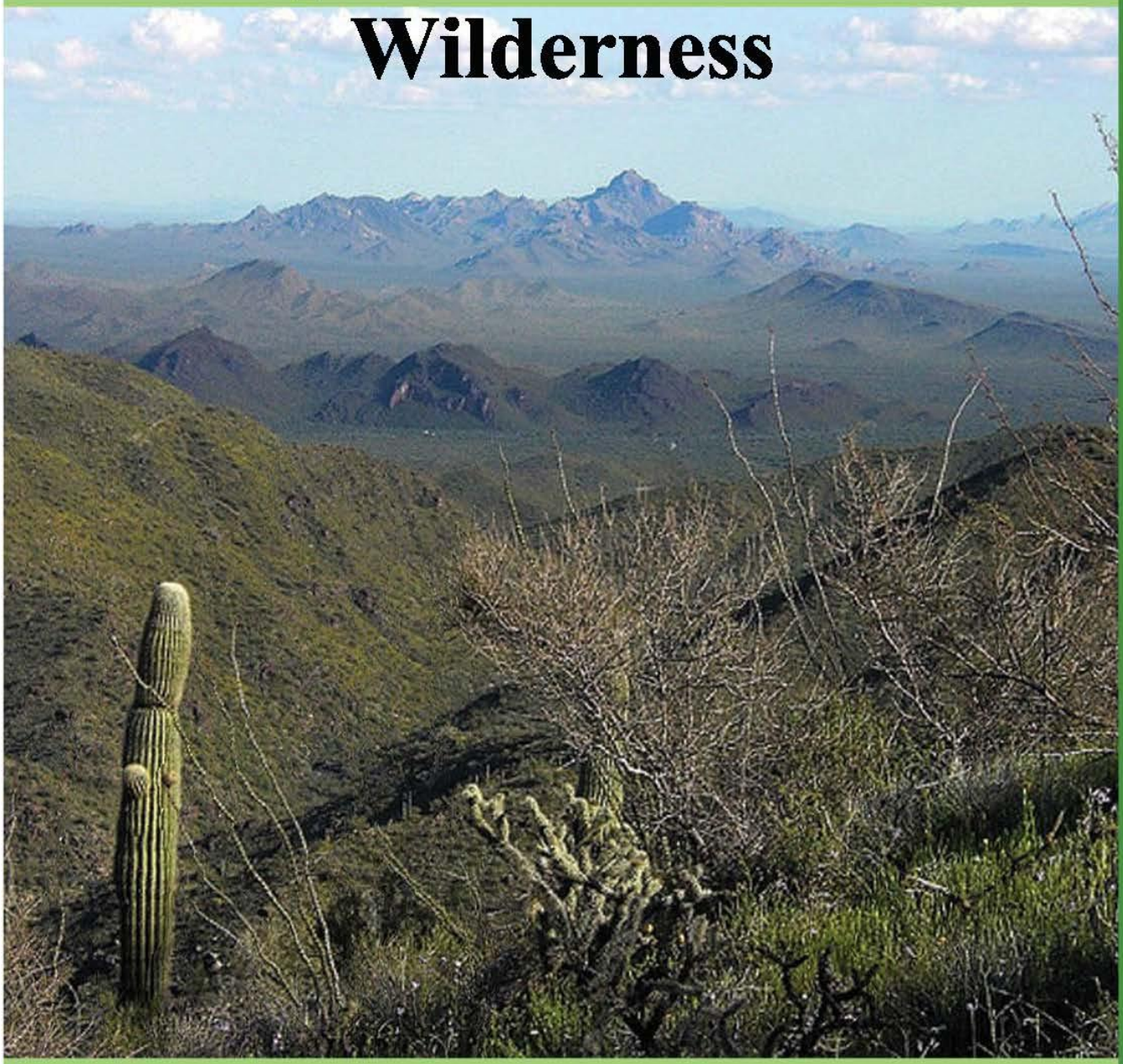
Harquahala Mountains Wilderness



BLM

Arizona Phoenix District Office Hassayampa Field Office

Final Management Plan and Environmental Assessment

September 30, 2015

The Bureau of Land Management is responsible for the balanced management of the public lands and resources and their various values so that they are considered in a combination that will best serve the needs of the American people. Management is based upon the principles of multiple use and sustained yield; a combination of uses that take into account the long term needs of future generations for renewable and non-renewable resources. These resources include recreation, range, timber, minerals, watershed, fish and wildlife, wilderness and natural, scenic, scientific and cultural values.

Final Harquahala Mountains

Wilderness Management Plan

And

Environmental Assessment

EA Number: DOI-BLM-AZ-P010-2013-0044-EA

U.S. Department of the Interior
Bureau of Land Management
Hassayampa Field Office
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List of Acronyms

ACEC- Area of Critical Environmental Concern

AGFD- Arizona Game and Fish Department

EA- Environmental Analysis

FAA- Federal Aviation Administration

HA- Herd Area

HMA- Herd Management Area

HMW- Harquahala Mountains Wilderness

MIST- Minimum Impact Suppression Tactics

MOU- Memorandum of Understanding

MRDG- Minimum Requirement Decision Guide

NEPA- National Environmental Policy Act

PEIS- Programmatic Environmental Impact Statement

ROD- Record of Decision

SRP- Special Recreation Permit

VFR- Visual Flight Rules

VRM- Visual Resource Management

WMP- Wilderness Management Plan

Part I – Introduction

Wilderness Background

Wilderness areas are places where the earth and its community of life remain undisturbed by the imprint of humans. They retain a primeval character without permanent improvements and generally appear to have been affected primarily by the forces of nature.

In 1964, the United States Congress established the National Wilderness Preservation System and designated the first Wilderness areas in passing the Wilderness Act. This American idea has become an increasingly significant tool to ensure long-term protection of wilderness character. By definition in the Act, wilderness is affected primarily by the forces of nature with human imprint substantially unnoticeable, has outstanding opportunities for solitude or primitive and unconfined type of recreation, is of at least five thousand acres or sufficient in size to make practicable its preservation and use in an unimpaired condition; and may contain supplemental attributes such as ecological, geological, scientific and educational, scenic, and historic values.

Wilderness provides unconfined recreation opportunities that don't require facilities, motor vehicles, motorized equipment, or mechanized transport. Some examples of these primitive and unconfined recreation opportunities are hiking, backpacking, hunting, horseback riding, photography, bird watching, and sightseeing.

Wilderness protects the habitat of numerous wildlife species and serves as a biodiversity bank for many species of plants and animals. Wilderness is also a source of clean water. It has long been used for science and education as well as for higher education purposes, providing sites for field trips, study areas for student research, and serving as a source of instructional examples. Recreation is another appeal of wilderness, and wilderness areas are seeing steadily increasing use from people who wish to experience freedom from the Nation's fast-paced industrialized society.

On November 28, 1990, the Harquahala Mountains Wilderness (HMW) was designated by Congress with the passage of the Arizona Desert Wilderness Act of 1990 (Public Law 101-628). This wilderness is managed by the Department of the Interior, Bureau of Land Management (BLM), under the authority of the Wilderness Act of 1964 and within the National Wilderness Preservation System and BLM's National Conservation Lands.

HMW consists of 22,865 acres and is located approximately 35 miles west of Wickenburg, Arizona and 80 miles from downtown Phoenix. BLM land surrounds this wilderness area. HMW supports mountain seeps and springs with varying rugged topography that supports exceptional natural diversity in flora and fauna. In the native language of the Mojaves who spoke River Yuman, Harquahala means "running water up high."

The BLM's Manual 8561 established that the agency will manage wilderness with the guidance of a wilderness plan. The environmental assessment (EA) analyzes the environmental and social impacts of the proposed Wilderness Management Plan (proposed action) and a "no-action" alternative.

Plan Purpose and Need

BLM Manual 8561 *Wilderness Management Plans* requires that wilderness areas be managed pursuant to a specific management plan. In fulfillment of this requirement, the Hassayampa Field Office staff prepared this Wilderness Management Plan (WMP) to address future management of this area.

The need for the Proposed Action stems from Section 4(b) of the Wilderness Act, which requires administering agencies to preserve wilderness character. Further, Section 1.4.C. of BLM Manual 6340 *Management of Designated Wilderness Areas* requires BLM District and Field Managers, to develop and implement land use and activity-level plans addressing wilderness areas that conform to the Wilderness Act, the establishing legislation, and BLM wilderness policies and guidance.

Based on the analysis herein, the BLM will decide whether to manage the wilderness area strictly according to legislative and regulatory requirements, or whether to implement a plan that provides additional actions to manage approved uses while ensuring adequate protection and preservation of resources and values, as well as providing mitigation for potential impacts to those resources and values.

This WMP describes the existing environment in the wilderness and proposes management actions to address specific issues or concerns. The EA describes and analyzes potential effects to wilderness character.

Conformance with Land Use Plan

The Proposed Action and No Action alternatives addressed in this EA are in conformance with the Bradshaw-Harquahala Resource Management Plan (BLM, 2010). Specific decisions that apply to both alternatives are:

WM-1. Wilderness Areas are to retain the qualities for which they were designated by Congress. They remain undisturbed and offer a respite with opportunities for enjoyment of solitude and natural landscapes through non-motorized, non-mechanized access.

WM-2. Wilderness remains closed to motorized and mechanized uses.

WM-3. Exceptions to the prohibition on motorized and mechanized uses may be allowed for such wildlife management activities as approved by the Field Manager, and when such motorized and mechanized equipment is determined to be the minimum tool needed to do the job. Such activities will be evaluated on a case-by-case basis as need arises.

WM-4. In the absence of group size limitations in existing wilderness or activity plans, group size for casual use activities will be limited to 25 people. BLM will evaluate requests for groups of more than 25 people on a case-by-case basis to ensure that resources and wilderness values are protected. Groups exceeding 25 people will require prior written authorization from the authorized officer. A special recreation permit will be required for groups over 50 people.

WM-5. Commercial recreation and vending operations are not allowed in the Harquahala Mountains (including,

but not limited to such activities as guided horse rides or guided hikes) except for guided hunt and outfitter services. Organized non-commercial activities will be allowed on a case-by-case basis when consistent with wilderness management objectives.

WM-7. Develop and adopt measurement standards for limits of acceptable change for trail conditions, visitor-to-visitor encounters, vegetation changes, Arizona Land Health Standards, and approved motorized/ mechanized activities. Exceeding the limits of acceptable change could result in implementing actions such as the following: Developing and distributing *Leave No Trace* or other educational information, initiating a permit system, closing damaged areas or trails to camping to allow natural restoration, realigning trails, reclaiming damaged areas, installing alternative access points, monitoring or removing non-native or invasive plants or animals; and mitigating the evidence (sights and sounds) of any authorized mechanized/mechanical uses.

This WMP also complies with the additional decisions in other program areas as established in the land use plan.

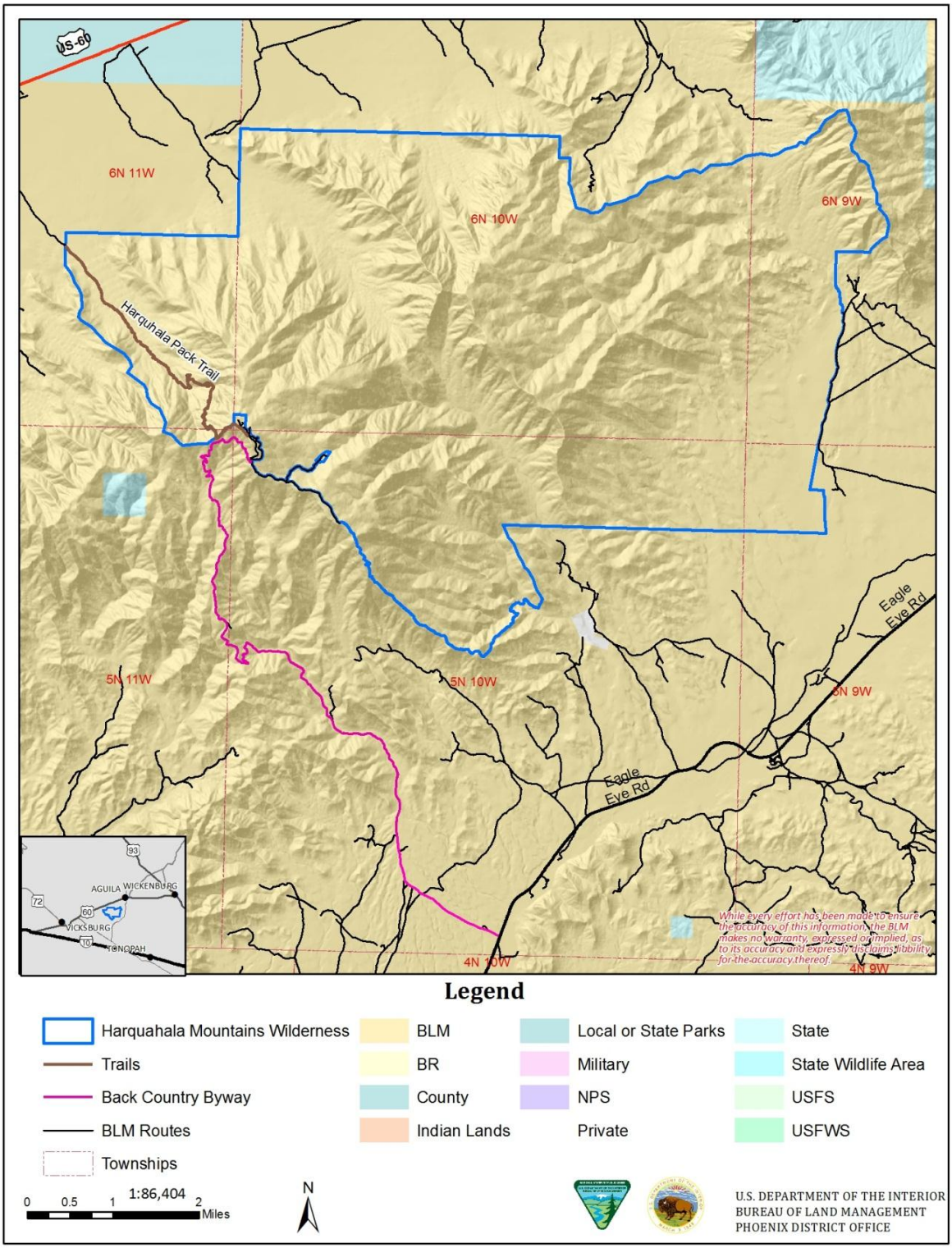
Relationship with Statutes, Regulations, or Other Plans

The Wilderness Act of 1964 defined wilderness as: "An area of undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed as to preserve its natural conditions." Under the Act, the BLM must manage wilderness within its jurisdiction to protect wilderness values.

Wilderness preservation became one of the BLM's multiple-use mandates with the signing of the Federal Land Policy and Management Act of 1976. The Arizona Desert Wilderness Act of 1990 designated the Harquahala Mountains Wilderness.

Regulations governing wilderness management by the BLM are present in 43 CFR 6300 and BLM Manual 6340, "Management of Designed Wilderness Areas."

This EA complies with the National Environmental Policy Act of 1969 by providing the decision maker with an appropriate alternative for managing this wilderness area and describing the environmental impacts of implementing each of the alternatives. A 45-day comment period was held to provide for public review and input to the WMP and EA.



Map 1. Location Map Harquahala Mountains Wilderness Area

Wilderness Overview (General Setting)

Wilderness Boundary, Location, and Access

As shown in Map 1, the wilderness is bounded on all sides by BLM lands. For access to the north boundary, one must first traverse across land managed by the Arizona State Land Department. These roads are numbered: 9329, 9328, 9327, and 9326 and terminate before the wilderness boundary. See Map 3. The road numbered 9331 leads to the wilderness boundary and provides access to the wildlife waters managed by the Arizona Game and Fish Department (AGFD). The road numbered 9332 leads to the Harquahala Peak Pack Trail Trailhead. BLM roads leading from Eagle Eye Road access the eastern and southern sections of the boundary. Roads numbered 9309 and 9310 lead to the eastern side of the wilderness boundary where there are no natural geographical features that clearly define the wilderness boundary from other public lands. On the southern boundary, roads leading to the wilderness are truncated by 1/3 of a mile or more before reaching the wilderness boundary. The Harquahala Back Country Byway consists of 10.5 miles of extremely rough road, climbing to the summit of the Harquahala Mountains which leads to the upper Harquahala Peak Pack Trail Trailhead, wilderness boundary, and features outside of the wilderness area. Boundaries are marked with flexible fiberglass posts. Minimum spacing is one-half mile apart. Additional signs are placed at locations that are prone to vehicular travel, such as flat, non-vegetative areas.

Ownership/Land Use

The BLM administers all surface and sub-surface land within the wilderness and surrounding the wilderness.

Environmental Setting:

The area is characterized by the Sonoran Desert subdivision of the basin and range physiographic province. This is characterized by the flat desert valleys separating isolated mountain ranges[1]. The geology includes major constituents of granite, gneiss, schist, and shale. Erosion has produced steep exposures on the northern slopes. Deeply incised canyons on the southern flanks have produced irregular, narrow ridges. A considerable number of springs and seeps are present.

The area is characterized by a relatively wet microclimate set above the dry valley. The upper reaches of the mountain may accumulate up to 12-18 inches of rain per year compared to an average rainfall in the valley of only 6 inches per year. Rainfall comes in a bi-seasonal pattern; about 40 percent of the total falls in the form of high intensity, localized thunderstorms during the summer months. The remainder falls during the winter months in the form of widespread storm fronts. Late spring and early fall are characterized by drought or near-drought conditions. The average daily temperatures range from 30 – 67 degrees Fahrenheit in January and 70-108 degrees Fahrenheit in July in valleys[2]. Temperatures in the mountain can fluctuate by 20 degrees or more for the same time of the year.

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[1] Thornbury 1965
[2] Sellers and Hill 1974

The area is located in a high-quality undeveloped landscape where the dark sky produces quality sky viewing experiences.

The elevation rises to a maximum of 5,681 feet and represents the highest peak in the immediate vicinity.

The western portion of this wilderness is contained within the Harquahala Mountain Smithsonian Solar Observatory Historic District and includes the Harquahala Peak Pack Trail, an historic trail used to pack scientific supplies, food, and other goods to the scientists who lived on the summit studying the weather via the solar constant. Other facilities related to this District are located outside of the HMW.

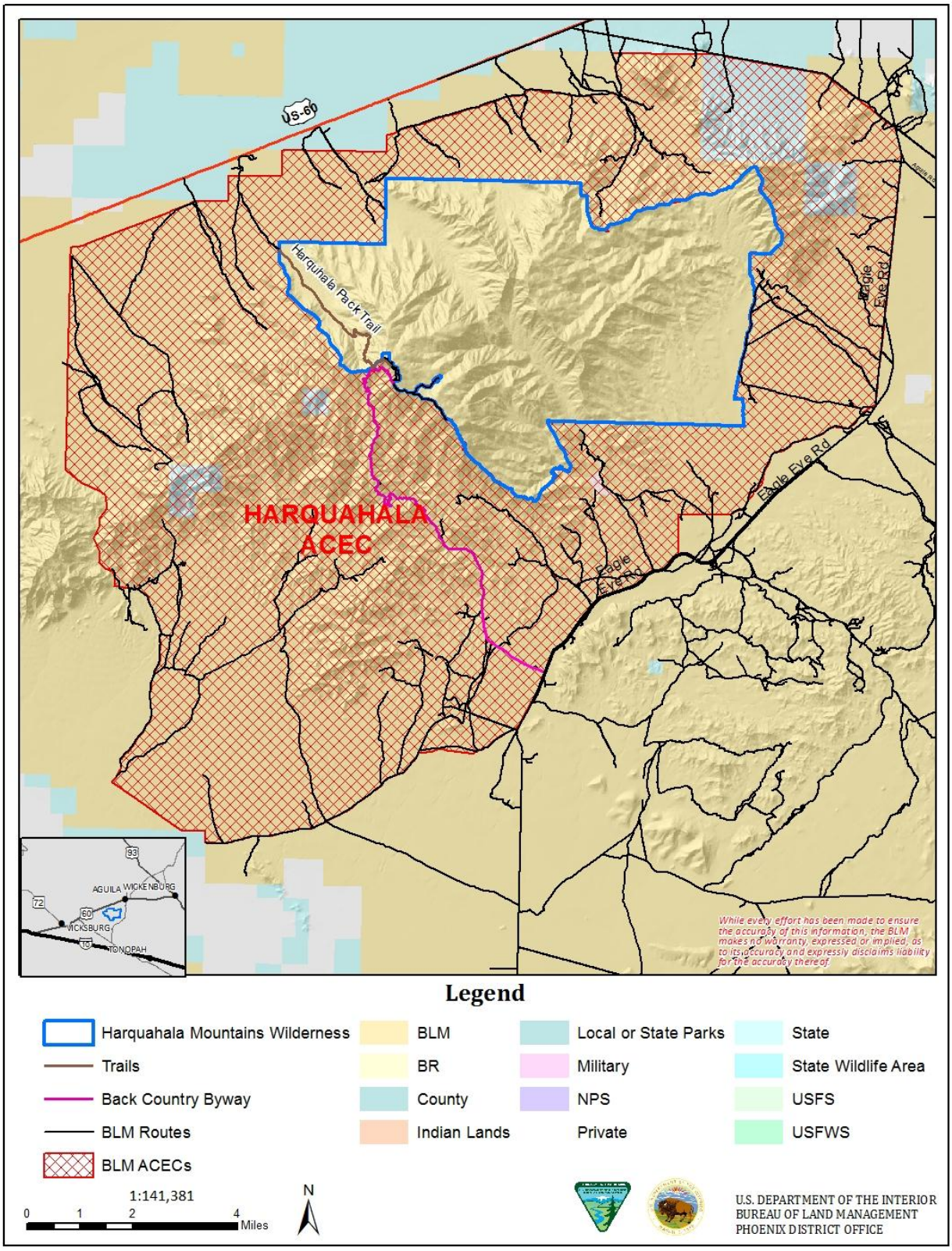
The Harquahala Mountains Area of Critical Environmental Concern (ACEC) surrounds the wilderness area and protects biological resources and significant cultural resources, including prehistoric and historic sites.

The area constitutes a rare, intact mountaintop vegetative community surrounded by low desert. As the highest topographic feature in the region, the mountains contain a biologically diverse system, in stark contrast to the surrounding landscape. The mountain range supports a diverse sky island ecosystem, with many species not found in the surrounding Sonoran Desert. See Map 2.

Military Aircraft Overflight

The Arizona Desert Wilderness Act of 1990 specifically provides for continuing military overflight above wilderness. Overhead aircraft can be heard and or seen during practice maneuvers. Noise disturbance from flights has not been reported by visitors. Flying over dark sky areas, such as wilderness areas, enhances military preparedness.[3]

[3] Strategies to Protect Arizona's $9 Billion Military Economy



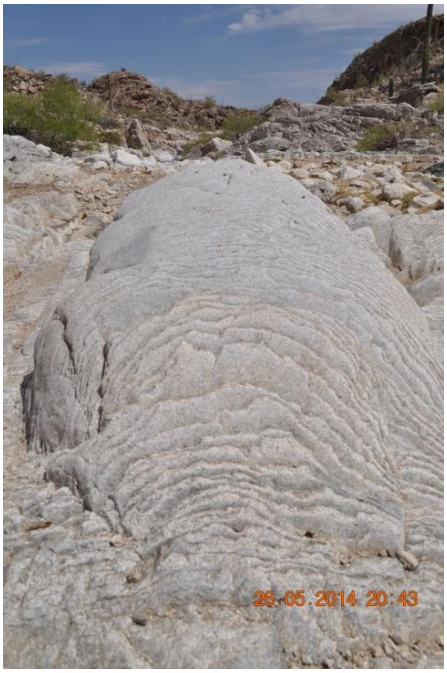
Map 2. Harquahala Mountains Area of Critical Environmental Concern

Part II – National Wilderness Management Goals

Four standard management goals have been established by the BLM for its designated wilderness areas.

1. To provide for the long-term protection and preservation of the area's wilderness character under a principle of non-degradation. The area's natural condition, opportunities for solitude, opportunities for primitive and unconfined types of recreation, and any ecological, geological, or other features of scientific, educational, scenic, or historical value present will be managed so that they will remain unimpaired.

2. To manage the wilderness area for the use and enjoyment of visitors in a manner that will leave the area unimpaired for future use and enjoyment as wilderness. The wilderness resource will be dominant in all management decisions where a choice must be made between preservation of wilderness and visitor use.



3. To manage the area using the minimum tool, equipment, or structure necessary to successfully, safely, and economically accomplish the objective. The chosen tool, equipment, or structure should be the one that least degrades wilderness values temporarily or permanently. Management will seek to preserve spontaneity of use and as much freedom from regulation as possible.

4. To manage nonconforming but accepted uses (i.e. grazing) permitted by the Wilderness Act and subsequent laws in a manner that will prevent unnecessary or undue degradation of the area's wilderness character. Nonconforming but accepted uses are the exception rather than the rule; therefore, emphasis is placed on maintaining wilderness character.

Part III – Issues

Input was solicited from BLM staff, interagency meetings, and public scoping meetings where issues were identified and discussed. The issues have been categorized into three types: (1) issues addressed by this plan; (2) issues resolved by policy; and (3) issues beyond the scope of the plan. The bulk of issues identified were related to keeping the area natural and recreation/visitor experiences in the wilderness.

Issues Addressed In This Plan:

General Wilderness Management

- How will natural conditions be maintained with respect to preventing overuse, managing fire, accommodating wildlife needs, and developing monitoring programs?
- Do stakeholders and others know of the minimum requirements provision of the Wilderness Act when resource management and recreation use functions are conducted in the wilderness?

Recreation

- How will visitor use be managed to maintain naturalness despite the following?
  - Development of social trails
  - Proliferation of campsites
  - Removal of trees and woody brush for camp fires
  - Human waste
  - Vandalism
  - Concentrated use in specific areas
- How can the BLM assist in keeping the recreation experience wild?
- How will the trail be maintained?
- Should pack animals besides horses and llamas be permitted in the wilderness?
- Should horse limits per group be imposed on the trail? How about on the rest of the wilderness area?
- Should more signs be installed for notifying the public about the wilderness boundary and the prohibition on motorized use?
- How should organized recreation be managed with regard to group sizes and appropriate areas?
- What would trigger adaptive management to maintain solitude or other wilderness values?
- What type of monitoring would be effective to measure that wilderness character is being preserved?
- What types of visitor use information should be made available (access, hiking route, boundary, signs, brochures, other media, etc.)?
- What type of informational systems would be used to inform visitors of management actions that may infringe upon solitude?
- What effect would signs on Highway 60 and Eagle Eye Road have on the volume of people using the trail?

- Are more trails needed to enhance the visitor experience or is one designated trail sufficient?
- Is there an area where a loop trail can be constructed?
- How can wilderness values and airspace for recreational purposes be managed?

Wild Burro Management

- How would burros be managed in the area?
- What impact do burros have on existing wildlife waters and vegetation?
- How may volunteers help with burro management?

Wildlife Management

- How does wilderness enhance habitat connectivity?
- Does this wilderness play a role in desert tortoise recovery?
- What arrangements does the BLM have with the AGFD to perform wildlife enhancement, recovery, or data collection needs for species recovery, health, and longevity and are motorized uses needed?
- Are there any maintenance needs or construction needs for wildlife waters?
- Are there existing bat roosts in the wilderness and, if so, how will they be managed?
- How may volunteers help with wildlife management actions?

Noxious Weeds

- What measures should be taken to prevent noxious weeds?
- What types of treatment methods would be used?
- How would BLM determine if the treatment was a success?

Fire Management

- Is the existing fire policy adequate to address fire behavior in the HMW?

Cultural

- How would you protect prehistoric and historic elements?
- Can volunteers help protect areas within this wilderness?

Issues Solved Through Policy or Administrative Action

Wilderness Designation

Wilderness areas were designated through the Arizona Desert Wilderness Act of 1990. The boundaries of the wilderness were set through the passing of the Act and are not open to review through this planning process.

Wild Horse and Burro Management

The Wild Free-Roaming Horses and Burros Act of 1971 directs the BLM to maintain these animals in a wild, free-roaming state and in a thriving ecological balance with their environment. This wilderness area is only a small portion of the Harquahala Herd Area. Therefore this plan will not address overall burro management. The plan will address burros in the context of their effect on wilderness character (primarily vegetation), and the impacts of their management (i.e. census and capture operations).

Water Rights

In the Arizona Desert Wilderness Act of 1990, Congress reserved a quantity of water sufficient to fulfill the purposes of the wilderness. The priority date of such reserved rights is the date of the Act, November 28, 1990. State-based water rights in the wilderness with a priority date before November 28, 1990 are not affected.

Livestock Grazing and Allotment Management Plans

Grazing of livestock, where established prior to November 28, 1990, shall be administered in accordance with section 4(d)(4) of the Wilderness Act and the grazing guidelines in Appendix A of House Report 101-405. Designation of wilderness does not affect grazing preference nor does it preclude the development of Allotment Management Plans. These items are administered according to the regulations in 43 CFR 4100. The designation of wilderness may affect some of the methods used to maintain range improvements and these things are discussed in this plan. In accordance with existing BLM policy, periodic interdisciplinary allotment evaluations assess the appropriateness of grazing use by cattle and other animals on vegetation and a determination of ecological health is made. Based on this analysis, an action plan is recommended (if needed) to assure that ecosystem structure and function is protected.

Law Enforcement and Emergency Services

Wilderness management policy and regulations (BLM Manual 6340 and 43 CFR 6300) provide for emergency law enforcement access to pursue suspects or to address health and safety concerns during emergencies. Search and Rescue (SAR) operations are the responsibility of the county Sheriff. In the event of a SAR operation, the BLM would coordinate with the involved agencies to assist as needed and to minimize impacts to wilderness character.

Historically, there have been no law enforcement problems in the HMW that required mechanized or motorized access. In the event of a problem, existing policy guidance is adequate.

Threatened, Endangered, or Special Status Species

All habitats of special status species will be managed under existing policy in BLM Manuals 6340 and 6840. Wildlife and/or plant species that become federally listed in the future will be managed under the Endangered Species Act of 1973, as amended.

Non-native Invasive and Noxious Species

With current technology, removal of established invasive species (such as red brome) is not ecologically or economically feasible. Noxious weeds are those species specifically identified by federal, state, or county governments as to be injurious to public health, agriculture, wildlife, recreation or any public or private property. New infestations of invasive or noxious plants will be addressed in this plan.

Minerals Management

The Arizona Desert Wilderness Act of 1990 withdrew the area from mineral entry. Recreational collection of minerals (rockhounding) is allowed in the wilderness. Collection must be for

non-commercial purposes and done in a manner that preserves the wilderness environment, uses only non-motorized hand tools and causes only minimal surface disturbance, which is not noticeable by the casual visitor. Use of metal detectors and Geiger counters would be acceptable. There are six mining claims within the wilderness boundary. Exploration and extraction would require additional environmental review at the time an application is submitted. Appropriate mitigation would be considered to prevent undue and unnecessary degradation. The Arizona Desert Wilderness Act of 1990 withdraws the HMW from the filling of any new claims.

Hunting and Fishing

Hunting and fishing regulations are written and enforced by the State.

Predator Management

Predator management will be based on the best available scientific information to implement specific management objectives in specific focus areas or to manage individual predators.

Military Overflights

Military flight restrictions are addressed in the Arizona Desert Wilderness Act of 1990. The Act states: “Nothing in this title shall preclude low level overflights of military aircraft, the designation of new units of special airspace, or the use or establishment of military flight training routes over wilderness areas designated by this title.” The BLM will continue to cooperate with the military in seeking mutually beneficial opportunities to protect the integrity of wilderness airspace, and the natural quiet of this area.

Access for the Physically Challenged

Special facilities to accommodate wilderness use by those with disabilities are not required by the Americans with Disabilities Act of 1990. Wheelchairs are allowed in wilderness for use by individuals whose disability requires the use of a wheelchair. Wheelchairs suitable for use in wilderness are those that would be suitable for use in an indoor pedestrian area.

Management of Traditional Cultural Properties

There are no known Traditional Cultural Properties in the wilderness, and the BLM knows of no current use of the area for Native American religious or traditional purposes. If such use is identified in the future, the BLM will act in accordance with Public Law 95-341 and applicable Federal policy.

Airspace including Drones

Visual flight rules (VFR) near noise sensitive areas is provided by the Federal Aviation Administration (FAA). The purpose of the Advisory Circular encourages pilots making VFR flights near noise sensitive areas to fly at altitudes higher than the minimum permitted by regulation and on flight paths that will reduce aircraft noise in such areas[4].

Drones are aircraft under the FAA regulations. In addition to being aircraft, drones are “motorized equipment” and “mechanical transport”, all of which are prohibited by the Wilderness Act. Drones cannot take off from, land in, or

[4] US Department of Transportation, Federal Aviation Administration, AC No: 91-36D

be operated from congressionally designated wilderness.[5]

Drones may be considered for approval as an administrative tool, on a case by case basis, after applying the Minimum Requirements Decision Guide (MRDG).

Issues beyond the Scope of This Plan

Sights and Sounds from Outside Land Uses on Private, State and Federal Lands

Some public comments have expressed concern about the potential for short-term, temporary impacts to solitude and naturalness caused by off-site land uses like mining, grazing, or rights-of-way use. Senate Report 101-359 in the Section-by-Section Analysis addressed the issue of outside sights and sounds as follows:

"Subsection (d) clarifies that the designation of wilderness areas does not imply the creation of 'protective perimeters' or buffer zones around any of the areas."

Recommendations – Outside the Wilderness Area

Complementary Facilities

During scoping, it was suggested by the public that existing facilities around Harquahala Peak Pack Trail may not be sufficient to support all desired recreational uses. A recommendation was made to expand the existing horse corral area by providing a larger area for trailering and a larger group camping area with hitches. These facilities would be located along road number 9332 away from the wilderness boundary. This would be in support of the wilderness use outside the wilderness boundary.

Constructing a trail for horse use was evaluated on the northeastern portion of the wilderness. It was determined a trail of this type would be better suited for outside the wilderness boundary due to the rocky nature of the proposed area and the proximity of the wilderness boundary. Proposed improvements outside the wilderness boundary are outside the scope of this EA and would be required to undergo a separate NEPA analysis process prior to approval.

Trailhead Amenities

Trailhead amenities may be added if the need presents itself. Wilderness users are encouraged to practice *Leave No Trace* principles when in the outdoors to maximize enjoyment of all visitors using the area.

Develop partnerships to assist in interpretive displays such as the big horn sheep recovery project and those dedicated to its advancement; and other topics integrating social, cultural, historic, scientific, and other supplemental values to further enhance the value of the wilderness and its role in society.

Permanent Public Access

Future consideration should be given to securing rights-of-way on existing routes located on BLM land to permanently provide public access to the wilderness boundary. At a minimum, this should include road number 9300, the

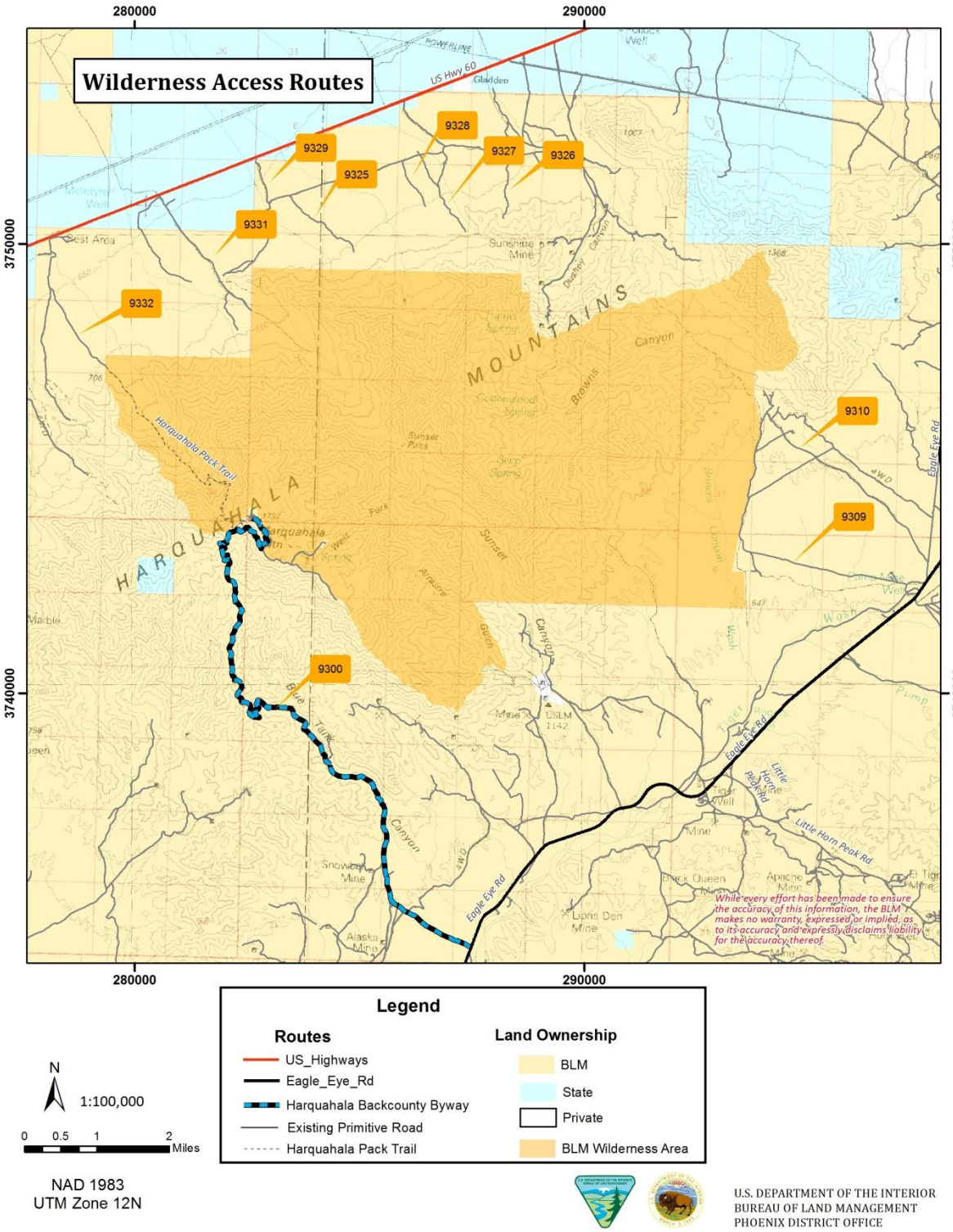
[5] ibid

Harquahala Back Country Byway and the road number 9310 leading to Brown's Canyon. See map 3.

Dark Sky Preservation

This region is located within a high quality dark sky region. Recognizing and maintaining the dark skies as a resource by integrating resource decisions to dark skies and border developments will result in preserving this region for eco-tourism, healthy wildlife populations, and cultural and astronomical values.[6]

[6] Sovick, J. Toward an Appreciation of the Dark Sky, Vol.18, No. 4, 2001



Map 3. Access routes surrounding the HMW

Part IV – Alternatives for Wilderness Management

Introduction

In this section, objectives are established to address activity plan issues identified in "Issues Addressed in This Plan" section. Management actions to meet national wilderness management goals and plan objectives are outlined below. Monitoring will be conducted to gauge the effectiveness of outlined management actions and to determine if plan objectives are being met.

Proposed Action

The following management actions would be implemented as part of the proposed action to ensure achievement of the national wilderness program goals listed in Part II.

OBJECTIVE 1: Preserve wilderness character and inform visitors and authorized persons of the HMW.

General

1. Apply the MRDG[7] to analyze all proposed actions and projects in the wilderness area.
    a. A MRDG training session will be offered annually to all staff, partners, and volunteers assigned to manage or conduct activities inside wilderness.
2. The BLM will partner with volunteers, youth, and other organizations/individuals whenever possible to accomplish wilderness goals.
3. The BLM will provide information to the public in many forms and locations.
    a. Printed information and internet web pages will be kept updated.
    b. Portal signs will be erected to provide visitor information at the Harquahala Pack Trail lower trailhead and the Harquahala Pack Trail upper trailhead.
    c. Signs at trailheads will consist of synthetic materials such as aluminum or plywood, but designed to be consistent with visual resource management objectives and social settings. Brown, or dark colors, will be used on sign backgrounds to minimize visibility from the surrounding area. No sign lighting will be provided.
    d. Signs will be installed along the Harquahala Peak Pack Trail as needed inside the wilderness to provide guidance at areas of low tread visibility. Trail signs inside the wilderness will be constructed to have a natural material appearance and be sufficiently built to withstand the desert environment. This could include routed wood signs or recycled plastic composite wood routed signs.
    e. Truncated BLM signs for wilderness access will be placed at main roads and will

[7] http://www.wilderness.net/MRDG/documents?RDG_overview.pdf

follow the BLM standards for National Conservation Lands. Signs will be placed at U.S. 60 at or near mile marker 69 and the intersection of the Harquahala Backcountry Byway (Road 9300) and Eagle Eye Road according to state and county road jurisdictions and standards.

f. All pack animals used for recreation or business related tasks must be fed weed-free feed for at least 72 hours before entering the wilderness.

4. The BLM will reclaim roads and/or install barriers when and where needed while complying with the visual resource management setting.
   a. Reclamation will occur using hand tools with methods such as vertical mulching techniques, native seed propagation, etc.
   b. Barriers will be installed where necessary to prevent degradation of naturalness through continued and illegal motor vehicle access.
   c. Barriers will be placed outside of the wilderness boundary except when limited by topography or geographic events, such as flash food areas, etc.
5. Wilderness boundary identification will be improved.
   a. Wilderness boundary signs will be posted around the wilderness perimeter and in other areas where awareness of the boundary is critical to protect wilderness values.
   b. Sign locations will be documented using GPS and entered into the data base.
   c. Boundary sign monitoring will be conducted, at a minimum, once every three years.
   d. Sign maintenance will comply with the BLM sign standards, Manual 9130.

OBJECTIVE 2: Provide for outstanding primitive recreation opportunities and dispersed use.

Harquahala Peak Pack Trailhead

Recreation

6. The Harquahala Peak Pack Trail will be designated as a trail asset type in the travel management plan with a maintenance intensity of 1 (the most primitive maintenance category). See Appendix A.
7. An adaptive management approach will be used to address the need for new trails and maintenance of the existing trail.
   a. No new trails will be constructed at this time.
   b. As visitor use increases, new trails will be considered through future analysis to accommodate

visitor needs. Additional site-specific analysis with public outreach would occur at that time.

c. The Harquahala Peak Pack Trail will be monitored and areas where the trail corridor is obstructed or damaged will be maintained as necessary. Reclamation and maintenance work will be designed and conducted to avoid archaeological sites along the trail.

8. Reclamation will occur on unauthorized areas of disturbance, including social trails, areas of erosion, campsites and other gathering areas, and other areas on the historic trail where needed to retain primitive recreation opportunities.
   a. Methods may include ground disturbance to allow native seed placement and growth using manual tools and labor.
9. The BLM will monitor recreation and use.
   a. The BLM will conduct a baseline inventory of existing recreation impacts present in wilderness. The inventory will include gathering data through visitor register log sheets at trailheads, staff or volunteer observation reports, verbal or written complaints, area condition assessment, and visitor counts through placement of traffic counters outside wilderness.
   b. A GIS record of areas and findings will be recorded.
   c. The BLM will conduct periodic monitoring (every 3 – 5 years) to determine changes to baseline conditions.
   d. Continual monitoring will occur throughout each year.
   e. The BLM will summarize findings and take appropriate actions to manage the area for wilderness values.
   f. When impacts exceed the standards listed in Table 1 below, action will be taken to alleviate the impact.

Table 1 Standards for managing recreation use.

Factor	Indicator	Standard
Inter-party contacts	Number of complaints per year received by office	Not to exceed 5 complaints per year
Evidence of human use	Presence of fire rings or campsites	No closer than ½-mile apart
		Not more than 2 visible from the Harquahala Peak Pack Trail and at least 100 feet from the trail.
	Presence of non-historic litter or human waste	None observable

10. The BLM will manage dispersed recreation and use.
    a. Educational messages will be employed through a variety of outreach methods to address the causes of settings not being achieved, focusing on normative messaging.[8]
    b. Directional signs along highways will be reduced in size or removed if standards are not being achieved.
    c. Additional maintenance will be conducted to reduce the visibility of human impacts through rehabilitation of disturbed areas and removal of litter and waste removal.
    d. A permit system may be implemented for access if use levels diminish the wilderness experience.

11. The BLM will allow group and organized recreation use on a case by case basis.
    a. Horse or llama use will be limited to 12 pack animals in a group except on the Harquahala Peak Pack Trail, which would be limited to 6 pack animals. No other pack animals, such as goats but not limited to goats, will be permitted in the wilderness.
    b. Pack animals would be fed with certified weed free day 72 hours before visiting the HMW.
    c. Hunting guide Special Recreation Permits (SRP) would be permitted for groups up to 10 clients per trip.
    d. No other commercial SRPs would be permitted.

OBJECTIVE 3: Maintain and enhance the natural conditions of the HMW.

[8] Caldini

Wild Burro Management

12. Specific actions related to burro management will be limited in the wilderness.
    a. Flights would be permitted to occur for population counts and other purposes within the wilderness, however, aircraft are not permitted to land in the wilderness except during emergency situations.
    b. If gather operations must occur within the wilderness boundary, bait or water trapping may occur as long as MRDG system is applied.

Wildlife Management

13. Wildlife is an important component of the natural condition within the HMW. The BLM will work with the Arizona Game and Fish Department in coordinating wildlife management activities including, but not limited to, the following:
    a. Population surveys
    b. Monitoring and data collection
    c. Inspection and maintenance of wildlife water developments including water hauling
    d. Developing new wildlife waters or re-developing existing waters
    e. Recovery and translocation actions
    f. Predator control operations
    g. Placement of traps for wildlife population management
    h. Habitat restoration and enhancement projects
    i. Placement and recovery of GPS collars on wildlife species and other future technologies that would advance tracking efforts.

Consistent with the *Policy and Guidelines for Fish and Wildlife Management in National Forests and Bureau of Land Management Wilderness* (as amended), activities, including maintenance of existing water supplies and development of additional water supplies, including wildlife water developments that take place within the wilderness that would involve uses generally prohibited under section 4 (c) of the Wilderness Act may be authorized by the BLM through application of the MRDG process.

Future development and re-development (new structures within the footprint of existing development) of wildlife water catchments will be analyzed under separate site-specific EAs.

Travel to existing wildlife waters for inspection and minor maintenance will be by non-motorized/non-mechanized travel unless it is determined, through the MRDG process, that motorized or mechanized travel is the minimum tool required. To accomplish wildlife management objectives, landing helicopters and use of drones may be considered for approval through the MRDG process on a case by case basis.

Non-native Invasive and Noxious Species

14. The BLM will monitor for and remove non-native invasive or noxious plants or animal species.
    a. Methods will be determined by the type and size of infestation and selected through an integrated weed management approach as outlined in the Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (PEIS) (BLM 2007a).

       The PEIS outlines the following priorities for weed management:

       Priority 1: Take actions to prevent or minimize the need for vegetation control when and where feasible, considering the management objectives of the site.

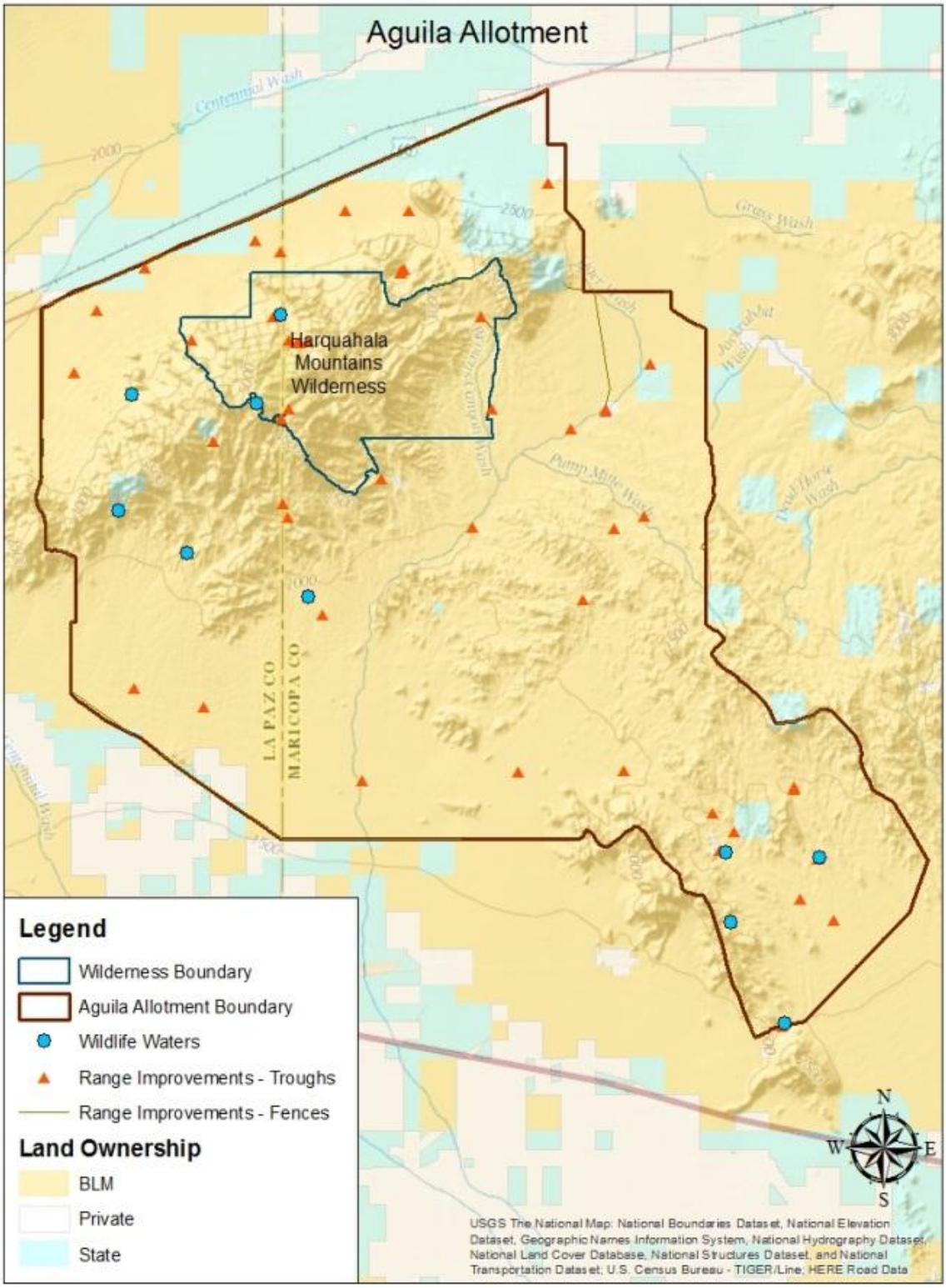
       Priority 2: Use effective non-chemical methods of vegetation control when and where feasible.

       Priority 3: Use herbicides after considering the effectiveness of all potential methods or in combination with other methods or controls.

    b. The BLM will monitor treated infestations to ensure success and conduct additional treatments as necessary.

Livestock Grazing

15. Livestock grazing management involving maintenance of existing infrastructure and herd management will continue to be conducted using non-motorized methods. See Map 4.



Map 4. Range and Wildlife Improvements

Fire Management

16. Pursuant to Section 4(c) of the Wilderness Act, otherwise prohibited uses may be authorized in wilderness areas only when they are determined to be [n]ecessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area). In accordance with the *Sonoran Desert Tortoise Candidate Conservation Agreement*, wildfires in Sonoran desertscrub vegetative communities that are characterized as tortoise habitat would be suppressed.
17. An evaluation and approval template for emergency actions that functions as a Minimum Requirements Analysis is in Appendix B-1 of BLM Manual 6340. The following process would be used to evaluate actions that may be considered during development of a proposed emergency fire response.
    a. Assign a resource advisor with knowledge and experience in wilderness stewardship to the firefighting team to assist in identifying and protecting wilderness character.
    b. Prevent the establishment of noxious weeds and invasive species to preserve the natural wilderness character through implementation of the following:
        i. Inspect and wash all suppression equipment prior to wilderness entry, but locate wash-down sites outside of wilderness areas.
        ii. Locate camps and other assembly points outside of wilderness areas and away from areas infested by noxious weeds and invasive species.
        iii. Avoid using water sources containing invasive species for suppressing fires in wilderness.
    c. Use of the Minimum Impact Suppression Tactics (MIST) when feasible, as long as the safety of firefighters, human life and property is protected.
    d. Locate support operations, such as helispots, fire camps, and staging areas outside of wilderness.
    e. Remove or rehabilitate evidence of human intervention to the maximum extent possible.
        i. Repair fire suppression-related resource damage immediately
        ii. Plan and implement actions prior to the suppression incident organization demobilization.
    f. Repairs to damaged sites or resources may occur with the same type of equipment that was used for suppression. For example, if motorized, earth-moving equipment was used to construct fire lines, then the same type of equipment may be used to contour and rehabilitate.

18. The District Manager, as the delegated authority, must document her/his approval of otherwise prohibited uses, and the documentation must be included in the wilderness fire activity reports. Types of prohibited uses include:
    a. Motorized Water Pumps
    b. Aerial Retardant Application
    c. Air Transport/Personnel Shuttle (landings) and Supply Drops
    d. Fence (Facility) Repair or Temporary Fence Installation
    e. Chainsaws
    f. Motor Vehicles
        i. Engines
        ii. Helicopter Transports
        iii. Crew Trucks
        iv. UTV/ATV
    g. Helispot Construction (major ground disturbance)
    h. Heavy Equipment (equipment associated with major ground disturbance, i.e. bulldozers, excavators)
19. In accordance with the Sonoran Desert Tortoise Candidate Conservation Agreement, immediately suppress wildfires in Sonoran desert scrub vegetative communities.

No Action Alternative

Under this alternative, the BLM would not initiate any new actions. Management would occur reactively as issues arise, with the exception of actions approved by existing documents that may be adapted to the HMW. Each new action would be considered in a separate environmental analysis, per the requirements of the National Environmental Policy Act.

Part V – General Management Situation and Affected Environment

This section describes the current activities or resources found within the wilderness area that may be affected by the proposed action or alternative.

Table 2. Resources that were considered for potential impacts

Resource	Not Present	Present, but Not Impacted	Present and Potentially Impacted	Rationale for Dismissal
Air Quality		X		No proposed management actions will contribute to changes in current air quality conditions.
ACECs		X		Present, but not affected due to the national wilderness designation which is a higher protection level than administrative ACEC designation. See Environmental Setting in Part 1
Cultural Resources		X		No proposed management actions will contribute to changes in current conditions.
Economic & Social Values	X			Not Present
Environmental Justice	X			Not Present
Prime or Unique Farmlands	X			Not Present
Fire Management		X		No proposed management actions will contribute to changes in current conditions.
Floodplains	X			Not Present
Human Health and Safety	X			Not Present
Invasive Non-native or Noxious Species			X	See Part VI for a discussion of potential impacts.
Livestock Grazing		X		No proposed management actions will contribute to changes in current conditions.
Mineral Resources		X		No proposed management actions will contribute to changes in current conditions.
Native American Religious Concerns		X		Tribes were notified of the proposed action, but no concerns were expressed.

Resource	Not Present	Present, but Not Impacted	Present and Potentially Impacted	Rationale for Dismissal
Paleontological Resources	X			
Recreation			X	See Part VI for a discussion of potential impacts.
Rights-of-way		X		No proposed management actions will contribute to changes in current conditions.
Soils			X	See Part VI for a discussion of potential impacts.
Travel Management/ Land Access		X		No proposed management actions will contribute to changes in current conditions.
Threatened/ Endangered Species	X			Not Present
Vegetation			X	See Part VI for a discussion of potential impacts.
Visual Resources			X	See Part VI for a discussion of potential impacts.
Wastes, Hazardous or Solid	X			Not Present
Water Quality, Surface and Ground		X		No proposed management actions will contribute to changes in current conditions.
Wetlands/ Riparian Zones		X		No proposed management actions will contribute to changes in current conditions.
Wild & Scenic Rivers	X			Not Present
Wild Burros			X	See Part VI for a discussion of potential impacts.
Wilderness			X	See Part VI for a discussion of potential impacts.
Wildlife (including Special Status Species and Migratory Birds)			X	See Part VI for a discussion of potential impacts.

Wilderness Values & Character

The HMW contains outstanding values of naturalness and opportunities for solitude. Numerous side canyons exist sporting varied topography with diverse vegetative communities. The Harquahala Peak Pack Trail traverses 5.4 miles with an elevation gain of 3,300

feet on the western slope of the Harquahala Mountain Range within the wilderness. Outstanding views and sounds of song birds and raptors in flight may be enjoyed by visitors hiking on the trail or traversing through untamed and rugged canyons.

Ecosystem structure and function within this wilderness is relatively intact. Some human-caused changes are present and are discussed under the specific resource category to which the change applies.

Soils

Soils within the HMW are typical of the low desert mountains. The primary soil unit within the project area is the Cellar-Rock outcrop complex, 10-70% slopes. These soils are shallow or very shallow on hill slopes and mountain slopes, with a moderate hazard of erosion. Water holding capacity is limited and runoff is medium to rapid. Other soils in the Cellar-Rock outcrop soil unit include Nickel and Eba soils on lower side slopes and Arizo soils in drainageways.

Minor soils that may occur in the lower elevation areas include the Eba-Continental complex, the Greyeagle-Continental-Nickel association, the Quilotosa-Vaiva Rock outcrop complex on mountain and hill slopes, and the Sal-Cipriano complex on fan terraces.

Vegetation

Vegetation within the HMW is typical of the Sonoran desert. The desert scrub vegetation type is most common, consisting mainly of low shurbs with dense clusters of trees along drainages, typically referred to as xeroriparian areas. Higher elevations have similar vegetation types with higher percentages grasses and forbs within the vegetation community. Mid to high elevations contain Interior Chaparral plant communities dominated by scrub oak and manzanita species. In Brown's Canyon, riparian obligate species are present above the dam.

Non-native Invasive and Noxious Species

The HMW contains no mapped infestations of non-native noxious invasive species. Non-native species that occur include Red Brome, Schismus species, filaree, and salt cedar in riparian areas. The BLM has not actively managed these species in this area.

Wildlife

The AGFD has jurisdiction over wildlife populations in Arizona and has developed cooperative management relationships with the BLM in their efforts to manage all wildlife species. Cooperative wildlife management activities by the AGFD and BLM on BLM administered wildernesses are guided by an existing memorandum of understanding (2007).

Habitats within the HMW include rugged mountain ranges with cliffs and steep-sided canyons, chaparral vegetation interspersed with semi-arid grassland, Sonoran scrub, desert wash woodlands, and abandoned mines. There are six mapped springs within the wilderness area. Perennial surface water occurs in portions of Brown's Canyon. Other drainages within the wilderness area contain surface water intermittently, depending on rainfall events. One wildlife water catchment is located in the HMW. See Map 4. The water catchment was constructed in partnership with AGFD and BLM.

AGFD maintains the wildlife water catchment to ensure that it continues to provide water for a variety of wildlife species.

Wildlife species that occur include mule deer, desert bighorn sheep, javelina, coyote, mountain lion, bobcat, grey fox, black-tailed jackrabbit, desert cottontail, Harris' antelope squirrel, Mexican free-tailed bat, pallid bat, canyon bat, Gambel's quail, Gila woodpecker, Sonoran desert toad, Gila monster, rosy boa, western diamondback and black-tailed rattlesnakes, as well as various other snakes, lizards, small mammals and migratory birds.

AGFD currently conducts periodic aerial fixed-wing and helicopter census, monitoring, or inspection flights over the wilderness at less than 2,000 feet above ground level (AGL), for mule deer, bighorn sheep and golden eagle.

Special Status Species

Special status species include federally listed or proposed species, and BLM sensitive species. The HMW does not contain habitat for any federally listed or proposed species; however, several BLM sensitive species are present. BLM manages sensitive species and their habitats to minimize or eliminate threats affecting the status of the species and to improve the condition of the species habitat (BLM Manual 6840). The BLM sensitive species known to occupy habitat in the HMW are Sonoran desert tortoise (*Gopherus morafkai*) (candidate species under the Endangered Species Act), Townsend's big-eared bat (*Corynorhinus townsendii*), cave myotis (*Myotis velifer*), California leaf-nosed bat (*Macrotus californicus*), Greater western mastiff bat, (*Eumops perotis californicus*), lowland leopard frog (*Lithobates yavapaiensis*), golden eagle (*Aquila chrysaetos*) and gilded flicker (*Colaptes chrysoides*).

The HMW is located in category I Sonoran desert tortoise habitat, which is the most valuable and protected category of habitat. Category I habitat is defined as habitat that is essential to the maintenance of large viable populations; where conflicts are resolvable; that contain medium to high density tortoise populations or low density populations contiguous with medium or high density populations; and have increasing, stable or decreasing populations. The desert tortoise distribution within the wilderness is not uniform. Tortoises tend to occupy hillsides and ridges with outcrops of large boulders as well as areas with incised washes and caliche caves, but may be found in lower densities throughout the area. Tortoises generally use natural and excavated cover sites between or under boulders and in caliche caves along washes wherever they occur. Their diet consists of annual forbs (30.1%), perennial forbs (18.3%), grasses (27.4%), woody plants (23.2%), and prickly pear fruit (1.1%).

Townsend's big-eared bat, California leaf-nosed bat, and cave myotis are insectivorous bats that roost in caves or abandoned mines. Several abandoned mines are present in and near HMW. Greater western mastiff bat is also and insectivorous bat, but this species roosts in crevices in canyons and cliffs.

Lowland leopard frogs may occur in any perennial water source within the planning area. They have been known to breed in a variety of natural and developed waters including perennial and intermittent streams, springs,

cienegas, and livestock ponds and drinkers.

Golden eagles have been known to nest in cliff habitat within the HMW. Golden eagles have large home ranges and hunt while soaring or from a perch. They typically feed on small mammals, but may also eat snakes, birds, juvenile deer and carrion.

Gilded flicker is a cavity nesting species, predominantly nesting in saguaro cacti. The species feeds on insects, fruits and seeds. These flickers forage primarily on the ground, often feeding on ants.

Wild Burros

The Harquahala Herd Area (HA) encompasses a portion of this wilderness. The BLM evaluated each HA through the development of the Bradshaw-Harquahala Resource Management Plan to determine whether or not there was enough food, water, cover and space to support healthy and diverse populations of wild burros over the long-term. Areas which met these criteria were then designated as Herd Management Areas (HMAs). Therefore HAs did not meet the criteria and are managed to achieve a population of zero burros over the long term. Burros currently occupy the HA and may be commonly seen in the eastern portion of this wilderness.

Livestock Grazing

The allotment envelopes the entire HMW. Perennial use (grazing year round) is authorized. Developed facilities associated with grazing exist within the HMW and all facilities are maintained without the use of motor vehicles or motorized equipment, unless approved by the BLM after conducting a MRDG evaluation.

Recreation

Current recreation use includes: backpacking, hiking, equestrian, and hunting for quail, mule deer, and big horn sheep. This area is contained within AGFD hunting unit 44a. Camping is dispersed throughout the wilderness with permitted hunting parties and ardent backpackers venturing into the heart of the wilderness. Visitor use days are estimated to exceed 700 per year.

This wilderness offers visitors a fairly high degree of solitude, due to the remoteness of the area and the topography featuring side canyons that screen out views, noise, and other visitors. Wide expanse areas exist making the activities of others relatively unnoticeable when viewed from a distance. Natural quiet is typically in abundance throughout the wilderness.

No visitor use conflicts have been documented for this wilderness. There is potential for visitor use conflict if the popularity of the Harquahala Peak Pack Trail increases with hikers and or horseback riders. The trail is challenging for horseback rides due to cliffs and narrow passages with no relief from topography which may result in only expert riders venturing on the trail.

As the Greater Phoenix Area continues to grow, this area may become more popular as people seek out natural places for a variety of benefits in their valuable respite from societal pressures, assuring their leisure time is well spent.

Visual Resources

The HMW is classified as Visual Resource Management (VRM) Class 1 in accordance with BLM policy. The objective for VRM Class 1 is to preserve the existing character of the landscape. This class provides for natural

ecological changes; however, it does not preclude management activity that will retain and or improve the ecological state. The level of change to the characteristic landscape should be low and should not attract attention. The characteristic landscape within HMW is predominantly natural in appearance; with the exception of the following: scattered remnants of abandoned water pipelines; mining features such as adits, prospecting pits, mine tailings, and one shaft; a concrete dam; filament lines, and water wells. Some of these features have a moderate degree of contrast under the BLM's Visual Contrast Rating System.

Water developments for wildlife and cattle exit within the area. Any needed or new construction for wildlife or grazing would be accomplished by applying the visual contrast rating system and providing for minimum visual disturbance.

Debris within the area or that may occur would be removed.

All proposed work in the HMW would undergo a Minimum Requirements Analysis and incorporate the visual contrast rating protocol.

Part VI – Environmental Consequences and Cumulative Impacts

Past, Present, and Reasonably Foreseeable Future Actions

Past and present actions include:

- livestock grazing management involving maintenance of existing infrastructure and herd management with non-motorized methods,
- wildlife population management including water development maintenance, population monitoring, and species recover actions including augmentation and translocation,
- non-motorized recreational usage, both organized and dispersed, throughout the wilderness, and
- unauthorized motorized travel within the wilderness.

All of these actions are expected to continue into the foreseeable future and no additional actions have been identified at this time.

Wilderness Values & Character

Proposed Action

Preservation of the wilderness character includes maintaining or enhancing natural conditions throughout the wilderness area, including promoting a healthy ecosystem, through the use of the MRDG. Specific actions have been identified, but not limited to the following:

- ensuring the MRDG is used by offering training sessions annually to staff assigned to manage or conduct activities within wilderness,
- improving the recognition of wilderness boundaries,
- increase awareness of FAA no-fly advisory zones by incorporating information on the aeronautical charts and other outreach methods that would inform recreational pilots and recreational users of other devises such as drones of existing regulations over wilderness areas,
- eliminating vehicle intrusion in wilderness,
- removing, maintaining, or repairing existing developments,
- coordinating with other agencies to achieve mutual healthy land goals,
- managing wildlife fire,
- adequately monitoring health of the land and wilderness character,
- inventorying, evaluating, and mitigating abandoned mine features for human and ecological hazards, bat use and the potential need for bat gates, as well as for historic/cultural and visual values, and
- monitoring for and removing exotic or noxious plant or animal species.

No Action

Providing for overall ecosystem health in this area without the guidance of the MRDG would compromise wilderness values of naturalness and solitude. Retaining debris would dampen the wilderness experience. Naturalness and solitude would be compromised as privacy for the wilderness visitor would be diminished by recreational pilots and the use of recreational devices. Other actions would be carried out, but not possibly in accordance with the MRDG.

Cumulative Impacts

Managing without applying the principles and protocol in the MRDG would result in additional acres of reduced wilderness values including naturalness and solitude.

Soils

Proposed Action

Soil stability on the Harquahala Peak Pack Trail is subjected to monsoon weather in the summer, which escalates the severity of water on the trail, entering the trail from topographic features that funnel the water across and down the trail resulting in portions of the trail compromised to washouts. In addition, portions of the trail may be compromised through hikers and horse use.

To provide for a quality trail experience, trail maintenance and re-routing of the trail may be needed. Reclaiming social trails and other disturbed areas would also reduce erosion and soil compaction in areas to maintain naturalness.

No Action

Trail maintenance would continue, but reclamation of social trails and other disturbed areas would not be allowed. Over time, this may reduce the sense of naturalness as these areas may continue to flourish and erosion through soil compaction would be evident.

Cumulative Impacts

No cumulative impacts were identified.

Vegetation including Non-native Invasive and Noxious Species

Proposed Action

Vegetation communities in the project area would likely improve as non-native invasive and noxious species would be identified and treated using various approved methods for eradication. Treatment areas would also be monitored by BLM specialists to evaluate the success of various types of treatments. Knowledge of successful treatment methods may help with management of other infested areas in the project area.

Equestrian users would also be required to use certified weed free hay to feed their horses 72 hours before visiting the area. Weed free hay would decrease the likelihood of new invasive species becoming established in new areas.

Overall the impacts from the Proposed Action would be beneficial to vegetation communities within the project area. No negative consequences would be expected.

No Action

Current BLM management would continue in the project area. Vegetation communities would continue to persist and flourish within the project area. Non-native and invasive management would be limited. Populations of non-native invasive and noxious weeds may expand beyond their current locations if no human intervention is made to

currently established populations. No certified weed free restrictions on equestrian users would be implemented by the BLM.

Cumulative Impacts

No cumulative impacts were identified.

Wildlife

Proposed Action

Wildlife and Special Status Species

Managing the wilderness according to the national wilderness program goals listed in Part II will benefit wildlife through habitat protection and reduced disturbance to wildlife species.

Reclaiming closed roads and other disturbed areas may have short-term minor impacts through disturbance to wildlife in the vicinity of the project. Long-term benefits to wildlife habitat from reclaiming disturbed areas would be expected to result from increased cover of native plants.

During the building and maintenance of vehicle barriers and the installation of wilderness boundary and recreation signs, localized disturbance to wildlife may occur. These disturbances are expected to be minor and short-term. Vehicle barriers and signage are expected to have long-term benefits to wildlife through reducing impacts to habitat.

Maintenance of wildlife waters would have minor, short-term disturbance during the maintenance activities. Wildlife would likely avoid the water during maintenance activities, but would be expected to return after the work was complete. Maintenance of wildlife waters is expected to have long-term benefits to a variety of wildlife species through increasing the reliability of the water source.

No Action

Under the no action alternative the benefits to wildlife and habitat described in the proposed action would not be expected to occur.

Cumulative Impacts

No cumulative impacts were identified relative to wildlife and wildlife habitat.

Wild Burros

Proposed Action

Wild burros currently exist in the project area and would not be negatively impacted by the proposed action. Activities in the project area may occur due to population management of burros (e.g. trapping, herding) but would follow existing rules found in the MRDG.

No Action

Under the no action alternative the benefits to burros described in the proposed action would not be expected to occur. Management of wild burros would continue as it has for the previous decade.

Cumulative Impacts

No cumulative impacts were identified relative to wild burros.

Livestock Grazing

Proposed Action

Livestock grazing would continue under the proposed action. Current access to range facilities within the wilderness is limited to foot and horseback travel and it is unlikely that the proposed action would have any effect on the current grazing system in place on the allotment.

No Action

The Proposed Action and the No Action alternative will have the same effect on livestock grazing.

Cumulative Impacts

No cumulative impacts were identified relating to livestock grazing.

Recreation

Proposed Action

An adaptive management approach provides the flexibility to address the current and future needs of visitors. Recreation use congregates along the established trail; while hunters find less congested areas.

Monitoring the Harquahala Peak Pack Trail to provide for maintenance needs and identifying user needs will provide visitors with a quality recreation experience. Reclamation of side trails will produce a more natural area and enhance visitor experience.

Reclamation of overused areas such as campsites or other gathering places or places of past uses will also result in a more natural type landscape and improve upon the wilderness experience and wilderness expectation. Reclamation of wash-outs and on the trail will result in an improved visitor experience and result in a more natural type landscape. MRDG methods would be employed in any reclamation efforts.

Installing wilderness boundary markers and barriers at problem areas will lessen the intrusions of motorized vehicles and enhance the wilderness experience.

By keeping recordation of areas where signs are installed/needed, including kiosks, will aid in improving the wilderness experience, as they function to address appropriate uses and non-appropriate uses. Keeping current on this recordation and acting accordingly will maximize the wilderness visitors' experience by deterring illegal uses while promoting naturalness, unconfined recreation, and solitude.

Establishing baseline data of recreation impacts will assist in identifying areas where changes are needed and will indicate where conditions are improving. Promoting existing wilderness land use ethics awareness programs such as *Leave No Trace* and incorporating normative messaging[9] will assist in maintaining the wilderness in terms of: undeveloped, untrammeled, natural, outstanding opportunities for solitude, or a primitive and unconfined type of recreation, and other supplemental qualities. In order to preserve these qualities, the practice of *Leave No Trace* is critical.

A variety of outreach methods will aid the visitor in knowing before going, and preparing them for their trip. In addition, on-site kiosks will aid visitors who may have discovered the area or who may not have planned an extensive trip into the wilderness.

The standard for managing dispersed recreation (Table 1) will result in improving the quality experience for the visitor.

Actions identified for hiking groups, pack animals, and hunting groups would provide for a quality recreation experience while maximizing wilderness values.

The remainder of proposed actions will enhance opportunities for primitive recreation and would increase visitors'

[9] Cialdini, Robert B

perception of solitude and naturalness of the area.

No Action

If the actions presented in the wilderness plan are not implemented, the Harquahala Peak Pack Trail would not be designated as a trail asset, making it less likely to obtain maintenance funding, which would impact the unconfined recreation opportunities.

Reclamation of social trails or other evidence of social gathering areas would not occur, reducing the visitors' perception of naturalness.

Reclamation of roads and installing barriers would not occur which would impact unconfined recreation opportunities and detract from naturalness and solitude.

Wilderness boundary identification would not be implemented which may increase incompatible motorized and mechanized uses and reducing solitude and unconfined recreation opportunities.

Use would not be monitored which would reduce naturalness, solitude, and other wilderness values.

Standards for management would not be in place which would result in the loss of naturalness and solitude.

Pack animals would not be on weed free feed which would result in the loss of naturalness due to weed proliferation.

There would be no restrictions placed on number of stock animals. This may result in visitor dissatisfaction because of party interaction or degradation of naturalness and solitude.

Proliferation of campsites would result in visitor dissatisfaction because it would impact naturalness.

Cumulative Impacts

Long term impacts should benefit the wilderness values of solitude, naturalness, unconfined recreation, and supplemental values. Wilderness is a resource where hiking, camping, backpacking and other forms of unconfined recreation reigns and caters to those who seek this experience and the pristine setting.

Areas without special designations cater to those who want less of a pristine setting to enjoy mechanized uses to motorized uses. Through monitoring and disseminating information to the public about wilderness and its purpose in the American mind and in the American value system, this area will attract those seeking these settings.

Visual Resources

Proposed Action

The proposed action would have the effect of meeting the VRM Class I objective of preserving the existing character of the landscape. Most of the actions proposed in the plan would have no effect on existing character; and actions that are intended to lessen the imprint of humans on the landscape would have the effect of improving landscape character.

By removing and or reclaiming any remnants related to grazing, mining, and other debris would enhance the visual rating.

No Action

There would be no benefits to the visual resources.

Cumulative Impacts

Removing debris and reclaiming areas would improve on the overall naturalness of the area.

Part VII – Consultation and Coordination

Agencies, Tribes, and Organizations Consulted

- **Agencies:**
  - Arizona Department of Game and Fish
  - State Historic Preservation Office

- **Tribes:**
  - Ak-Chin Indian Community
  - Colorado River Indian Tribes
  - Fort McDowell Yavapai Nation
  - Fort Mohave Indian Tribe
  - Gila River Indian Community
  - The Hopi Tribes
  - Navajo Nation
  - Salt River Pima-Maricopa Indian Community
  - Tohono O'odham Nation
  - Yavapai-Apache Nation
  - Yavapai-Prescott Indian Tribe
  - Pueblo of Zuni

- **Organizations:**
  - Arizona Conservation Partners
  - Arizona Wilderness Coalition
  - International Dark Sky Association
  - International Mountain Biking Association
  - Sun City Hikers
  - Western Desert Association
  - Wickenburg Horsemen's Association

List of Preparers

Mary Skordinsky, Outdoor Recreation Planner, Project Lead

James Holden, Rangeland Management Specialist

Codey Carter, Wildlife Biologist

Steven Bird, Wild Horse and Burro Specialist

Chris McLaughlin, Archaeologist

Josh Tibbetts, Fire Management Specialist

Tom Bickauskas, Travel Management Specialist

Casey Addy, Natural Resource Specialist

Hillary Conner, Realty Specialist

Judd Sampson, Geologist

Matt Plis, Mining Engineer

Gloria Tibbetts, Planning and Environmental Coordinator

Ken Mahoney, State Wilderness Program Lead

Amanda James, Assistant Field Manager/Monument Manager

Rem Hawes, Field Manager

Part VIII – References

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Appendix A: Route Report for the Harquahala Pack Trail

Agency Route No.: Harquahala Pack Trail **21190**

Facilitator: Tom Folks Interview Date: 7/7/2015

Team Members Tom Bickauskas, Chris McLaughlin

- [ ] PrincipalFeederTrunk
- [ ] Other
- [x] Connector
- [ ] Loop
- [ ] Spur
- [x] Single Track
- [ ] Motorcycle Track
- [ ] ATV Track
- [ ] Dual Track
- [ ] Graded Track

UTM N: 0000000
E: 000000
Length: 4.5 miles
Use Level: Light
Maint. # (if any):

- [x] Evidence of Construction
- [ ] Regulary Maintained
- [x] Infrequently Maintained
- [ ] Maintained In Past

Route Origin: (if known)

Jurisdictions: [x] BLM [ ] USFS [ ] State [ ] Military [ ] Private Property [ ] Other:

Additional Information: 0.5 meter width average

Admin Additional Information:

Official Right-of-Way or Officially-Recognized County or State Route

Is the route an officially-recognized right-of-way or an officially recognized County or State route? **No**

All or Part Officially-Recognized Right-of-Way
All or Part Officially-Recognized County Road
All or Part Officially-Recognized State Route
FLMPA

Other Access / Uses

Does the route provide other access / uses? **Yes**

Does the route provide commercial or private property access (e.g. via prescriptive or vested rights)? **Yes**

Is the route a regional route that serves more than one planning sub-region?

Is the route a principal means of connectivity within a sub-region?

Is the route officially recognized as part of a Federal planning document and is subject to maintenance?

Access / Uses

		Primary	Secondary	Tertiary
Commercial Ranching Facility	In Allotment	[x]	[ ]	[ ]
Administrative Uses	Compliance/Enforcement Monitoring	[x]	[ ]	[ ]
Administrative Uses	Wildlife Agency Monitoring	[x]	[ ]	[ ]

Special Resources

Is the continued use of this route likely to impact State or Federal special status species or their habitat or cultural or any other specially-protected resources or objects identified by Agency planning documents, plan amendments or any other special area designations (e.g. National Monuments)? **Yes**

Page 1 of 4

Impacted Resources		Direct	Indirect
Desert Tortoise (Monument Object)	In C-1 Habitat	☑	☐
Gambel's Quail	Habitat	☑	☐
Mule Deer (Monument Object)	Habitat	☑	☐
Bighorn Sheep (Monument Object)	In or Through Lambing Ground	☑	☐
Bighorn Sheep (Monument Object)	In or Through Habitat	☑	☐
Mountain Lion	Habitat	☑	☐
Areas of Critical Environmental Concern (ACEC)	In or Through Current ACEC	☑	☐
Javelina (Monument Object)	Habitat	☑	☐
Cultural Management Areas	In or Through	☑	☐
Wilderness	In	☑	☐
Dove	Habitat	☑	☐
Management Unit	Harquahala	☑	☐
Visual Resource Management (VRM)	Class 1	☑	☐
ROS	Semi-Primitive Non-motorized	☑	☐
Soils	Route Subject to Erosion Concerns	☑	☐
Wild Burro Herd Area (Herd Management Area-HMA)	In or Through	☑	☐
Known Cultural Sites	Proximate (within 1/4 mile)	☑	☐

Avoidance, Minimization or Mitigation of Impacts

Can the impacts to the above sensitive resources be avoided, minimized or mitigated? **Yes**

Recreation, Route Network, Public Safety, Public Multi-Use Access

Does this route contribute to recreational opportunities, route network connectivity, public safety, or other public multi-use access opportunities enumerated in agency Organic laws? **Yes**

Uses	Primary	Secondary	Tertiary
Astronomy / Night Sky Concerns	☑	☐	☐
Camping - Primitive/Dispersed	☐	☑	☐
Equestrian	☑	☐	☐
Hiking	☑	☐	☐
Historical Sightseeing	☑	☐	☐
Hunting	☑	☐	☐
Rockhounding	☑	☐	☐
Special Recreation Permit	☐	☑	☐
Trailheads	☑	☐	☐
Vistas, Sightseeing, Photography	☑	☐	☐
Wildlife Watching	☑	☐	☐

Route Redundancy

Can the commercial, private-property and public uses of this route be adequately met by another route(s) (within this route's zone of influence) that minimizes impacts to the sensitive resources identified above or that minimizes cumulative effects on various other resources?) **No**

Commercial	**Yes**
Private Property	**No**
Public Uses	**Yes**

Other: No

Route Recommendations:

Close	Mitigate Limit	Limit	Mitigate Open	Open
08	06	08	03	07

Range of Alternatives:

A ☐ Open ☐ Mitigate Open ☑ Limit ☐ Mitigate Limit ☐ Close

☑ Limit Use

☑ Limit Mode of Transportation

- ☐ Non-Motorized Only
- ☐ Non-Motorized, Non-Mechanical
- ☑ Pedestrian
- ☐ All-Terrain Vehicles
- ☐ Motorcycles
- ☐ Single Track
- ☐ Stock High Clearance Vehicles (Trucks, SUV)
- ☐ Stock 4 Wheel Drive
- ☐ Stock 4 Wheel Drive / High Clearance Vehicles
- ☐ Modified 4 Wheel Drive Vehicles
- ☑ Equestrian
- ☐ Mountain Bike
- ☐ Other

Manage as a non-motorized trail. Eliminating motorized access would reduce effects to wildlife and riparian habitats ar movement corridor area from such use—per 43 C.F.R. § 8342.1(a/b). Limit public access to reduce potential impacts t bighorn sheep—per 43 C.F.R. § 8342.1(b). Limiting motorized access reduces the potential for harassment of wildlife—per 43 CFR § 8342.1(b).

B ☐ Open ☐ Mitigate Open ☐ Limit ☐ Mitigate Limit ☐ Close

C ☐ Open ☐ Mitigate Open ☐ Limit ☐ Mitigate Limit ☐ Close

D ☐ **Open** ☐ **Mitigate Open** ☐ **Limit** ☐ **Mitigate Limit** ☐ **Close**

F ☐ **Open** ☐ **Mitigate Open** ☐ **Limit** ☐ **Mitigate Limit** ☐ **Close**

G ☐ **Open** ☐ **Mitigate Open** ☐ **Limit** ☐ **Mitigate Limit** ☐ **Close**

Pref ☐ **Open** ☐ **Mitigate Open** ☑ **Limit** ☐ **Mitigate Limit** ☐ **Close**

☑ Limit Use

☑ Limit Mode of Transportation

- ☐ Non-Motorized Only
- ☐ Non-Motorized, Non-Mechanical
- ☑ Pedestrian
- ☐ All-Terrain Vehicles
- ☐ Motorcycles
- ☐ Single Track
- ☐ Stock High Clearance Vehicles (Trucks, SUV)
- ☐ Stock 4 Wheel Drive
- ☐ Stock 4 Wheel Drive / High Clearance Vehicles
- ☐ Modified 4 Wheel Drive Vehicles
- ☑ Equestrian
- ☐ Mountain Bike
- ☐ Other

Manage as a non-motorized trail. Eliminating motorized access would reduce effects to wildlife and riparian habitats ar movement corridor area from such use—per 43 C.F.R. § 8342.1(a/b). Limit public access to reduce potential impacts t bighorn sheep—per 43 C.F.R. § 8342.1(b). Limiting motorized access reduces the potential for harassment of wildlife—per 43 CFR § 8342.1(b).

Appendix B: Concurrence Letter from the Arizona State Historic Preservation Office

2015-0756 (127502)

NAE

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Phoenix District
Hassayampa Field Office
21605 North 7th Avenue
Phoenix, Arizona 85027
www.blm.gov/az/

TAKE PRIDE IN AMERICA

RECEIVED
SEP 28 2015
ARIZONA STATE HISTORIC PRESERVATION OFFICE

September 27, 2015

In Reply Refer To:
8100 (AZP010)

E-MAILED
9-28-15

James Garrison
State Historic Preservation Officer
Arizona State Parks
1300 West Washington Street
Phoenix, AZ 85007

Subject: Section 106 Consultation for the Harquahala Pack Trail EA

Dear Mr. Garrison,

The Bureau of Land Management (BLM) is continuing our Section 106 consultation with you regarding our proposed comprehensive Harquahala Mountains Wilderness Management Plan and environmental assessment (EA). This plan will provide management guidance for wilderness use over the next twenty years or until a substantial change warrants a new plan. The purpose of this effort is to conduct the National Environmental Policy Act (NEPA) environmental analysis in order to implement decisions specific to the Harquahala Mountains Wilderness in accordance with the BLM Bradshaw-Harquahala Resource Management Plan (April 2010) and wilderness guidance. The BLM is completing the EA to consider impacts.

The BLM prepared the wilderness management plan (WMP) to address future management of the Harquahala Mountains Wilderness. It will guide management actions for the entire wilderness area and proposes four goals established by the BLM for its designated wilderness areas:

- To provide for the long-term protection and preservation of the area's wilderness character under a principle of non-degradation. The area's natural condition, opportunities for solitude, opportunities for primitive and unconfined types of recreation, and any ecological, geological, or other features of scientific, educational, scenic, or historical value present will be managed so that they will remain unimpaired.

- To manage the wilderness area for the use and enjoyment of visitors in a manner that will leave the area unimpaired for future use and enjoyment as wilderness. The wilderness resource will be dominant in all management decisions where a choice must be made between preservation of wilderness and visitor use.

- To manage the area using the minimum tool, equipment, or structure necessary to successfully, safely, and economically accomplish the objective. The chosen tool, equipment, or structure should be the one that least degrades wilderness values temporarily or permanently.

- To manage nonconforming but accepted uses (i.e. grazing) permitted by the Wilderness Act and subsequent laws in a manner that will prevent unnecessary or undue degradation of the area's wilderness character. Nonconforming but accepted uses are the exception rather than the rule; therefore, emphasis is placed on maintaining wilderness character.

Under the proposed action, to provide for a quality trail experience, trail maintenance and re-routing of the trail may be needed. Reclaiming social trails and other disturbed areas would also reduce erosion and soil compaction in areas to maintain naturalness.

Under the No Action alternative, Trail maintenance would continue, but reclamation of social trails and other disturbed areas would not be allowed.

Specific to cultural resource concerns, the BLM recognizes in its Bradshaw-Harquahala Resource Management Plan (RMP) and the proposed wilderness management plan the Harquahala Mountains Special Cultural Resources Management Area (SCRMA) and Harquahala Mountain National Register District as important resources to protect and maintain.

Pack Trail

In 1995, an archaeological survey was conducted of approximately 6.8 miles (10.9 km) of the Harquahala Mountain Solar Observatory Pack Trail. The survey recorded five standard and one linear archaeological site. All of the recorded sites were historic in origin. Two sites, AZ S: 3:4(ASM) and AZ S: 3:11(ASM) were related to supplying the solar observatory with food and other materials; the latter site, a trail was probably used earlier by miners for access to the mountain. One site, AZ S: 3:10(ASM) was a previously unrecorded mining camp. Three sites, AZ S: 3:5(ASM), AZ S: 3:12(ASM), and AZ S: 3:13(ASM) were part of a complex associated with occupation of the area by a reclusive miner (Ellison). Sites reported by the survey comprise the Harquahala Mountain National Register District.

The actions in the proposed wilderness plan may have potential to affect, perhaps positively, the historic Harquahala Smithsonian Observatory, AZ S: 3:1 (ASM) listed on the National Register of Historic Places and the location of solar research by scientists from the Smithsonian Institution during the 1920s in western Arizona. In addition to the observatory building, the site also includes outbuilding foundations, the remnant of a croquet court, scattered artifacts, and the upper portion of the historic Harquahala Pack Trail that emanates from the valley below. All other site descriptions from the 1995 archaeological survey are attached to this letter.

The Harquahala Mountain Pack Trail has been listed in the Arizona State Trails Guide since 1994. These historic features are all included within the Harquahala Mountain Smithsonian Observatory Archaeological District, which is listed on the National Register of Historic Places under criteria A and D.

Since 1979, the BLM has devoted considerable funding and effort to stabilizing and maintaining the observatory building. Additional efforts have been devoted to installing interpretive facilities that include a loop trail, interpretive signs, parking areas, and benches. Written interpretive materials include a brochure and a published book of correspondence between the scientists and the Smithsonian.

The BLM has installed recreational facilities adjacent to the wilderness area, including picnic tables and trailheads, at the base and the peak of Harquahala Mountain along the Harquahala Mountain Back Country Byway. The BLM Back Country Byway program, established in 1989, offers the public a way to enjoy travel on remote and challenging routes in scenic areas.

The observatory and the interpretive facilities are difficult to maintain in good condition, due to the effects of frequently severe weather conditions on the mountain top. The facilities also have been damaged by occasional vandalism including the removal of the door of the structure built to protect the remains of the original adobe structure the scientists lived in. The observatory is also in need of durable interpretive signage.

A cultural resources survey of the communications site nearby was completed by the Environmental Planning Group (EPG) (Dobschuetz 2006). EPG also surveyed the proposed lay-down area at the base of the mountain, where it was proposed that materials and equipment would be temporarily stored during construction. The lay-down area is a large parking area constructed for users of the Back Country Byway. No cultural resources were affected there and none would be affected in the current proposal.

According to AZSITE and BLM records, other than the Harquahala Peak Observatory at the top of the mountain to which this trail leads, no National Register eligible or National Register listed sites previously recorded and known within a ¼-mile of the Harquahala Pack Trail shall be impacted by the proposed trail maintenance work and subsequent use of the trail. No other Register eligible historic or prehistoric sites or features were identified during survey outside of those related to the observatory and its archaeological district.

For recreational project planning in 1998, a consultant was hired to perform archaeological survey along the pack trail to identify, comment on condition, and define the actual historic route and all historic and archaeological sites that might be associated with the pack trail. This work resulted in a report entitled "Cultural Resource Survey of the Harquahala Peak Smithsonian Solar Observatory Pack Trail, La Paz and Maricopa Counties, Arizona", by Mark Hackbarth (1995). The report formally documents the pack trail, a base camp for the observatory, an unassociated mining camp, the observatory, and associated features, Ellison's camp, a historic corral site, and a windmill site. No prehistoric archaeological sites were located.

No Adverse Effect Rationale:

- The wilderness management plan's proposed trail maintenance will maintain a feature (the pack trail itself) of a National Register listed site,
- The trail was originally established for the purposes that the BLM allows and proposes to continue to allow (horseback and foot traffic),
- Trail maintenance would be done by hand and only within the tread of the existing trail,
- Maintenance would prevent trail erosion by natural forces such as rain and wind and by other forces such as horseback and foot traffic,
- The project would not result in any adverse impact to the Smithsonian Observatory or the archaeological district,
- BLM will monitor the effects of access to and recreational use of the area, to insure that no unanticipated impacts occur to sensitive natural and cultural resources,
- BLM will consult with the SHPO on any trail maintenance for this area in the future so as to not affect eligibility of trail sections or related resources.

The BLM is consulting with Native American Tribes about the proposed trail maintenance. The Harquahala Mountains are a part of the traditional territory of the Western Yavapai. We have also had discussions with the Yavapai Prescott Tribe, and Tribal members did not identify the peak as an area of special significance.

Provided that the historic observatory and surrounding features are avoided during trail maintenance and the maintenance is completed in accordance with the Secretary's standards, the BLM recommends a finding that the project, including the previously recommended monitoring for impacts from the increased visitation and use of the trail, would not result in any adverse effects to these sites, associated features, National Register Criteria, or the National Register district. The BLM seeks the SHPO's concurrence that this project calls for a finding of no adverse effect. Please review our finding and notify us in writing with the SHPO's concurrence or not.

If you need additional information or have any questions, please contact Christopher J. McLaughlin at 623-580-5674. Thank you for your consideration.

NO ADVERSE EFFECT

9/28/15

Arizona State Historic Preservation Office

Enclosure

Sincerely,

D. Remington Hawes

Rem Hawes
Field Manager

Cc: Kris Dobschuetz, AZ SHPO Archaeologist and Compliance Specialist
Bill Collins, AZ Deputy SHPO and Historian with SHPO
Vivia Strang, AZ SHPO National Register Coordinator

Site Descriptions from Northland Research Inc. report authored by Mark R. Hackbarth (1995)

AZ S: 3:1(ASM) – Harquahala Peak Observatory – *National Register Listed.* Site consists of two buildings, one of which is a two story adobe building. The other building is a storage shed. The buildings were built in the 1920s by the Smithsonian Institution. The observatory was used for study of the sun. Wooden supports and beams, and one wooden porch remain. Siding and roofing of the main building, and the storage shed, are made of corrugated metal. Buildings are partially deteriorateed and slightly vandalized.

AZ S: 3:4 (ASM) – *considered eligible* – Solder-seal cans {Owens machine glass bottles} key strip openings on cans. The base camp consisted of a round metal water tank, rectangular water trough, two cobble walls (corral), depression, two terraces and associated cleared areas, square rock alignment (garage), and possible outhouse foundation. Artifacts on the site included large numbers of cans (500-1000), and lesser amounts of glass (50+), and a few rubber tires, leather shoe fragments. Corrugated sheet metal and wooden fence posts, plus a downed barbed wire fence are present. Archival information about the site indicates that a garage, cabin, and corral were present when the 1941 GLO survey of the township was conducted; all were abandoned at that time. Base camp was used as a way station along route to Smithsonian Solar Observatory (1920-25). The trail that bisects the site [part of AZ S: 3:11(ASM)] is the route to the top of the mountain and the Observatory. Uphill from the site, this trail becomes wide enough for a foot path, but downhill it was a two wheeled car track. The change in width goes along with the steep nature of the landform. The site is in a narrow valley and above it the slope increases to 37%. The water trough and tank were not mentioned in the GLO notes so they probably were added afterwards; the depression may be associated with water pump or well. Most artifacts on the north side of the road and are near what has been guessed as the garage. Car fender and gas tank are in this area and support this hypothesis. Alternatively, most of the food-related cans are also present and may indicate it was the habitation locus. The two terraces and level/cleared areas may be the habitation or garage area.

AZ S: 3:5 (ASM) – *considered eligible* – Site has three loci: habitation, milling, and subsistence. In addition, there are two nearby sites that were in use at the time Ellison's camp was occupied. These two sites are SW and NE of Ellison's camp. The camp is named for the occupant that supplied food, water, and transportation to the occupants of the Smithsonian Solar Observatory. It is situated on NW side of a wash; a spring is present at the site. The pack trail from us 60 ends at the camp and appears to have been the only way to get to site from the Centennial Wash area. There are ten features and a low-density of artifacts. The structures are generally dry-laid masonry, but with mortar cap on top of the walls. Walls in cross-section are a truncated pyramid. Roofs are metal and wood in a shed style and one with a gable end. A possible work shop has a concrete foundation, but no remaining superstructure. Mining evidence comes from the home made mill stones and basins with sluice gates situated next to the "mill" loci. The habitation evidence is a compound with two rooms and a court-yard near the can dump and a root cellar on the slope. Subsistence is seen from the coop and terrace that are present near the mill. Irrigation of the flat terrace from the spring was conducted by piped water and surface runoff. Artifacts on the site indicate that it was used before 1917 and so predates the solar observatory. The level of effort put into site development suggests a long period of use. Reuse by hunters is evident from one habitation feature.

AZ S: 3:10 (ASM) – *considered eligible* – Site consists of four tent/building platforms, a depression, and moderate density artifact concentration. Wooden elements of floors and roofs at two of the platforms indicate that not all items were salvaged from the site once it was abandoned. The original use of the site appears to have been a habitation site for miners that exploited nearby mineral resources. The site is situated on a steep slope overlooking a drainage that empties into a box canyon, i.e. the site is on the slope of the canyon wall. As a result, three of four platforms were cut and fill operations behind the rock terrace wall used to create the features. Largest feature was nearest the can dump and also had a floor and probably a roof. A stove was still present in the feature and indicates that feature 3 was the communal cook- house and/or lodging loci. One feature near a vertical drop off also had a boiler plate fragment to suggest that power was available to the residents. Evidence to support this comes from the drill that made uniform holes in the bedrock. The trail that passes the site was used to supply the Smithsonian Solar Observatory and there was no mention of any other mining operation in the area (other than Ellison). Archival information says that by 1941 there was no mining for the past 10 years in the township. Artifacts at the site were 10-15% machine soldered metal cans, some sun-colored amethyst glass fragments and wire nails. The assemblage looks very similar to items at AZ S: 3:4(ASM), although an enamel ware wash basin was present at AZ S: 3:10(ASM) and may suggest a 1930s age.

AZ S:3:11 (ASM) – *eligible individually* – pack trail varies from a two-wheeled rut leading off of the highway to a 1.0 m wide path with numerous switchbacks that ascends a 37% slope. Route has been marked on the Gladden 1961 USGS topographical quadrangle the entire route from top of the mountain to US Route 60; on the Harquahala Mountain (1990) provisional USGS topo by Northland using a GPS. Features along this route were mainly rock cairns that mark the trial, although two rock alignments, two adits, two water troughs, and one cleared circle. Artifacts along the trail were mainly metal cans; two large dumps and isolated cans were reported. The identifiable tobacco cans were mainly near the more mountainous portion of the project area and probably were mining claim locations. Glass was rare, except in the dumps; more common items were wire, wood, pipes, and bar iron. Two animal shoes were found that attest to use of the trail by pack animals. Archival information also shows Ellison using mules to load material and carry uphill to the observatory. Site crosses a mining camp [AZ S: 3:10(ASM)], passes through a base camp [AZ S: 3:4(ASM)], passes the observatory [AZ S: 3:1(ASM)], and ends near the Ellison habitation and mill site [AZ S: 3:5(ASM)]. Along this route it follows a ridge top as a two-wheeled rut passing along at a 3.5% grade slope in the upper bajada. The middle section of the trail passes into a box canyon where the landform ascends at a 20-40% grade. In the third section, the trail climbs out of the canyon as it cuts back and forth on the hill side; average slope of the hill was 60%, although the switchbacks allow the trail to stay at a less steep slope. Once the summit was reached, the trail descends the south mountain face where the slope is a more gradual 40% grade. UPDATE -- SAL.ASM -- 7/21/04 -- BOUNDARY NOT UPDATED -- "A Cultural Resource Survey of 22.35 Miles (727.30 Acres) along US Route 60 from Mileposts 62.50 to 64.80, Mileposts 65.00 to 71.45, and Mileposts 71.70 to 85.30 between the Town of Wenden and East of the Town of Aguila, La Paz and Maricopa Counties, Arizona", Davis 2000, Entranco, Phoenix, AZ. AZ S:3:11(ASM) is a historic pack trail previously recorded by Northland Research, Inc. The trail is located at approximately MP 70.49, on the south side of US 60 within the south side of an ADOT easement through federal land administered by the BLM, Phoenix field office. A GLO map of T6N, R11W, GSRB&M, surveyed in 1908 and 1914, filed

in 1916, shows the trail in its current location. Within the ADOT easement, the trail occurs as a two-track road with heavy vehicle disturbance and no associated historic artifacts. The trail is 12 feet wide and begins at the southern edge of the US 60 pavement, continues south 110 feet through a barbed-wire gate (the gate is not within the easement fence, which is absent in this location), then turns west for approximately 300 feet, and proceeds south again for 60 feet. At this point it continues beyond the boundary of the ADOT easement. AZ S: 3:11(ASM) has been previously recommended as eligible for inclusion in the NRHP under Criterion D (information potential). The trail leads into the Harquahala Mountain Smithsonian Solar Observatory Historic District, which was listed in the NRHP on May 5, 1997 and passes through several historic sites. However, the portion within the ADOT easement has been greatly disturbed and currently conveys none of its historic feeling. The BLM agrees with the recommendation that the portion of AZ S: 3:11(ASM) inside the easement are considered a non-contributing component of the site. A barbed-wire fence is between the trail and US 60.

AZ S: 3:12 (ASM) – *considered eligible* – Site consists of two widely spaced features with little in between except pipe and a clearing of vegetation associated with the corral. At the northeast corner of the site is a corral with a circular water trough. The corral fence is made of T-posts and six strands of barbed wire. Between the posts are saguaro ribs and branches interwoven into the six strands of wire that are 5 ft. high. Pipe used to reinforce the corral corners and gate are identical to those observed at AZ S: 3:5(ASM), so the age should be the same (1917). The circular water trough has a dividing wall that is lower than the main wall so that water would overflow into the larger section, but not be lost to the ground. Walls are wet-laid native cobbles. Finger impressions present in mortar; black lining for water proofing in the trough. Pipe in the smaller section of the trough is vertical and probably comes from the clearing area to the south. There was a pipe in the corral heading in this direction. The clearing is bounded by dense growth of hollyleaf buckthorn. The sharp distinction between the dense brush and grass in the clearing suggests some type of soil modification that affected the clearing. Suspect it is trampling of the area that has caused the difference; same condition inside corral. The dam has been included as part of the site, but it does not date to the same period. The dam is 25-30 ft. high, impounds 1/2 an acre at the surface, is about 2m wide at the top, and earthen filled. Dam and pond do not appear on the 1961 USGS map of the area.

AZ S: 3:13 (ASM) – *considered eligible* – Site consists of water tank, windmill at a spring, series of pipes, part of the pack trail crosses the site and a rock alignment that forms a 'u' on a nearby hill slope. No artifacts at any of the features, except a few cans, wire, etc... The windmill is a tower with 4 legs, three guy wires attach tower to bedrock outcrops (2), and a cottonwood tree. Corrugated sheet metal form an apron around the base of the tower. Pipe leading from tower to nearby water tank are similar to items observed at Ellison's camp [AZ S: 3:5(ASM)], so sites probably date to the same era (pre-1917). Tower is in wash where seeping water was evident. Bedrock outcrops on side of wash probably force groundwater to surface here. Above the wash on a ridge was the pack trail that has become reused by a two wheeled road. Next to bend in the road was the water trough. Trough is concrete with a black tar-like lining. Fragment of the fan blade assembly of the wind mill is next to the trough. Between the two features are a set of pipes, both on the ground and suspended in the air from trees and an 'a' frame. A completely unrelated feature is the u-shaped terrace wall (rock alignment). It encloses a level area that has been filled-in behind the wall. Unmodified cobbles used in its construction, some portions of wall are 2-3 courses high. There is very little vegetation inside the arc scribed by the feature. No artifacts

associated with the feature. There is a vague trail leading part way up the slope towards the feature from the pack trail, but it does not reach the feature and could have been a natural clearing on the ridge or a figment of imagination.

Appendix C: Response to Public Comments

Submitter	Comment	Response
Sierra Club	Allowing commercial enterprises to operate will denigrate the wilderness. How will this affect the wildlife, vegetation and natural quiet of the wilderness to allow hunting guides?	A decision was carried forward from the Bradshaw-Harquahala Record of Decision (2010) and Approved Resource Management Plan regarding commercial use for special recreation permits in this wilderness and excludes other types of commercial use. See WM- 5, page 3 of this document under the heading, "Conformance with Land Use Plan"
Sierra Club	Vehicular access into Ellison Place should be curtailed.	Out of scope. Route decisions outside of wilderness will be made when the travel management plan outside of wilderness is completed. Archaeological resources can be addressed regardless of actions that take place in this plan.
Sierra Club	Close dead-end route in the northwest corner of 5N 10W, to prevent wilderness trespass and damage to archaeological values.	Out of scope. Route decisions outside of wilderness will be made when the travel management plan outside of wilderness is completed. Barriers can be installed and other protective measures can be taken at the wilderness boundary to prevent wilderness incursions.
Sierra Club	Why are water catchments necessary and how will they benefit wildlife? What research exists to support construction of more waters? It is unclear in studies (cited) that wildlife waters improved wildlife populations. Species richness might benefit more from protecting plants, removing people from an area, or closing roads than by adding guzzlers (cited).	Out of scope. The need for additional wildlife waters will be analyzed in a separate EA if new waters are proposed.

Submitter	Comment	Response
Sierra Club	Maintenance to grazing infrastructure and wildlife waters should be clearly necessary and be accomplished by using a non-motorized form of access and a non-motorized/non-mechanical type of minimum tools.	For wildlife waters, the minimum tool will be determined according to the MRDG process as stated in the proposed actions. This is an agreement in an MOU between the BLM and AFGD. The proposed action also states that range improvements will be maintained without the use of motor vehicles.
Sierra Club	Arizona Game and Fish should do a non-motorized form of access and use a non-motorized/mechanized form of a minimum tool. AZ Game and Fish should minimize impacts to wildlife and to habitat. BLM should work with Arizona Game and Fish, but should also question the need for certain actions, whether it is a water catchment or so-called "predator management."	The minimum tool for wildlife management actions will be determined according to the MRDG process. The AGFD has management authority for wildlife populations while the BLM has management authority for wildlife habitat. Impacts to wildlife habitat, wilderness values, and multiple use management are analyzed in Part VI.
Sierra Club	Wildlife fires should be allowed to burn within the wilderness area and managed outside of the wilderness should they threaten structures of communities.	In the Conservation Agreement for the Sonoran Desert Tortoise (May, 2015) the BLM has agreed to conduct fire suppression within desert tortoise habitat.
Sierra Club	If removing and reclaiming any remnant infrastructure related to grazing and mining are not historical archaeological sites/or artifacts, then we support reclaiming these areas.	Comment noted.
Sierra Club	Interpretive signs have been damaged or fallen in disrepair. Would it be possible to replace them? Historic cistern located next to the observatory is mistaken for a trash can. Can you install a grate? Vehicular access to the observatory should be curtailed and a parking area farther down the road should be created to curtail vandalism.	Comment noted. The Smithsonian Observatory site, Ellison place, and objects at the bottom of the trail are not in the wilderness. The Harquahala Peak Pack Trail, which is included in the historic district, is within the wilderness and is addressed in Section IV, Objective 2, starting on page 17-18.

Submitter	Comment	Response
Sierra Club	Would be happy to assist with projects to address trespasses, remove invasive plants, or other projects in the wilderness.	Comment noted.
AZ Game and Fish Department	Department staff must be able to proactively manage wildlife in the wilderness to serve as refugia for wildlife populations.	BLM acknowledges that according to the master MOU between AGFD and BLM (Agreement number: AZ-930-0703), Game and Fish has authority for the management of wildlife populations.
AZ Game and Fish Department	Modify statement on page 14 to read, "Predator management will be based on the best available scientific information to implement specific management objectives in specific focus areas or to manage individual predators." and is consistent with AZ Game and Fish Commission policy on Predation Management.	The suggested change has been added to the Proposed Action section in Part V.
AZ Game and Fish Department	Modify statement on page 19, change "projects" to "activities" to be consistent with the statement introducing the list.	The suggested change has been made.
AZ Game and Fish Department	Page 19, add clarifying wording for consistency with the Policies and Guidelines for Fish and Wildlife Management in National Forest and Bureau of Land Management (as amended):	The suggested change has been made.
AZ Game and Fish Department	Page 27, Special Status Species, the Sonoran desert tortoise is currently a candidate species under the ESA.	The suggested change has been made.
AZ Game and Fish Department	Page 30, edits suggested	The suggested change has been made.
AZ Game and Fish Department	page 30, inventorying mines, we suggest adding inventorying for bat use and the potential need for bat gates.	The suggested change has been made.
AZ Game and Fish Department	Page 32, clarifying edits, Maintenance add development also.	The suggested change has been made.

Submitter	Comment	Response
AZ Game and Fish Department	Page 32, burros will continue to exist in the area, is contradictory to HB-5 in the B-H ROD, RMP, "burros will be removed from the herd area, as funding is available, with the target of reaching a population of zero. Burros are a negative impact on water quality, forage, and wildlife in the HMWA and should be removed from the Herd Area.	Comment noted. Page 32 text has been modified for clarification. Burro management is outside of the scope of this plan.
Craig Weaver	Recognize dark skies within the wilderness plan.	Comment noted and has been added to the Recommendations outside of the Wilderness Area, page 14.
Craig Weaver	Block the routes from the communication building to the nearby boundary of the wilderness to prevent wilderness trespass by OHV use.	See page 17, #4 of the proposed action.
Craig Weaver	Removing burros from the mountain and reducing the negative impacts on Brown's Canyon and Tiger Wash will improve the naturalness of the area.	Comment noted. Burro management is outside of the scope of this plan.
Arizona Wilderness Coalition	Conducting "periodic" monitoring to determine recreational impacts once every 3-5 years to determine changes to baseline conditions is inadequate and too infrequent to protect natural and historic resources.	Monitoring occurs every year with the ability to address negative impacts; comprehensive monitoring would be conducted every 3 -5 years as described in the Proposed Action.
Arizona Wilderness Coalition	The schedule proposed for boundary sign monitoring every three years is inadequate.	Monitoring occurs every year; changes to conditions would be monitored every 3 -5 years as described in the Proposed Action.
Arizona Wilderness Coalition	Recruit other volunteers and or students to assist in regularly monitoring between the official monitoring schedule, i.e. site steward program, AWC Wilderness Stewardship Program, wilderness hiking groups organized on meetup.com, friends groups, and other conservation organizations.	Comment noted.

Submitter	Comment	Response
Arizona Wilderness Coalition	Making public funds available to support volunteer involvement through private non-profit conservation organizations could be highly cost-effective.	Comment noted.
Arizona Wilderness Coalition	Wilderness plan should include a commitment to posting additional outreach methods for visitor information by using the web, including relevant interpretative materials, detailed maps that clearly delineate the boundary, and allow visitors to ascertain their position relative to authorized routes and legal boundaries, specific visitor use regulations for the area, and LNT. It behooves BLM to improve the quality and depth of the visitor information it provides on the web.	See Section IV, page 19, #10 of the Proposed Action
Arizona Wilderness Coalition	One well-known feature of the area was notably absent from the draft plan; the historic remnants of the Smithsonian Solar Observatory. This plan should address and incorporate management actions for this historic resource.	The Smithsonian Observatory is outside of the wilderness boundary and therefore, outside the scope of this plan.
Arizona Wilderness Coalition	Empty sign holders at the summit can signal to the public that the resource is not adequately cared for and that it may not be valuable for preservation; increasing negative impacts.	Comment noted.
Arizona Wilderness Coalition	BLM should include in the management plan to ensure that the observatory is well protected and adequately interpreted.	The observatory at the summit is outside the wilderness boundary and therefore, outside the scope of this plan.
Arizona Wilderness Coalition	We strongly encourage proposed drone use in the wilderness area to be analyzed through an EA.	The level of NEPA analysis would be determined based on the methods proposed.
Arizona Wilderness Coalition	Any proposed landings of helicopters should be analyzed through both a MRDG and an EA.	The level of NEPA analysis would be determined based on the methods proposed.

Submitter	Comment	Response
Arizona Wilderness Coalition	The most recent raptor nest buffer and avoidance guidelines should be used, consulting U.S. Fish and Wildlife and BLM standards, in addition to any recommendations from AZ Game and Fish Department.	Outside the scope of this plan.
Arizona Wilderness Coalition	This wilderness and much of the surrounding area is included in the proposed Belmont-Harquahala National Conservation Area designation in the Sonoran Desert Heritage Act currently under consideration of the U.S. Congress. As a result, BLM should take extra care and caution in making consistent management decisions and allowing uses in this region in order to remain consistent with future legislative protection, i.e. sensitive wildlife corridors; limit any expansion or developments of infrastructure, including roads, rights of ways, and utility corridors; and encourage the preservation of dark skies in the region.	Outside the scope of this plan.
Renee Gray	Please show for record that I support all of BLM's proposed actions in this EA regarding the Management of Harquahala Mountains Wilderness. Thank you!	Comment noted.