

# Apache-Sitgreaves National Forests Draft Wilderness Evaluation Report

Wildcat Canyon South Potential Wilderness

PW-03-01-006

June 2009

This draft potential wilderness evaluation report is divided into four parts: background, capability, availability, and need. Capability and availability are intended to be objective evaluations of existing conditions in the Wildcat Canyon South Potential Wilderness.

The most important area of focus for public comment is the “need” evaluation. The intent of this part of the evaluation is to consider if the potential wilderness fits into the National Wilderness Preservation System at the regional level. This report offers data that helps us understand different sources that might generate need. Ultimately, however, need for wilderness is generated by public demand. Therefore, public input is an essential component of this part of the potential wilderness evaluation.

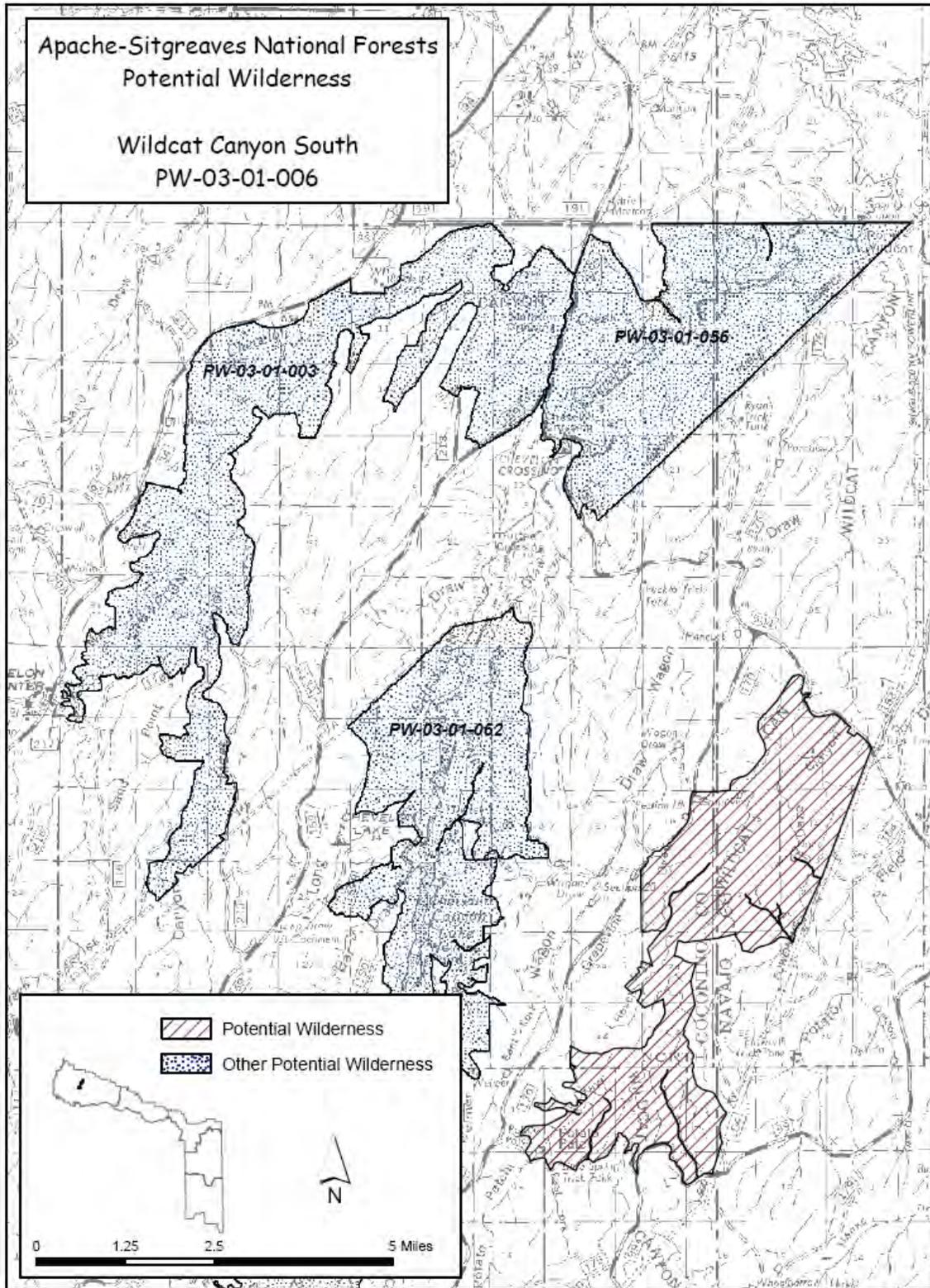
We would like your feedback on this draft report - if we have missed an important detail or if you would like to share your comments or other input, please contact us. Written comments can be sent to: Apache-Sitgreaves National Forests, Attention: Forest Plan Revision Team, P.O. Box 640, Springerville, Arizona 85938, or E-mail: [asnf.planning@fs.fed.us](mailto:asnf.planning@fs.fed.us). We are also available by phone; ask for a planning team member at 928-333-4301 or 928-333-6292 (TTY).

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Apache-Sitgreaves National Forests  
Potential Wilderness

Wildcat Canyon South  
PW-03-01-006



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Map created June 2009 by streiman.

## *Introduction*

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As part of the Forest Plan Revision process for the Apache-Sitgreaves National Forests (ASNFs), the Forest Service has prepared this Wilderness Evaluation Report for the Wildcat Canyon South potential wilderness.

### *Purpose*

The Forest Service must evaluate all lands possessing wilderness characteristics for potential wilderness during plan revision (39 CFR 219.17). Completion of a potential wilderness inventory and evaluation is an essential step in the plan revision process. Wilderness is just one of many special area designations that the Forest Service considers during plan revision, but it is one of only three special area evaluations that are mandatory. If an area is recommended for wilderness designation, then the revised plan would contain desired conditions, objectives, and/or guidelines that would protect its wilderness characteristics.

### *The Process*

The wilderness evaluation began with an inventory of potential wilderness, which includes areas of federal land over 5,000 contiguous acres and other areas that meet the criteria in FSH 1909.12 Ch. 71, and then determined if those areas meet the definition of wilderness. Once a list of potential wilderness areas was created, each area was evaluated for capability, availability, and need. These evaluation factors are described in the introduction to each evaluation step and in Appendix A. This report summarizes the wilderness capability, availability, and need evaluations based on the best available information.

The ASNFs will use this report to determine whether or not to make a preliminary administrative recommendation for wilderness designation for the Wildcat Canyon South potential wilderness. The Responsible Official's (Forest Supervisor) recommendation will be documented in the final Plan and the Plan Approval Document. Public comments on this report will be accepted and considered throughout the plan revision process. If a potential wilderness is recommended for wilderness, the recommendation will receive further review by the Chief of the Forest Service and the Secretary of Agriculture. If the Chief of the Forest Service intends to move forward with a wilderness recommendation, the Forest Service will complete a detailed analysis of the trade-offs and impacts in accordance with the National Environmental Policy Act, including further public review and comment. Ultimately, only Congress has the authority to designate wilderness.

## *Background*

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<b>Name</b>	Wildcat Canyon South
<b>Number</b>	PW-03-01-006
<b>Acres</b>	6,972
<b>Ranger District</b>	Black Mesa
<b>History (if applicable)</b>	N/A
<b>Location, Vicinity, and Access</b>	The Wildcat Canyon South potential wilderness is located in the western part of the ASNFs in Arizona. It is located in Coconino and Navajo Counties, approximately 45 miles west-northwest of Show Low. It can be accessed from State Highway 260 and Forest Road (FR) 504.
<b>Geography and Topography</b>	The potential wilderness is located on the Mogollon Plateau, which drains north into the Little Colorado River. The area includes Wildcat and Daze Canyons with elevations ranging from less than 6,500 feet at the FR 504 crossing to over 7,000 feet on the uplands.
<b>Surroundings</b>	The Wildcat Canyon South potential wilderness boundary follows a combination of forest roads, activity areas, terrain features, and a power line corridor. There is no private land adjacent to Wildcat Canyon South potential wilderness.
<b>Vegetation</b>	A mosaic of vegetative communities is found within Wildcat Canyon South potential wilderness. Vegetation varies with elevation, aspect, and slope. Wildcat and Daze Canyons pass through ponderosa pine forest, in the southern portions of the potential wilderness, which grades into piñon-juniper in the northern portions. The steep-walled canyons create complex environmental conditions with associated vegetation, including mixed conifer forest. The cottonwood-willow riparian forest along the stream channels consists primarily of box elder, ash, narrowleaf cottonwood, willow, Gambel oak, rose, wild grape, and poison ivy. Small benches or sand and gravel bars are found near the mouths of side canyons and support a variety of grasses, herbaceous ground cover, and low shrubs. Some mullein, a Class C noxious weed, is found along the boundary roads.
<b>Appearance and Key Attractions</b>	<p>The primary scenic features are primitive, steep-walled, and twisting canyons, with cliffs rising as much as 200 feet above deep pools in the stream channels. The vegetation diversity along the stream corridors adds to the scenic quality of the area.</p> <p>The natural beauty, wildlife, and remoteness of the area are the primary attractions.</p>
<b>Special Designations</b>	The proposed Wildcat Research Natural Area is located in the northwest corner of the potential wilderness.

## **CURRENT USES**

<b>Recreation</b>	There is very little recreation activity, due to the remoteness. Current recreation activities are primarily hunting, hiking, backpacking, OHV use, and viewing scenery and wildlife. There are no developed recreation sites or trails within the area. Most of the area has recreation emphases of Semi-Primitive Motorized and Roaded Natural.
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<b>Wildlife</b>	Large wildlife species found in the area include elk, mule deer, black bear, and mountain lion. Small animals and birds also inhabit the area. Several Mexican spotted owl (threatened) protected activity centers (PAC) are found within the potential wilderness. Sensitive wildlife species include bald eagle, American peregrine falcon, and common black-hawk.
<b>Range</b>	Cattle and sheep grazing occurs in the area in the Long Tom and Wildcat Allotments. There are approximately 3 miles of fence and 0.5 miles of pipeline in the potential wilderness.
<b>Water</b>	Wildcat Canyon is an intermittent drainage. Side drainages are either intermittent or ephemeral. There is one undeveloped spring and one trick tank/guzzler within the potential wilderness.
<b>Forest Products</b>	Some firewood cutting occurs in the uplands.
<b>Special Uses</b>	A dual 500 kV power line right-of-way parallels the eastern boundary.
<b>Minerals</b>	There are no mining claims, mineral districts, mineral withdrawals, or coal, oil and gas, or geothermal leases in the potential wilderness.
<b>Heritage Resources</b>	Isolated hunting camps and rock art from the Mogollon culture are found in the potential wilderness.
<b>Fire</b>	Thirty-nine fires (most < ¼ acre and the largest approximately 6,262 acres) occurred between 1970 and 2006. The majority were caused by lightning.

## Capability Evaluation

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Wilderness capability describes the basic characteristics that make the area appropriate and valuable for wilderness designation, regardless of the area's availability or need. Five sets of factors are used to determine capability: naturalness, level of development, opportunities for solitude or primitive and unconfined recreation, special features, and the ability of the Forest Service to manage the area as wilderness. The first four factors consider how the current conditions of the potential wilderness fit the definition of wilderness. Manageability is slightly different because it evaluates features of the area that would make it more or less difficult to manage as wilderness, such as size, shape, and juxtaposition to external influences. The following summarizes the information found in Appendix B.

### Summary

#### Natural

##### High

The potential wilderness is essentially natural and the diversities of vegetation and wildlife species are key features. Vegetation types include piñon-juniper woodland and cottonwood-willow riparian, ponderosa pine, and mixed conifer forests. The potential wilderness provides habitat for Mexican spotted owl, bald eagle, American peregrine falcon, and common black-hawk. There are no perennial streams, known impoundments, or water quality concerns. Mullein is found along area roads near the area, but there are no records of the plant within the potential wilderness. Yellow sweet clover may be found along area roads. No surveys have specifically been conducted for non-native species in the area. The night sky is not affected because there are no nearby population centers.

#### Undeveloped

##### Medium

There is some evidence of human activity, including some fences and user-created routes. There are no trails.

#### Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation

##### High (canyons)

##### Low (uplands)

Canyons - There are outstanding opportunities for solitude because of the winding canyons and difficult access. There are also outstanding opportunities for primitive and unconfined recreation because of the area's remoteness, dense canyon vegetation, and lack of trails. Recreation opportunities include hiking, photography, hunting, wildlife viewing, backpacking, and hunting.

Uplands - Solitude in the uplands may be affected by the sights and sounds of the power line along the east boundary and motor vehicles on the west boundary road, several roads bounded on both sides by the potential wilderness, and user-created routes. Recreation opportunities are limited primarily to the canyons.

#### Special Features and Values

##### Medium

Special features and values include sandstone and limestone canyon walls, trees and lush undergrowth along the drainage, potential for ecological and cultural research, and habitat for Mexican spotted owl, bald eagle, American peregrine falcon, and common black-hawk.

**Manageability**

**High** (canyons)

**Low** (uplands)

Canyon - The canyons would be manageable as wilderness because of their limited access and lack of resource conflicts. There is no motor vehicle use in the canyons because of the terrain.

Uplands - It would be very difficult to manage the uplands as wilderness because of the rolling terrain, lack of physical barriers to motor vehicle use, easy access to the area, and many boundaries that follow roads. There are also several roads that are bounded on both sides by the potential wilderness. User-created routes are associated with firewood cutting, hunting, and motorized recreation.

**OVERALL CAPABILITY**

**Medium**

## *Availability Evaluation*

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Availability criteria indicate the availability of a potential wilderness for wilderness designation by describing other resource and land use potentials for the area. Availability examines the potential impact of designating an area as wilderness to both the current and future land uses and activities. In essence, it is a summary of the trade-offs between wilderness and other uses. The following summarizes the information found in Appendix C.

### *Summary*

#### **Water Yield**

**High**

The area is of some value for water yield, but the stream is intermittent with occasional perennial pools. No impoundments are planned or needed.

#### **Habitat Management**

**Low**

Management needs for sensitive wildlife habitats include mechanical treatments to reduce fire hazard and improve wildlife habitat through creation of openings and release of browse species. There is no time frame for treatment.

#### **Aquatic Restoration**

**High**

No specific treatments have been identified for the watershed.

#### **Vegetation Restoration**

**Low**

Ponderosa pine forests in this area are severely departed from their historic conditions and are in need of mechanical thinning and prescribed burning to reduce fire hazard. There is no time frame for treatment.

#### **Public Access Needed**

**High**

There are no unique characteristics that would require developed public access.

#### **OHV Use**

**Low**

Although motor vehicle use will generally not be allowed off designated roads and trails when the travel management rule is implemented on the forest, enforcement efforts in this area could be difficult because of the fairly level terrain in the uplands and the existing network of user-created routes. Illegal motor vehicle use for recreation, hunting, and firewood cutting is expected to continue in the uplands.

**Land Use Authorizations**

**Low to Medium**

Land use authorizations include grazing permits and structures, firewood permits, and nearby rights-of way. Grazing permittees and the Forest Service need motorized access to check, repair, and replace fences and to clean out stock tanks. Firewood cutting is, and would continue to be, permitted and requires motorized vehicles and equipment.

**Adjacent Non-FS Lands**

**High**

There are no inholdings or non-federal lands adjacent to the potential wilderness.

**Minerals**

**High**

There is a low potential for future mineral uses.

**OVERALL AVAILABILITY**

**Low to Medium**

## *Need Evaluation*

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The evaluation criteria below indicate how the potential wilderness might fit into the National Wilderness Preservation System, which includes all wilderness areas in the United States. Need is considered at the regional level and must incorporate public participation. The criteria used to evaluate need include consideration of other wilderness and non-wilderness areas that provide opportunities for unconfined outdoor recreation or preservation of certain ecosystem characteristics. The following summarizes the information found in Appendix D.

### *Summary*

**Factor 1** - 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.

#### **Low**

There are adequate wilderness opportunities in the vicinity of Wildcat Canyon South potential wilderness. Within 100 miles of this potential wilderness there are 971,114 wilderness acres. Within 100 miles of Flagstaff, there are 66,446 potential wilderness acres on the ASNFs and 687,395 wilderness acres. Within 100 miles of Phoenix, there are 61,535 potential wilderness acres on the ASNFs and 1,684,972 wilderness acres.

**Factor 2** - Present visitor pressure on other wildernesses, the trends in use, changing patterns of use, population expansion factors, and trends and changes in transportation.

#### **Medium**

According to the 2001 National Visitor Use Monitoring study, approximately 38,000 people visited the three Wilderness areas on the ASNFs. Most of this use was concentrated in the two smaller, more easily accessed Wildernesses, Mount Baldy and Escudilla. Visitor use in Mount Baldy is locally considered high, while visitor use in Escudilla is considered moderate to high. Use in Bear Wallow Wilderness is lighter because it is less easily accessed and slightly larger. Wilderness users on the ASNFs are predominantly male, white or Hispanic/Latino, between the ages of 31 and 60, and live in the Phoenix and Tucson areas.

Approximately 70 percent of the Arizona visitors to the ASNFs are from the Phoenix (58 percent) and Tucson (11 percent) metropolitan areas. Populations in these areas have increased much faster than in the more rural areas. Visitors from the four counties where the ASNFs are located account for another 20 percent. In general, there has been no to moderate population growth in these counties. Recently, there have been major highway improvements between Phoenix and the ASNFs.

It can be assumed that with increasing populations and improved transportation features, wilderness use on the ASNFs would continue to increase, especially in those areas where the trailheads are easily accessed.

Surrounding National Forests (Coconino, Coronado, Gila, and Tonto) all have much higher numbers of wilderness visits than the ASNFs. Use on the Coconino, Coronado, and Gila is high, while use on the ASNFs and Tonto is moderate.<sup>1</sup>

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<sup>1</sup> This is based on use categories developed by the Forest Service Wilderness Advisory Group, with low use defined as 0-10,000 visits, medium as 10,001 – 30,000 visits, and high being greater than 30,000 visits. Total wilderness use for a forest from NVUM was divided by the number of wildernesses the forest is lead for, to get an average amount of use per wilderness.

Regionally, increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth that occurred from 1990 to 2000, which far exceeded the national growth rate. Assuming Arizona continues to grow at a rate much higher than the national rate, visits to wilderness will continue to increase. Arizona, in particular, could benefit from additional wilderness.

Public demand increases with proximity to six population centers: Flagstaff, Phoenix, Tucson, Santa Fe, Taos, and Albuquerque. Consider wilderness recommendations within 100-150 miles of those cities to provide for that demand. Some additional public demand for wilderness in the Southwestern Region will occur from people moving to rural communities near the National Forests.

Nationwide, Wilderness represents 17 percent of all federal agency acres. In the Southwestern Region 13 percent of the Forest Service lands are Wilderness. Only 6 percent of the federal acres in northeast Arizona are wilderness acres. For wilderness acres in the Southwestern Region to be at the national average would require the addition of about 1 million acres.

**Factor 3** - The extent to which nonwilderness lands on the NFS unit or other Federal lands are likely to provide opportunities for unconfined outdoor recreation experiences.

**Low**

There are adequate nonwilderness lands on or near the ASNFs that could provide unconfined outdoor recreation experiences. Within 100 miles of the Flagstaff, there are 310,343 acres of Inventoried Roadless Areas (IRA). Additionally, there are 285,599 acres managed for semi-primitive recreation on the ASNFs. Many of these acres overlap with IRAs and potential wilderness.

Within 100 miles of Phoenix, there are 354,977 acres of IRAs. Additionally, there are 457,285 acres managed for semi-primitive recreation on the ASNFs. Many of these acres overlap with IRAs and potential wilderness.

**Factor 4** - 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.

**Low**

The ASNFs have identified 11 Threatened and Endangered Species, 105 Species of Concern<sup>2</sup>, and 208 Species of Interest<sup>3</sup> that occur or are found on the forests. None of these species require a primitive wilderness environment to survive. However, some (Mexican gray wolf, for example) would benefit from reduced disturbance and human encounters.

**Factor 5** - Within social and biological limits, management may increase the capacity of established wildernesses to support human use without unacceptable depreciation of the wilderness resource.

**Low**

There is little opportunity for management to increase the capacity of the established wildernesses on the ASNFs. Both Mount Baldy and Escudilla Wildernesses are heavily used, are less than 10,000 acres, are easily accessed by motor vehicles, and have limited trail systems. Encounters with other wilderness visitors in both areas are high. No management changes have been identified for Bear Wallow Wilderness because the use is much lighter.

<sup>2</sup> Species of Concern are species for which management actions may be necessary to prevent listing under the Endangered Species Act.

<sup>3</sup> Species of Interest are species for which management actions may be necessary to achieve ecological or other multiple-use objectives.

**Factor 6** - 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. This approach is helpful from the standpoint of rounding out the National Wilderness Preservation System and may be further subdivided to suit local, subregional, and regional needs.

**Low**

This potential wilderness contains two underrepresented ecosystems, 5 acres of Great Basin grassland and 993 acres of piñon-juniper woodland.

**OVERALL NEED**

**Low**, but contains two underrepresented ecosystems

## *Appendix A: Wilderness Evaluation Process*

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The following is summarized from Forest Service Handbook 1909.12, Chapter 70. This process is used by the Forest Service to determine whether there are areas that could be recommended for wilderness designation by Congress. The process includes three steps: an inventory of potential wilderness areas, an evaluation of the potential wilderness areas, and a determination if a recommendation will be pursued for any potential wilderness areas.

### **Inventory of Potential Wilderness Areas**

The first step in the evaluation of potential wilderness is to identify and inventory all areas within National Forest System Lands that satisfy the definition of wilderness found in the 1964 Wilderness Act.

Areas identified through this process are called potential wilderness areas. This inventory of potential wilderness is not a land designation. It is completed with the express purpose of identifying all lands that meet the criteria for being evaluated for wilderness suitability and possible recommendation to Congress for wilderness designation.

The inventory of areas relies on local knowledge and judgment regarding unique, site-specific conditions of each area being considered. The boundaries of areas for the potential wilderness inventory should facilitate easy on-the-ground identification.

### **Inventory Criteria**

Areas qualify for inclusion in the potential wilderness inventory if they meet the statutory definition of wilderness and meet either criteria 1 and 3 or criteria 2 and 3 below.

1. Areas contain 5,000 acres or more.
2. Areas contain less than 5,000 acres, but meet one or more of the following criteria:
  - 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.
3. Areas do not contain forest roads (36 CFR 212.1) or other permanently authorized roads, except as permitted in areas east of the 100<sup>th</sup> meridian (sec. 71.12).

Areas may be included in the potential wilderness inventory even though they include the types of areas or features listed in FSH 1909.12, 71.11.

On the ASNFs, GIS was used to identify those areas that met the inventory criteria. Site-specific information was gathered from Ranger District (District) personnel to provide background information, identify features not shown in GIS, and determine where the Region 3 criteria on roaded areas, fingers, and extrusions should be applied.

### **Evaluation of Potential Wilderness Areas**

An area recommended for wilderness must meet the tests of capability, availability, and need. In addition to the inherent wilderness quality it possesses, an area must provide opportunities and experiences that are dependent upon or enhanced by a wilderness environment. The ability of the Forest Service to manage the area as wilderness is also considered.

## **Capability**

The capability of a potential wilderness is the degree to which an area contains the basic characteristics that make it suitable for wilderness recommendation without regard to its availability for or need as wilderness. The following characteristics are considered in evaluating a potential wilderness area:

1. Natural - an area is substantially free from the effects of modern civilization and generally appears to have been affected primarily by the forces of nature.
2. Undeveloped - the degree to which an area is without permanent improvements or human habitation.
3. Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation - the capability of the area to provide solitude or primitive and unconfined types of recreation. This includes a wide range of experiential opportunities. Solitude is the opportunity to experience isolation from sights, sounds, and the presence of others from developments and evidence of humans.
4. Special Features and Values - an area is capable of providing other values such as those with ecologic, geologic, scientific, educational, scenic, historical, or cultural significance.
5. Manageability - the ability to manage an area as wilderness as required by the Wilderness and how boundaries affect manageability of an area.

Responses to the capability questions were drafted at the ASNFs Supervisors Office and reviewed by District personnel. Any changes were incorporated into the capability evaluation.

If an area is found to not be capable of being wilderness (a rating of Low), it is not carried forward into the Availability Evaluation.

## **Availability**

Areas determined to meet wilderness capability requirements are considered potentially available for wilderness designation. 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. Other resource potential including current use and potential future use is analyzed for the various resources involved.

Constraints and encumbrances on lands may also govern the availability of lands for wilderness. The degree of Forest Service control over the surface and subsurface of the area is also considered. The Forest Service should have sufficient control to prevent development of incompatible uses that would negatively affect wilderness character and potential.

Responses to the availability questions were drafted by at the ASNFs Supervisors Office and reviewed by District personnel. Any changes were incorporated into the availability evaluation.

## **Need**

The need for an area to be designated as wilderness is determined through an analysis on a regional basis by evaluating such factors as the geographic distribution of areas and representation of landforms and ecosystems to which it contributes to the overall National Wilderness Preservation System. This need is demonstrated through a public involvement process, including public input to the evaluation report.

A set of GIS models, information papers, and analyses were provided by the Region 3 Regional Office. This information was synthesized at the ASNFs Supervisors Offices and reviewed by District personnel. Any changes were incorporated into the need evaluation.

## Appendix B: Capability Evaluation and Ratings

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### Capability Characteristics

#### Natural

1. Presence of non-native species.

High - Non-native species are not evident.

Medium - Non-native species are evident in isolated spots.

Low - Non-native species are common or scattered throughout the area.

Rating: **Medium to High** - Mullein is found along the roads near the area, but there are no GIS records of the plant within the potential wilderness. Yellow sweet clover may have been used for erosion control along roads in the past. No surveys have specifically been conducted for non-native species in the area.

2. Rivers within the potential wilderness 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 potential wilderness are seasonal or heavily impacted by impoundments.

Rating: **High** - There are no perennial rivers in the potential wilderness. Wildcat Canyon is intermittent. All other drainages are ephemeral. There are no known 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.

Rating: **High** - There are no nearby population centers and the lights from Heber/Overgaard and Forest Lake Estates are not visible from the area.

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 not all rivers/streams have been sampled.

Low - There are rivers within the area that are listed on the State Impaired Waters List (303d).

Rating: **Medium** - Because the streams are intermittent or ephemeral, they have not been sampled. There are no known water quality issues.

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.

**Rating: Medium** - Biological diversity is moderate and essentially natural. The potential wilderness provides habitat for threatened wildlife species including Mexican spotted owl. Sensitive wildlife species include bald eagle, American peregrine falcon, and common black-hawk.

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.

**Rating: High** - Diversity of natural vegetation and wildlife species are key natural features. Vegetation types include piñon-juniper woodland, cottonwood-willow riparian forest, ponderosa pine forest, and mixed conifer forest. The potential wilderness also contains small areas of old ponderosa pine and mixed conifer in southern Wildcat Canyon. Hiking, hunting, wildlife viewing, photography, and backpacking are some of the available recreation opportunities. Wildlife species and habitat are diverse because the varied topographic, soil, and vegetative conditions within the canyon combine with permanent water (pools) to provide habitat for numerous wildlife species.

### **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.

**Rating: Medium** - There is some evidence of human activity, including some fences and user-created routes. There are no developed trails in the potential wilderness.

### **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.

**Rating: High** - The area presents challenging recreation opportunities because of its remoteness and dense canyon vegetation. The lack of formal trails increases the level of challenge.

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.

Rating: **High** (canyon) - The winding canyons and difficult access contribute to the opportunities for solitude found in the canyon in this potential wilderness.

**Low** (uplands) - Solitude in the uplands may be affected by the sights and sounds of the power line along the east boundary and motor traffic on the west boundary road, and motor vehicle use on the several roads bounded on both sides by the potential wilderness, and user-created routes.

10. Opportunity to engage in primitive and unconfined recreation such as backpacking, 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.

Rating: **Medium** - There are opportunities for hiking, photography, hunting, wildlife viewing, backpacking, and hunting in the area, but they are limited primarily to the canyons. There are no trails through the area.

### **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.

Rating: **Medium** - Wildcat Canyon's simplistic beauty is based on its orange, white, and gray sandstone and limestone components. The lush undergrowth and towering tree canopy characterize the area's beauty. The deep V-shaped canyon is more apparent in the lower canyon as are sandstone formations.

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.

Rating: **Medium** - The potential exists for scientific research because of the ecological characteristics in the area. There are probably a number of archaeological sites within the potential wilderness, but no formal surveys have been conducted.

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.

Rating: **Medium** - There are Mexican spotted owl PACs throughout the potential wilderness.

**Overall Capability: Medium**

**Manageability**

14. Ability to manage the area 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.

**Rating: High** (canyon) - The canyons would be manageable as wilderness because of their limited access and lack of resource conflicts.

**Low** (uplands) - Because of the lack of physical barriers in the uplands, it would be difficult to managing motor vehicle use. Much of the boundary follows roads and activity areas, which are generally accessible to all motorized vehicles.

15. Motorized use within the area.

Yes - Has motorized vehicle use.

No - Does not have any motorized vehicle use.

**Rating: No** (canyon) - There is no motorized vehicle use in the canyons because of the terrain.

**Yes** (uplands) - Much of the potential wilderness includes rolling upland areas around the canyons. Roads and activity areas generally delineate the potential wilderness; there are few physical barriers that limit motorized vehicle use in the uplands. User-created routes are associated with firewood cutting, hunting, and motorized recreation. There are also several roads that are bounded on both sides by the potential wilderness.

**Overall Manageability: High** (canyon)

**Low** (uplands)

## Appendix C: Availability Evaluation and Ratings

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### Availability Characteristics

1. Areas that are of high value for water yield or on-site storage where installation and maintenance of improvements may be required.

High - No impoundment needed.

Medium - Minor improvements will have an effect.

Low - Identified impoundment that will have an effect on wild characteristics.

Rating: **High** - The area is of some value for water yield, but the stream is intermittent with occasional perennial pools. No impoundments are planned or needed.

2. Areas needing management for wildlife or aquatic animals that MIGHT conflict with wilderness management.

Low - Intense management (motorized equipment: helicopters, chainsaws, broadcast burning) and frequent entries (= or <5 yrs).

Medium - Management requires helicopters but no motorized equipment on the ground and frequency is generally less than 10 years.

High - Low management requirements with no motorized equipment required to meet objectives and infrequent entries.

Rating: **Low** - Management needs for sensitive wildlife habitats include mechanical treatments to reduce fire hazard and improve wildlife habitat through creation of openings and release of browse species. There is no time frame for treatment.

3. Area needing active aquatic restoration activities.

Low - The majority of watershed needs attention.

Medium - Site-specific improvements needed.

High - Properly functioning with no or little restoration activities needed.

Rating: **High** - No specific treatments have been identified for the watershed.

4. Area needing active vegetative restoration activities due to specific species survival (such as White Bark Pine restoration) or identifiable fuel reduction activity to reduce the risk of catastrophic wildfire or known areas of severe insect infestation that will lead to heavy tree mortality.

Low - The need for vegetation restoration is a higher priority and requires long-term management and mechanized or motorized equipment.

Medium - Areas needing high intensity management activities for a short time period (< or = 5 years). These areas could be available for wilderness after those activities are completed (like fuel reduction activities). Some intense restoration work over small areas could be accomplished without conflicting with wilderness management (species conservation work not requiring motorized equipment).

High - The area needs little vegetative restoration.

Rating: **Low** - Ponderosa pine forests in this area are severely departed from their historic conditions and are in need of mechanical thinning and prescribed burning to reduce fire hazard. There is no time frame for treatment.

5. Areas having such unique characteristics or natural phenomena that general public access should be developed to facilitate public use and enjoyment.

High - Does not exist or minimal development will be provided.

Medium - Requires minor development or improvement that does not qualify as a developed recreation site but is a higher development level than is normally found within wilderness.

Low - Has a developed recreation site or features that warrant construction of a developed recreation site.

Rating: **High** - There are no unique characteristics that would require developed public access.

6. Lands committed through contracts, permits or agreements that would be in conflict with wilderness management (some minor permitted uses may be still be allowed).

High - Current authorizations do not conflict with potential wilderness.

Medium - Current authorization(s) but can be terminated or there is long-term authorization or commitment but does not require motorized equipment for access or maintenance.

Low - Currently exists, must be retained (long-term commitments), and requires motorized equipment for access or maintenance.

Rating: **Low to Medium** - Allotment fences that run through this area vary in age and condition. The grazing permittee and Forest Service need access to these fences to check and repair them. Various mechanical tools would be needed to complete fence maintenance. Stock tanks, if located within the area, would also need periodic cleaning. Firewood cutting is, and would continue to be, permitted. Firewood cutting requires motorized vehicles and equipment.

7. Forest Service has sufficient control to prevent development of irresolvable, incompatible use that would lessen wilderness character and potential.

High - No inholdings and no non-federal lands adjacent to potential wilderness.

Medium - No inholdings but adjacent lands may be private.

Low - In-holdings exist.

Rating: **High** - There are no inholdings or non-federal lands adjacent to the potential wilderness.

**Low to Medium** - Forest Service control to prevent development of irresolvable, incompatible use that would lessen wilderness character and potential is moderate. The incompatible uses would be firewood cutting and illegal motor vehicle use off-road for recreation and hunting, and future possible widening of the existing power line corridor.

Although off-road vehicle use would be illegal when the travel management rule is implemented on the forest, enforcement in this area could be difficult due to the fairly level terrain the uplands and the existing network of hunting and firewood roads. The existence and possible continued illegal use of these roads would reduce the wilderness character and potential.

**Overall Availability: Low to Medium**

## Appendix D: Need Evaluation

*Factor 1 - 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.*

There are 29 Wildernesses within 100 miles of PW-03-01-006. The total acreage of these wilderness areas is 971,114 acres. The Forest Service (FS) manages 24 of these areas, the Bureau of Land Management (BLM) manages 4, and the National Park Service (NPS) manages 1.

Potential Wilderness	Existing Wilderness within 100 Miles	Existing Wilderness Acreage	Distance from Potential Wilderness	Managing Agency
PW-03-01-006	White Canyon	6,981	90	BLM
PW-03-01-006	Needle's Eye	6,277	90	BLM
PW-03-01-006	Fishhooks	11,400	98	BLM
PW-03-01-006	Superstition	158,920	75	FS
PW-03-01-006	Bear Wallow	11,113	96	FS
PW-03-01-006	Four Peaks	60,487	65	FS
PW-03-01-006	Salt River Canyon	32,035	55	FS
PW-03-01-006	Salome	18,688	45	FS
PW-03-01-006	Sierra Ancha	18,198	44	FS
PW-03-01-006	Hells Canyon	9,841	99	BLM
PW-03-01-006	Mount Baldy	7,627	78	FS
PW-03-01-006	Escudilla	5,210	100	FS
PW-03-01-006	Castle Creek	24,477	89	FS
PW-03-01-006	Mazatzal	248,858	53	FS
PW-03-01-006	Hellsgate	38,845	30	FS
PW-03-01-006	Pine Mountain	18,656	61	FS
PW-03-01-006	Cedar Bench	16,585	61	FS
PW-03-01-006	Fossil Springs	10,754	45	FS
PW-03-01-006	West Clear Creek	26,291	45	FS
PW-03-01-006	Granite Mountain	9,850	102	FS
PW-03-01-006	Woodchute	5,790	84	FS
PW-03-01-006	Munds Mountain	17,997	58	FS
PW-03-01-006	Wet Beaver	6,721	51	FS
PW-03-01-006	Petrified Forest	52,058	60	NPS
PW-03-01-006	Sycamore Canyon	58,818	78	FS
PW-03-01-006	Red Rock-Secret Mtn	50,312	72	FS
PW-03-01-006	Kachina Peaks	18,857	79	FS
PW-03-01-006	Kendrick Mountain	8,200	91	FS
PW-03-01-006	Strawberry Crater	11,268	77	FS
	TOTAL	971,114		

There are 26 Wildernesses and 687,395 wilderness acres within 100 miles of Flagstaff, Arizona. There are 7 potential wildernesses and 66,446 potential wilderness acres on the ASNFs within 100 miles of Flagstaff (only acres within 100 miles are shown; actual and potential wildernesses may be larger).

There are 44 Wildernesses and 1,684,972 wilderness acres within 100 miles of Phoenix, Arizona. There are 6 potential wildernesses and 61,535 potential wilderness acres on the ASNFs within 100 miles of Phoenix (only acres within 100 miles are shown; actual and potential wildernesses may be larger).

<b>Population Center</b>	<b>Wilderness within 100 Miles</b>	<b>Wilderness Acres within 100 Miles</b>	<b>Potential Wilderness Within 100 Miles</b>	<b>Potential Wilderness Acres within 100 Miles</b>
Flagstaff	Salome	12,662	PW-03-01-011	4,911
	Sierra Ancha	3,508	PW-03-01-005	9,418
	Hells Canyon	9,841	PW-03-01-006	6,969
	Hassayampa River Cyn	12,672	PW-03-01-062	6,583
	Mazatzal	248,858	PW-03-01-056	6,676
	Castle Creek	24,477	PW-03-01-003	9,490
	Hellsgate	38,845	PW-03-01-001	22,399
	Pine Mountain	18,656	TOTAL	66,446
	Cedar Bench	16,585		
	Fossil Springs	10,754		
	West Clear Creek	26,291		
	Granite Mountain	9,850		
	Wet Beaver	6,721		
	Upper Burro Creek	11,426		
	Woodchute	5,790		
	Munds Mountain	17,997		
	Apache Creek	5,435		
	Red Rock-Secret Mtn	50,312		
	Juniper Mesa	7,575		
	Sycamore Canyon	58,818		
	Petrified Forest	9,409		
	Kachina Peaks	18,857		
	Kendrick Mountain	8,200		
	Strawberry Crater	11,268		
	Saddle Mountain	41,815		
	Kanab Creek	773		
	TOTAL	687,395		
Phoenix	Apache Creek	5,435	PW-03-01-056	6,676
	Aravaipa Canyon	19,790	PW-03-01-003	9,490
	Arrastra Mountain	123,379	PW-03-01-006	6,969
	Big Horn Mountains	21,444	PW-03-01-062	6,583
	Castle Creek	24,477	PW-03-01-001	22,399
	Cedar Bench	16,585	PW-03-01-005	9,418
	Eagletail Mountains	100,511	TOTAL	61,535
	Fossil Springs	10,754		
	Four Peaks	60,487		
Granite Mountain	9,850			

<b>Population Center</b>	<b>Wilderness within 100 Miles</b>	<b>Wilderness Acres within 100 Miles</b>	<b>Potential Wilderness Within 100 Miles</b>	<b>Potential Wilderness Acres within 100 Miles</b>
	Harcuvar Mountains	25,465		
	Harquahala Mountains	22,559		
	Hassayampa River Cyn	12,672		
	Hells Canyon	9,841		
	Hellsgate	38,845		
	Hummingbird Springs	30,038		
	Juniper Mesa	7,575		
	Kofa	29,451		
	Mazatzal	248,858		
	Munds Mountain	17,997		
	Needle's Eye	6,277		
	North Maricopa Mountains	61,157		
	Organ Pipe Cactus	60,659		
	Pine Mountain	18,656		
	Pusch Ridge	56,743		
	Rawhide Mountains	18,240		
	Red Rock-Secret Mtn	50,312		
	Saguaro	13,861		
	Salome	18,688		
	Salt River Canyon	32,035		
	Sierra Ancha	18,198		
	Sierra Estrella	14,746		
	Signal Mountain	13,125		
	South Maricopa Mtns	58,963		
	Superstition	158,920		
	Sycamore Canyon	58,818		
	Table Top	34,696		
	Tres Alamos	8,034		
	Upper Burro Creek	27,153		
	Upper Burro Creek	8,918		
	West Clear Creek	26,291		
	Wet Beaver	6,721		
	White Canyon	6,981		
	Woodchute	5,790		
	Woolsey Peak	64,977		
	<b>TOTAL</b>	<b>1,684,972</b>		

*Factor 2 - Present visitor pressure on other wildernesses, the trends in use, changing patterns of use, population expansion factors, and trends and changes in transportation.*

#### Item 1

Each Federal agency that manages wilderness collects and reports visitor use information differently. The Forest Service reports wilderness use by each national forest, not each wilderness. The National Park Service collects backcountry visitor use only for overnight stays. The Bureau of Land Management reports use for each wilderness.

According to the 2001 National Visitor Use Monitoring study, approximately two percent of the Apache-Sitgreaves National Forests (ASNFs) users visited the three wilderness areas on the forest. This figure is similar to other non-urban forests in the Southwestern Region. More urban forests (Cibola and Coronado) reported approximately 25% of their users visited wilderness areas.

Most of the wilderness use on the ASNFs is concentrated in the two smaller wilderness areas, Mount Baldy and Escudilla. These areas are each less than 10,000 acres, are easily accessible by motor vehicles, and have limited trail systems. Visitor use in Mount Baldy is considered high with use concentrated on two of the three trails. Visitor use in Escudilla is considered moderate to high with use concentrated on one trail. Encounters with other wilderness visitors in both areas are high. Use in Bear Wallow Wilderness is lighter because it is less accessible and is slightly larger. There are no accurate use figures for the Blue Range Primitive Area, which is managed as wilderness.

Approximately 70 percent of the Arizona visitors to the ASNFs are from the Phoenix and Tucson metropolitan areas. Populations in these areas have increased much faster than in the more rural areas. Visitors from the four counties where the ASNFs are located account for another 20 percent. In general, there has been no to moderate population growth in these counties. Recently, there have been major highway improvements between Phoenix and the ASNFs.

It can be assumed that with increasing populations and improved transportation features, wilderness use would continue to increase in those wilderness areas on the ASNFs that are easily accessible to the recreating public.

#### Item 2

The ASNFs include three designated wilderness areas, the nation's sole remaining primitive area, and 322,000 acres of inventoried roadless areas. Users of designated wilderness areas fit a profile similar to other forests' users: 1) they are predominantly male (81 percent), 2) white (91 percent) or Hispanic/Latino (6 percent), 3) between the ages of 31 and 60, and 4) often travel from the Phoenix and Tucson areas. NVUM data suggest that roughly 45,000 wilderness visits were made during fiscal year 2001 although the error rate on this data is very high ( $\pm 56$  percent) because of the relatively low number of visitors interviewed (Kocis et al. 2002). There are no use figures specific to the Blue Range Primitive Area or the inventoried roadless areas.

### **Regional Demand for Wilderness**

1. Increased demand for additional wilderness in both Arizona and New Mexico should be anticipated based on population growth that occurred during the period of 1990 to 2000, which exceeded the national growth rate.

2. 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.
3. Demographics related to visitor race and ethnicity will affect the rate of increase in wilderness visits in the Southwestern Region. Even though the faster growing racial/ethnic groups have relatively low participation rates, wilderness use is still expected to increase because of the overall population growth rate.
4. Public demand increases with proximity to six population centers: Flagstaff, Phoenix, Tucson, Santa Fe, Taos, and Albuquerque. Consider wilderness recommendations within 100-150 miles of those cities to provide for that demand.
5. 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.
6. In terms of geographic distribution of wilderness, the Southwestern Region is under-represented with five percent fewer wilderness acres as compared with the representation nationally. Additionally, all quadrants in Arizona and New Mexico are under-represented with the exception of the southwest and southeast quadrants in Arizona. The most under-represented quadrants when compared with total federal wilderness acres are southeast and northwest New Mexico, and northeast Arizona which are at 6 percent or less in the number of wilderness acres.
7. Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new retirees and others, further contributing to a growth in wilderness visitation.

*Factor 3 - The extent to which nonwilderness lands on the NFS unit or other Federal lands are likely to provide opportunities for unconfined outdoor recreation experiences.*

There are 28 Inventoried Roadless Areas (IRA) and 310 343 IRA acres within 100 miles of Flagstaff and 37 IRAs and 354,977 IRA acres within 100 miles of Phoenix (only acres within 100 miles are shown; actual IRAs may be larger). There is one proposed NPS wilderness within 100 miles of Flagstaff.

Within 100 miles of Flagstaff and on the ASNFs, there are 250,203 acres managed for Semi-Primitive Motorized (SPM) recreation and 33,396 acres managed for Semi-Primitive Non-motorized (SPNM) recreation. Many of these acres overlap with the IRAs and potential wilderness areas.

Within 100 miles of Phoenix and on the ASNFs, there are 140,290 acres managed for Semi-Primitive Motorized (SPM) recreation and 33,396 acres managed for Semi-Primitive Non-motorized (SPNM) recreation. Many of these acres overlap with the IRAs and potential wilderness areas.

<b>Population Center</b>	<b>Inventoried Roadless Area within 100 miles</b>	<b>IRA Acres within 100 Miles</b>	<b>National Forest</b>
Flagstaff	Arnold Mesa	248	Tonto
	Arnold Mesa	12,271	Prescott
	Ash Creek	7,654	Prescott
	Barbershop Canyon	1,310	Coconino
	Black Canyon	10,672	Prescott
	Blind Indian Creek	26,815	Prescott
	Boulder	40,310	Tonto
	Boulder Canyon	4,548	Coconino
	Cherry Creek	11,357	Tonto
	Chevelon Canyon	5,567	Apache-Sitgreaves
	Cimarron Hills	5,297	Coconino
	Coconino Rim	7,212	Kaibab
	East Clear Creek	1,611	Coconino
	Fritsche	14,178	Prescott
	Grief Hill	12,521	Prescott
	Hackberry	17,864	Coconino
	Hackberry	913	Prescott
	Hellsgate	6,163	Tonto
	Jacks Canyon	2,855	Coconino
	Leonard Canyon	3,068	Apache-Sitgreaves
	Lime Creek	42,516	Tonto
	Lower Jacks Canyon	776	Coconino
	Mazatzal	16,922	Tonto
	Muldoon	5,815	Prescott
	Padre Canyon	9,423	Coconino
	Pine Mountain Wilderness Contiguous	6,510	Tonto
	Pine Mountain Wilderness Contiguous	3,126	Prescott
	Salome	2,928	Tonto
	Sheridan Mountain	15,740	Prescott
	Sierra Ancha Wilderness Contiguous	7,778	Tonto
	Walker Mountain	6,375	Coconino

Population Center	Inventoried Roadless Area within 100 miles	IRA Acres within 100 Miles	National Forest
	TOTAL	310,343	
Phoenix	Arnold Mesa	12,271	Prescott
	Arnold Mesa	248	Tonto
	Ash Creek	7,654	Prescott
	Barbershop Canyon	1,310	Coconino
	Black Canyon	10,672	Prescott
	Black Cross	5,959	Tonto
	Blind Indian Creek	26,815	Prescott
	Boulder	40,310	Tonto
	Boulder Canyon	4,548	Coconino
	Catalina St. Pk. Roadless Area	950	Coronado
	Cdo Wsa	1,954	Coronado
	Cherry Creek	11,357	Tonto
	Chevelon Canyon	5,567	Apache-Sitgreaves
	Cimarron Hills	5,297	Coconino
	East Clear Creek	1,611	Coconino
	Fritsche	14,178	Prescott
	Goldfield	15,239	Tonto
	Grief Hill	12,521	Prescott
	Hackberry	913	Prescott
	Hackberry	17,864	Coconino
	Hellsgate	6,163	Tonto
	Horse Mesa	9,136	Tonto
	Jacks Canyon	2,855	Coconino
	Leonard Canyon	3,068	Apache-Sitgreaves
	Lime Creek	42,516	Tonto
	Lower Jacks Canyon	776	Coconino
	Lower Romero WSR	10	Coronado
	Mazatzal	16,922	Tonto
	Middle Romero WSR	60	Coronado
	Muldoon	5,815	Prescott
	Oracle Roadless	22,354	Coronado
	Picacho	4,963	Tonto
	Pine Mountain Wilderness Contiguous	6,510	Tonto
	Pine Mountain Wilderness Contiguous	3,126	Prescott
	Salome	2,928	Tonto
	Santa Teresa	494	Coronado
	Sheridan Mountain	15,740	Prescott
	Sierra Ancha Wilderness Contiguous	7,778	Tonto
	Upper Romero Wsr	150	Coronado
	Walker Mountain	6,375	Coconino
	TOTAL	354,977	

*Factor 4 - 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.*

The ASNFs have identified 11 Threatened and Endangered Species, 105 Species of Concern<sup>4</sup>, and 208 Species of Interest<sup>5</sup> that occur or are found on the forests. None of these species require a primitive wilderness environment to survive. However, some (Mexican gray wolf, for example) would benefit from reduced disturbance and human encounters.

*Factor 5 - Within social and biological limits, management may increase the capacity of established wildernesses to support human use without unacceptable depreciation of the wilderness resource.*

There are three existing wildernesses on the ASNFs, all on the Apache side. Two, Mount Baldy and Escudilla, are less than 10,000 acres, are easily accessible by motor vehicles, and have limited trail systems. Visitor use in Mount Baldy is considered high with use concentrated on two of the three trails. Visitor use in Escudilla is considered moderate to high with use concentrated on one trail. Encounters with other wilderness visitors in both areas are high. For these two areas there are limited management opportunities to accommodate additional use. The third wilderness, Bear Wallow, is slightly larger, is more difficult to access, and has four trails. Visitor use is considered low. Here, additional demand could be accommodated without management changes.

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<sup>4</sup> Species of concern are species for which management actions may be necessary to prevent listing under the Endangered Species Act.

<sup>5</sup> Species of Interest are species for which management actions may be necessary to achieve ecological or other multiple-use objectives.

*Factor 6 - 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. This approach is helpful from the standpoint of rounding out the National Wilderness Preservation System and may be further subdivided to suit local, subregional, and regional needs.*

The Southwestern Regional Office used the process outlined in Loomis and Echohawk (1999)<sup>6</sup> to determine the underrepresented landforms and ecosystem types in Wilderness within Region 3.

The following landforms within the White Mountains-San Francisco Peaks-Mogollon Rim ecoregion section (where the ASNFs are located) are underrepresented in Wilderness in the region: Burro Mountains Oak-Juniper Woodland, Coconino Plateau Woodland, and San Francisco Peaks Coniferous Forest. Only Burro Mountain Oak-Juniper Woodland and Coconino Plateau Woodland are found on the ASNFs.

The following ecosystems types are underrepresented in Wilderness in the region: Desert Communities, Great Basin/Colorado Plateau Grassland, Great Plains Grassland, Piñon-Juniper Woodland, Sagebrush Shrubland, and Semi-desert Grassland. Only Great Basin Grassland, Piñon-Juniper Woodland, and Semi-desert Grassland are found on the ASNFs.

This potential wilderness contains two underrepresented ecosystems, 5 acres of Great Basin Grassland and 993 acres of Piñon-Juniper Woodland.

**Overall Need: Low**, but contains two underrepresented ecosystems

#### UNDERREPRESENTED LANDFORMS

Potential Wilderness	Name	Acreage	Acres of Burro Mountains Oak-Juniper Woodland	Acres of Coconino Plateau Woodland
PW-03-01-001	Leonard Canyon	22,405		7,171
PW-03-01-003	West Chevelon Canyon	9,493		3,689
PW-03-01-011	Black Canyon	4,913		4,911
PW-03-01-053	Cold Spring Mountain	17,541	1,878	
PW-03-01-054	Hells Hole	15,524	15,439	
PW-03-01-056	Chevelon Canyon North	6,678		6,612
PW-03-01-057	Coal Creek	5,698	370	
PW-03-01-058	Big Lue Mountains	5,222	4,932	

<sup>6</sup> Loomis, John and Echohawk, J. Chris. 1999. Using GIS to identify under-represented ecosystems in the National Wilderness Preservation System in the USA. *Environmental Conservation*. 26 (1): 53-58.

**UNDERREPRESENTED ECOSYSEMS**

Potential Wilderness	Name	Acreage	Acres of Great Basin Grassland	Acres of Piñon-Juniper Woodland	Acres of Semi-Desert Grassland
PW-03-01-001	Leonard Canyon	22,405		9,245	
PW-03-01-003	West Chevelon Canyon	9,493		5,273	
PW-03-01-006	Wildcat Canyon South	6,972	5	993	
PW-03-01-011	Black Canyon	4,913	819	3,963	
PW-03-01-040	Mother Hubbard	2,656		922	
PW-03-01-041	Campbell Blue	9,445		0.1	
PW-03-01-042	Noland	7,843		333	
PW-03-01-049	Hot Air/Salt House	76,111			5,743
PW-03-01-050	Sheep Wash	7,965			1,259
PW-03-01-051	Painted Bluffs	44,106			6,896
PW-03-01-052	West Blue/San Francisco	156,437			32,538
PW-03-01-053	Cold Spring Mountain	17,541			4,790
PW-03-01-054	Hells Hole	15,524			4,856
PW-03-01-056	Chevelon Canyon North	6,678	2,244	4,372	
PW-03-01-057	Coal Creek	5,698			1,027
PW-03-01-058	Big Lue Mountains	5,222			1,172
PW-03-01-060	Centerfire	15,239		503	
PW-03-01-062	Chevelon Lake	6,585		596	
PW-03-01-063	Milk Creek	5,387	400	2,039	
PW-03-01-067	Sunset	30,365			17,755
PW-03-01-069-1	BRPA Exclusion 1	7,792		770	245
PW-03-01-069-2B	BRPA Exclusion 2b	6,958			3,404
PW-03-01-069-3	BRPA Exclusion 3	4,665			304
PW-03-01-069-4	BRPA Exclusion 4	10,404			2,032