

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, Nuttall 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*), Chihuahuah (*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 (*Dasyilirion 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 Pinalaño 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).

Public Input

Public involvement and input is an essential component of the potential wilderness evaluation process. The draft potential wilderness evaluation reports will be shared with the public for feedback in the summer of 2013, in conjunction with the 90-day public comment period for the revised forest plan. The public feedback will be considered and incorporated into the reports, as appropriate.