species [including manzanita spp. (*Arctostaphylos spp*.), desert ceanothus (*Ceanothus greggii*), mountain mahogany (*Cercocarpus montanus*), silktassles (*Garrya wrightii),* Stansbury cliffrose (*Purshia stansburiana*), shrub live oak (*Quercus turbinella*) and sumacs (*Rhus spp.*)] may be present, but do not codominate. The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) or Texas bluestem (*Schizachyrium cirratum*). About half of this area has recently been severely burned and is recovering as grassland, with many tree species sprouting.

The remaining area is divided between mixed conifer at the highest elevations and shrub mixes at the lowest elevations. The dominant trees in the mixed conifer areas are Douglas-fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*), southwestern white pine (*Pinus strobiformis*) and lesser amounts of white fir (*Abies concolor*). The shrub mix consists of "evergreen" shrubs such as cacti [barrels (*Ferocactus spp.*), hedgehogs (*Echinocactus spp.*), prickly-pear and cholla (*Opuntia spp.*), etc.], agaves [desert spoon (*Dasyliron wheeleri*), agaves and shin-dagger (*Agave spp.*)], beargrass (*Nolina microcarpa*), soap-tree yucca (*Yucca elata*), desert broom (*Baccharis saprothroides*) and Mearns sumac (*Rhus choriophylla*). Deciduous shrubs include ocotillo (*Foquieria splendens*), catclaw mimosa (*Mimosa aculeaticarpa var. biuncifera*), acacias (*Acacia spp.*), little-leaf sumac (*Rhus microphylla*), wolfberry (*Lycium spp.*), palo verde (*Cercidium spp*.), velvet mesquite (*Prosopis velutina*), Wright silk-tassel (*Garrya wrightii*), desert ceanothus (*Ceanothus greggii*), and mountain mahogany (*Cercocarpus spp.*). Subshrubs such as false mesquite (*Calliandra eriophylla*) and snakeweed (*Gutierrezia sarothrae*) are also present.

Riparian vegetation communities occupy most canyon bottoms, including Cañada del Oro, and have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*), Goodding willow (*Salix gooddingii*) and yewleaf willow (*Salix taxifolia)*.

All woodlands and shrub mixes have been grazed for over 100 years, and introduced species, particularly Lehmann lovegrass (*Erigrostis lehmanniana*), are common.

Current Uses: Visitors use this PWA for a variety of recreational activities. The four trails running through the area are used for hiking, horseback riding, and mountain biking. One of these trails is the Arizona National Scenic Trail, a route that stretches across the entire state, runs through the area and is used for hiking, horseback riding, and mountain biking. Charouleau Gap Road, on the north boundary, is a popular OHV area, and use along this road includes dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. Two existing roads within the PWA are currently in use, but have been recommended for decommissioning. Mount Lemmon Ski Valley and rock climbing areas near the top of Mount Lemmon lie approximately 1/3 mile from the boundary, and visitors to these areas sometimes venture into the PWA. Topography is rugged, so there is very limited cross-country travel through the PWA. There are two grazing allotments within the Samaniego Ridge Potential Wilderness Area. Both allotments are active with valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation

communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

The ruggedness of the Samaniego Ridge Potential Wilderness Area has allowed it to retain a semiprimitive setting. The diversity of vegetation within the PWA boundary ranges from desert scrub to pine forests. The area is habitat for threatened and endangered species. This area of the Santa Catalina Mountains does not have perennial rivers or streams and there are no know water quality issues. However, the Cañada Del Oro riparian area is heavily impacted by four-wheel-drive vehicles. Light pollution affects about half the area, due to the proximity of the area to the city of Tucson. Features that detract from the area's wilderness character include the presence of invasive, nonnative species in the riparian area, including Lehmann lovegrass, bullfrogs and Boer's lovegrass.

Undeveloped

The Samaniego Ridge Potential Wilderness Area has obvious evidence of human activity throughout the area, including spring developments, fences and pipelines.

Opportunities for Solitude or Primitive and Unconfined Recreation

A person could find an experience of solitude, serenity and self-reliance within this potential wilderness area. Recreational opportunities include hiking, backpacking, hunting and challenging rock-climbing. However, the close proximity of the area to Oro Valley, Arizona brings disruption to the area from the sights and sounds of civilization. This factor detracts from the feeling of solitude and isolation from civilization while recreating within the area.

Special Features

The unique rock formations are important as a wilderness characteristic. The area has a history of mining, which provides opportunities for historic research. This area is known to have had populations of threatened and endangered species.

Manageability

The Samaniego Ridge Potential Wilderness Area has livestock grazing that causes some resource conflicts. Given this condition, this area holds some challenges in managing it for wilderness characteristics. There are no identified boundary changes that would enhance the area's wilderness character.

The Samaniego Ridge Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Samaniego Ridge Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. However, the current trails and signs conflict with wilderness requirements. The trails within the area are extensively used and require continuous maintenance, which is currently done with the use of chainsaws. There are

four threatened or endangered species that may be located in this PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA. There is also an annual wildlife survey done in the area that is conducted with the use of helicopters. The Cañada Del Oro watersheds within the area are in need of restoration. There are water impoundments for livestock at the low elevations and for wildlife at the high elevations that require maintenance. The area is in need of vegetation restoration activities for big horn sheep habitat that may require the use of mechanized equipment. This area is committed through permits for livestock grazing and there are mining claims. This current authorization does not conflict with wilderness management or detract from wilderness qualities. There is no potential for timber extraction. The area has had copper mining in the past and there is the potential for extraction of locatable minerals. There are no cultural resources that will be affected by wilderness management. The Samaniego Ridge Potential Wilderness Area is composed entirely of National Forest System lands, as is the adjacent land. The closest private land is approximately two-thirds of a mile from the potential wilderness area boundary and could impact the wilderness character of the area.

The Samaniego Ridge Potential Wilderness Area overall was rated as **low** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Samaniego Ridge Potential Wilderness Area, there are 28 designated wilderness areas, totaling about 917,000 acres (see Table 57).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 57. Designated wilderness within 100 miles of the Samaniego Ridge Potential Wilderness Area

Wilderness Area	Acres
Aravaipa Canyon Wilderness	19,700
Baboquivari Peak Wilderness	2,040
Chiricahua National Monument Wilderness	10,290
Chiricahua Wilderness	87,700
Coyote Mountains Wilderness	5,100
Dos Cabezas Mountains Wilderness	11,700
Fishhooks Wilderness	10,500
Four Peaks Wilderness	61,074
Galiuro Wilderness	76,317
Miller Peak Wilderness	20,228
Mount Wrightson Wilderness	25,260
Needle's Eye Wilderness	8,760
North Santa Teresa Wilderness	5,800
Pajarita Wilderness	7,553
Peloncillo Mountains Wilderness	19,440
Pusch Ridge Wilderness	56,933
Redfield Canyon Wilderness	6,600
Rincon Mountain Wilderness	38,590
Saguaro Wilderness	70,905
Salome Wilderness	18,531
Salt River Canyon Wilderness	32,101
Santa Teresa Wilderness	26,780
Sierra Ancha Wilderness	20,850
Sierra Estrella Wilderness	14,400
South Maricopa Mountains Wilderness	60,100
Superstition Wilderness	159,757
Table Top Wilderness	34,400
White Canyon Wilderness	5,790
TOTAL	917,199

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands,

the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wildernesses

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSAs range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems within wilderness areas range from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area, and includes the Pusch Ridge and Mount Wrightson Wildernesses. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Samaniego Ridge Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Samaniego Ridge Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Samaniego Ridge Potential Wilderness Area includes 5 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 58). Of these five vegetation communities, the Samaniego Ridge PWA would only contribute an additional 0.1 percent to wilderness in the following vegetation types: Interior Chaparral, Madrean Encinal Woodland and Riparian Areas. In addition, the Samaniego Ridge PWA would contribute 0.3 percent to wilderness in Madrean Pine Oak Woodland. The vegetation communities in this PWA

consist of 87.30 percent regionally underrepresented vegetation types, therefore the PWA rates in the medium range (50-90 percent) for this factor.

Table 58. Southwestern Region underrepresented vegetation communities found in the Samaniego Ridge Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Samaniego Ridge PWA	Percent of Samaniego Ridge PWA	Percent Addition of Samaniego Ridge PWA to Wilderness
Interior Chaparral	291	2.2	0.1
Madrean Encinal Woodland	5,297	39.7	0.1
Madrean Pine Oak Woodland	5,089	38.1	0.3
Mixed Conifer Forest	104	0.8	0.0
Riparian Areas	870	6.5	0.1
Grand Total	**11,651**	**87.3%**	**0.6%**

The Samaniego Ridge Potential Wilderness Area overall was rated as **medium** for Need (for individual scores, see appendix G).

East Catalina Potential Wilderness Area Evaluation [PW-05-03-D5-002]

Area Overview

Size and Location: The East Catalina Potential Wilderness Area (PWA) encompasses 25,651 acres. This area is located in the Santa Catalina Mountains, which are part of the Santa Catalina Ranger District of the Coronado National Forest in southeastern Arizona (see Map 12 at the end of this document). The East Catalina PWA is overlapped by 24,831 acres of the Butterfly Inventoried Roadless Area, comprising 97 percent of the PWA.

Vicinity, Surroundings and Access: The East Catalina Potential Wilderness Area is approximately 23 miles northeast of Tucson, Arizona, within the Santa Catalina Ranger District on the eastern side of the Santa Catalina Mountains. Most State and private land uses adjacent to the eastern side of the Santa Catalina Mountains are generally rural and agricultural in nature. There are several incorporated and unincorporated communities along Interstate 10, including the Tucson metropolitan area and State Highway 77.

General Hitchcock Highway (NFS Road 833) is the primary motorized access route into the National Forest on the south side of the Santa Catalina Mountains from the Tucson metropolitan area to the unincorporated community of Summerhaven. General Hitchcock Highway connects to several Forest roads and trails: the Bellota Trailhead (NFS Trail 15), Bug Springs Trailhead (NFS Trail 10), General Hitchcock Campground Road (NFS Road 615), Green Mountain Trailhead (NFS Trail 21), Incinerator Ridge Road (NFS Road 3), Bigelow Trailhead (NFS Trail 520), Bear Wallow Road (NFS Road 2), Soldier Camp Road (NFS Road 625A) and Control Road (NFS Road 38).

Bug Springs Trail and Green Mountain Trail provide nonmotorized trail access through the PWA from General Hitchcock Highway. Green Mountain Trail connects to the Maverick Springs Trail (NFS Trail 704), Shortcut Trail (NFS Trail 21A) and the Brush Corrals Trail (NFS Trail 19) within the PWA.

Brush Corrals Trail provides nonmotorized trail access from Green Mountain Trail through the PWA to Evans Mountain Trail (NFS Trail 32) and Brush Corrals Road (NFS Road 4407) in Buehman Canyon. Evans Mountain Trail provides nonmotorized trail access through the PWA from Brush Corrals Trail to Knagge Trail (NFS Trail 18). Brush Corrals Road provides motorized access to the eastern side of the Santa Catalina Mountains from San Pedro River Road in the San Pedro Valley area across private and State Trust lands to Brush Corrals Trail.

Incinerator Ridge Trail (NFS Trail 18A) provides nonmotorized trail access from Incinerator Ridge Trailhead at General Hitchcock Highway and Sollers Point Road (NFS Road 3) to Incinerator Ridge Road (NFS Road 3) and Knagge Trail. Knagge Trail provides nonmotorized trail access from Incinerator Ridge Trail to Davis Spring Trail (NFS Trail 31). Davis Spring Trail provides nonmotorized trail access through the PWA from Butterfly Trail (NFS Trail 16). Bigelow Trail provides nonmotorized trail access from General Hitchcock Highway at Palisades.

Bear Wallow Road (NFS Road 2) provides access from General Hitchcock Highway to Bigelow Road (NFS Road 34). Bigelow Road provides motorized road access from Bear Wallow Road to the Bigelow Lookout and Butterfly Trailhead. Butterfly Trail provides nonmotorized trail access through the PWA to the Butterfly Peak Natural Area, Crystal Spring Trail (NFS Trail 17), Davis Spring Trail and Bigelow Trail (NFS Trail 520).

Control Road (NFS Road 38) is the primary motorized access route to the north side of the Santa Catalina Mountains from State Highway 77 and the unincorporated community of Oracle to General Hitchcock Highway and the unincorporated community of Summerhaven. Control Road also provides motorized access to Crystal Spring Trail. Crystal Spring Trail provides nonmotorized trail access through the PWA into the Butterfly Peak Research Natural Area and to Butterfly Trail. Continental Copper Access Road (NFS Road 4450) provides motorized access to the northeast side of the Santa Catalina Mountains across private and State Trust lands from San Pedro River Road in the San Manuel/San Pedro Valley area to Control Road.

Redington Road (NFS Road 371) is the primary motorized access route to the east side of the Santa Catalina Mountains from San Pedro River Road in the San Pedro Valley and from the Tucson metropolitan area from the west. Redington Road provides motorized access to NFS Road 36. NFS Road 36 provides motorized access to NFS Roads 4431 and 4437, Bellota Trail (NFS Trail 15) and the Bellota Ranch headquarters. NFS Road 4431 provides access for high-clearance four-wheel-drive vehicles to within approximately ½ mile of the PWA in the Alamo Spring/Burro Creek area. NFS Road 4437 provides access for high-clearance four-wheel-drive vehicles to within approximately ½ mile of the PWA in the Woods Tank area. Bellota Trail provides nonmotorized trail access, approximately ½ mile south of the PWA.

There is adequate motorized and trail access to the PWA from the western side along General Hitchcock Highway. However, there is little, if any, documented right-of-way for the existing road system across the non-Federal lands outside the proclaimed national forest boundary from the San Pedro Valley on the east side of the PWA.

Boundaries: The boundary of this PWA follows natural features, such as ridgelines and high points, in the Santa Catalina Mountains. A small section of the northern boundary follows private land lines and Butterfly Trail.

Geography and Topography: The East Catalina Potential Wilderness Area is primarily situated along the northeastern flank of the Santa Catalina Mountains, except for its southern end, which straddles the crest of the range. Covering an area of 25,651 acres, this PWA rises from a low point of 3,880 feet above sea level in Buehman Canyon along the eastern flank of the range to a maximum elevation of approximately 8,200 feet along a ridge line north of Mount Bigelow. This PWA is located entirely within the Santa Catalina Mountains Unit of the Santa Catalina Ranger District, Coronado National Forest.

The northwest-trending Santa Catalina-Rincon Mountains structural block is typical of the Southern Basin and Range Province in southeastern Arizona, and is bounded by the Santa Cruz River Basin to the southwest and the San Pedro River Valley to the northeast. The range lays immediately east of the boundary separating the Mexican Highlands Subprovince from the Sonoran Desert Subprovince to the west. This structural block represents a large metamorphic core complex, which is characterized by rocks that were subjected to high temperatures and great pressures prior to being rapidly uplifted during middle Tertiary time to form a northwest-elongated, arcuate dome-like structure. Highly metamorphosed granitic gneiss, Precambrian Oracle Granite and Wilderness Granite and a very large intrusive body of Eocene age occur within its core, which is exposed along the west-southwestern flanks and within the central portions of the Santa Catalina and Rincon Mountains. Located along the limbs of this domal structure, variably metamorphosed, folded and faulted remnants of late Precambrian to early Cretaceous sediments are preserved along the northeastern and eastern flanks of the Santa Catalina and Rincon Mountains and the southwestern flank of the Rincon Mountains. The East

Catalina PWA is primarily underlain by the Wilderness Granite, Precambrian Oracle Granite and sediments of late Precambrian to early Cretaceous age.

Appearance and Vegetation: The vegetation consists of over 75 percent evergreen oak woodland communities. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), gray oak (*Quercus grisea*), Mexican blue oak (*Quercus oblongifolia*) and Toumey oak (*Quercus toumeyi*). Other tree species [including pinyon pines (*Pinus discolor*), Chihuahua pine (*Pinus leiophylla*), Arizona cypress (*Hesperocyparis arizonica*) and alligator (*Juniperus deppeana*)] and redberry junipers(*J. coahuilensis*) and interior chaparral species [including manzanita spp. (*Arctostaphylos spp*.), desert ceanothus (*Ceanothus greggii*), mountain mahogany (*Cercocarpus montanus*), silktassles (*Garrya wrightii.),* Stansbury cliffrose (*Purshia stansburiana*), shrub live oak (*Quercus turbinella*) and sumacs (*Rhus spp.*)] may be present, but do not codominate. The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) or Texas bluestem (*Schizachyrium cirratum*). Most of this area has recently burned and is recovering as grassland, with many tree species sprouting.

The remaining area is divided between mixed conifer at the highest elevations and shrub mixes at the lowest elevations. The dominant trees in the mixed conifer areas are Douglas-fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*) and southwestern white pine (*Pinus strobiformis*), with lesser amounts of white fir (*Abies concolor*), Gambel oak (*Quercus gambelii*) and aspen (*Populus tremuloides*). The shrub mix consists of "evergreen" shrubs like cacti [barrels (*Ferocactus spp.*), hedgehogs (*Echinocactus spp.*), prickly-pear (*Opuntia spp.*), and cholla (*Cylindropuntia spp.*)], agaves [desert spoon (*Dasyliron wheeleri*), agaves and shin-dagger (*Agave spp.*)], beargrass (*Nolina microcarpa*), soap-tree yucca (*Yucca elata*), desert broom (*Baccharis saprothroides*) and Mearns sumac (*Rhus choriophylla*). Also present are deciduous shrubs such as ocotillo (*Foquieria splendens*), catclaw mimosa (*Mimosa aculeaticarpa var. biuncifera*), acacias (*Acacia spp.*), little-leaf sumac (*Rhus microphylla*), wolfberry (*Lycium spp.*), limber bush (*Jatropha cardiophylla*), palo verde (*Cercidium spp*.), velvet mesquite (*Prosopis velutina*), Wright silk-tassel (*Garrya wrightii*), barberry (*Berberis spp.*), desert ceanothus (*Ceanothus greggii*), and mountain mahogany (*Cercocarpus spp.*) along with sub-shrubs such as false mesquite (*Calliandra eriophylla*) and snakeweed (*Gutierrezia sarothrae*).

Riparian vegetation communities occupy most canyon bottoms, including Canada del Oro and have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*), Goodding willow (*Salix gooddingii*) and yewleaf willow (*Salix taxifolia)*. Most of these areas were also recently burned and are recovering as grassland, with some broadleaf tree species sprouting.

All woodlands and shrub mixes have been grazed for over 100 years, and introduced species, particularly Lehmann lovegrass (*Erigrostis lehmanniana*), are common.

Current Uses: Visitors use this PWA for a variety of recreational activities. The four trails running through the area are used for hiking, horseback riding, and mountain biking. There are no roads within or adjacent to this area, but Sky Island Scenic Byway, with developed campgrounds, picnic areas, and trailheads, several summer home areas, organization camps, and a visitor center lies ½ mile away, and visitors to these areas may venture into the PWA. The Redington Pass

Backcountry Touring Area, where motorized touring and OHV use is encouraged, lies on the south boundary, and uses along those roads include dispersed uses such as camping, hunting, and target shooting. As a result of this activity on adjacent roads, visitors often venture into the PWA. Topography is rugged, so there is very limited cross-country travel through the PWA. There are three grazing allotments within the East Catalina Potential Wilderness Area. All of these allotments are active with valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

The ruggedness of the East Catalina Potential Wilderness Area has allowed it to retain a semiprimitive setting. There are several vegetation types within the PWA boundary. The area is habitat for Mexican spotted owls. This area of the Santa Catalina Mountains does not have perennial rivers or streams and there are no know water quality issues. Light pollution is somewhat evident from the adjacent Tucson metropolitan area. One feature that detracts from the area's wilderness capability is the presence of the invasive, nonnative plant Lehmann lovegrass, which is common in the area.

Undeveloped

The East Catalina Potential Wilderness Area has obvious evidence of human activity, including range improvements and historic remains of mining activity.

Opportunities for Solitude or Primitive and Unconfined Recreation

A person could find an experience of solitude, serenity and self-reliance within this potential wilderness area. However, the sights and sounds from nearby civilization may hinder the feeling of being alone. Limited access to the area also minimizes opportunities for recreation. There are some opportunities for hunting, hiking and backpacking within this area.

Special Features

The East Catalina Potential Wilderness Area offers panoramic views. This area is habitat for Mexican spotted owl and includes a portion of the Butterfly Research Natural Area that creates opportunities for environmental and scientific research.

Manageability

The East Catalina Potential Wilderness Area has livestock grazing that causes some resource conflicts. Given this condition, this area holds some challenges in managing it for wilderness characteristics. There are no identified boundary changes that would enhance the area's wilderness character.

The East Catalina Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the East Catalina Potential Wilderness Area, some of the current recreational uses and tourism could continue if the area was designated as wilderness. However, the trails within the area that includes a portion of the Arizona Trail are extensively used and require continuous maintenance, which is currently done with the use of chainsaws. This area includes popular mountain-biking trails and there are plans to connect existing trails to increase the area available for mountain biking. There are four threatened or endangered species that may be located in this PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA. A number of the watersheds within the area are in need of site-specific restoration activities. There are water impoundments for livestock that require maintenance, which is currently done using mechanized equipment. Portions of the west side of the PWA are in close proximity to Mount Lemmon Highway that requires intense vegetation management to create a fuel break. Vegetation management is also needed for game animal habitat. This area is committed through permits for livestock grazing. These permits do not conflict with wilderness management or detract from wilderness qualities. There is no potential for timber extraction. There are no known high-value mineral deposits within the area. There are no cultural resources that will be affected by wilderness management. The East Catalina Potential Wilderness Area is composed entirely of National Forest System lands, as is the adjacent land. The closest private land is adjacent to the PWA boundary and could impact the wilderness character of the area.

The East Catalina Potential Wilderness Area overall was rated as **high** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the East Catalina Potential Wilderness Area, which is assumed to be approximately a day's drive. Within 100 miles of the East Catalina PWA there are 28 designated wilderness areas totaling about 917,000 acres (see Table 59).

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Table 59. Designated wilderness within 100 miles of the East Catalina Potential Wilderness Area

Wilderness Area	Acres
Aravaipa Canyon Wilderness	19,700
Baboquivari Peak Wilderness	2,040
Chiricahua National Monument Wilderness	10,290
Chiricahua Wilderness	87,700
Coyote Mountains Wilderness	5,100
Dos Cabezas Mountains Wilderness	11,700
Fishhooks Wilderness	10,500
Four Peaks Wilderness	61,074
Galiuro Wilderness	76,317
Miller Peak Wilderness	20,228
Mount Wrightson Wilderness	25,260
Needle's Eye Wilderness	8,760
North Santa Teresa Wilderness	5,800
Pajarita Wilderness	7,553
Peloncillo Mountains Wilderness	19,440
Pusch Ridge Wilderness	56,933
Redfield Canyon Wilderness	6,600
Rincon Mountain Wilderness	38,590
Saguaro Wilderness	70,905
Salome Wilderness	18,531
Salt River Canyon Wilderness	32,101
Santa Teresa Wilderness	26,780
Sierra Ancha Wilderness	20,850
Sierra Estrella Wilderness	14,400
South Maricopa Mountains Wilderness	60,100
Superstition Wilderness	159,757
Table Top Wilderness	34,400
White Canyon Wilderness	5,790
TOTAL	917,199

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands,

the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wildernesses

There are eight existing wilderness areas and three wilderness study areas (WSAs) on the Coronado National Forest. The wilderness areas and WSAs range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems within wilderness areas range from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area, and includes the Pusch Ridge and Mount Wrightson Wildernesses. Encounters with other wilderness visitors in both areas are high. For these two areas, there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the East Catalina Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The East Catalina Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles, approximately 3 percent, occur in 20 designated wilderness areas.

The East Catalina Potential Wilderness Area includes 5 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 60). Of these five vegetation communities, the East Catalina PWA would only contribute an additional 0.1 percent to wilderness in the Interior Chaparral. In addition, the East Catalina PWA would contribute an additional 0.2 percent to wilderness in Madrean Encinal Woodland and an additional 0.3 percent to wilderness in Madrean Pine Oak Woodland. The vegetation communities in this PWA consist

of 81.50 percent regionally underrepresented vegetation types, therefore the PWA rates in the medium range (50-90 percent) for this factor.

Table 60. Southwestern Region underrepresented vegetation communities found in the East Catalina Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within East Catalina PWA	Percent of East Catalina PWA	Percent Addition of East Catalina PWA to Wilderness
Interior Chaparral	1,303	5.1	0.1
Madrean Encinal Woodland	14,450	56.5	0.2
Madrean Pine Oak Woodland	4,880	19.1	0.3
Mixed Conifer Forest	75	0.3	0.0
Riparian Areas	125	0.5	0.0
Grand Total	**20,833**	**81.5%**	**0.6%**

The East Catalina Potential Wilderness Area overall was rated as **medium** for Need (for individual scores, see appendix G).

Little Rincon Potential Wilderness Area Evaluation [PW-05-03-D5-003]

Area Overview

Size and Location: The Little Rincon Potential Wilderness Area (PWA) encompasses 8,965 acres. This area is located in the Rincon Mountains, which are part of the Santa Catalina Ranger District of the Coronado National Forest in southeastern Arizona (see Map 12 at the end of this document). The Little Rincon PWA is overlapped by 6,661 acres of the Happy Valley Inventoried Roadless Area, comprising 74 percent of the PWA.

Vicinity, Surroundings and Access: The Little Rincon Potential Wilderness Area is approximately 29 miles southeast of Tucson, Arizona, within the Santa Catalina Ranger District on the eastern side of the Rincon Mountains. There are several incorporated and unincorporated communities along Interstate 10, including the Tucson metropolitan area and Pantano. The PWA straddles the border of Cochise County and Pima County.

The Little Rincon PWA is surrounded on all sides by National Forest lands. The closest private land is approximately one half mile from the PWA boundary. Five National Forest System Roads provide access into the PWA, all entering from the North. There are no access roads into the southern portion of the PWA. Old Happy Valley Road (NFS Road 4406), Eagle Peak Road (NFS Road 4411) and Page Creek Riparian Road (NFS Road 4410) partially run along the PWA border. Turkey Creek Spring Road (NFS Road 4408) and Bear Creek Road (NFS Road 4409) lead up to the boundary line of the PWA. Although no National Forest System Trails run through the Little Rincon PWA, the Miller Canyon Trail can be accessed within one half mile of the PWA boundary. National Park Service lands are located approximately one mile from the PWA.

There is adequate motorized and trail access to the PWA from the northern side, however, there is little, if any, documented right-of-way for the existing road system across the non-Federal lands outside the proclaimed national forest boundary.

Boundaries: The boundary of this PWA follows natural features, such as ridgelines and high points, in the Little Rincon Mountains. The northern boundary was established along private land boundary lines. The border partially follows Old Happy Valley Road (NFS Road 4406) on the west side and Eagle Peak Road (NFS Road 4411) and Page Creek Riparian Road (NFS Road 4410) on the north side.

Geography and Topography: The Little Rincon Potential Wilderness Area (PWA) encompasses the southern part of the north-trending Little Rincon Mountains. This mountain range is bounded on the east by the San Pedro Valley and on the west by Ash Creek, Happy Valley (Paige Creek), and the Rincon Mountains. The Little Rincon PWA is nearly four miles wide (east to west) in the center, but narrows both north and south; it is a maximum of five miles long at the center along the north-south border between Pima and Cochise counties. This PWA is located entirely within the Santa Catalina Ranger District, Coronado National Forest (CNF). Covering an area of 8,965 acres, the Little Rincon PWA consists of most of southern part of the Little Rincon Mountain range between the roads that follow Ash Creek and Happy Valley (Paige Creek) on the west and north and the forest boundary on the east.

The Little Rincon PWA is situated along the southern portion of a northeast-trending ridge that extends from near Bald Mountain in the north to south of North Star Peak in the south. It rises from 4,000 feet above sea level at Ash Creek along the southern edge and from 4,000 feet at Buckhorn Spring along the northern edge to a maximum elevation of 6,382 feet at Forest Hill and to 6,000 feet at North Star Peak along the eastern edge of the PWA. Details of the topography of the Little Rincon PWA are shown on the 1:62,500 scale map of Saguaro National Monument.

The Little Rincon Mountains contain the same rock types as occur in the Rincon Mountains. They are separated by a major normal fault that down-dropped the Little Rincon Mountains. These mountains are typical of the fault bounded, structurally uplifted blocks within the Mexican Highlands sub-province of the southern Basin and Range Province in southeastern Arizona. The geology is characterized by Early Proterozoic (younger Precambrian or 1650 – 1800 million years ago [Ma]) age metamorphic rocks (Pinal Schist) intruded by Middle Proterozoic (1400 Ma) porphyritic biotite granite to granodiorite (1,449 Ma) similar to the Oracle Granite. These ancient rocks are overlain in a few places by Paleozoic sedimentary rocks that are now exposed in fault slivers. These older rocks are intruded by a Cretaceous age (~68 Ma) diorite (similar to the Leatherwood quartz diorite in the Santa Catalina Mountains), and later by a Tertiary age (45 Ma) Wrong Mountain Quartz Monzonite, a garnet-biotite-muscovite granite; and by Tertiary age (27 to 28 Ma) granodiorite of Happy Valley. The southern half of the Little Rincon PWA primarily is Wrong Mountain Quartz Monzonite and the northern half is primarily granodiorite of Happy Valley.

No active mining claims are located in the Little Rincon PWA and the area does not have historic production of metals or non-metals. There has been little or no historical mining activity or exploration within the Little Rincon PWA. The Cretaceous diorite intrusions in nearby mountain ranges (San Manuel north of the Santa Catalina Mountains) are associated with porphyry copper deposits, and the garnet-biotite-muscovite granites are associated with tungsten occurrences in the Santa Catalina Mountains (Geesman mine).

Appearance and Vegetation: The vegetation consists of over 75 percent evergreen oak woodland communities. Species include Madrean evergreen oaks such as Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), gray oak (*Quercus grisea*), Mexican blue oak (*Quercus oblongifolia*) and Toumey oak (*Quercus toumeyi*). Other tree species [including pinyon pines (*Pinus discolor*), Chihuahua pine (*Pinus leiophylla*), Arizona cypress (*Hesperocyparis arizonica*) and alligator (*Juniperus deppeana*)] and redberry junipers(*J. coahuilensis*) and interior chaparral species [including manzanita spp. (*Arctostaphylos* spp.), desert ceanothus (*Ceanothus greggii*), mountain mahogany (*Cercocarpus montanus*), silktassles (*Garrya wrightii.),* Stansbury cliffrose (*Purshia stansburiana*), shrub live oak (*Quercus turbinella*) and sumacs (*Rhus spp.*)] may be present, but do not codominate. The ground cover is dominated by warm-season grasses such as threeawns (*Aristida* spp.), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Rothrock grama (*Bouteloua rothrockii*), Arizona cottontop (*Digitaria californica*), plains lovegrass (*Eragrostis intermedia*), curly-mesquite (*Hilaria belangeri*), green sprangletop (*Leptochloa dubia*), muhly grasses (*Muhlenbergia* spp.) or Texas bluestem (*Schizachyrium cirratum*). Most of this area has recently burned and is recovering as grassland, with many tree species sprouting.

The remaining area is divided between mixed conifer at the highest elevations and shrub mixes at the lowest elevations. The dominant trees in the mixed conifer areas are Douglas-fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*) and southwestern white pine (*Pinus strobiformis*), with lesser amounts of white fir (*Abies concolor*), Gambel oak (*Quercus gambelii*) and aspen

(*Populus tremuloides*). The shrub mix consists of "evergreen" shrubs like cacti [barrels (*Ferocactus spp.*), hedgehogs (*Echinocactus spp.*), prickly-pear (*Opuntia spp.*), and cholla (*Cylindropuntia spp.*), etc.], agaves [desert spoon (*Dasyliron wheeleri*), agaves and shin-dagger (*Agave spp.*)], beargrass (*Nolina microcarpa*), soap-tree yucca (*Yucca elata*), desert broom (*Baccharis saprothroides*) and Mearns sumac (*Rhus choriophylla*). Also present are deciduous shrubs such as ocotillo (*Foquieria splendens*), catclaw mimosa (*Mimosa aculeaticarpa var. biuncifera*), acacias (*Acacia spp.*), little-leaf sumac (*Rhus microphylla*), wolfberry (*Lycium spp.*), limber bush (*Jatropha cardiophylla*), palo verde (*Cercidium spp.*), velvet mesquite (*Prosopis velutina*), Wright silk-tassel (*Garrya wrightii*), barberry (*Berberis spp.*), desert ceanothus (*Ceanothus greggii*), and mountain mahogany (*Cercocarpus spp.*) along with sub-shrubs such as false mesquite (*Calliandra eriophylla*) and snakeweed (*Gutierrezia sarothrae*).

Riparian vegetation communities occupy most canyon bottoms, including Canada del Oro and have a variety of upland and obligate riparian species, including Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), Arizona sycamore (*Platanus wrightii*), Arizona walnut (*Juglans major*), Goodding willow (*Salix gooddingii*) and yewleaf willow (*Salix taxifolia)*. Most of these areas were also recently burned and are recovering as grassland, with some broadleaf tree species sprouting.

All woodlands and shrub mixes have been grazed for over 100 years, and introduced species, particularly Lehmann lovegrass (*Erigrostis lehmanniana*), are common.

Current Uses: Visitors use this PWA for a variety of recreational activities. There are no trails within the area, and no developed recreation sites here, but roads adjacent to the area on the west side are popular for motorized touring and dispersed uses such as camping and hunting. As a result of this activity on adjacent roads, visitors often venture into the PWA. One existing road within the PWA is currently in use, but has been recommended for decommissioning. Topography varies from rolling to moderately rugged, so there is limited cross-country travel through the PWA. There are two grazing allotments within the Little Rincon Potential Wilderness Area. Both allotments are active and valid permitted uses. This PWA is within Fire Management 1 (FMU 1). Fire management units divide the landscape into smaller geographic areas to describe the differences in management strategies based on safety considerations, as well as physical, biological and social characteristics. FMU 1 indicates fire adapted vegetation communities. Current fire management includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired forest plan objectives when risk is within acceptable limits.

Capability

Naturalness

Diversity of vegetation within the Little Rincon Potential Wilderness Area includes Manzanita in the northern portion, chaparral, oak and mesquite grasslands, isolated pines, and juniper. There are no significant drainages within the boundaries of the PWA, and impoundments are limited to dirt tanks. Night skies can be clearly seen and light pollution is not evident. The biological diversity in the area includes a mixture of habitats and ecological conditions. The area contains coatimundi and lesser long-nosed bat foraging, and may also serve as a possible jaguar/ocelot corridor. The area contains a diverse amount of natural resources, particularly noticeable in its variety of plant communities and unique rocky landforms. Although no rivers or streams have been sampled, there are no known water quality issues. Lehmann's and Boer's lovegrasses exist throughout the area, with additional reports of buffelgrass.

Undeveloped

The Little Rincon Potential Wilderness Area has some unnoticeable evidence of human activity, including range improvements and dispersed camping along roads. An old bulldozer line can be seen leading to one of the tanks.

Opportunities for Solitude or Primitive and Unconfined Recreation

The higher elevation areas within the Little Rincon PWA provide ample opportunities for challenging recreation. While feelings of isolation may be experienced in parts of this PWA, recreational use may be interrupted by visible and audible signs of I-10 and ranching infrastructure. Primitive recreation on the Little Rincon PWA may include hiking, backpacking, and hunting, although there are no existing system trails.

Special Features

Panoramic views, unique landforms and distinct rock features serve as an outstanding component of the Little Rincon PWA. An agave study has been conducted on this PWA, and some additional scientific research opportunities may exist. Unique wildlife such as the coatimundi, lesser long-nosed bat and possibly jaguar and ocelot live on this PWA.

Manageability

Abundant access to the Little Rincon Potential Wilderness Area exists from the western and northern boundary road. The area is geologically isolating, but private land makes up much of the northern border. Dispersed camping along roads may interfere with wilderness management. The PWA currently does not have any motorized vehicle use. There are no identified boundary changes that would enhance the area's wilderness character.

The Little Rincon Potential Wilderness Area overall was rated as **medium** for Capability (for individual scores, see appendix E).

Availability

In the Little Rincon Potential Wilderness Area, most of the current recreational uses and tourism could continue if the area was designated as wilderness. There are five threatened or endangered species that may be located in the PWA and may require habitat restoration and/or monitoring, which could impact the availability of the PWA. Watersheds within the area include seasonal drainages with occasional pools. Long term drought in the area has somewhat limited traditional water availability in the area. There are spring developments, storage tanks and water impoundments that require maintenance that could have a moderate effect on wilderness character. Past use of ATVs and helicopters to perform this maintenance could impact wilderness character if similar practices are continued in the future. There are no ecosystem restoration activities currently planned for the areas. Planned treatments using aircraft may be used for vegetative management, with planned ignitions every 10-15 years. The area is committed through permits for livestock grazing on two allotments. This current authorization does not conflict with wilderness management or detract from wilderness qualities. There is no potential for timber extraction. There is no potential for extraction of locatable minerals. There are no cultural resources that will be affected by wilderness management. The Little Rincon Potential Wilderness Area is entirely composed of National Forest System lands, as is the adjacent land. The closest private land is approximately a half mile from the PWA boundary and may impact the wilderness character of the area.

The Little Rincon Potential Wilderness Area overall was rated as **high** for Availability (for individual scores, see appendix F).

Need

Wilderness and Nonwilderness Lands in the Vicinity

The Coronado National Forest has eight wilderness areas comprising 339,553 acres or 19 percent of the Forest. Nationally, wilderness comprises 19 percent of National Forest System lands and within the Southwestern Region only 13 percent of these NFS lands are wilderness. The Coronado National Forest currently equals the national average of National Forest System land as wilderness and exceeds the regional average.

The Forest Service evaluated comparable public lands within a 100-mile radius of the potential wilderness area, which is assumed to be approximately a day's drive. Within 100 miles of the Little Rincon PWA, there are 20 designated wilderness areas totaling about 528,000 acres (see Table 61).

Table 61. Designated wilderness within 100 miles of the Little Rincon Potential Wilderness Area

Wilderness Area	Acres
Aravaipa Canyon Wilderness	19,790
Baboquivari Peak Wilderness	2,776
Chiricahua National Monument Wilderness	12,161
Chiricahua Wilderness	88,793
Coyote Mountains Wilderness	5,795
Dos Cabezas Mountains Wilderness	11,855
Fishhooks Wilderness	11,400
Galiuro Wilderness	75,585
Miller Peak Wilderness	20,381
Mount Wrightson Wilderness	25,596
Needle's Eye Wilderness	6,277
North Santa Teresa Wilderness	5,733
Pajarita Wilderness	7,897
Peloncillo Mountains Wilderness	19,244
Pusch Ridge Wilderness	56,743
Redfield Canyon Wilderness	6,206
Rincon Mountain Wilderness	38,611
Saguaro Wilderness	77,119
Santa Teresa Wilderness	28,769
White Canyon Wilderness	6,981
TOTAL	527,713

There are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including over 4.1 million acres of Federal lands. Nonwilderness lands that provide a wilderness-like setting include

primitive and semiprimitive nonmotorized areas, inventoried roadless areas, wilderness study areas, BLM National Conservation Areas, and USFWS National Wildlife Refuges. The combined acres of nonwilderness lands in the vicinity are double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for this factor.

Visitor Pressure

Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth during the period of 1990 to 2000, which exceeded the national growth rate. Assuming Arizona continues to grow at a rate greatly outpacing the national rate (predicted to be about 3 times the national rate), the number of visits to existing wilderness will continue to increase, and Arizona in particular could benefit from additional wilderness. Public demand increases with proximity to the Phoenix and Tucson population centers, which collectively represent 86 percent of the state's population. Substantial consideration should therefore be given to potential wilderness areas within 100 miles of those cities, in an effort to provide for the growing demand. Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests. In terms of geographic distribution of wilderness across all Federal lands, the Southwestern Region is underrepresented with 12 percent of Federal land in wilderness acres, as compared with 17 percent nationally. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new residents and retirees, further contributing to a growth in wilderness visitation. All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Primitive Sanctuary for Plants and Wildlife

As part of the forest plan revision process, the Coronado National Forest has developed a list of species that warrant consideration in the population viability evaluation. This species list includes 255 threatened, endangered, sensitive, and highly vulnerable species (G1-G2 or T1-T2) that are known to occur on the Coronado National Forest. Appendix I shows the total number of these species that are known to occur in each potential wilderness area, provided the Forest Service has adequate information on habitat distribution. Although none of these species require a primitive environment to survive, all listed species would benefit from reduced disturbance. The combined number of threatened, endangered, sensitive, and highly vulnerable species on this PWA rates in the medium range (30-60 species) for this factor.

Capacity of Established Wilderness Areas

There are eight existing wilderness areas and three wilderness study areas (WSA) on the Coronado National Forest. The wilderness areas and WSA range in size from 7,400 acres to 87,700 acres. Accessibility by motor vehicles ranges from easily accessible to remote, hard-to-access wilderness. Trail systems range within wilderness areas from extensive trail systems to very minimal systems. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson Wilderness Areas. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes.

Wilderness Areas with Similar Landform and Vegetation

Consideration was given to how the landform and ecological condition of the Little Rincon Potential Wilderness Area might be broadly similar to existing wilderness areas within the National Wilderness Preservation System. All designated wilderness areas in Arizona and New Mexico were compared using ecological sections and vegetation communities.

The Little Rincon Potential Wilderness Area is in the Basin and Range Section of the Chihuahuan Semi-Desert Province (Section 321A, McNab and Avers 1994). The Basin and Range Section encompasses 24,270 square miles, of which 749 square miles (approximately 3 percent) occur in 20 designated wilderness areas.

The Little Rincon Potential Wilderness Area includes 4 of the 16 underrepresented vegetation communities in the Southwestern Region of the Forest Service (see Table 62). Of these four vegetation communities, the Little Rincon PWA would contribute to wilderness in the following vegetation types: Madrean Encinal Woodland (0.6 percent) and Riparian Areas (0.1 percent). The vegetation communities in this PWA consist of 30.80 percent regionally underrepresented vegetation types, therefore the PWA rates in the low range (less than 50 percent) for this factor.

Table 62. Southwestern Region underrepresented vegetation communities found in the Little Rincon Potential Wilderness Area (PWA)

Underrepresented Vegetation Communities	Acres within Little Rincon PWA	Percent of Little Rincon PWA	Percent Addition of Little Rincon PWA to Wilderness
Interior Chaparral	150	1.7	0.0
Madrean Encinal Woodland	2,578	28.8	0.6
Madrean Pine Oak Woodland	5	0.1	0.0
Riparian Areas	16	0.2	0.1
Grand Total	**2,749**	**30.8%**	**0.7%**

The Little Rincon Potential Wilderness Area overall was rated as **medium** for Need (for individual scores, see appendix G).

Chapter 3: Effects of Recommendation

The Effects of Recommendation analysis evaluates: (1) the interim management direction in the Proposed Action and Alternative 1 as the basis for a recommended wilderness scenario in each area and (2) the impact on the area if it were designated by Congress. This is appropriate because the amount of time between an agency recommendation and final action by Congress has been highly variable, taking between a few months and several decades to complete. For the non-wilderness scenario, the potential outcomes of plan alternatives that do not recommend that potential wilderness area are evaluated. This analysis synthesizes the findings from the Environmental Impact Statement (EIS) and associated specialist reports, and considers site-specific issues that were evaluated as part of the capability, availability and need analysis. Any areas analyzed are eligible for recommendation in the revised Forest Plan. This means that even though the areas may not be part of the Proposed Action for the revised Forest Plan, it does not mean their recommendation cannot be part of the final plan that is approved in the record of decision. Likewise, even though an area is in the Proposed Action, it may not be carried forward in the final decision. The management direction described in the General Recommended Wilderness Direction applies to all potential wilderness areas evaluated in this report. The effects of recommendation for Unique Potential Wilderness Areas apply to specific PWAs that demonstrate unique issues or challenges to potential wilderness management. Effects of recommendation for all other PWAs are described in the Other Potential Wilderness Areas section.

The effects of recommendation are analyzed for the following Potential Wilderness Areas: Dragoon, Ku Chish, Chiricahua Addition South, Chiricahua Addition West, Chiricahua Addition North, Jhus Canyon, Bunk Robinson WSA, Whitmire Canyon WSA, Devil's Kitchen, Skeleton Canyon, Deer Creek, Tumacacori, Pajarita Addition West, Pajarita Addition East, Cobre, Pajarito, Mount Wrightson, Mount Fagan, Happy Jack, Mount Washington, Canelo, Whetstone, Santa Teresa Addition North, Santa Teresa Addition South, Mount Graham WSA, Mount Graham Addition, Galiuro Addition, Winchester, Samaniego Ridge, East Catalina, and Little Rincon.

General Recommended Wilderness Direction

The following recommended wilderness direction applies to all Potential Wilderness Areas on the Coronado National Forest. If recommended, these areas are to be managed as Recommended Wilderness Areas or Wilderness Study Areas according to direction provided in the Forest Plan. A summary of the Plan components that would have an impact on Potential Wilderness Areas is provided below. To read the Wilderness-related Plan components in their entirety, see the "Designated Wilderness Areas" and "Recommended Wilderness Areas and Wilderness Study Areas" sections in Chapter 3 of the Revised Forest Plan.

Wilderness Management

The following summarizes the management direction in the Forest Plan, including desired conditions and guidelines, that would have an effect on how the Potential Wilderness Areas would managed if they were to be designated a Recommended Wilderness or a Wilderness Study Area.

Desired Conditions for Recommended Wilderness – Wilderness study areas and recommended wilderness are natural in appearance. They provide unconfined opportunities for exploration, solitude, natural risk, challenge, and primitive recreation. When traveling on trails, human

encounters are generally limited; when traveling cross-country, almost no human encounters are expected. There is little evidence of human developments or human activities. Ecological disturbance processes such as fire, insects, and disease are the primary factors affecting landscape patterns in wilderness study areas. Both recommended wilderness and wilderness study areas are managed to maintain their wilderness character. There is little or no evidence of camping activity, unauthorized trails, or trash. Where needed, outfitters and guides provide services to visitors seeking a wilderness experience. Visitor use is in balance with wilderness characteristics.

Guidelines for Recommended Wilderness – Wilderness study areas and recommended wilderness areas should be managed to maintain their wilderness character. Wilderness study areas and recommended wilderness should be managed to preserve or enhance scenic resources. Wilderness study areas and recommended wilderness should be managed for primitive recreation settings. New recreation facilities other than trails should not be constructed. Timber harvest should not be permitted. Gathering of forest products for sale should not be permitted. Mechanized or motorized trails should not be designated. New roads should not be constructed.

Post-Congressional Designation – If the area is designated, it would have separate desired condition and guidelines in the plan that describe its unique wilderness character as described under capability. It would also no longer permit mechanized recreation or motorized vehicle use. Administrative and permitted use of mechanized and motorized equipment and vehicles would be prohibited except for circumstances described in FSM 2320, and in rare circumstances, per the Minimum Requirements Process.

Non-wilderness Management

This section summarizes elements of Forest Plan direction for non-wilderness areas. This provides information on how Potential Wilderness Areas that are not recommended for Wilderness would be managed, and the resulting effects on those areas, compared to the current condition.

The majority of these areas would be managed under a Primitive (36%), Semi-Primitive Non-Motorized (35%), or Semi-Primitive Motorized (25%) ROS category. Both Primitive and SPNM lands are unroaded areas that have no facilities other than trails. Although the number of visitors may vary between Primitive and SPNM, both of these classifications allow for dispersed recreation within a predominantly natural environment. Semi-Primitive Motorized settings are areas with primitive roads, which are generally the only facilities in the area (other than trails). The SPM classification allows for motorized travel on primitive designated Forest roads and trails. In the portion of these areas that are managed for a semi-primitive setting, vegetation treatments and construction of facilities to support range management could be carried out. Independent of the ROS classification, valid permitted uses such as grazing will continue.

Wilderness Study Areas would continue to be managed under the guidelines established by the Wilderness Act of 1964, which requires management to maintain wilderness characteristics in the area.

Effects Common to All Recommended Wilderness Areas

The following effects of recommendation apply to all Potential Wilderness Areas on the Coronado National Forest. These are general effects that would occur as a result of managing as Recommended Wilderness Areas or Wilderness Study Areas, according to direction provided in the Forest Plan.

Resource Effects

Wilderness Management

The recommendation of 31 new areas for wilderness designation would substantially increase opportunities for a wilderness experience on the Coronado National Forest. Recommendation would provide for increased wilderness visitation because recommended areas would provide a wilderness-like experience near many underserved populated areas. Recommendation of additional wilderness also offers a wider choice of areas for quiet recreation. Recommendation would limit public access for motorized and mechanized recreation in these areas and may displace those uses to other Forest lands.

Designation of wilderness may provide additional, high quality refugia for sensitive, threatened, and endangered species. The presence of special-status species contributes positively to the wilderness character of these areas. Recommending additional areas for wilderness designation may impede the progress of habitat restoration and/or monitoring activities that traditionally involve motorized or mechanized equipment. However, potential manageability concerns are offset by the value added by these new areas on a regional scale. Recommended wilderness areas may provide additions of underrepresented ecosystems to the wilderness system land base[4]. In addition, they address the need for wilderness based on increasing visitor pressure on existing wilderness areas.

Motor vehicle use by Forest Service personnel (i.e., administrative use) in recommended wilderness would be allowed until Congress acts upon the recommendation, but only if such use does not degrade the wilderness character of the recommended areas. In recommended wilderness areas, construction of new roads or motorized trails would be prohibited. This is consistent with current recreation offerings in most of the potential wilderness areas. Recommending wilderness for these areas is appropriate for recreation quality, as most areas currently offer solitude and primitive recreation in the form of nonmotorized trails and rugged cross-country opportunities. Most current uses of these areas are compatible with wilderness character and would be able to continue.

Across all 31 potential wilderness areas, fuel and vegetation management activities may be more difficult to implement because of wilderness restrictions. This may affect the risk of fire, particularly in the wildland-urban-interface. However, treatments are still possible with proper planning to use nonmechanized methods and nonmotorized access. The ability to use prescribed fire would be available in recommended wilderness areas in accordance with the Forest's Wilderness Fire Management Plan. While progress in fuel treatments may be less than that accomplished in non-wilderness management areas, increases in risk of wildland fire are unlikely to be significant.

Non-Wilderness Management

The effects of non-wilderness management common to all potential wilderness areas include those effects associated with multiple use management. If these areas continue to be managed as non-wilderness, vegetation management could continue without mechanized equipment restrictions. Mineral rights could also remain available in these areas. The areas could remain open for motorized recreation including cycling and off-highway vehicle use. Under non-

[4] Underrepresented resources are discussed in more detail in the Individual Potential Wilderness Area Evaluations.

wilderness management, these effects of multiple uses would not guarantee that the areas remain untrammeled into the future.

Economic and Social Effects

Wilderness Management

It is difficult to quantify the economic effects of an individual wilderness area. There is some evidence that new wilderness areas receive increased visitation for a period of time following their designation, but it is not certain that this level of visitation is sustained. Nonetheless, it is estimated that the economic contribution of recreation activities would increase with the increase in visitor-days associated with lands with wilderness character (Forest Service 2011). Wilderness designation is also associated with economic values related to the protection of ecosystem services, increases in amenity-based migration, education and research activities, and passive use values[5] (Loomis and Richardson 2001). Additional wilderness areas may also pose economic costs, particularly to individuals or businesses who engage in extractive and/or motorized activities on the Forest.

The wilderness designation of additional Potential Wilderness Areas would promote the protection of places of traditional cultural importance to Native American populations. These areas are important for understanding the cultural frontier of the Coronado National Forest. Where the area faces an increased risk of uncharacteristic fire as the result of wilderness management, tribes have expressed concern that this disturbance could alter sites of traditional cultural importance and make them inappropriate for their use or for gathering products from these sites (See Resource effects)[6].The cultural and scientific importance of these areas would promote future research and educational opportunities.

Wilderness is associated with improvements in quality of life. Well-being can be measured both subjectively (reported feelings) and objectively (e.g., increases in income or life expectancy). Wilderness designation may contribute to improvements along both measures. A number of social values are associated with wilderness, including preservation of open space, an increase in primitive recreation opportunities, health benefits, and protection of cultural resources (Forest Service 2011).

Non-Wilderness Management

Receipts, employment and labor income generated from resource use would be possible under a non-wilderness alternative, if these areas were to be developed for multiple uses. Mineral extraction could generate income where there is the potential for locatable minerals. However, it is uncertain if any of the areas in the evaluation have mineral resources that are economically feasible to extract without further study and exploration. Firewood collection and recreation levels would likely be similar to current use. More special use permits for many recreation and public services would be allowed than would be permitted if the areas were recommended as wilderness per the suitability table in Chapter 5 of the draft Forest Plan.

[5] Passive use values, also known as non-use values, may refer to the value of simply knowing that a resource is protected (existence value), the value of having a site available for future use (option value), and the value of protecting resources that may be used to produce value in the future, such as species with potential medicinal properties (quasi-option value).

[6] The Dragoon, Winchester, Galiuro Addition, Santa Teresa North Addition, and Santa Teresa South Addition PWAs would face moderate increased risk of uncharacteristic fire because of wilderness management.

When compared to the recommended wilderness scenarios, social values of preservation of open space, promotion of ecosystem services and other forest-related amenity values would continue to be provided but would be qualitatively different because motorized uses would be more prominent. This would permit more multi-modal use on existing trails and allow for the potential construction of new trails, compared to the constraints on trail maintenance under the recommended wilderness scenario. Special use permits could be issued for uses that would diminish the natural features in these areas while motorized use and road construction could increase sedimentation and fugitive dust.

The social and economic consequences of wilderness designation would vary across PWAs. Public safety concerns and illegal uses in the PWAs along the US-Mexico border may offset the social and economic values of wilderness described above. Economic and social values may not change substantially in Wilderness Study Areas, which are already managed for wilderness characteristics as set forth by the Wilderness Act of 1964. In contrast, the PWAs that arose out of high public demand and the additions to existing wilderness areas are expected to contribute the most social and economic benefits.

Unique Potential Wilderness Areas

In addition to the above effects common to all Potential Wilderness Areas, there are also Potential Wilderness Areas with unique situations, where recommending or not recommending that area as Wilderness would produce additional effects. The section below discusses unique potential wilderness area effects that supplement the effects of recommended wilderness common to all. However, while some Potential Wilderness Areas have these unique management challenges, others do not; therefore, this Unique Potential Wilderness Area effects analysis will not discuss every PWA. Additionally, any given PWA could have more than one unique management characteristic, and would then be discussed in more than one of the groupings listed below. Thus, these Unique Direction groups are not mutually exclusive. Potential wilderness areas sharing unique characteristics or circumstances are categorically organized and addressed below. Unique Potential Wilderness Areas are divided into the following sections: Potential Wilderness Areas on the International Border, Additions to Existing Wilderness, Wilderness Study Areas, Potential Wilderness Areas of High Public Interest, and Other Potential Wilderness Areas.

Potential Wilderness Areas on the International Border

Many of the potential wilderness areas are known to have high levels of illegal activity, due to their proximity to the US-Mexico border. The Tumacacori, Mount Wrightson and Mount Fagan areas on the Nogales District require significant US Border Patrol presence. There are also border patrol concerns associated with all of the potential wilderness areas located on the Douglas District, including the Chiricahua Addition North, Chiricahua Addition West, Jhus Canyon, Ku Chish, and Bunk Robinson and Whitmire Canyon WSAs. Recommending these areas as wilderness may hamper Border Patrol's law enforcement activities. In addition, the illegal activity in the area may negatively impact the areas' wilderness character. Quality solitude and undeveloped character may be more difficult to find in these areas, as signs of ongoing illegal activity as well as evidence of Border Patrol enforcement and infrastructure collectively detract from the areas' wilderness character.

Wilderness Management

Resource Effects: The wilderness characteristics of these areas would be enhanced by the interim guidance and wilderness guidance. However, the recommendation of these areas as wilderness will not necessarily prevent the ongoing illegal drug and human trafficking throughout these areas. Wilderness designation may also potentially draw heightened illegal use to the area due to the historic lack of law enforcement presence in wilderness areas, where motorized use is prohibited. Increased trafficking in these areas has also led to the proliferation of user created trails and trash throughout the landscape, thus subtracting from the overall wilderness quality.

The enhanced primitive setting may benefit a variety of species and promote biodiversity, withstanding the adverse conditions brought on by illegal activity. Because the Minimum Requirement Decision Process would apply to the area, the use of mechanized equipment would be limited while recommended, and it would be prohibited once designated. Any trail construction or other activities that are designed to enhance wilderness experiences would be constructed using hand tools and would use natural materials. Hunting would continue in the area.

Motorized travel would only be permitted for administrative use and would be minimized to preserve the wilderness characteristics of the area. Once designated, administrative use of motor vehicles would be prohibited except in rare occasions where their use is the minimum tool necessary for wilderness management. The use of motorized vehicles by Border Patrol or Forest Service Law Enforcement Officers will continue in cases of hot pursuit of criminals. In all cases, there would be a loss of recreation opportunities for motorized recreation users, which would prevent collection of forest products, including firewood, timber and minerals.

Livestock grazing would be allowed to continue. The use of mechanized and motorized vehicles and equipment would be permitted for the maintenance and upkeep of stock tanks and fences in accordance with FSM 2320.

Across all potential wilderness areas, recommendation for wilderness status may have an effect on fire and vegetative management activities. The desired conditions for recommended wilderness areas include a landscape where ecological disturbance processes such as fire, insects, and disease are the primary factors affecting landscape patterns. However, wilderness restrictions may affect the timeframe and the methods used to improve forest health and reduce fire risk. These restrictions may lead to a continued or increased threat to the wildland-urban-interface that overlaps or is adjacent to recommended wilderness areas or wilderness study areas. For the Tumacacori PWA, which has recently burned in an uncharacteristic wildfire, wilderness management would limit restoration options but would probably not increase the risk of uncharacteristic fire because of a reduced opportunity to treat the area mechanically. The Mount Fagan PWA is already in a condition similar to the historic range of variation for its associated vegetation types and therefore would be managed more readily using unplanned ignitions that allow fire to play its natural role.

Non-Wilderness Management

Resource Effects: Both the Tumacacori and Mount Fagan PWAs are primarily managed under the Semi-Primitive Non-Motorized ROS classification. These settings include unroaded areas that people use for a wide variety of activities, but primarily for dispersed uses. These areas have no facilities other than trails and are similar to Primitive areas except that they can be small areas, are typically closer to roads, and sometimes have large numbers of visitors.

A smaller portion of these PWAs are managed as Semi-Primitive Motorized lands. Semi-Primitive Motorized settings are areas with primitive roads (i.e., high clearance and/or 4-wheel drive). People use these areas for a wide variety of activities, both recreational and other, including enjoying the scenery, getting away from other people, hunting, OHV use, dispersed camping, hiking, horseback riding, mountain biking, mining, and cutting firewood. Generally the only facilities in these areas are primitive roads and trails.

The use of motorized and mechanized travel could detract from the vegetation and wildlife characteristics of the area. Primarily the use of motorized travel and roads in SPM areas would potentially have negative effects on wildlife habitats through increased habitat fragmentation and disruption.

For the Tumacacori PWA, which has recently burned in an uncharacteristic wildfire, non-wilderness management would allow for a wider range of treatment options, including use of mechanical equipment to reduce the risk of uncharacteristic fire throughout the area. Mount Fagan PWA is already in a condition similar to the historic range of variation for its associated vegetation types and therefore would be managed using unplanned ignitions that allow fire to play its natural role, similar to the wilderness management scenario.These areas would be expected to see a similar amount of immigration and drug related border patrol activities but would be easier to access and would be patrolled more frequently. As a result, the size and concentration of trash, trails and other related impacts would be more dispersed and less noticeable.

Livestock grazing would continue to be managed under the current Allotment Management Plan.

Additions to Existing Wilderness

Potential wilderness areas that provide additional acreage to existing wilderness areas include the Chiricahua Addition West, Chiricahua Addition North, Mount Wrightson Addition, Galiuro Addition, Santa Teresa Addition North and Santa Teresa Addition South. These six areas are generally (although not always) smaller than the rest of the PWAs, and would offer improved wilderness boundary management. Some of these additions already have minimal or no motorized use due to their rugged terrain and remoteness, and are therefore highly available for wilderness recommendation.

In the small Santa Teresa Wilderness additions (North and South), as well as the Galiuro Addition PWA, the areas' isolated locations lead to light visitation and limited recreational activities. Several foot and horse trails run through the area, but there are no motorized trails. Some dispersed recreation use occurs off motorized roads that border the areas, generating some degree of visitor foot traffic into the PWAs.

In the Mount Wrightson Addition and the Chiricahua Wilderness Additions (North and South), there is a significant amount of recreation activity on non-motorized trails, as well as off of bordering roads. Visitation consists primarily of hiking, horseback riding, camping, and hunting. A section of the Arizona National Scenic Trail runs through the Mount Wrightson Addition PWA. In all of these areas, however, the current recreational uses and types of visitation are compatible with wilderness management. Wilderness recommendation would be unlikely to have an impact on recreation in the area. As a group, these areas have the capability of providing predominantly moderate quality wilderness recreation experiences for visitors.

Wilderness Management

Resource Effects: The wilderness characteristics of these areas would be enhanced, including an increase of wilderness character within the existing wilderness areas. These additions would increase the remoteness and opportunities for solitude within the area, and potentially enrich the wilderness character of the adjacent designated wilderness areas.

In recommended areas, the primitive setting would benefit a variety of species and would promote biodiversity. Because the Minimum Requirement Decision Process would apply to the area, the use of mechanized equipment would be limited while recommended, and prohibited once designated. Any trail construction or other activities that are designed to enhance wilderness experiences would be constructed using hand tools and would use natural materials. Hunting would continue.

Motorized travel would only be permitted for administrative use and would be minimized to preserve the wilderness characteristics of the area. Once designated, administrative use of motor vehicles would be prohibited except in rare occasions where their use is the minimum tool necessary for wilderness management. In both cases, there would be a very minimal loss of recreation opportunities for motorized recreation users but would prevent collection of forest products including firewood, timber, and minerals.

There are some moderate border patrol concerns associated with the Chiricahua Addition North and Chiricahua Addition West PWAs on the Douglas District. Low levels of illegal activity in these areas would indicate a moderate impact on wilderness quality. The Mount Wrightson Addition on the Nogales District requires significant US Border Patrol presence. Recommending this area as wilderness may hamper Border Patrol's law enforcement activities. In addition, the illegal activity in the area may negatively impact the areas' wilderness character. Quality solitude and undeveloped character may be more difficult to find in these areas, as signs of ongoing illegal activity as well as evidence of Border Patrol enforcement and infrastructure collectively detract from the areas' wilderness character.

Livestock grazing would be allowed to continue. The use of mechanized and motorized vehicles and equipment would be permitted for the maintenance and upkeep of stock tanks and fences in accordance with FSM 2320.

Across all potential wilderness areas, recommendation for wilderness status may have an effect on fire and vegetative management activities. The desired conditions for recommended wilderness areas include a landscape where ecological disturbance processes such as fire, insects, and disease are the primary factors affecting landscape patterns. However, wilderness restrictions may affect the timeframe and the methods used to improve forest health and reduce fire risk. These restrictions may lead to a continued or increased threat to the wildland-urban-interface that overlaps or is adjacent to recommended wilderness areas or wilderness study areas.For the Chiricahua West and North Additions, which have recently burned in an uncharacteristic wildfire, wilderness management would limit restoration options but would probably not increase the risk of uncharacteristic fire because of a reduced opportunity to treat the area mechanically. The Galiuro Addition and Santa Teresa North and South Additions have a moderate risk of uncharacteristic fire under their current condition and therefore unplanned ignitions would be the primary treatment in future management so that fire can play its natural role in the ecosystem. Mount Wrightson Addition is already in a condition similar to the historic range of variation for

its associated vegetation types and therefore would be managed more readily using unplanned ignitions that allow fire to play its natural role.

Non-Wilderness Management

Resource Effects: With the exception of the Santa Teresa Addition South and the Galiuro Addition, all of these additions to existing wilderness would continue to be managed primarily under the Semi-Primitive Motorized ROS classification. SPM settings may contain primitive roads, and may allow for a wide variety of activities, including hunting, OHV use, dispersed camping, hiking, horseback riding, mountain biking, mining, and cutting firewood. Generally the only facilities in these areas are primitive roads and trails. As these areas are adjacent to existing Wilderness, the SPM boundaries may include areas less than a half mile of roads. The use of motorized and mechanized travel in the SPM areas could detract from the vegetation and wildlife characteristics of the area. Primarily the use of motorized travel and roads in SPM areas would potentially have negative effects on wildlife habitats through increased habitat fragmentation and disruption.

The Santa Teresa Addition South and Galiuro Addition are primarily classified as Primitive ROS. Primitive settings are large wilderness-like areas where people seek a completely natural setting, challenge, and solitude. These areas have no facilities other than trails and rarely have large numbers of visitors. Under the non-wilderness scenario, these areas would be managed similarly to a designated wilderness due to their remoteness, lack of use and absence of structures.

The Chiricahua Addition North consists of 2,357 acres (34.3%) that fall within the Roaded Natural ROS classification. Roaded Natural settings are road corridors that often lead to developed sites such as campgrounds, picnic areas, or visitor centers (including both Forest Service and other recreation sites). The natural setting is the focus, but individual buildings and structures are occasionally encountered within these corridors. The difference in management direction between wilderness and non-wilderness designation would be significant within this PWA. The RN classification would allow for more facilities, motorized use, and heavy recreation impacts throughout the area.

The use of motorized and mechanized travel could detract from the vegetation and wildlife characteristics of the area. Primarily the use of motorized travel and roads in RN areas would potentially have negative effects on wildlife habitats through increased habitat fragmentation and disruption.

For the Chiricahua West and North Additions, which has recently burned in an uncharacteristic wildfire, non-wilderness management would allow the greatest flexibility in post-treatment options and in further mechanical treatments to reduce the risk of uncharacteristic fire throughout the area. The Galiuro Addition and Santa Teresa North and South Additions have a moderate risk of uncharacteristic fire under their current condition and therefore, non-wilderness management would allow for a wider range of treatment options, including use of mechanical equipment to reduce the risk of uncharacteristic fire throughout the area. Mount Wrightson Addition is already in a condition similar to the historic range of variation for its associated vegetation types and therefore would be managed using unplanned ignitions that allow fire to play its natural role, similar to the wilderness management scenario.

Mount Wrightson, which requires the most Border Patrol presence in this group, would have effects similar to the Tumacacori and Mount Fagan PWAs under the non-wilderness scenario.

There would be no difference in Border Patrol activities for the Galiuro Addition and Santa Teresa North and South Additions, as the US Border Patrol does not currently occupy these areas. The Chiricahua North and West Additions would have increased law enforcement presence and would therefore be expected to have less evidence of illegal activities.

Livestock grazing would continue to be managed under the current Allotment Management Plan.

Wilderness Study Areas

There are three existing Wilderness Study Areas on the Forest: the Mount Graham WSA, the Bunk Robinson WSA, and the Whitmire Canyon WSA. Mount Graham was established by the Arizona Wilderness Act of 1984, and Bunk Robinson and Whitmire Canyon were created by the New Mexico Wilderness Act of 1980. Under the existing Forest Plan, they are managed as Wilderness Study Areas, following guidelines established in the Wilderness Act of 1964. In the proposed Plan, the Mount Graham WSA is recommended as a wilderness in all alternatives. The Bunk Robinson and Whitmire Canyon WSAs are not recommended as wilderness in three of the four plan alternatives. Bunk Robinson and Whitmire Canyon are located in the Douglas District, along the US-Mexico border. Significant illegal border-related activity has been recorded in the area, presenting law enforcement-related management challenges. These two WSAs are not recommended as wilderness in some alternatives because their high levels of illegal activity and associated evidence of human presence make them less desirable wilderness areas.

Recommending these areas as wilderness will have little to no effect on their current management, as the management direction for recommended wilderness areas in the proposed Plan is nearly identical to that of the current WSA management. Furthermore, recommending these three areas as PWAs will have little effect on the character or quality of wilderness on the Coronado NF, as they are already managed to maintain their wilderness potential.

Wilderness Management

Resource Effects: The effects to wilderness characteristics of these areas will be similar to current management, as these areas have been consistently managed to maintain wilderness character since their designation in the Arizona Wilderness Act of 1984 and the New Mexico Wilderness Act of 1980.

The primitive setting would continue to benefit a variety of species and would promote biodiversity. Because the Minimum Requirement Decision Process would apply to the area, the use of mechanized equipment would be limited while recommended, and prohibited once designated. Any trail construction or other activities that are designed to enhance wilderness experiences would be constructed using hand tools and would use natural materials. Hunting would continue.

Motorized travel would only be permitted for administrative use and would be minimized to preserve the wilderness characteristics of the area. Once designated, administrative use of motor vehicles would be prohibited except in rare occasions where their use is the minimum tool necessary for wilderness management.

Livestock grazing would be allowed to continue. The use of mechanized and motorized vehicles and equipment would be permitted for the maintenance and upkeep of stock tanks and fences in accordance with FSM 2320.

Wilderness Study Area Management

Resource Effects: Under the scenario that does not recommend the Bunk Robinson or Whitmire Canyon Wilderness Study Areas for wilderness status, or if Congress does not act upon the recommendation to designate the Mount Graham Wilderness Study Area as wilderness, then these areas would continue to be managed as Wilderness Study Areas. This management is guided by the principles of the Wilderness Act of 1964, which requires management to maintain wilderness characteristics in the area. As Wilderness Study Areas and recommended wilderness are managed under a common set of Management Area standards and guidelines, there are few distinctions to be made between their management as WSA and management as recommended wilderness. The primary distinction is that when proposing an area as a WSA, the Forest is not recommending that area to be designated by Congress as a future part of the National Wilderness Preservation System. While this may have little impact on management of the area while it is being managed as a Wilderness Study Area, should that status be changed by Congress and returned to multiple use management, the area would not be subject to the same management parameters of the NWPS.

The character of the WSAs can be described by their Recreation Opportunity Spectrum setting category. Most of the three WSAs are predominantly Primitive ROS character. The minority of lands in the WSAs that are not of Primitive character are Semi-Primitive Non-Motorized character, where the landscape is somewhat more influenced by nearby roads. Therefore, the recreation setting of these areas continues to be away from roads and in a setting that promotes the wilderness character.

The management of grazing, fire, and vegetation would be the same under both wilderness and non-wilderness scenarios.

Potential Wilderness Areas of High Public Interest

Potential wilderness areas of significant interest to the public include the Mount Graham Wilderness Study Area, Tumacacori, Dragoon, Ku Chish, and Whetstone PWAs. These areas carry a variety of management issues to consider when evaluating the effect of recommending them as wilderness areas. Similarly, this group of PWAs has a variety of wilderness characteristics that would contribute to or detract from their value as additions to the Coronado NF's wilderness landscape.

As recommended wilderness areas, construction of new roads or motorized trails would be prohibited. This is consistent with current recreation offerings in the majority of these PWAs. Recommending wilderness for these areas is appropriate for recreation quality, as most areas currently offer solitude and primitive recreation in the form of non-motorized trails and rugged cross-country opportunities. There are a few isolated incompatible recreation uses, however; for example, there is currently mountain bike use in the Whetstone area, which is inconsistent with wilderness management. Although a few uses would be incompatible with wilderness designation, most current use in these areas are compatible with wilderness character and would be able to continue.

Wilderness Management

Resource Effects: The wilderness characteristics of these areas would be enhanced by the interim guidance and wilderness guidance. The primitive setting may benefit a variety of species and promote biodiversity. Because the Minimum Requirement Decision Process would apply to the area, the use of mechanized equipment would be limited while recommended, and it would be prohibited once designated. Any trail construction or other activities that are designed to enhance wilderness experiences would be constructed using hand tools and would use natural materials. Hunting would continue in the area.

Motorized travel would only be permitted for administrative use and would be minimized to preserve the wilderness characteristics of the area. Once designated, administrative use of motor vehicles would be prohibited except in rare occasions where their use is the minimum tool necessary for wilderness management. In all cases, there would be a loss of recreation opportunities for motorized recreation users, which would prevent collection of forest products, including firewood, timber and minerals.

There are also some moderate border patrol concerns associated with the Ku Chish PWA on the Douglas District and the Tumacacori PWA on the Nogales District. Illegal activity in this area may negatively impact the wilderness quality but because of the rough terrain and limited access, Border Patrol activities are not expected to be altered if it were managed for wilderness character.

Livestock grazing would be allowed to continue. The use of mechanized and motorized vehicles and equipment would be permitted for the maintenance and upkeep of stock tanks and fences in accordance with FSM 2320.

Across all potential wilderness areas, recommendation for wilderness status would have an impact on fire and vegetative management activities. The desired conditions for recommended wilderness areas include a landscape where ecological disturbance processes such as fire, insects, and disease are the primary factors affecting landscape patterns. However, wilderness restrictions may affect the timeframe and the methods used to improve forest health and reduce fire risk. These restrictions may lead to a continued or increased threat to the wildland-urban-interface that overlaps or is adjacent to recommended wilderness areas or wilderness study areas. For the Ku Chish PWA, which has recently burned in an uncharacteristic wildfire, wilderness management would limit restoration options but would probably not increase the risk of uncharacteristic fire because of a reduced opportunity to treat the area mechanically. The Dragoon PWA has a moderate risk of uncharacteristic fire under the current condition and therefore, unplanned ignitions would be the primary treatment used in future management so that fire can play its natural role in the ecosystem. The Whetsone PWA is already in a condition similar to the historic range of variation for its associated vegetation types and therefore would be managed more readily using unplanned ignitions that allow fire to play its natural role.

Non-Wilderness Management

Resource Effects: Both the Dragoon and Whetstone PWAs are primarily managed under the Semi-Primitive Non-Motorized ROS classification. These settings include unroaded areas that people use for a wide variety of activities, but primarily for dispersed uses. These areas have no

facilities other than trails and are similar to Primitive areas except that they can be small areas, are typically closer to roads, and sometimes have large numbers of visitors.

A smaller portion of these PWAs are managed as Semi-Primitive Motorized lands. Semi-Primitive Motorized settings are areas with primitive roads (i.e., high clearance and/or 4-wheel drive). People use these areas for a wide variety of activities, both recreational and other, including enjoying the scenery, getting away from other people, hunting, OHV use, dispersed camping, hiking, horseback riding, mountain biking, mining, and cutting firewood. Generally the only facilities in these areas are primitive roads and trails.

The use of motorized and mechanized travel could detract from the vegetation and wildlife characteristics of the area. Primarily the use of motorized travel and roads in SPM areas would potentially have negative effects on wildlife habitats through increased habitat fragmentation and disruption.

The Ku Chish Potential Wilderness Area is primarily classified as Primitive ROS. Primitive settings are large wilderness-like areas where people seek a completely natural setting, challenge, and solitude. These areas have no facilities other than trails and rarely have large numbers of visitors. Under the non-wilderness scenario, these areas would be managed similarly to a designated wilderness.

For the Ku Chish PWA, which has recently burned in an uncharacteristic wildfire, non-wilderness management would allow for a wider range of treatment options, including use of mechanical equipment to reduce the risk of uncharacteristic fire throughout the area. The Dragoon PWA has a moderate risk of uncharacteristic fire under the current condition and therefore, unplanned ignitions would be the primary treatment used in future management so that fire can play its natural role in the ecosystem. The Whetstone PWA is already in a condition similar to the historic range of variation for its associated vegetation types and therefore would be managed using unplanned ignitions that allow fire to play its natural role, similar to the wilderness management scenario.

Livestock grazing would continue to be managed under the current Allotment Management Plan.

Other Potential Wilderness Areas

The remaining potential wilderness areas have unique issues that may present varying levels of manageability as quality wilderness. The Jhus Canyon PWA contains historic signs of human activity, including historical mining sites and homesteads throughout the area. This detracts from the area's undeveloped character, therefore Jhus Canyon may be a lower quality candidate for wilderness recommendation. The Winchester PWA, located in the Safford District, presents a highly manageable area that has minimal or no motorized use due to rugged terrain, remoteness and lack of public access. Recommending wilderness for this area would be consistent with wilderness character.

Wilderness Management

Resource Effects: The wilderness characteristics of these areas would be enhanced by the interim guidance and wilderness guidance, particularly its remoteness and opportunities for solitude. As isolation lends to a natural remoteness, these effects may be less prominent in secluded areas.

The primitive setting would benefit a variety of species and would promote biodiversity. Because the Minimum Requirement Decision Process would apply to these areas, the use of mechanized equipment would be limited while recommended, and prohibited once designated. Any trail construction or other activities that are designed to enhance wilderness experiences would be constructed using hand tools and would use natural materials. Hunting would continue in these areas.

Motorized travel would only be permitted for administrative use and would be minimized to preserve the wilderness characteristics of the area. Once designated, administrative use of motor vehicles would be prohibited except in rare occasions where their use is the minimum tool necessary for wilderness management. In both cases, there would be a very minimal loss of recreation opportunities for motorized recreation users but would prevent collection of forest products including firewood, timber, and minerals.

There are also some moderate border patrol concerns associated with the Jhus Canyon PWA on the Douglas District. Illegal activity in this area may negatively impact the wilderness quality but because of the rough terrain and limited access, Border Patrol activities are not expected to be altered if it were managed for wilderness character.

Livestock grazing would be allowed to continue. The use of mechanized and motorized vehicles and equipment would be permitted for the maintenance and upkeep of stock tanks and fences in accordance with FSM 2320.

Across all potential wilderness areas, recommendation for wilderness status would have an impact on fire and vegetative management activities. Recommended wilderness status would limit vehicle and mechanized equipment use, thereby increasing planning time and costs and reducing the options available for vegetation treatment and firefighting in these areas. For the Jhus Canyon PWA, which has recently burned in an uncharacteristic wildfire, wilderness management would limit restoration options but would probably not increase the risk of uncharacteristic fire because of a reduced opportunity to treat the area mechanically. The Winchester PWA has a moderate risk of uncharacteristic fire under the current condition and therefore, wilderness management would decrease the ability of the Forest Service to treat the area so that unplanned ignitions can be used in future management and fire can play its natural role in the ecosystem.

Non-Wilderness Management

Resource Effects: The Jhus Canyon PWA is primarily managed under the Semi-Primitive Non-Motorized ROS classification. These settings include unroaded areas that people use for a wide variety of activities, but primarily for dispersed uses. These areas have no facilities other than trails and are similar to Primitive areas except that they can be small areas, are typically closer to roads, and sometimes have large numbers of visitors.

The Jhus Canyon PWA also consists of 2,103 acres (20.6%) that fall within the Roaded Natural ROS classification. Roaded Natural settings are road corridors that often lead to developed sites such as campgrounds, picnic areas, or visitor centers (including both Forest Service and other recreation sites). The natural setting is the focus, but individual buildings and structures are occasionally encountered within these corridors. The difference in management direction between

wilderness and non-wilderness designation would be significant within this PWA. The RN classification would allow for more facilities, motorized use, and heavy recreation impacts throughout the area.

The use of motorized and mechanized travel could detract from the vegetation and wildlife characteristics of the area. Primarily the use of motorized travel in RN areas would potentially have negative effects on wildlife habitats.

The Winchester Potential Wilderness Area is primarily classified as Primitive ROS. Primitive settings are large wilderness-like areas where people seek a completely natural setting, challenge, and solitude. These areas have no facilities other than trails and rarely have large numbers of visitors. Under the non-wilderness scenario, these areas would be managed similarly to a designated wilderness.

For the Jhus Canyon PWA, which has recently burned in an uncharacteristic wildfire, non-wilderness management would allow the greatest flexibility in post-treatment options and in further mechanical treatments to reduce the risk of uncharacteristic fire throughout the area. The Winchester PWA has a moderate risk of uncharacteristic fire under the current condition and therefore, wilderness management would decrease the ability of the Forest Service to treat the area so that unplanned ignitions can be used in future management and fire can play its natural role in the ecosystem.

Livestock grazing would continue to be managed under the current Allotment Management Plan.

List of Preparers

Following are the credentials of Forest Service resource specialists who contributed to the content of this document, in alphabetical order.

CRAIG WILCOX
Position: Forest Silviculturist, Coronado National Forest
Education: B.A., Forest Science, Texas A & M University
Experience: 24 years
Contribution: Vegetation descriptions

DEBBY KRIEGEL
Position: Landscape Architect, Coronado National Forest
Education: B.S., Animal Health Science, University of Arizona
M.L.A., Landscape Architecture, University of Michigan
Experience: 26 years
Contribution: Recreation/Visitor Pressure

ERIN BOYLE
Position: Assistant Forest Planner, Coronado National Forest
Education: B.S., Geology, Evergreen State College
M.S., Hydrology, University of Arizona
Experience: 8 years
Contribution: Inventory, District discussions

JENNIFER MORISSEY
Position: Recreation Planner, Crimson Planning
Education: A.B., Harvard University
M.S., Natural Resources Planning, University of Vermont
Experience: 23 years
Contribution: Effects of Recommendation

JENNIFER M. RUYLE
Position: Forest Planner, Coronado National Forest
Education: B.S., Soil Resource Management, University of California (Berkeley);
M.S., Soil and Water Science, University of Arizona
Experience: 34 years
Contribution: Forest Plan Revision and EIS Team Leader

JUDY YORK
Position: Writer-Editor
Education: B.S. Wildlife Resources, University of Idaho
M.S. Natural Resources Communications, University of Idaho
Experience: 26 years
Contribution: Document editing

LINDA PEERY

Position:	Planning Biologist, Coronado National Forest
Education:	B.S., Conservation Biology, University of Arizona
Experience:	2 years
Contribution:	Inventory, District discussions

MINDI LEHEW

Position:	Natural Resources Specialist, Coronado National Forest
Education:	B.S., Environmental Science, University of Arizona
	Graduate Certificate, Water Policy, University of Arizona
	M.S., Natural Resources Studies, University of Arizona
Experience:	6 years
Contribution:	Lead Author/Preparer for Potential Wilderness Area Evaluation Report

TERRY AUSTIN

Position:	Data Management Specialist, Coronado National Forest
Education:	B.S., Business Management and Administration, University of Phoenix
Experience:	31 years
Contribution:	Geographic Information System support

Appendix A – Potential Wilderness Area Overall Ratings

Potential Wilderness Area (PWA)	Acres	Capability	Availability	Need
PW-05-03-D1-001 Dragoon	14,251	Medium	High	Low
PW-05-03-D1-002 Chiricahua Addition South	11,684	Medium	High	Medium
PW-05-03-D1-003 Ku Chish	26,266	High	High	Medium
PW-05-03-D1-004 Bunk Robinson WSA	19,052	Medium	Medium	Low
PW-05-03-D1-005 Whitmire Canyon WSA	12,163	Medium	High	Low
PW-05-03-D1-006 Devil's Kitchen	5,700	Medium	High	Low
PW-05-03-D1-007 Skeleton Canyon	5,056	Medium	High	Low
PW-05-03-D1-008 Deer Creek	5,639	Medium	High	Low
PW-05-03-D1-009 Chiricahua Addition West	2,731	Medium	High	High
PW-05-03-D1-010 Chiricahua Addition North	6,881	High	High	High
PW-05-03-D1-011 Jhus Canyon	10,219	Medium	High	High
PW-05-03-D2-001 Tumacacori	37,330	Medium	Medium	Medium
PW-05-03-D2-002 Mount Wrightson Addition	14,395	Medium	High	High
PW-05-03-D2-003 Pajarita Addition West	4,126	Medium	Medium	Medium
PW-05-03-D2-004 Pajarita Addition East	1,150	Medium	High	Medium
PW-05-03-D2-005 Cobre	7,364	Medium	Medium	Medium
PW-05-03-D2-006 Pajarito	8,435	Medium	Medium	Medium
PW-05-03-D2-007 Mount Fagan	6,256	Medium	High	Medium
PW-05-03-D2-008 Happy Jack	6,835	Medium	High	Low
PW-05-03-D3-001 Whetstone	19,213	High	High	Medium
PW-05-03-D3-002 Mt Washington	6,208	Medium	Medium	Low
PW-05-03-D3-003 Canelo	8,488	Medium	Low	Medium
PW-05-03-D4-001 Winchester	7,207	Medium	High	Low
PW-05-03-D4-002 Galiuro Addition	16,891	Medium	Low	Medium
PW-05-03-D4-003 Mount Graham WSA	61,315	High	Medium	Low
PW-05-03-D4-004 Santa Teresa Addition North	3,072	Medium	Medium	Low
PW-05-03-D4-005 Santa Teresa Addition South	3,217	Medium	Medium	Low
PW-05-03-D4-006 Greasewood	10,985	Low	N/A	N/A
PW-05-03-D4-007 Kane Spring	8,856	Low	N/A	N/A
PW-05-03-D4-008 Mount Graham Addition	16,728	Medium	Low	Low
PW-05-03-D5-001 Samaniego Ridge	15,156	Medium	High	Medium
PW-05-03-D5-002 East Catalina	25,651	Medium	High	Medium
PW-03-05-D5-003 Little Rincon	8,965	Medium	High	Medium

Appendix B - Capability Rating Criteria

This rating system was created to assess the wilderness character of potential wilderness areas (PWAs). The 15 criteria were developed by the Southwestern Regional Office, with direction from the Forest Service Handbook 1909.12 Chapter 72.1.

As the PWAs were assessed, they were assigned a high, medium, or low rating on each criterion. A breakdown of these scores by PWA may be found in appendix E. An overall rating for each area was determined by the number of high, medium, or low ratings an area received. The number of high, medium, and low ratings was totaled and an overall average was determined for each area. If an area had 8 or more high ratings for the 15 criteria, the area got a high rating for capability; if eight or more medium criterion ratings then an overall rating of medium, and if eight or more low ratings the overall rating was low. If an area received a low rating for capability, the area was not evaluated for availability or need. A list of the areas that did not meet the threshold can be found in appendix J.

Capability Rating Criteria

Natural

1. Presence of nonnative species
   - High – nonnative species are not evident
   - Medium – nonnative species are evident in isolated spots.
   - Low – nonnative species are common or scattered throughout the area.
2. Rivers within the wilderness area are in free-flowing condition
   - High – Rivers within the area are considered free-flowing
   - Medium – Some rivers have impoundments or other issues that affect their free-flowing character.
   - Low – Rivers within the wilderness area are seasonal or heavily impacted by impoundments.
3. Quality of night-sky as affected by light pollution
   - High – The night sky is clear with little to no interference from light pollution.
   - Medium – Some stars are visible and there is moderate degradation from light pollution
   - Low –Few stars are visible at night and the presence of light pollution is evident
4. Presence of pollutants that degrade water
   - High – All rivers/streams have been sampled and there are no water quality issues.
   - Medium – There are no known water quality issues within the area but the not all rivers/streams have been sampled.
   - Low – There are rivers within the area that are listed on the State Impaired Waters List (303d)
5. Area provides elements of biological diversity and naturalness, including unique habitats, TES or rare plants and wildlife.
   - High – has critical or unique habitats and diverse ecological conditions.
   - Medium – has a mix of habitats and ecological conditions.
   - Low – has limited ecological conditions and habitats.

6. Area contains a variety of natural resources, including a variety of tree species and structures. Intermingled grasslands or meadows, numerous recreation opportunities, diversity of wildlife habitats, and wildlife, etc.
    - High – diverse amount of natural resources
    - Medium – mixed amount of natural resources
    - Low – limited amount of natural resource diversity

Undeveloped

7. Area has current or past evidence of human activity.
    - High – little or no evidence of human activity
    - Medium – unnoticeable or unobjectionable human activity
    - Low – obvious evidence of human activity

Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation

8. Area provides physically and mentally challenging recreation opportunities that promote adventure and self-reliance.
    - High – Most of the area provides challenging recreation opportunities
    - Medium – Some parts of the area have the potential for challenging recreation opportunities.
    - Low – Few parts of the area can provide challenging recreation opportunities.
9. Opportunity to experience solitude and isolation from human activities while recreating in the area.
    - High – Significant feeling of being alone or remote from civilization.
    - Medium – Feeling of being alone is possible but signs of civilization are likely.
    - Low – Little opportunity of feeling alone.
10. Opportunity to engage in primitive and unconfined recreation such as back-packing, kayaking, hunting, fishing, etc.
    - High – There are many opportunities for engaging in primitive recreation.
    - Medium – There are some opportunities for engaging in primitive recreation.
    - Low – There are few to no opportunities to engage in primitive recreation.

Special Features and Values

11. Area contains outstanding or distinct features like rock formations, panoramic views, etc.
    - High – many distinct features or few but exceptional features
    - Medium – some distinct features
    - Low – one or no distinct features
12. Area has potential for scientific research, environmental education, or historic/cultural opportunities.
    - High – good potential for two or more types of these opportunities
    - Medium – potential for one type of opportunity
    - Low – little or no potential for this type of opportunity

13. Area contains unique or rare species of plants and/or animals.
    - High – area has several unique or rare plants and/or animals
    - Medium – area has a few unique or rare plants and/or animals
    - Low – area has no unique or rare plants and/or animals

Manageability

14. Ability to manage the area in for wilderness character, including distance and influence from outside activities; opportunity to access the area; and resource conflicts or encumbrances.
    - High – isolated from areas of activity; controlled or limited access; no encumbrances or resource conflicts
    - Medium – somewhat isolated from areas of activity; adequate access opportunities; some resource conflicts and/or encumbrances
    - Low – areas of activity are nearby; many access opportunities; many resource conflicts and/or encumbrances
15. Motorized use within the area
    - Yes (Low) – has motorized vehicle use
    - No (High) – does not have any motorized vehicle use

Appendix C - Availability Rating Criteria

This rating system was created to assess the resource demands and uses of potential wilderness areas (PWAs), based on guidance from the Forest Service Handbook 1909.12 Chapter 74. As the PWAs were assessed, they were assigned a high, medium, or low rating on each criterion. A breakdown of these scores by PWA may be found in appendix F. To determine the overall availability rating of a PWA, each resource area was rated high, medium, or low for ten factors. If an area was not assigned a low rating in any category, then the overall score was high. If the area received 1-2 low ratings on the individual criteria, the overall score was medium. If the area was assigned 3 or more low ratings, then the area's overall score was low.

Availability Rating Criteria

1. Degree of Forest Service control…
    a. *…over land surface (consider private land, MOU/As, cooperative agreements, etc.)*
    b. *…over land subsurface (consider existing / potential mineral and water rights*
    c. *…over airspace (consider military and commercial needs / uses)*
2. Recreation, including Tourism
    a. *Current recreational uses*
    b. *Trends in recreational use*
    c. *Trends in tourism*
    d. *Need for additional services, education, interpretation, outfitter-guides*
    e. *Planned/potential future uses*
3. Wildlife, Species, Populations, and Management Needs, Including Aquatic Species and Plants
    a. *Current TES and Sensitive Species status*
    b. *Management needs for TES and SS*
    c. *Current hunting use*
    d. *Trends in hunting use*
    e. *Insects and disease*
    f. *Planned/potential (re-)introductions, habitat improvement projects, etc.*
4. Vegetation Management, Fire, and Fuels
    a. *Current departure from fire regime and/or potential natural vegetation*
    b. *Treatment types needed (consider motorized, mechanized, aircraft, etc.)*
    c. *Anticipated treatment frequency and duration needed to restore ecosystem*
    d. *Trade-off to limit treatments to infrequent aircraft, nonmotorized methods, and natural ignitions*
    e. *Planned/ongoing treatments (consider type and duration)*
5. Water Availability and Use
    a. *Current water availability and flow patterns*
    b. *Trends in water availability and flow*
    c. *Existing water storage installations, impoundments, diversions, and current use*

   d. *Need for future water storage installations, impoundments, diversions, and additional use*
   e. *Planned/potential future uses*

6. Livestock Operations
   a. *Current grazing sue*
   b. *Trends in livestock numbers*
   c. *Trends in facility maintenance (consider frequency, materials, equipment type, mode of access, etc.)*
   d. *Need for additional range improvements (consider water storage, fences, pipelines, etc.)*
   e. *Potential for expanding livestock operations (consider forage capacity, extent of rangelands, and livestock numbers)*

7. Timber
   a. *Percent/proportion of area containing commercially valuable (harvestable) timber*
   b. *Current output*
   c. *Trends in output*
   d. *Planned/potential increases in timber production*

8. Minerals
   a. *Current mineral developments*
   b. *Trends in mineral exploration, extraction, and output*
   c. *Presence of high value deposits of strategic importance*
   d. *Demand for mineral development*
   e. *Planned/potential mining activities*

9. Cultural Resources
   a. *Existing sites and resources (consider structures and traditional uses)*
   b. *Trends in traditional uses and resource collection*
   c. *Trends in protection and maintenance of resources (consider frequency and mechanized or motorized equipment)*
   d. *Need for additional protection, maintenance, or access*
   e. *Planned/potential development, interpretive, or protection projects*

10. Authorized and Potential Uses
   a. *Current commitments through contracts, permits, or agreements that are not already described (consider commitment length, potential for termination, and access needs)*
   b. *Need for educational or scientific permits, utility development, or other uses*

Appendix D – Need Assessment Factors

This rating system was created to assess the need to recommend potential wilderness areas (PWAs) for wilderness designation. Six factors were evaluated based on direction from the Forest Service Handbook 1909.12 Chapter 72.31. A breakdown of these scores by PWA may be found in appendix G.

Factor 1: Wilderness Lands in the Vicinity

> *The location, size, and type of other wildernesses in the general vicinity and their distance from the proposed area. Consider accessibility of areas to population centers and user groups. Public demand for wilderness may increase with proximity to growing population centers.*

The ratings for this need factor were based on each potential wilderness area's location relative to existing wilderness areas. On average, visitors will travel about 92 miles to reach a wilderness area (USDA Forest Service 2009a). The number of wilderness areas and the total acreage within 100 miles of each PWA was calculated. The analysis also considered accessibility of the potential wilderness areas to population centers over 5,000 and the associated public demand based on proximity. Potential wilderness areas were given a rating of high if the area could sufficiently meet the needs of the underserved population of Tucson. In order to receive a high rating, the PWA must be within 40 miles of the Tucson metropolitan area. Potential wilderness areas were given a rating of medium if the area could sufficiently meet the needs of the communities with populations over 10,000. In order to receive a medium rating, the PWA must be within 30 miles of these communities. Those potential wilderness areas that did not fall into either of these categories were given a rating of low. The Coronado National Forest currently equals the national average of 19 percent for National Forest System lands as wilderness and exceeds the regional average of only 13 percent lands in wilderness.

Factor 2: Visitor Pressure

> *Present visitor pressure on other wildernesses, the trends in use, changing patterns of use, population expansion factors, and trends and changes in transportation.*

The number of wilderness areas within 100 miles of population centers over 5,000 was calculated based on the assumption that a 100-mile radius represented the reasonably accessible existing wilderness. The National Visitor Use Monitoring Report for 2001 and 2007 was referenced for analysis of wilderness visits and trends in use, as well as population expansion factors at a regional scale. This factor analyzes the ability of each potential wilderness area to meet future demand for wilderness. It is predicted that future demand for wilderness on the Coronado National Forest will be greatest from Tucson (USDA Forest Service 2009a). All of the PWAs were rated high for this factor based on high current use on existing wilderness areas, surrounding population increases, and high demand for additional wilderness on the Coronado National Forest.

Factor 3: Nonwilderness Lands in the Vicinity

> *The extent to which nonwilderness lands on the NFS unit or other Federal lands are likely to provide opportunities for unconfined outdoor recreation experiences.*

The ratings for this need factor were based on each potential wilderness area's location relative to nonwilderness areas that are specially-designated Federal public lands likely to offer a similar

unconfined recreation experience. The number of nonwilderness areas and the total acreage within 100 miles of each PWA was calculated. The results of this analysis show that there are significant opportunities for unconfined outdoor recreation experiences outside of the designated wilderness areas within 100 miles of the Coronado National Forest, including 4.1 million acres of Federal lands. This is double the amount of designated wilderness within 100 miles of the Coronado National Forest. Therefore, all potential wilderness areas received a low need rating for Factor 3.

Factor 4: Primitive Sanctuary for Plants and Wildlife

> *The need to provide a refuge for those species that have demonstrated an inability to survive in less than primitive surroundings or the need for a protected area for other unique scientific values or phenomena.*

As part of the forest plan revision process, the Coronado National Forest has developed a list of species considered in the population viability evaluation. Though all of these species would benefit from reduced disturbance, none require a primitive wilderness environment to survive. The PWAs were rated based on the presence of threatened, endangered, sensitive, and highly vulnerable (G1-G2, T1-T2) species from a Forest total of 255 species. The PWA was given a high rating if the area contained more than 60 of these species. The PWA was given a medium rating if the area contained 30-60 of these species. Those PWAs that contained less than 30 of these species were given a low rating.

Factor 5: Capacity of Established Wilderness Areas

> *Within social and biological limits, management may increase the capacity of established wilderness to support human use without unacceptable depreciation of the wilderness resource.*

Use in the existing wilderness areas on the Coronado National Forest is largely self-regulating due to rugged terrain and a lack of water. Visitor use is considered high in the wilderness areas adjacent to the Tucson metropolitan area and includes the Pusch Ridge and Mount Wrightson wilderness areas. The Coronado National Forest also has wilderness areas that are remote, difficult to access, and where visitor use is considered low. Here, additional demand could be accommodated without management changes. All of the PWAs rated low for this factor given the proximity of wilderness areas that can accommodate additional use.

Factor 6: Wilderness Areas with Similar Landform and Vegetation

> *An area's ability to provide for preservation of identifiable landform types and ecosystems. Consideration of this factor may include utilization of Edwin A. Hammond's subdivision of landform types and the Bailey-Kuchler ecosystem classification.*

The guidelines set forth from the Forest Service Southwestern Regional Office identify underrepresented landform types and ecosystems as those that comprise less than three percent of the acres in the Southwestern Region (Arizona and New Mexico). The Coronado National Forest does not contain any underrepresented landform types; however, it does contain six underrepresented ecosystems: Interior Chaparral, Madrean Encinal Woodland, Madrean Pine Oak Woodland, Mixed Conifer Forest, Spruce Fir Forest, and Riparian Areas (Cottonwood Willow Riparian Forest, Montane Willow Riparian Forest). Potential wilderness areas that were composed of over 90 percent underrepresented ecosystems received a high rating. PWAs that

were composed of 50-90 percent underrepresented ecosystems received a medium rating. PWAs that were composed of less than 50 percent underrepresented ecosystems received a low rating.

Public Review and Comment on Potential Wilderness Areas

The public was given opportunity to provide input and feedback to the potential wilderness area evaluation report. Information about the PWAs and the evaluation process was also posted on the Coronado National Forest forest plan revision website, with provisions to submit comments online or via email. There is no rating associated with the public input.

Overall Need Rating

The PWAs were assigned a high, medium, or low rating for each factor. The overall need rating for the PWA was based on the total number of ratings for high, medium, and low. The PWA was rated high overall if the area received three or more high ratings in the individual factors. The PWA was rated medium overall if the area received two high ratings in the individual factors. The PWA was rated low overall if the area received only one high rating in the individual factors. For a breakdown of the individual scores for each PWA, see appendix G.

Appendix E – Capability Rating Matrix

Potential Wilderness Area (PWA)	Question															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Overall Rating
PW-05-03-D1-001 Dragoon	Low	Low	Med	Med	Med	Med	Low	Med	Med	High	High	High	Med	Med	No	**Medium**
PW-05-03-D1-002 Chiricahua Addition South	Med	Med	High	Med	Med	Med	Low	High	Med	Med	Med	Med	Med	Med	No	**Medium**
PW-05-03-D1-003 Ku Chish	Med	Med	High	Med	High	Med	Med	High	High	High	High	High	High	High	No	**High**
PW-05-03-D1-004 Bunk Robinson WSA	High	Med	High	Med	Med	Med	Low	Med	Low	Med	Med	Med	Med	Low	Yes	**Medium**
PW-05-03-D1-005 Whitmire Canyon WSA	High	High	High	Med	Med	Low	High	Med	Med	Med	Med	Med	Med	Med	No	**Medium**
PW-05-03-D1-006 Devil's Kitchen	Low	Low	High	Med	Med	Low	Low	Med	Med	Med	Low	Med	Med	Med	Yes	**Medium**
PW-05-03-D1-007 Skeleton Canyon	Low	Med	High	Med	Med	Low	Low	Med	Med	Med	Low	Med	Med	Med	Yes	**Medium**
PW-05-03-D1-008 Deer Creek	Low	Low	High	Med	Low	Low	Low	Med	Med	Med	Low	Med	Med	Med	No	**Medium**
PW-05-03-D1-009 Chiricahua Addition West	Med	Med	High	Med	Med	Low	High	Med	Med	Med	Low	Low	Low	Low	No	**Medium**
PW-05-03-D1-010 Chiricahua Addition North	Med	High	High	Med	High	High	Med	Med	High	Med	Med	High	High	Med	No	**High**
PW-05-03-D1-011 Jhus Canyon	Med	Med	High	Med	High	High	Low	Med	Med	Med	Med	High	Med	Low	No	**Medium**

Potential Wilderness Area (PWA)	Question															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Overall Rating
PW-05-03-D2-001 Tumacacori	Low	Low	Med	Med	High	Med	Low	High	Med	High	High	High	High	Med	Yes	**Medium**
PW-05-03-D2-002 Mount Wrightson Addition	Low	Med	Med	Med	High	High	Med	Med	Med	High	High	High	High	Low	Yes	**Medium**
PW-05-03-D2-003 Pajarita Addition West	Low	Med	High	Med	High	High	Low	Med	Med	Med	High	High	High	Low	Yes	**Medium**
PW-05-03-D2-004 Pajarita Addition East	Low	Med	Med	Med	Med	Low	Low	Low	Med	Med	Low	High	Med	Med	No	**Medium**
PW-05-03-D2-005 Cobre	Low	Low	High	Med	High	High	Low	Med	Med	High	Med	High	High	Med	Yes	**Medium**
PW-05-03-D2-006 Pajarito	Low	Low	Med	Med	High	Med	Low	Med	Med	Med	Med	High	High	Low	Yes	**Medium**
PW-05-03-D2-007 Mount Fagan	Low	Med	Med	Med	High	Med	Med	Med	Low	Med	Med	Med	Med	Med	Yes	**Medium**
PW-05-03-D2-008 Happy Jack	Low	Med	High	Med	Low	Low	Low	Med	Med	Med	Med	Low	Med	Low	No	**Medium**
PW-05-03-D3-001 Whetstone	Med	Med	High	Med	High	High	Med	High	High	High	High	Med	High	Med	Yes	**High**
PW-05-03-D3-002 Mt Washington	Low	High	High	Med	Med	Med	Low	High	Med	High	High	Med	Med	Med	No	**Medium**
PW-05-03-D3-003 Canelo	Low	Low	High	Med	Med	Med	Low	Low	Med	Med	Low	Med	Med	Low	Yes	**Medium**
PW-05-03-D4-001 Winchester	Low	Med	High	Med	Med	Low	Med	Med	Med	Med	Low	Low	Low	High	Yes	**Medium**

Potential Wilderness Area (PWA)	Question															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Overall Rating
PW-05-03-D4-002 Galiuro Addition	Low	Med	High	Med	Med	Low	Low	Med	Med	Med	Med	Med	Low	Med	Yes	**Medium**
PW-05-03-D4-003 Mount Graham WSA	Med	Med	Med	Med	High	High	Med	Med	High	High	High	High	High	Med	No	**High**
PW-05-03-D4-004 Santa Teresa Addition North	Med	Med	High	Med	Low	Med	Low	Med	Med	Med	Low	Low	Low	Med	Yes	**Medium**
PW-05-03-D4-005 Santa Teresa Addition South	Med	Med	High	Med	Low	Low	High	High	Med	Med	Low	Low	Low	High	Yes	**Medium**
PW-05-03-D4-006 Greasewood	Low	Low	High	Med	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Yes	**Low**
PW-05-03-D4-007 Kane Spring	Low	Low	High	Med	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Yes	**Low**
PW-05-03-D4-008 Mount Graham Addition	Med	Med	High	Med	Med	High	Low	Med	Med	Med	Med	Med	Med	Low	Yes	**Medium**
PW-05-03-D5-001 Samaniego Ridge	Low	High	Low	Med	Med	Med	Med	High	Med	Med	Med	High	Med	Med	No	**Medium**
PW-05-03-D5-002 East Catalina	Low	Med	High	Med	Med	Med	Med	High	High	High	High	High	Med	Med	Yes	**Medium**
PW-03-05-D5-003 Little Rincon	Low	High	High	Med	Med	Med	Med	Med	Med	Med	High	Med	Med	High	No	**Medium**

Appendix F – Availability Rating Matrix

Potential Wilderness Area (PWA)	Resource under consideration										
	FS Control	Recreation	Wildlife	Veg/Fire	Water	Livestock	Timber	Minerals	Cultural	Other Uses	Overall Rating
PW-05-03-D1-001 Dragoon	Med	High	High	Med	Med	High	High	Med	High	High	**High**
PW-05-03-D1-002 Chiricahua Addition South	Med	High	High	Med	Med	High	High	High	High	High	**High**
PW-05-03-D1-003 Ku Chish	High	High	High	High	Med	High	High	High	High	High	**High**
PW-05-03-D1-004 Bunk Robinson WSA	Med	High	High	Med	Low	Med	High	High	High	High	**Med**
PW-05-03-D1-005 Whitmire Canyon WSA	Med	High	High	Med	Med	High	High	High	High	High	**High**
PW-05-03-D1-006 Devil's Kitchen	Med	High	High	Med	Med	High	High	High	High	High	**High**
PW-05-03-D1-007 Skeleton Canyon	Med	High	High	Med	High	High	High	High	High	High	**High**
PW-05-03-D1-008 Deer Creek	Med	High	High	Med	Med	High	High	High	High	High	**High**
PW-05-03-D1-009 Chiricahua Addition West	High	High	High	Med	High	High	High	High	High	High	**High**
PW-05-03-D1-010 Chiricahua Addition North	High	High	High	High	High	High	High	High	High	High	**High**
PW-05-03-D1-011 Jhus Canyon	Med	High	High	High	Med	High	High	High	High	High	**High**
PW-05-03-D2-001 Tumacacori	Low	High	High	Med	High	High	High	Med	High	Med	**Med**
PW-05-03-D2-002 Mount Wrightson Addition	High	Med	High	High	High	High	High	Med	High	High	**High**
PW-05-03-D2-003 Pajarita Addition West	Low	High	High	High	High	High	High	Med	High	Med	**Med**
PW-05-03-D2-004 Pajarita Addition East	Med	High	High	High	High	High	High	High	High	High	**High**
PW-05-03-D2-005 Cobre	Low	High	High	Med	Med	High	High	High	High	Med	**Med**
PW-05-03-D2-006 Pajarito	Low	Med	High	High	High	High	High	High	High	Med	**Med**
PW-05-03-D2-007 Mount Fagan	Med	High	High	High	Med	Med	High	Med	High	High	**High**

Potential Wilderness Area (PWA)	Resource under consideration										
	FS Control	Recreation	Wildlife	Veg/Fire	Water	Livestock	Timber	Minerals	Cultural	Other Uses	Overall Rating
PW-05-03-D2-008 Happy Jack	Med	High	High	High	Med	High	High	Med	High	High	**High**
PW-05-03-D3-001 Whetstone	High	High	Med	High	High	Med	High	High	High	High	**High**
PW-05-03-D3-002 Mt Washington	Med	High	High	High	High	High	High	Med	High	Low	**Med**
PW-05-03-D3-003 Canelo	High	Med	Low	Med	Med	Low	High	High	High	Low	**Low**
PW-05-03-D4-001 Winchester	High	High	High	High	High	High	High	High	High	High	**High**
PW-05-03-D4-002 Galiuro Addition	High	Low	Low	Low	Low	Low	High	Low	High	High	**Low**
PW-05-03-D4-003 Mount Graham WSA	High	Med	Low	Low	High	Med	High	High	High	High	**Med**
PW-05-03-D4-004 Santa Teresa Addition North	High	High	High	High	High	Low	High	Low	High	High	**Med**
PW-05-03-D4-005 Santa Teresa Addition South	High	High	High	High	High	Low	High	High	High	High	**Med**
PW-05-03-D4-008 Mount Graham Addition	High	Med	Low	Low	Low	Low	Low	High	Med	Low	**Low**
PW-05-03-D5-001 Samaniego Ridge	High	Med	High	Med	High	Med	High	High	High	Med	**High**
PW-05-03-D5-002 East Catalina	High	High	High	Med	High	Med	High	High	High	High	**High**
PW-03-05-D5-003 Little Rincon	High	High	High	Med	High	Med	High	High	High	High	**High**

Appendix G – Need Assessment Matrix

Potential Wilderness Area (PWA)	Factor						
	1	2	3	4	5	6	Overall Rating
PW-05-03-D1-001 Dragoon	Med	High	Low	Med	Low	Med	**Low**
PW-05-03-D1-002 Chiricahua Addition South	Med	High	Low	High	Low	Med	**Med**
PW-05-03-D1-003 Ku Chish	Low	High	Low	High	Low	Med	**Med**
PW-05-03-D1-004 Bunk Robinson WSA	Med	High	Low	Med	Low	Med	**Low**
PW-05-03-D1-005 Whitmire Canyon WSA	Med	High	Low	Med	Low	Med	**Low**
PW-05-03-D1-006 Devil's Kitchen	Med	High	Low	Med	Low	Med	**Low**
PW-05-03-D1-007 Skeleton Canyon	Low	High	Low	Med	Low	Low	**Low**
PW-05-03-D1-008 Deer Creek	Low	High	Low	Med	Low	Med	**Low**
PW-05-03-D1-009 Chiricahua Addition West	Low	High	Low	High	Low	High	**High**
PW-05-03-D1-010 Chiricahua Addition North	Low	High	Low	High	Low	High	**High**
PW-05-03-D1-011 Jhus Canyon	Low	High	Low	High	Low	High	**High**
PW-05-03-D2-001 Tumacacori	Med	High	Low	Med	Low	Med	**Low**
PW-05-03-D2-002 Mount Wrightson Addition	High	High	Low	High	Low	High	**High**
PW-05-03-D2-003 Pajarita Addition West	Med	High	Low	Med	Low	Low	**Low**
PW-05-03-D2-004 Pajarita Addition East	Med	High	Low	Med	Low	Low	**Low**
PW-05-03-D2-005 Cobre	Med	High	Low	Med	Low	Low	**Low**
PW-05-03-D2-006 Pajarito	Med	High	Low	Med	Low	Med	**Low**
PW-05-03-D2-007 Mount Fagan	High	High	Low	Med	Low	Low	**Med**
PW-05-03-D2-008 Happy Jack	Med	High	Low	Med	Low	Med	**Low**
PW-05-03-D3-001 Whetstone	High	High	Low	Low	Low	Low	**Med**
PW-05-03-D3-002 Mt Washington	Med	High	Low	Med	Low	Med	**Low**
PW-05-03-D3-003 Canelo	Med	High	Low	High	Low	Med	**Med**
PW-05-03-D4-001 Winchester	Low	High	Low	Low	Low	Med	**Low**
PW-05-03-D4-002 Galiuro Addition	Low	High	Low	Med	Low	High	**Med**
PW-05-03-D4-003 Mount Graham WSA	Med	High	Low	Med	Low	Med	**Low**
PW-05-03-D4-004 Santa Teresa Addition North	Low	High	Low	Low	Low	Med	**Low**
PW-05-03-D4-005 Santa Teresa Addition South	Med	High	Low	Low	Low	Med	**Low**
PW-05-03-D4-008 Mount Graham Addition	Med	High	Low	Med	Low	Med	**Low**
PW-05-03-D5-001 Samaniego Ridge	High	High	Low	Med	Low	Med	**Med**
PW-05-03-D5-002 East Catalina	High	High	Low	Med	Low	Med	**Med**
PW-03-05-D5-003 Little Rincon	High	High	Low	Med	Low	Low	**Med**

Appendix H – Potential Wilderness Areas within Ecosystem Management Areas

Ecosystem Management Area	Potential Wilderness Area
Dragoon	Dragoon
Chiricahua	Ku Chish Chiricahua Addition South Chiricahua Addition West Chiricahua Addition North Jhus Canyon
Peloncillo	Bunk Robinson WSA Whitmire Canyon WSA Devil's Kitchen Skeleton Canyon Deer Creek
Tumacacori	Tumacacori Pajarita Addition West Pajarita Addition East Cobre Pajarito
Santa Rita	Mount Wrightson Mount Fagan Happy Jack
Huachuca	Mount Washington Canelo
Whetstone	Whetstone
Santa Teresa	Santa Teresa Addition North Santa Teresa Addition South
Pinaleño	Mount Graham WSA Mount Graham Addition Greasewood Kane Spring
Galiuro	Galiuro Addition
Winchester	Winchester
Santa Catalina	Samaniego Ridge East Catalina Little Rincon

Appendix I – Total Threatened, Endangered, Sensitive, and Highly Vulnerable Species per Potential Wilderness Area

Ecosystem Management Area	Potential Wilderness Area	Amphibians	Birds	Fishes	Fungi-Lichens	Insects	Mammals	Mollusks	Other Invertebrates	Reptiles	Vascular Plants	Total Species
Peloncillo	Bunk Robinson WSA	1	18	0	0	0	11	0	0	6	7	**43**
	Whitmire Canyon WSA	1	7	0	0	0	11	0	0	6	7	**32**
	Devil's Kitchen	1	9	0	0	0	11	0	0	6	7	**34**
	Skeleton Canyon	1	8	0	0	0	11	0	0	5	7	**32**
	Deer Creek	1	19	0	0	0	11	0	0	7	7	**45**
Chiricahua	Chiricahua Addition South	2	8	0	2	3	12	8	0	4	28	**67**
	Ku Chish	2	12	0	2	6	16	10	0	5	32	**85**
	Chiricahua Addition West	2	8	0	2	3	12	7	0	4	28	**66**
	Chiricahua Addition North	2	8	0	2	8	13	8	0	5	31	**77**
	Jhus Canyon	1	8	0	2	5	14	8	0	4	29	**71**
Dragoon	Dragoon	1	6	0	0	0	9	7	0	2	9	**34**
Tumacacori	Tumacacori	4	10	0	0	2	16	0	0	7	17	**56**
	Pajarita Addition West	4	10	1	0	2	16	0	0	7	13	**53**
	Pajarita Addition East	4	8	0	0	2	16	0	0	6	13	**49**
	Cobre	2	8	0	0	2	16	0	0	6	7	**41**
	Pajarito	3	12	0	0	2	16	0	0	7	16	**56**
Santa Rita	Mount Wrightson Addition	4	14	1	2	4	18	4	0	1	32	**80**
	Mount Fagan	0	2	0	2	3	15	3	0	2	14	**41**
	Happy Jack	1	11	2	3	3	18	2	0	3	5	**48**

Ecosystem Management Area	Potential Wilderness Area	Amphibians	Birds	Fishes	Fungi-Lichens	Insects	Mammals	Mollusks	Other Invertebrates	Reptiles	Vascular Plants	Total Species
Huachuca	Mount Washington	2	11	0	0	4	13	3	0	5	21	**59**
	Canelo	4	11	2	0	6	15	4	0	7	24	**73**
Whetstone	Whetstone	0	7	0	0	0	12	3	0	2	2	**26**
Pinaleño	Mount Graham WSA	0	9	0	1	2	10	5	0	4	13	**44**
	Mount Graham Addition	0	9	0	1	2	8	4	0	3	12	**39**
Winchester	Winchester	0	4	0	0	0	5	0	0	3	3	**15**
Galiuro	Galiuro Addition	1	8	0	0	1	8	1	0	2	6	**27**
Santa Teresa	Santa Teresa Addition North	0	3	0	0	0	5	0	0	2	3	**13**
	Santa Teresa Addition South	1	4	0	0	0	5	0	0	2	3	**15**
Santa Catalina	Samaniego Ridge	1	11	1	1	3	11	5	0	2	21	**56**
	East Catalina	2	11	1	1	3	11	4	0	2	21	**56**
	Little Rincon	2	9	0	1	2	11	3	0	2	17	**47**

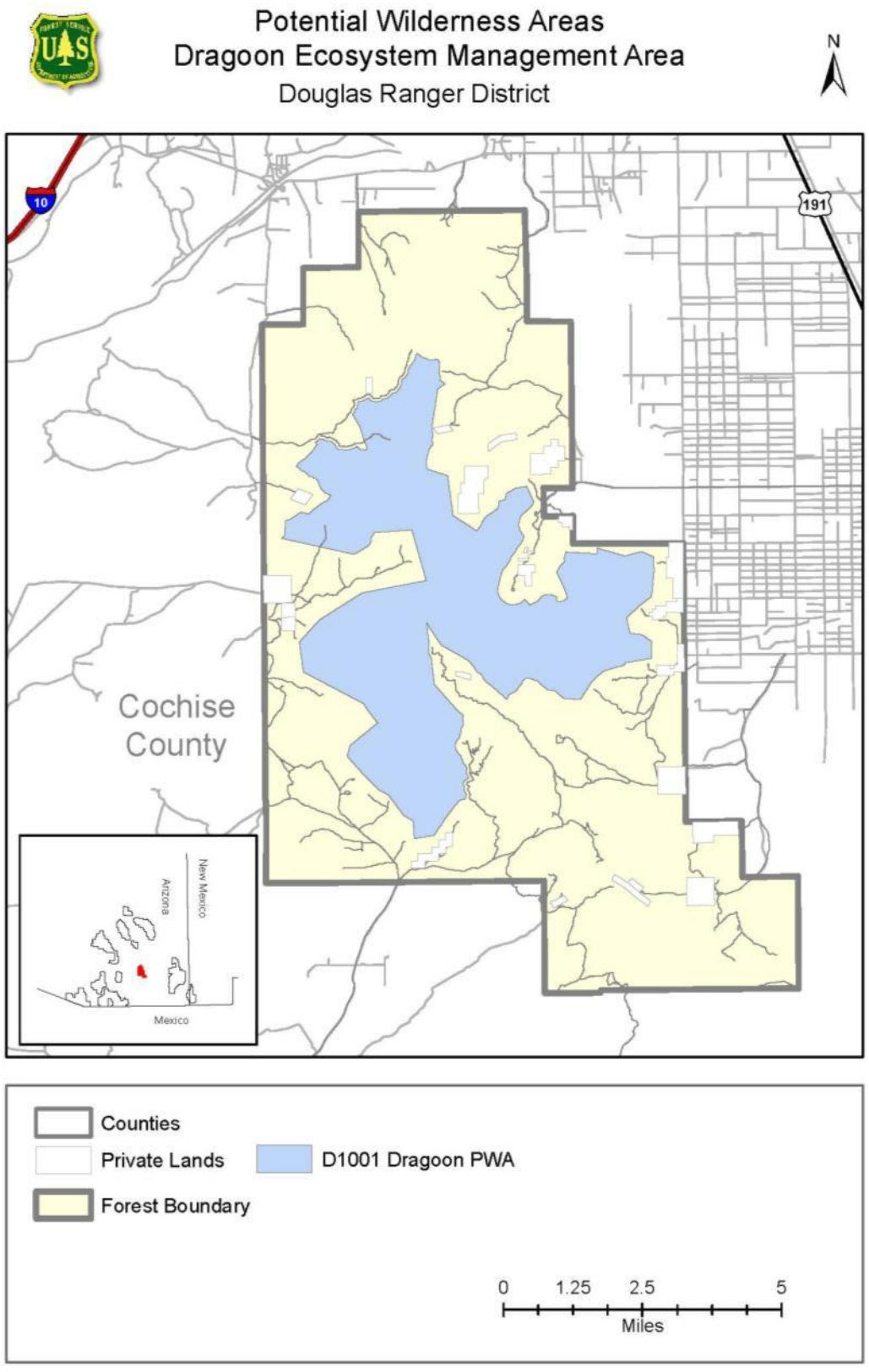
Appendix J – Areas Excluded from Further Evaluation

These areas rated low overall for Capability and were excluded from further evaluation. For a breakdown of the individual ratings, see appendix E.

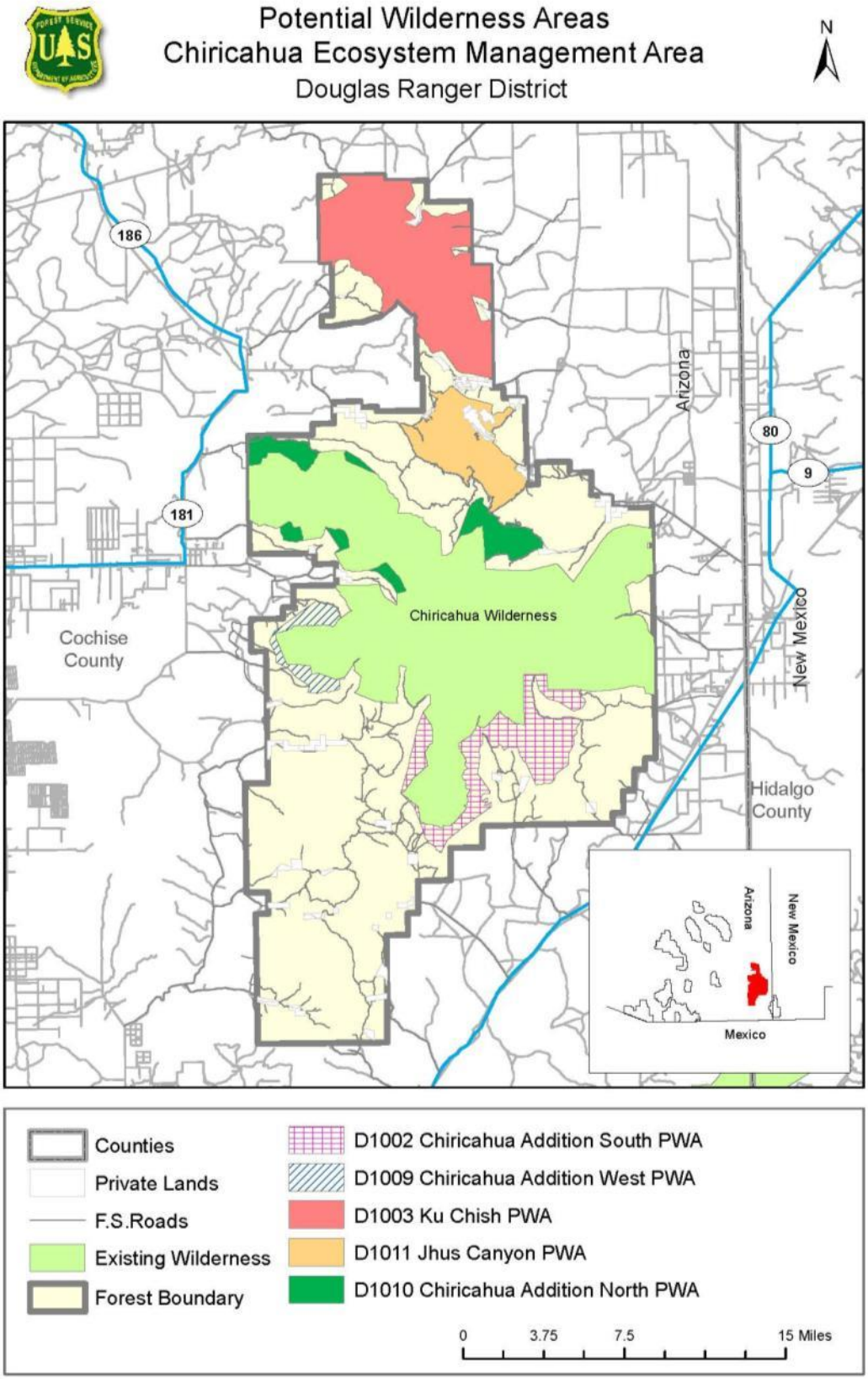
Greasewood PW-05-03-D4-006
This PWA was not considered for further evaluation based on its low ratings for 13 of the 15 criteria, including use of motorized vehicles within the potential wilderness area. The Greasewood PWA rated High for quality of night sky and Medium for water quality. The Safford District staff fully supports the decision to drop the Greasewood PWA from further evaluation.

Kane Spring PW-05-03-D4-007
This PWA was not considered for further evaluation based on its low ratings for 13 of the 15 criteria, including use of motorized vehicles within the potential wilderness area. The Kane Spring PWA rated High for quality of night sky and Medium for water quality. The Safford District staff fully supports the decision to drop the Kane Spring PWA from further evaluation.

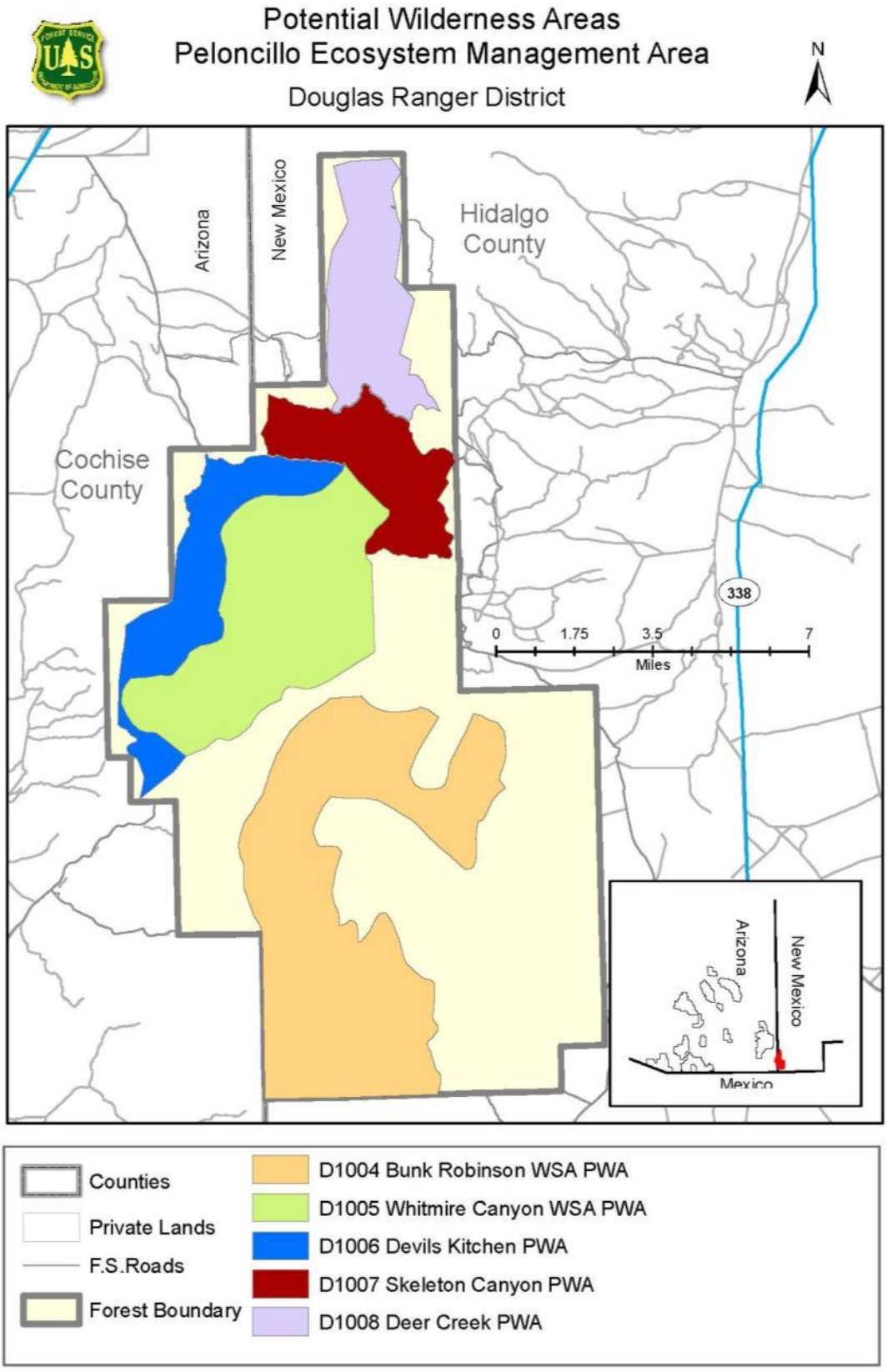
Map 1: Dragoon Ecosystem Management Area



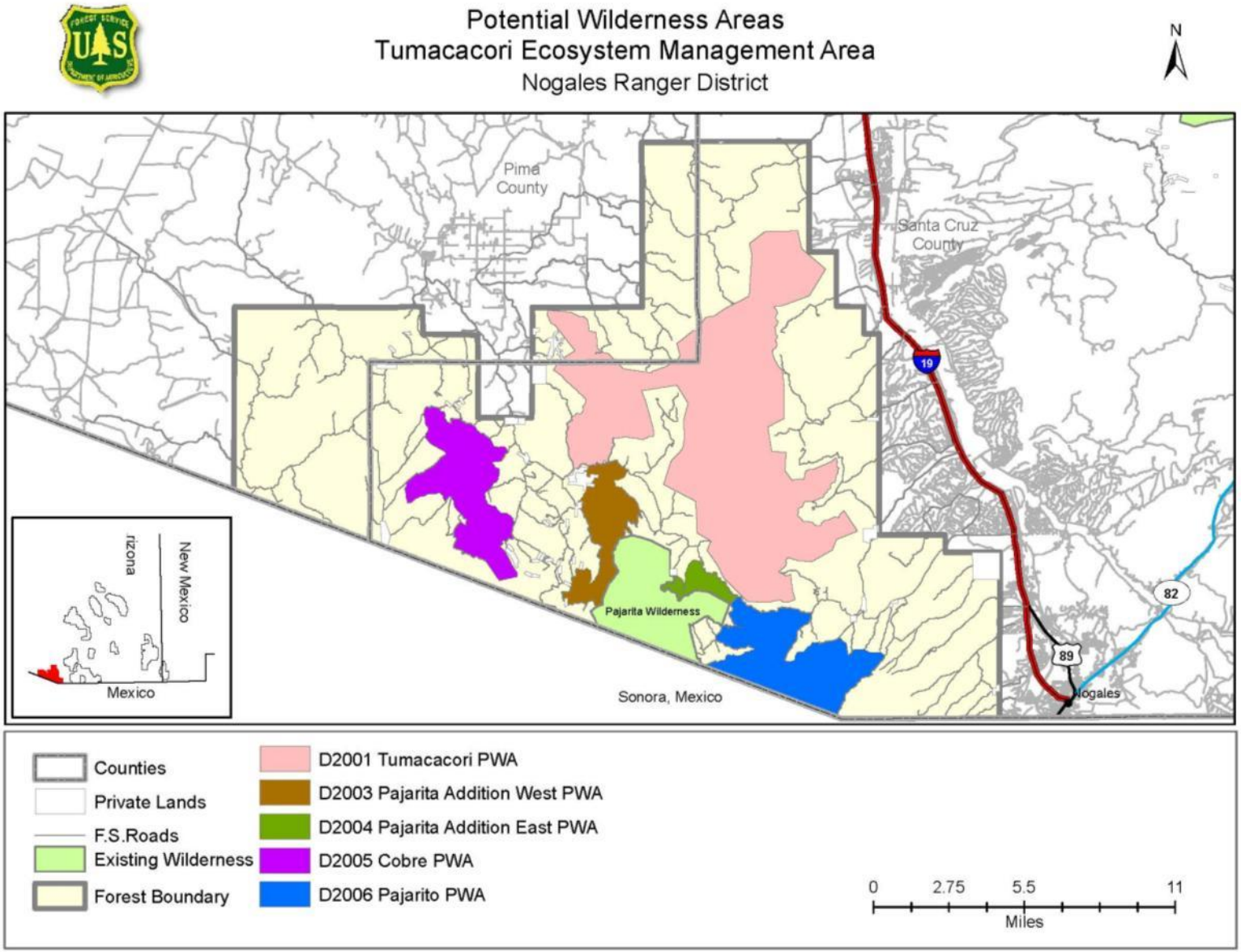
Map 2: Chiricahua Ecosystem Management Area



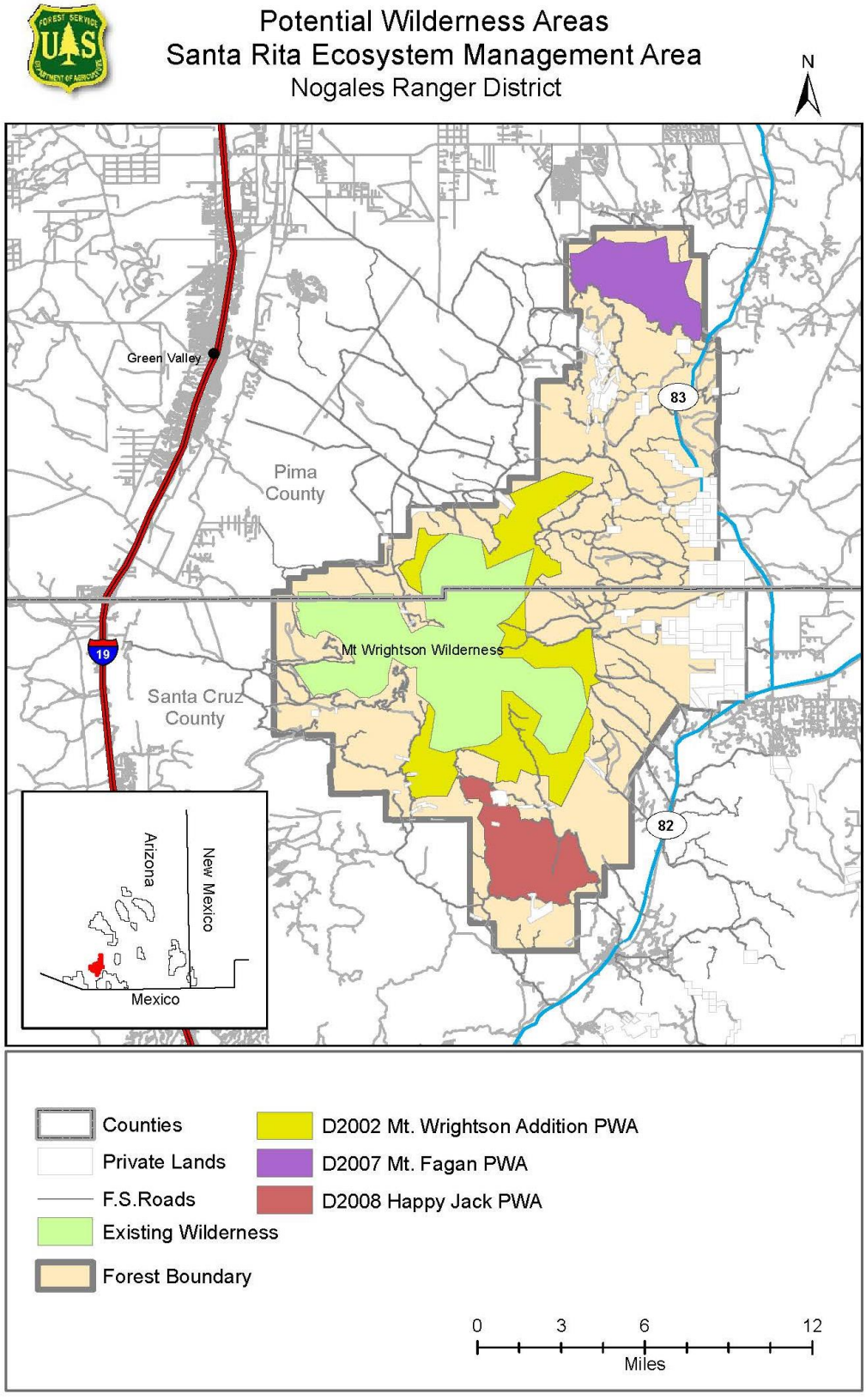
Map 3: Peloncillo Ecosystem Management Area



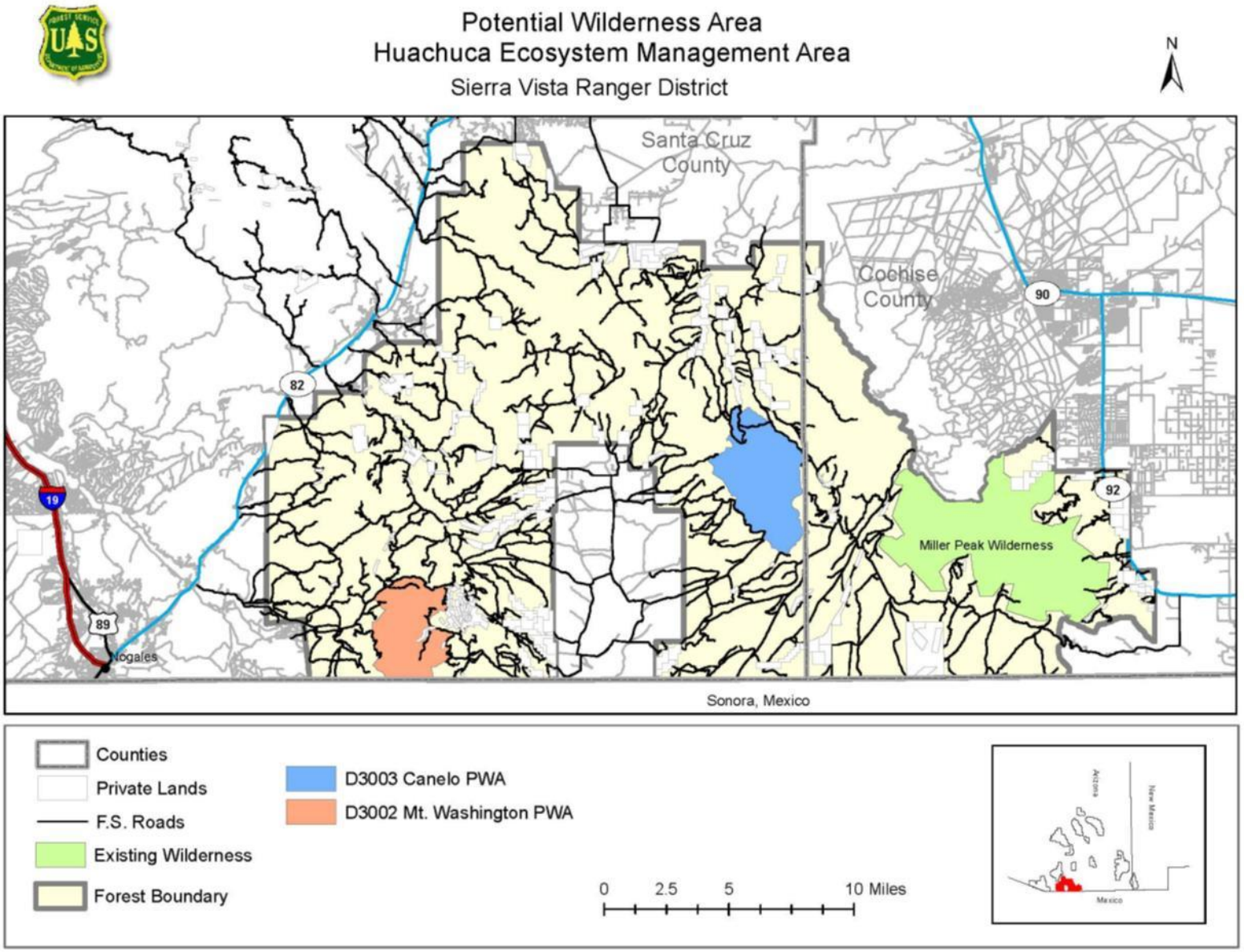
Map 4: Tumacacori Ecosystem Management Area



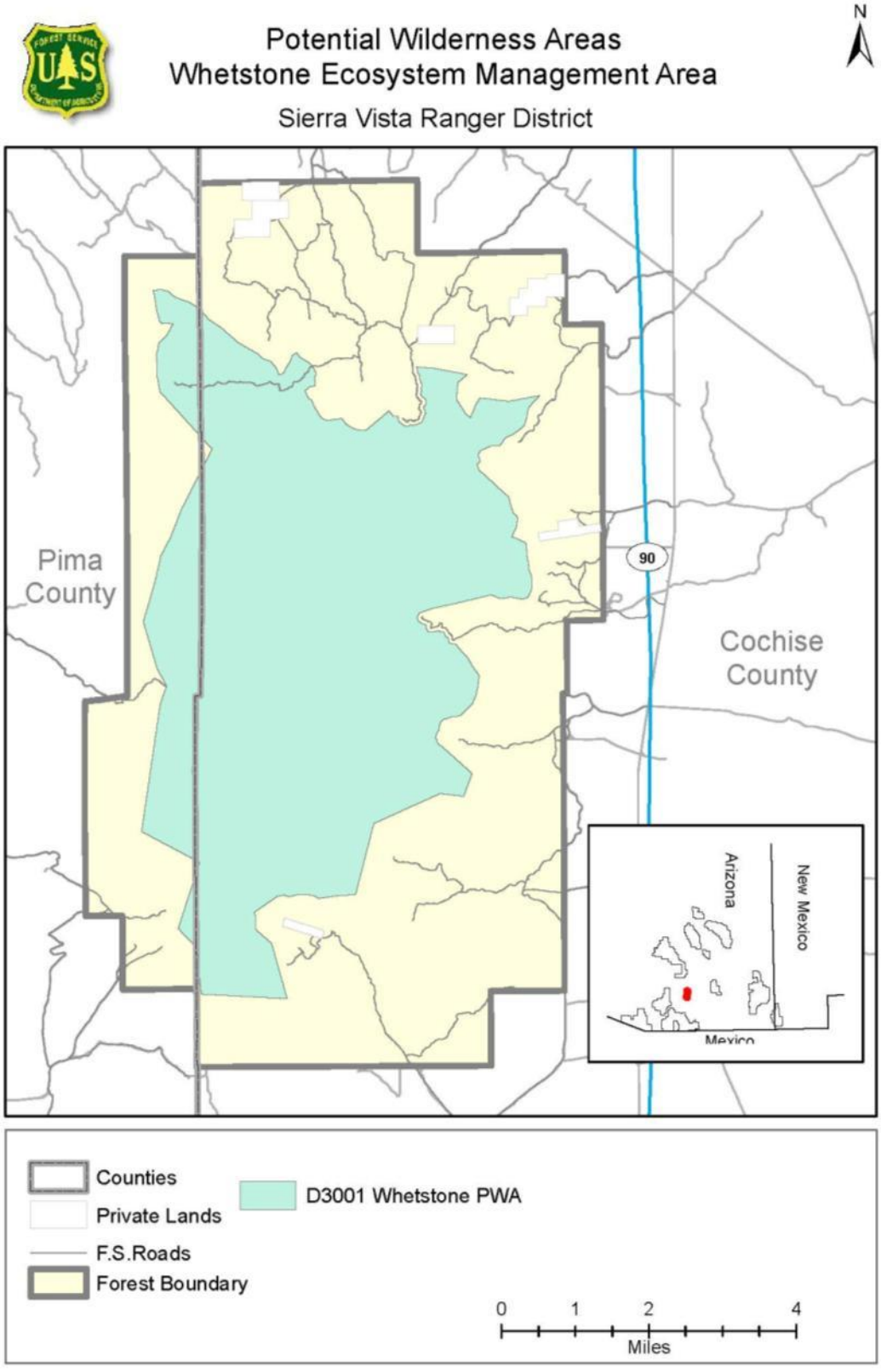
Map 5: Santa Rita Ecosystem Management Area



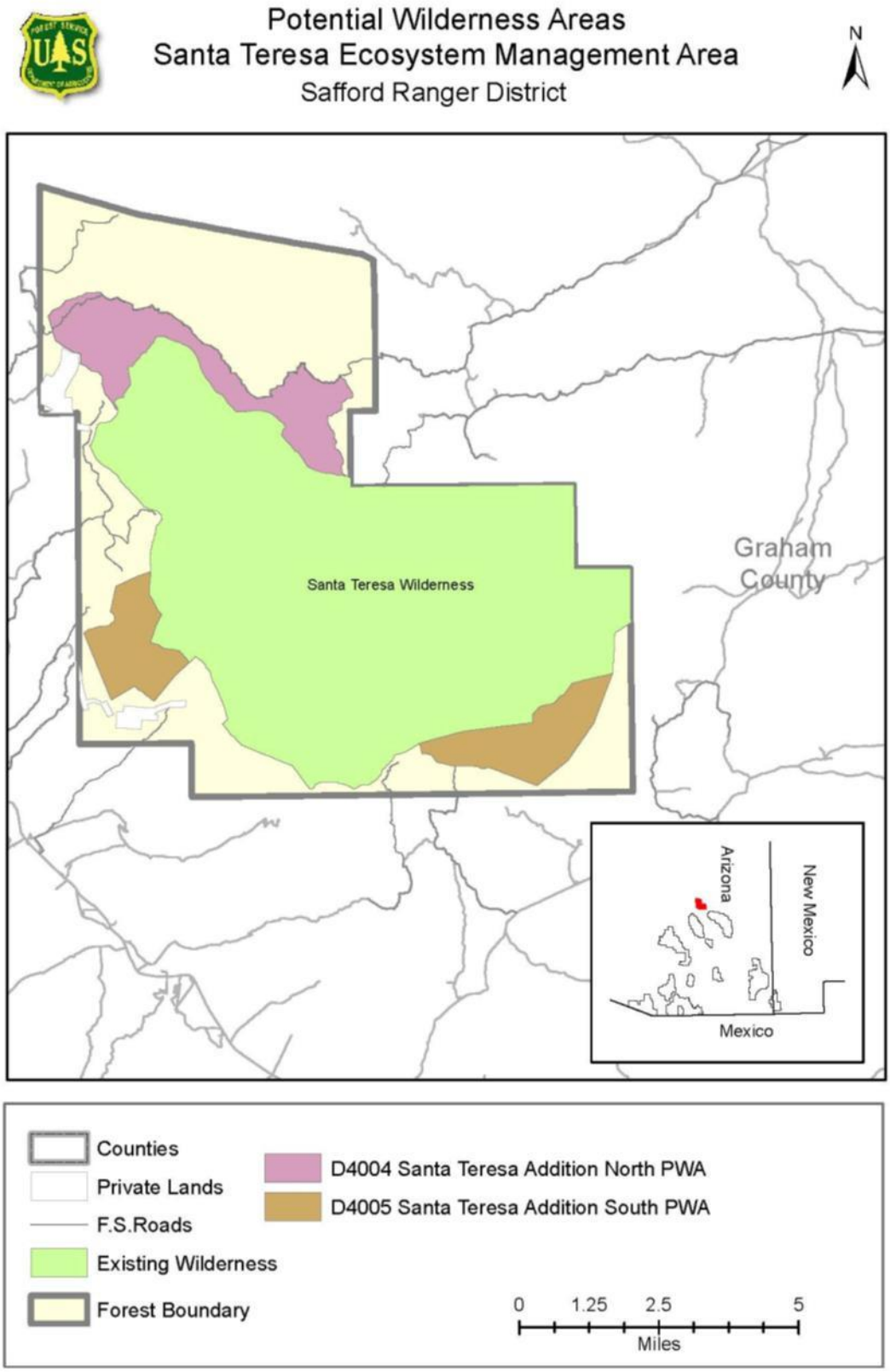
Map 6: Huachuca Ecosystem Management Area



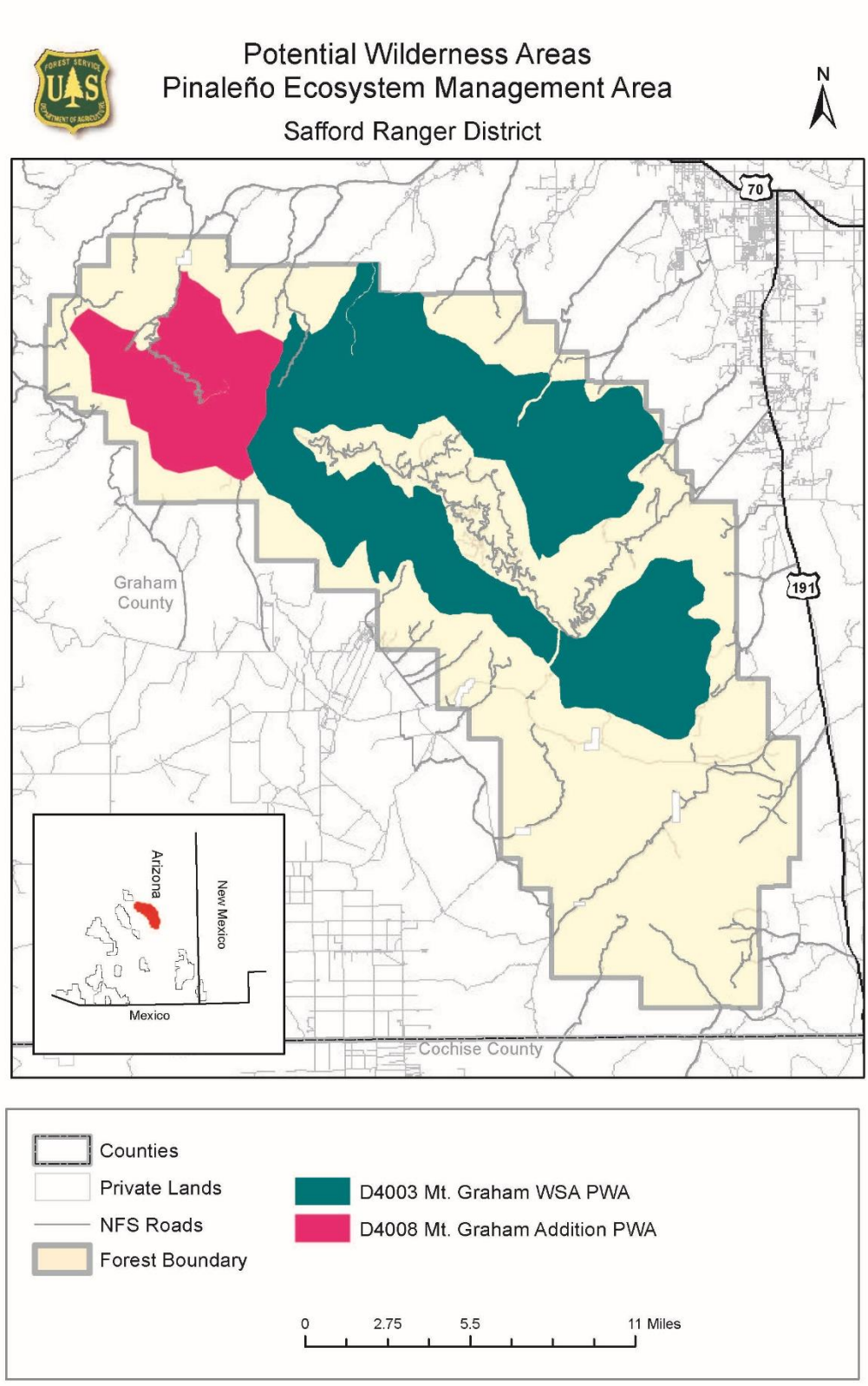
Map 7: Whetstone Ecosystem Management Area



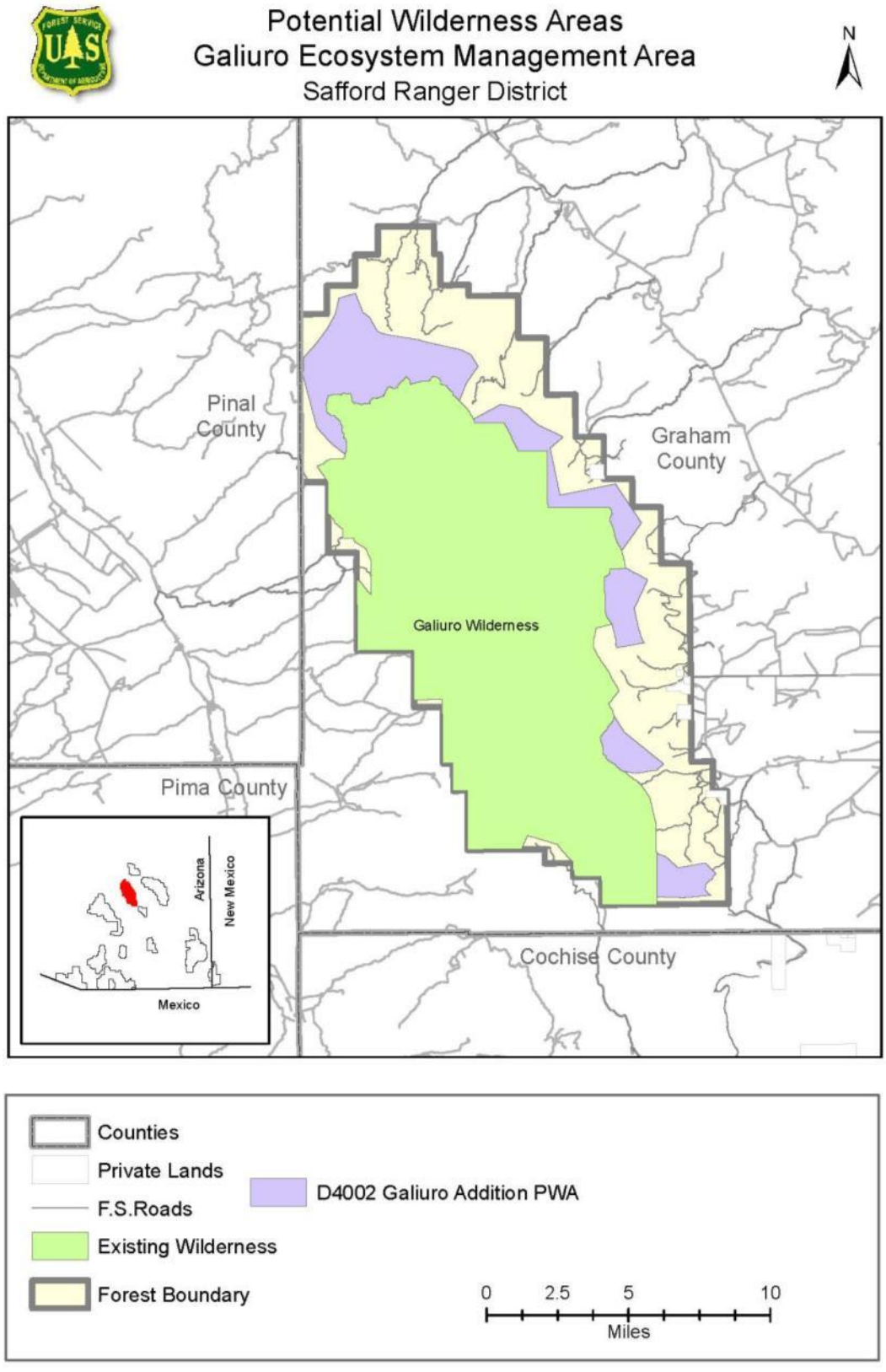
Map 8: Santa Teresa Ecosystem Management Area



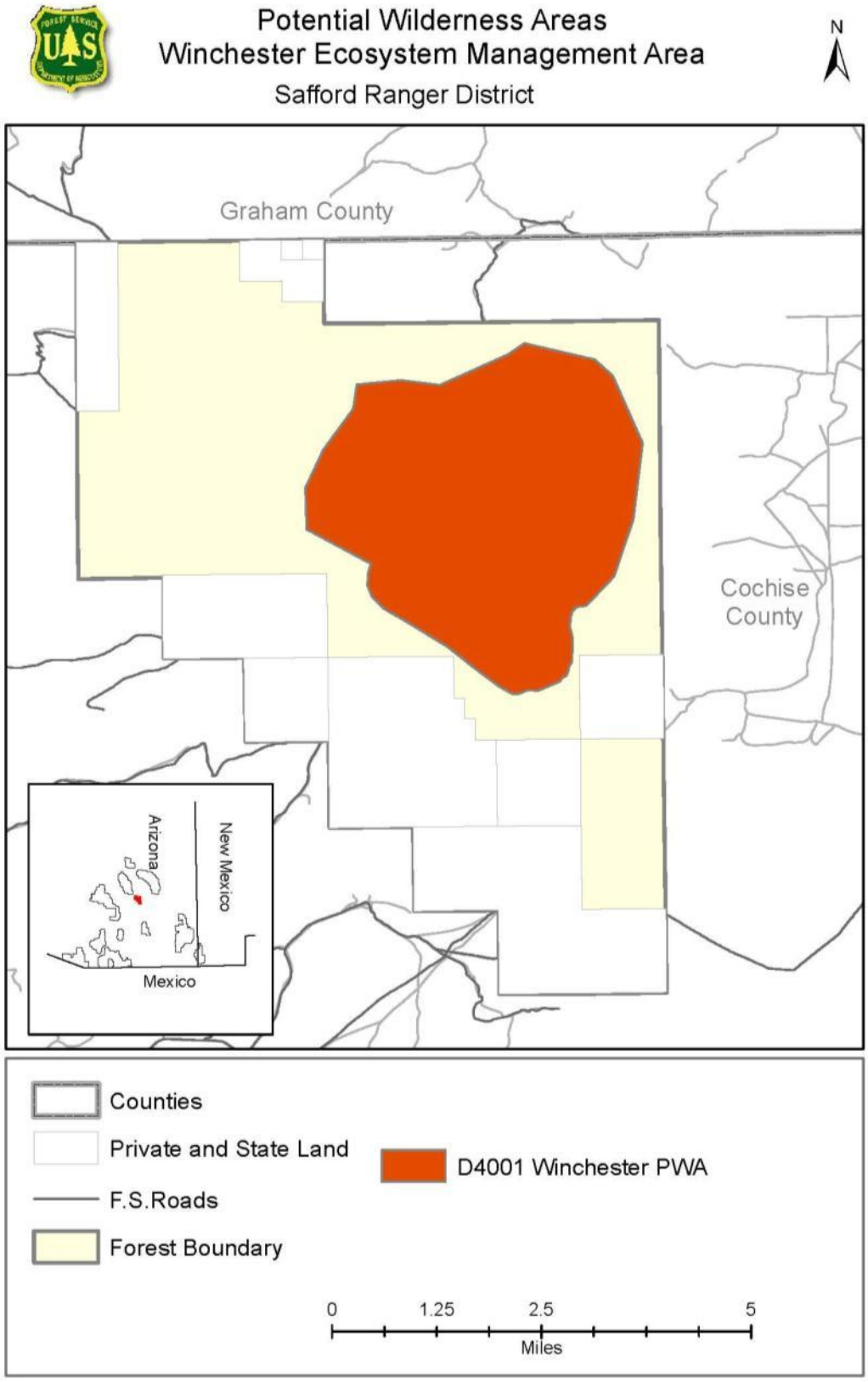
Map 9: Pinaleño Ecosystem Management Area



Map 10: Galiuro Ecosystem Management Area



Map 11: Winchester Ecosystem Management Area



Map 12: Santa Catalina Ecosystem Management Area