

Apache-Sitgreaves National Forests Draft Wilderness Evaluation Report

Leonard Canyon Potential Wilderness

PW-03-01-001

June 2009

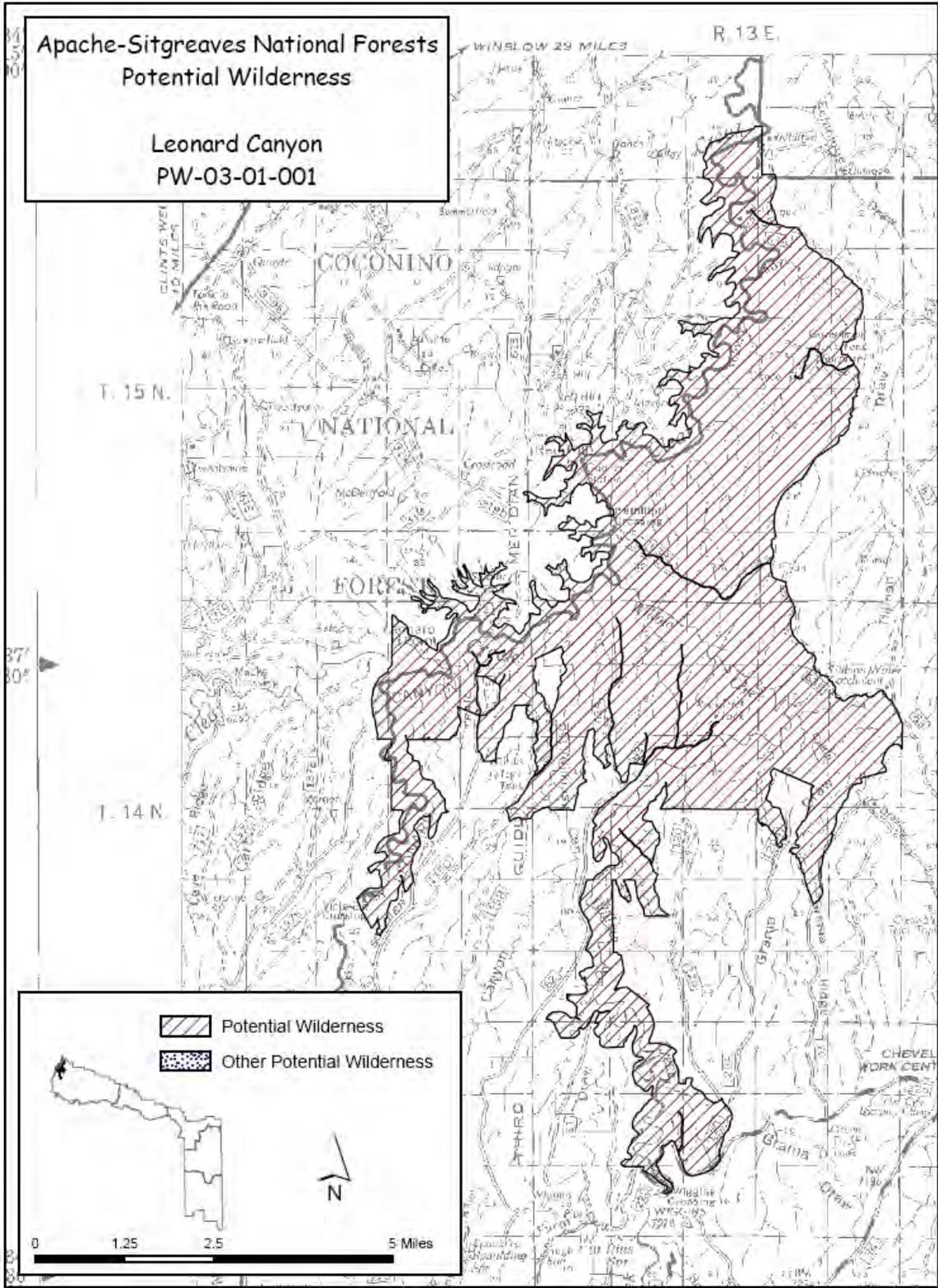
This draft potential wilderness evaluation report is divided into four parts: background, capability, availability, and need. Capability and availability are intended to be objective evaluations of existing conditions in the Leonard Canyon Potential Wilderness.

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. 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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 Map created June 2009 by etreiman.

Introduction

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 Leonard Canyon 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 Leonard Canyon 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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| Name | Leonard Canyon |
| Number | PW-03-01-001 |
| Acres | 22,405 |
| Ranger Districts | Black Mesa and Mogollon Rim, Coconino National Forest (NF) |
| History (if applicable) | The Leonard Canyon Inventoried Roadless Area (IRA) (2001 Roadless Rule) has 3,082 acres. |
| Location, Vicinity, and Access | <p>Approximately 60 miles west-northwest of Show Low, Arizona in Coconino County. It is located in the extreme western part of the ASNFs and the extreme eastern part of the Coconino NF in Arizona.</p> <p>The Leonard Canyon potential wilderness can be accessed from the east by following State Highway 260 west from Heber/Overgaard, Forest Road (FR) 300, and FR 34 to the old Chevelon Work Center. From there follow FR 225 west to Wiggins Crossing (the south end of the Willow Creek canyon). Leonard Canyon proper is accessed by continuing west on FR 225 and north on FR 115, which parallels Leonard Canyon on the east. From State Highway 87, west of Leonard Canyon, many Coconino NF roads provide access to the western boundary of the potential wilderness.</p> |
| Geography and Topography | <p>The potential wilderness is located on the Mogollon Plateau, which drains north into the Little Colorado River. The area includes Leonard, East Clear Creek, and Willow Creek Canyons, which are incised into the exposed limestone and sandstone. Elevations range from 5,700 feet on lower East Clear Creek to 7,100 feet on the Mogollon Plateau.</p> |
| Surroundings | <p>The potential wilderness straddles the boundary between the ASNFs and the Coconino NF. Knoll Lake is near the Leonard Canyon headwaters, approximately 20 miles upstream from the potential wilderness boundary. To the south and east are National Forest lands containing a number of canyons (West Chevelon and Chevelon) and lakes (Bear Canyon, Woods Canyon, Willow Springs, Chevelon Canyon). The Leonard Canyon potential wilderness boundary follows a combination of forest roads, activity areas, and private land.</p> <p>Two parcels of private land adjoin Leonard Canyon potential wilderness. One parcel sits between Willow Creek and West Willow Creek on the southeast side. The other abuts the west side of Leonard Canyon.</p> |

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| Vegetation | <p>A mosaic of vegetative communities is found within Leonard Canyon potential wilderness. Vegetation varies with elevation, aspect, and slope. Leonard Canyon and Willow Creek canyon 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.</p> <p>Vegetation is a Wild and Scenic River (WSR) Outstandingly Remarkable Value (ORV) for Willow Creek because of the diversity of species that occur throughout the river corridor.</p> |
| Appearance and Key Attractions | <p>The primary scenic features are primitive, steep-walled, and twisting canyons, with cliffs rising as much as 300 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> <p>Scenery is a WSR ORV in East Clear Creek because of its scenic beauty.</p> |
| Special Designations | <p>Leonard Canyon, Willow Creek, and East Clear Creek eligible WSRs are located all or partially within the potential wilderness. Motor vehicle use is currently restricted within Leonard and Willow Creek Canyons.</p> |

CURRENT USES

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| Recreation | <p>There is very little recreation activity, due to the remoteness and difficult access. Current recreation activities are primarily hunting, hiking, backpacking, OHV use, and viewing scenery and wildlife. There are no developed recreation sites within the area. There is one trail that provides non-motorized access into the area. Most of the area has recreation emphases of Semi-Primitive Non-Motorized and Semi-Primitive Motorized.</p> |
| Wildlife | <p>Large wildlife species found in the area include elk, mule deer, black bear, and mountain lion. Small animals and birds also inhabit the area. Threatened fish and wildlife species habitat includes Little Colorado spinedace, Mexican spotted owl, and Chiricahua leopard frog. Sensitive fish and wildlife species habitat includes bluehead sucker, bald eagle, American peregrine falcon, common black-hawk, northern goshawk, and northern leopard frog.</p> <p>Wildlife species and habitat are WSR ORVs for Willow Creek, East Clear Creek, and Leonard Canyon because the varied topographic, edaphic, and vegetative conditions within the canyons combine with permanent water (pools) to provide habitat for numerous wildlife species.</p> |
| Range | <p>Cattle grazing occurs on the uplands around the canyons. Parts of the potential wilderness are within the Clear Creek, Wallace, and Limestone Allotments. There are 17.6 miles of fence and 0.1 miles of pipeline in the potential wilderness.</p> |

- Water** East Clear Creek is the only perennial stream in the potential wilderness. All other drainages are intermittent, including Leonard Canyon and Willow Creek, or ephemeral. There are 14 stock tanks and 3 trick tanks/guzzlers within the potential wilderness.
- In 1993, approximately 1,000 acres of the potential wilderness had been withdrawn for a First Form, Bureau of Reclamation water project, the Winslow Project. No current information can be found concerning this project.
- Forest Products** The northern half of the potential wilderness is part of the Black Mesa Ranger District winter/spring firewood area. It is used regularly by residents of Winslow, Holbrook, and to a lesser extent, Flagstaff and the Navajo and Hopi reservations for firewood cutting.
- Minerals** There are no mining claims, mineral districts, mineral withdrawals, or coal, oil and gas, or geothermal leases in the potential wilderness.
- Heritage Resources** Rock shelters are common along East Clear Creek. Known historic sites in Leonard Canyon include cabins, corrals, and a sheep dip, while known prehistoric sites include lithic scatters, rock art, and a cliff dwelling. Willow Creek contains rock art and dwellings from the Mogollon Culture and pot shards from the Apache Culture.
- Fire** Sixty-two fires (most < ¼ acre and the largest approximately 1,858 acres) occurred between 1970 and 2006. Almost all were caused by lightning.

Capability Evaluation

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 wildlife species including Mexican spotted owl, Little Colorado spinedace, Chiricahua leopard frog, bluehead sucker, bald eagle, American peregrine falcon, northern goshawk, common black-hawk, and northern leopard frog. Free-flowing, perennial stream include East Clear Creek. There are no impoundments or water quality concerns. Leonard Canyon is an eligible WSR with a proposed classification of Recreational. East Clear Creek is an eligible WSR with a proposed classification of Scenic. Willow Creek is an eligible WSR with a proposed classification of Wild. Mullein is found along area roads, 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

High (canyons)

Medium (uplands)

Canyons - There is very little evidence of human activity in the canyons, including an old trail and a gauging station.

Uplands - Unobjectionable evidence of human activity scattered throughout the uplands includes fences, stock tanks, trick tanks/guzzlers, and user-created routes.

Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation

High (canyons)

Low (uplands)

Canyons - The canyons have outstanding opportunities for solitude and primitive and unconfined recreation because of the remoteness, difficult access, dense vegetation, rugged terrain, and limited trails. Recreation opportunities include hiking, hunting, camping, backpacking, viewing wildlife, and photography.

Uplands - The uplands have opportunities for primitive and unconfined recreation but they are not outstanding because of the rolling terrain. Solitude, especially in the southern portion, may be affected by motor vehicle travel on boundary roads and user-created routes.

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 research, and habitat for the wildlife and fish species listed above in **Natural**.

Manageability

High (canyons)

Medium (uplands)

Canyons - The canyon would be manageable as wilderness because of its isolation and lack of resource conflicts. There is no motor vehicle use in the canyons because of the terrain.

Uplands - It would be difficult to manage the uplands as wilderness because of the rolling terrain, lack of physical barriers to motor vehicle use, remoteness, and many boundaries that follow roads. User-created routes are associated with firewood cutting, hunting, and motorized recreation.

OVERALL CAPABILITY

High (canyons)

Medium (uplands)

Availability Evaluation

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 value for water yield, but no impoundments are needed.

Habitat Management

High

No management needs have been identified for wildlife or aquatic animals. A fish barrier had been proposed for lower Willow Creek, but no good sites were ever identified.

Aquatic Restoration

Low

A large portion of the potential wilderness consists of uplands. The piñon-juniper woodlands in the uplands are generally in unsatisfactory watershed condition (Environmental Assessment [EA] for Chevelon Canyon, Clear Creek, Limestone, and Wallace Allotments, 12/2002) and watershed improvement has been identified as a need. Proposed piñon-juniper pushes and maintenance of pushes are mapped in the EA and are expected to aid in watershed improvement by reducing piñon-juniper density and allowing grasses to grow.

Vegetation Restoration

Low

Canyons - Current conditions are severely departed from the historic conditions. No vegetation treatments have been identified for Leonard Canyon, however the canyon has a high fuel loading and, given the right conditions, is at high risk of severe wildfire. Areas of small, dense trees as are in need of thinning and/or prescribed burning for forest health and fire hazard reduction to protect threatened species habitat.

Uplands - Mainly piñon-juniper woodlands and ponderosa pine forest. Conditions in the uplands are severely departed from the historic condition. The EA referenced in above has identified mechanical treatments within the next 10 years in piñon-juniper woodlands within this potential wilderness.

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 will be minimal because of its remoteness and lower priority. Illegal motor vehicle use for recreation, hunting, and firewood cutting is expected to continue in the uplands.

Land Use Authorizations

Low

Land use authorizations include grazing permits and structures and firewood permits. 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

Medium

There are adjacent private lands along the western boundary, the extreme northern boundary, and the southeastern boundary.

Minerals

High

There is a low potential for future mineral uses.

OVERALL AVAILABILITY

Medium (canyons)

Low (uplands) - Uplands are easily accessed and are used for firewood cutting. Control of motor vehicle use would be difficult.

Need Evaluation

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 Leonard Canyon potential wilderness. Within 100 miles of this potential wilderness there are 956,063 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.¹

¹ 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 IRAs. 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 Concern², and 208 Species of Interest³ 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.

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

³ 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.

Medium

This potential wilderness contains one underrepresented landform, 7,171 acres of Coconino Plateau woodland, and one underrepresented ecosystem, 9,245 acres of piñon-juniper woodland.

OVERALL NEED

Medium, contains one underrepresented landform and one underrepresented ecosystem

Appendix A: Wilderness Evaluation Process

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 100th 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

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** - Leonard Canyon, East Clear Creek, and Willow Creek have all been found to be free-flowing. Leonard Canyon is an eligible WSR with a proposed classification of Recreational. East Clear Creek is an eligible WSR with a proposed classification of Scenic. Willow Creek is an eligible WSR with a proposed classification of Wild.

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: **High** - East Clear Creek has been sampled and no water quality issues are present. Leonard Canyon and Willow Creek within the potential wilderness are intermittent and have not been sampled; no water quality issues have been identified.

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: **High** - Biological diversity is high and essentially natural. The potential wilderness provides habitat for threatened fish and wildlife species including Mexican spotted owl, Little Colorado spinedace, and Chiricahua leopard frog. Sensitive fish and wildlife species include bluehead sucker, bald eagle, American peregrine falcon, northern goshawk, common black-hawk, and northern leopard frog. Both Vegetation and Wildlife habitat and species are recognized as ORVs for the eligible WSRs within this potential wilderness.

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 several areas of old ponderosa pine and mixed conifer. 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: **High** (canyons) - There is very little evidence of human activity in the Leonard Canyon potential wilderness canyons. There are an old trail that crosses East Clear Creek at Hamilton Crossing and a gauging station located approximately 1 mile downstream of this crossing.

Medium (uplands) - Unobjectionable evidence of human activity scattered throughout the uplands includes fences, stock tanks, trick tanks/guzzlers, and user-created routes.

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

Low (uplands) - Solitude in the uplands, especially in the southern portion, may be affected by motorized vehicle travel on the boundary roads 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, camping, wildlife viewing, backpacking, and hunting in the area, but they are limited primarily to the river canyons. There are no trails through the area; only one non-system trail crosses East Clear Creek at Hamilton Crossing.

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** - The canyon's 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.

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 unique ecological characteristics in the area.

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: **High** - Leonard Creek provides habitat for Little Colorado spinedace, a threatened species. The potential wilderness also provides habitat for threatened Mexican spotted owl, Chiricahua leopard frog, and Little Colorado spinedace. Sensitive fish and wildlife species include bluehead sucker, bald eagle, American peregrine falcon, common black-hawk, northern goshawk, and northern leopard frog.

Overall Capability: **High** (canyons)
Medium (uplands)

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** (canyons) - The canyons would be manageable as wilderness because of their isolation, limited access, and lack of resource conflicts.

Medium (uplands) - Because of the remoteness of the potential wilderness and lack of physical barriers in the uplands, there could be some difficulty in managing motor vehicle use. Much of the boundary follows roads, 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** (canyons) - There is no motorized vehicle use in the canyons because of the terrain and forest orders that restrict such use.

Yes (uplands) - Much of the potential wilderness includes rolling upland areas around the canyons. Roads 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.

Overall Manageability: **High** (canyons)
Medium (uplands)

Appendix C: Availability Evaluation and Ratings

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 value for water yield, but no impoundments are 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: **High** - No management needs have been identified for wildlife or aquatic animals. A fish barrier had been proposed for lower Willow Creek, but no good sites were ever identified.

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: **Low** - A large portion of the potential wilderness, as currently delineated, consists of uplands. The piñon-juniper woodlands in the uplands are generally in unsatisfactory watershed condition (Environmental Assessment [EA] for Chevelon Canyon, Clear Creek, Limestone, and Wallace Allotments, 12/2002) and watershed improvement has been identified as a need. Proposed piñon-juniper pushes and maintenance of pushes are mapped in the EA and are expected to aid in watershed improvement by reducing piñon-juniper density and allowing grasses to grow.

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 (canyons) - Current conditions are severely departed from the historic conditions. No vegetation treatments have been identified for Leonard Canyon, however the canyon has a high fuel loading and, given the right conditions, is at high risk of severe wildfire. Areas of small, dense trees as are in need of thinning and/or prescribed burning for forest health and fire hazard reduction to protect Threatened species habitat.

Low (uplands) - Mainly piñon-juniper woodlands and grasslands. Conditions in the uplands are severely departed from the historic condition, and restoration of grasslands has been identified as an objective in the Forest Plan Revision. The EA referenced in #3 above has identified mechanical treatments within the next 10 years in both piñon-juniper woodlands and grasslands within this potential wilderness.

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 - Fences that run through this area vary in age and condition. Grazing permittee and Forest Service need access to these fences to check and repair them. If new fencing is required a variety of motorized vehicles may be needed. Chain saws may be needed to brush fence line or to cut fallen trees off of or out of fences. Stock tanks 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 - Inholdings exist.

Rating: **Low** - There are adjacent private lands along the western boundary, the extreme northern boundary, and the southeastern boundary.

Forest Service control to prevent development of irresolvable, incompatible use that would lessen wilderness character and potential is **LOW**. The incompatible uses would be firewood cutting and illegal motor vehicle use off-road for recreation and hunting.

Although off-road vehicle use will be prevented when the travel management rule is implemented on the forest, enforcement effort in this area will be minimal due to its remoteness and lower priority. This use would lessen the wilderness character.

Overall Availability: **Medium** (canyons)

Low (uplands) - Uplands are easily accessed and are used for firewood cutting.

Control of motor vehicle use would be difficult.

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 27 Wildernesses within 100 miles of PW-03-01-001. The total acreage of these wilderness areas is 956,063 acres. The Forest Service (FS) manages 22 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-03-01-001 | White Canyon | 6,981 | 94 | BLM |
| PW-03-01-001 | Needle's Eye | 6,277 | 97 | BLM |
| PW-03-01-001 | Superstition | 158,920 | 76 | FS |
| PW-03-01-001 | Four Peaks | 60,487 | 64 | FS |
| PW-03-01-001 | Salt River Canyon | 32,035 | 61 | FS |
| PW-03-01-001 | Sierra Ancha | 18,198 | 49 | FS |
| PW-03-01-001 | Salome | 18,688 | 46 | FS |
| PW-03-01-001 | Mount Baldy | 7,627 | 93 | FS |
| PW-03-01-001 | Hells Canyon | 9,841 | 89 | BLM |
| PW-03-01-001 | Hassayampa River Cyn | 12,672 | 96 | BLM |
| PW-03-01-001 | Mazatzal | 248,858 | 44 | FS |
| PW-03-01-001 | Hellsgate | 38,845 | 27 | FS |
| PW-03-01-001 | Castle Creek | 24,477 | 77 | FS |
| PW-03-01-001 | Pine Mountain | 18,656 | 49 | FS |
| PW-03-01-001 | Cedar Bench | 16,585 | 48 | FS |
| PW-03-01-001 | Fossil Springs | 10,754 | 32 | FS |
| PW-03-01-001 | West Clear Creek | 26,291 | 31 | FS |
| PW-03-01-001 | Granite Mountain | 9,850 | 90 | FS |
| PW-03-01-001 | Woodchute | 5,790 | 69 | FS |
| PW-03-01-001 | Wet Beaver | 6,721 | 36 | FS |
| PW-03-01-001 | Munds Mountain | 17,997 | 43 | FS |
| PW-03-01-001 | Petrified Forest | 52,058 | 70 | NPS |
| PW-03-01-001 | Sycamore Canyon | 58,818 | 63 | FS |
| PW-03-01-001 | Red Rock-Secret Mtn | 50,312 | 57 | FS |
| PW-03-01-001 | Kendrick Mountain | 8,200 | 78 | FS |
| PW-03-01-001 | Kachina Peaks | 18,857 | 66 | FS |
| PW-03-01-001 | Strawberry Crater | 11,268 | 66 | FS |
| | TOTAL | 956,063 | | |

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).

| Population Center | Wilderness within 100 Miles | Wilderness Acres within 100 Miles | Potential Wilderness Within 100 Miles | Potential Wilderness Acres within 100 Miles |
|--------------------------|------------------------------------|--|--|--|
| 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 | | |

| Population Center | Wilderness within 100 Miles | Wilderness Acres within 100 Miles | Potential Wilderness Within 100 Miles | Potential Wilderness Acres within 100 Miles |
|--------------------------|------------------------------------|--|--|--|
| | 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 | | |
| | TOTAL | 1,684,972 | | |

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 (± 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.

| Population Center | Inventoried Roadless Area within 100 miles | IRA Acres within 100 Miles | National Forest |
|--------------------------|---|-----------------------------------|------------------------|
| 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 Concern⁴, and 208 Species of Interest⁵ 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.

⁴ Species of Concern are species for which management actions may be necessary to prevent listing under the Endangered Species Act.

⁵ 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)⁶ 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 ecosystem 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 one underrepresented landform, 7,171 acres of Coconino Plateau Woodland, and one underrepresented ecosystem, 9,245 acres of Piñon-Juniper Woodland.

Overall Need: Medium, contains one underrepresented landform and one underrepresented ecosystem

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 | |

⁶ 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 |