

HOT SPRINGS CANYON

LANDS WITH WILDERNESS CHARACTERISTICS

*PUBLIC LANDS IN THE MULESHOE
COOPERATIVE MANAGEMENT AREA,
GALIURO MOUNTAINS, ARIZONA*



A proposal report to the Bureau of Land Management,
Safford Field Office, Arizona



ARIZONA WILDERNESS COALITION

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Cover Photo: From point S1 along the northern unit boundary, looking over a broad valley-section of Hot Springs Creek, before it plunges into a steep gorge for several miles. The riparian ecosystem here supports many rare fish, birds, plants, and a number of tree species. The canyon downstream is a popular and adventurous hiking route featuring plunge pools, spectacular geology, and lush forest. All photos in this report by Shannon Maitland.

PREFACE: This Proposal was developed according to BLM Manual 6310

General Overview

Instruction Memorandum 2011-154 and Manuals 6310 and 6320 set out the BLM's approach to protecting wilderness characteristics on the public lands. This guidance acknowledges that wilderness is a resource that is part of BLM's multiple use mission, requires the BLM to keep a current inventory of wilderness characteristics, and directs the agency to consider protection of these values in land use planning decisions.¹

In March 2012, the Bureau of Land Management issued updated manuals for inventorying and managing Lands with Wilderness Characteristics on public lands (hereafter often referred to as LWC's). These manuals provide the agency with direction for implementing its legal obligations to inventory and consider management of Lands with Wilderness Characteristics, including the Federal Land Policy and Management Act's provision that BLM "preserve and protect certain public lands in their natural condition" (43 U.S.C. § 1701(a)(8)). **Manual 6310** (Conducting Wilderness Characteristics Inventory on BLM Lands) guides the BLM on how to meet its obligations to inventory for and identify lands with wilderness characteristics. **Manual 6320** (Considering Lands with Wilderness Characteristics in the BLM Land Use Planning Process) guides the BLM on the options available to address lands with wilderness characteristics in land use planning once they have been identified in the required inventory, such as putting management prescriptions in place to protect wilderness characteristics. The purpose of this report is to provide the BLM with recommendations for designation of Lands with Wilderness Characteristics in the Safford Resource Area of southeastern Arizona, based on new, accurate, and up-to-date information according to **Manual 6310**.²

What does Manual 6310 require for the identification of LWC's?

Minimum standards for LWC proposals are described in Manual 6310 in section .06.B.1. There are three things required in a citizens' wilderness proposal in order to meet the minimum standard for BLM to consider it in an inventory and to consider it as new information:

- Detailed map with specific boundaries;
- Detailed narrative of the wilderness characteristics; and
- Photographic documentation.

Once there is new information that meets these standards, then "as soon as practicable, the BLM shall evaluate the information," including field checking as needed and comparing with existing data to see if previous conclusions remain valid. Further, BLM will document its rationale and make it available to the public. (.06.B.2). This proposal report provides the three necessary criteria listed above.

¹Memorandum 2011-154 is available online at:
http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2011/IM_2011-154.html

² Manual 6310 is available online at :
http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_manual.Par.38337.File.dat/6310.pdf

What does Manual 6310 require for an area to be identified as an LWC?

Requirements for determining lands have wilderness characteristics are found in section .06.C.2 of Manual 6310. Lands with Wilderness Characteristics must possess the following traits:

• **Size**

Sufficient roadless area to satisfy size requirements (5,000 acres, of sufficient size to make management practicable or “any roadless island of the public lands”; or contiguous with Wilderness, Wilderness Study Areas, USFWS areas Proposed for Wilderness, Forest Service WSAs or areas of Recommended Wilderness, National Park Service areas Recommended or Proposed for Designation).

• **Naturalness**

Affected primarily by the forces of nature – The criteria is “apparent naturalness” which depends on whether an area looks natural to “the average visitor who is not familiar with the biological composition of natural ecosystems versus human affected ecosystems.” This is an important distinction between ecological integrity and apparent naturalness.

Human impacts – Human impacts must be documented and some are acceptable so long as they are “substantially unnoticeable”; Examples include trails, bridges, fire rings, minor radio repeater sites, air quality monitoring devices, fencing, spring developments, and stock ponds.

Outside human impacts – impacts outside the area are generally not considered, but major outside impacts should be noted and evaluated for direct effects on the entire area (the manual explicitly cautions BLM to “avoid an overly strict approach”).

• **Outstanding opportunities for either solitude or primitive and unconfined recreation**

The area does not have to possess both opportunities for solitude and primitive and unconfined recreation, nor does the area need to have outstanding opportunities on every acre; BLM cannot compare lands in question with other parcels; BLM cannot use any type of rating system or scale.

• **Supplemental values**

Ecological, geological, scientific, scenic, educational or historical features should be documented where they exist, although they are not required traits.

What does Manual 6310 require for the identification of the boundaries of an LWC?

Boundaries should be based on wilderness inventory roads and naturalness rather than opportunities for solitude or primitive and unconfined recreation. For inventorying wilderness characteristics, BLM will use the “road” definition from FLPMA’s legislative history; the term “road” and “wilderness inventory road” are interchangeable in this guidance. The AWC survey team took a very literal, maintenance-driven approach to road/way determination.

• “Wilderness inventory roads” are routes which have been: (1) *improved and maintained* (when needed), (2) *by mechanical means* (but not solely by the passage of vehicles), (3) *to insure relatively regular and continuous use*.

• “Primitive routes” or “ways” are transportation linear features located within areas that have been identified as having wilderness characteristics and not meeting the wilderness inventory road definition.

• Lands between individual human impacts should not be automatically excluded from the area; no setbacks or buffers allowed; boundaries should be drawn to exclude developed rights-of-way; “undeveloped rights-of-way and similar possessory interests (e.g., as mineral leases) are not treated as impacts to wilderness characteristics because these rights may never be developed”; areas can have wilderness characteristics even though every acre within the area may not meet all the criteria.

METHODS: The research approach to developing this citizens' proposal

The information presented in this report was developed systematically to ensure a comprehensive and accurate description of the proposed LWC that fulfills the citizens' proposal requirements of Manual 6310. Our intent has been to effectively combine the analytical power of technology with the equally important elements of qualitative observation, to produce a suite of products that can be used to facilitate the protection of a variety of lands with wilderness characteristics across the Safford Resource Area, meeting the conservation objectives of Arizona Wilderness Coalition *and* the legal obligation for the BLM to *"preserve and protect certain public lands in their natural condition"*.

STEP 1: GIS ROADLESS ANALYSIS

The initial exercise in our inventory was to complete a geospatial analysis of the study area to identify potential roadless areas using a combination of Qgis, ESRI ArcGis, and Google Earth Pro. The BLM's Route Inventory dataset was queried for keywords that indicated that a route may be maintained, such as "gravel-surfaced", "2WD use", "Recent grading", and numerous other terms. Several rounds of this process were verified over color aerial imagery to assess the quality of the output. During this step, some errors in the dataset were corrected, such as incomplete line features or very inaccurate digitization. Additionally, we performed a visual assessment of aerial imagery for roads that appeared obviously maintained, and added an attribute column to mark these features as such. We also acquired railroad data, US Census Lidar data for Primary & Secondary Roads, Interstate highway data, and county-maintained roads data from Cochise County. In addition, we digitized natural gas pipeline corridors, telephone and power lines, and the proposed route for the SunZia transmission line. Each feature type was buffered by distances ranging from 10 feet for dirt roads, to 50 feet for interstates and powerlines, and the results were dissolved and unioned to develop one master feature dataset that represented probable wilderness inventory roads and rights-of-way corridors. These data were then used to clip BLM's Surface Management dataset into contiguous blocks of BLM land. Areas less than 5,000 acres were then deleted (unless contiguous to wilderness, WSA, or Proposed Wilderness), and the resultant output was a dataset of 52 units of BLM lands that were probable roadless areas.

STEP 2: FIELD INVENTORY PRIORITIZATION

Prior to visiting any sites on the ground, we assessed each initial roadless area polygon to determine where our resources would be most effectively deployed. Our objectives were to maximize field inventory efforts on the areas that we estimated would possess the most outstanding wilderness values, while also covering a broad geographic sample of the study area. Our determinations were informed by EIS documents, past wilderness inventory reports by BLM and AWC, research by The Nature Conservancy and the Sky Island Alliance, and geospatial data we acquired from BLM, US Forest Service, academic institutions, and the Arizona Game and Fish Department, including the Heritage Database. It is important to make clear that the units we decided not to inventory probably possess wilderness characteristics, but given available resources, we could not visit every unit. In addition to the units we are proposing as LWC's, we are also providing recommendations for areas we have identified as "Potential LWC's". Those units should still be inventoried for wilderness characteristics.

STEP 3: FIELD PLANNING

Trips to the field were strategic, focused efforts. For each unit, we developed a list of field inventory points that we endeavored to visit either by foot or vehicle. By using the BLM Route Inventory Dataset, the BLM Range Improvements dataset, the USGS Springs dataset, the Arizona Land Resources Information System Mines dataset, and USGS Topographic Maps, we identified potential impacts to naturalness *and* areas of potential supplemental value. These datasets were exhaustively examined on Google Earth to validate feature locations. Additionally, other inventory features were identified on the aerial imagery. Once the field inventory points were identified, they were loaded into MotionX GPS HD for iPad. Also, we loaded high-resolution color aerial imagery for our target units and the surrounding area, to assist in navigation, identification of landscape features, and location of hard to detect features. Finally, standard logistical planning steps were completed to ensure that our team would enjoy safe and efficient days in the field.

STEP 4: FIELD INVENTORY

From January to March, 2016, our team dedicated more than 800 hours to inventorying lands with wilderness characteristics. Our objectives were: 1) to refine unit boundaries to confirmed wilderness inventory roads and impacts to naturalness; 2) to identify and document primitive routes, ways, and trails; 3) locate and document minor impacts to naturalness that are permitted within LWC's; 4) identify and document opportunities for solitude and primitive recreation; and 5) discover and document supplemental values where they exist. The primary tool for documentation was GeoJot+ for iPhone, a data collection app that allows the user to develop drop-down data tables that are attached to geotagged .jpeg digital photographs. In making determinations whether a route was a road versus a way, we returned to the legislative definition of a road (discussed earlier), closely assessed the history of maintenance, and considered the purpose (or lack thereof) of the route, the level of use, its connectivity, and other aspects. We are confident that upon verification, our determinations meet the intent of Manual 6310.

STEP 5: FINAL ASSESSMENT, MAPPING, AND DATA COMPILATION

After a field trip, data were loaded into GeoJot + Core for PC, where edits were made where necessary, and final determinations for unit boundaries were made. A range of products were developed from this application: 1) the photopoint data in Section 5 of this report, complete with tables and geotags; 2) .kml files for Google Earth to visualize the photopoints across the landscape; and 3) a .kml file of scenic panoramas of the units, showcasing the immense beauty and wildness of our final unit proposals. It is the intent of AWC to share these interactive products with BLM to facilitate in the review of our proposals and to support our best efforts to put forth fair proposals in full transparency. Finally, edits were made to unit polygons in GIS, supplemental information was further explored, maps were developed, and the components of this report were produced. Arizona Wilderness Coalition is proud to share with the BLM this citizens' proposal report and accompanying GIS data, the product of an intensive and science-based conservation process that furthers our collective goal to *"preserve and protect certain public lands in their natural condition"*.

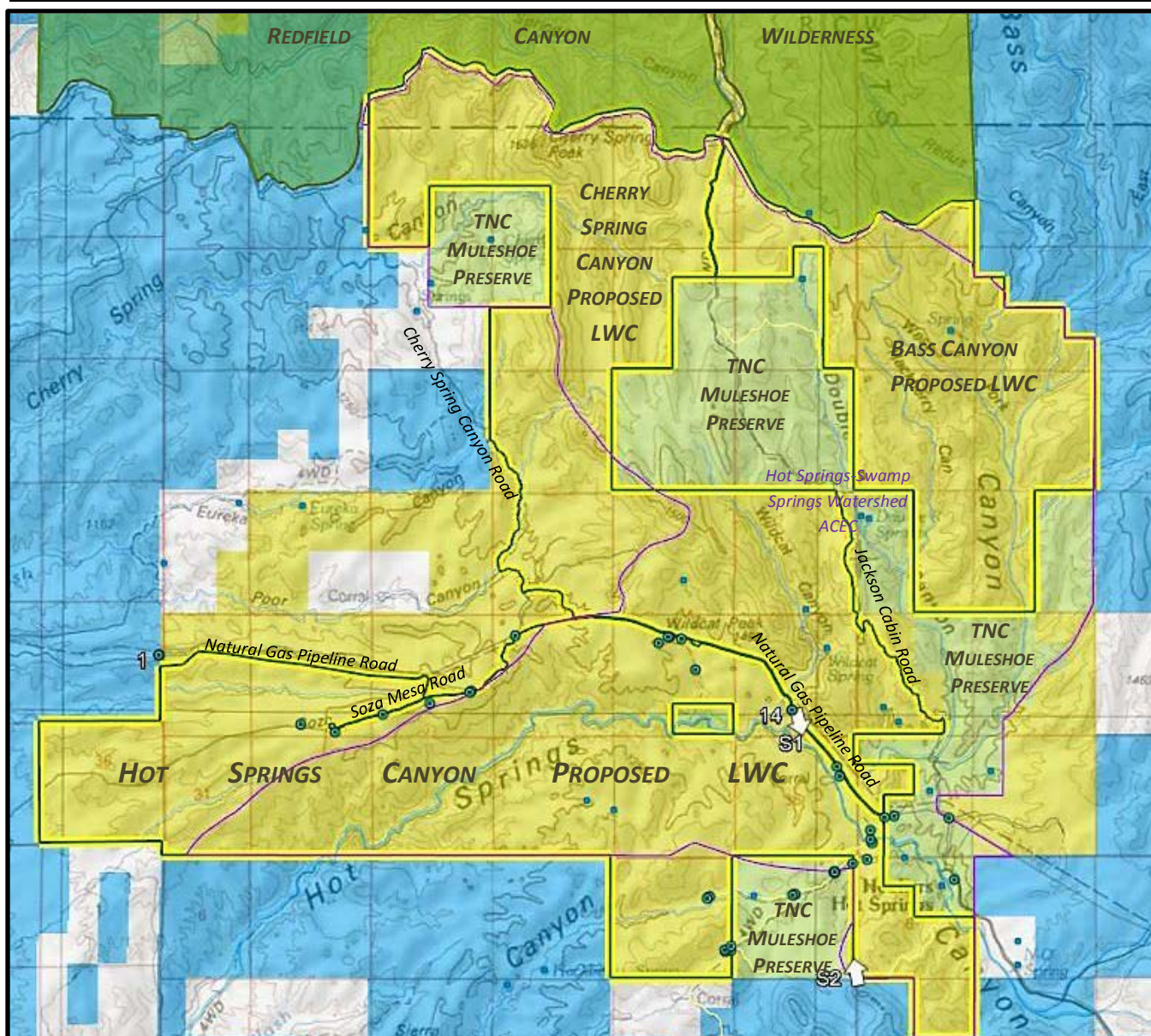
Section 1:

***Overview of the Proposed
Lands with Wilderness Characteristics***



From point S1, looking west into the start of Hot Springs Canyon

Unit Introduction: Overview map showing unit location & labeled boundaries



Bur. of Land Management	PROPOSED LWC Unit	POTENTIAL LWC Unit	Area of Critical Environmental Concern	Designated Wilderness	National Forest	AZ State Trust Land	Private Land	TNC Muleshoe Preserve	State Land in Wilderness
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The Hot Springs Canyon Proposed LWC (7,551 acres) is located at the southern end of the Galiuro Mountains in southeastern Arizona and is encompassed by the Muleshoe Cooperative Management Area, a 57,500 acre area managed for ecosystem health by the US Forest Service, Bureau of Land Management, and The Nature Conservancy. Located about 30 miles northeast of Tucson, 25 miles to the northwest of Wilcox, and five miles northeast of the small town of Cascabel, access to the area is mostly managed by TNC, and visitors arrive by way of a long dirt road that leads to the Muleshoe Preserve headquarters at the historic Hookers Hot Springs. Hot Springs Creek is the primary terrain feature of the proposed LWC. This creek runs through a 600 to 700 foot deep canyon in the center of the unit as it descends to the San Pedro River just a few miles to the west. The creek provides lush riparian habitat that supports rare native fish, birds, and an abundance of unique plants and other animals. Rolling grasslands punctuated by bluffs and cliffs surround the canyon. The vegetation consists of semi-desert grassland with patches of upper Chihuahuan desert-scrub and Madrean evergreen woodland, and is in a generally excellent ecological condition due to restricted livestock grazing and use of prescribed fire. The unit provides some of Arizona's best bird-watching, exciting canyoneering, and is a case-study in effective collaborative ecosystem management.

- S4 Scenic Photos shown in report text
- Photo Data Points (Numbers shown in Sections 3 & 4)
- Wilderness Inventory Roads
- Primitive Routes or Vehicle Ways
- Trails or Reclaimed Ways
- Creeks, Canyons and Washes
- Springs



Map of Proposed LWC, showing photo data points, vehicle routes, and unit boundaries. Background map USGS topographic. Data: Google Earth, Bing, BLM, USGS, US Census, AZDOT, TWS, Field Survey. Projection: WGS 84 – UTM Zone 12N Produced for Arizona Wilderness Coalition by Joe Trudeau, Hassayampa Forestry & Ecological. April 2016. www.az-eco.com.



Section 2: Documentation of Wilderness Characteristics

Size Criteria

At ~7,551 acres of contiguous BLM land, the Hot Springs Canyon Proposed LWC meets the minimum size criteria for roadless lands set forth in BLM Manual 6310. There is one private inholding contained within the boundaries of the unit; an ~82 acre parcel owned by The Nature Conservancy (TNC), and not accessed by any open vehicle routes. Photo point 12 documents that the route that once led to the parcel is now permanently closed and gated per management guidelines established in the 1998 Muleshoe Ecosystem Management Plan. Another parcel owned by TNC is surrounded on three sides by the proposed BLM unit. Section 1 in T13S – R20E is a full 640-acre section that was once accessed by a vehicle route that has now also been closed and is used as a hiking trail (see points 21 – 32 which show the un-driven nature of this way). Because of the heightened conservation objectives of TNC and BLM, as expressed in the Muleshoe Ecosystem Management Plan, we do not think that managing for wilderness characteristics – which would preclude vehicle access to these private parcels – is contrary to the existing management framework.

Naturalness

The Hot Springs Canyon Proposed LWC is affected primarily by the forces of nature and appears natural to the average visitor. There, the works of man are few and are substantially unnoticeable. The LWC unit is absolutely dominated by the forces of nature.

Ranching developments or range improvements do not detract from the naturalness of the LWC. Since 1982, when TNC purchased the private lands throughout the Muleshoe Cooperative Management Area livestock grazing has been eliminated or curtailed significantly. The area has been managed instead to restore native ecosystems. As a result, there are few grazing developments found within the proposed LWC, all of which pre-date the ecosystem management approach adopted by the Muleshoe cooperators. Two dirt tanks along Soza Mesa Road in the northwestern part of the unit were excluded because they appear to have been semi-recently improved (near points 2 and 4), and another one or two dirt tanks are further down the unmaintained portion of that route, which appear to have naturalized. Earth-bermed tanks are among the list of disturbances listed as substantially unnoticeable in BLM Manual 6310, and therefore these tanks in particular do not impact naturalness. A water development at point 33 (Sierra Blanca Well, consisting of a solar array and water tank) is a small and localized impact and is not reached by an open vehicle route (see points 21-32) so we feel that this is a negligible impact on the larger landscape.

Primitive routes do not substantially affect the naturalness of the proposed LWC. The BLM and TNC have successfully closed and allowed to naturalize most of the routes that once affected streams, travelled up washes, and crosses the hillsides. There are less than three and a half miles of unmaintained primitive routes located within the proposed LWC, mostly located along the northern and western unit boundary. Several old vehicle ways in the eastern part of the LWC have become trails

and are for non-motorized use only (see points 21-32). Neither the primitive routes nor the trails detract from naturalness.

There are no mines present within the Hot Springs Canyon Proposed LWC, and in fact the Muleshoe Ecosystem Management Plan states that there are no known mineral occurrences in the Muleshoe planning area, and the potential for new discoveries is very low. Due to the protections provided by the Muleshoe Ecosystem Management framework, it is unlikely that mining would ever occur in this area. The lack of mining impacts contributes to the remarkable naturalness of the proposed LWC unit.

Solitude & Recreation

The Hot Springs Canyon Proposed LWC provides outstanding opportunities for solitude and primitive and unconfined recreation. Some activities that the BLM has identified as primitive recreation in the Safford area include hunting, horseback riding, hiking, backpacking, camping, rock scrambling and climbing, sightseeing, photography, and environmental study (BLM, 1987). The proposed LWC provides access to all of these activities, plus more.

Hot Springs Creek runs through Hot Springs Canyon for over five miles within the LWC unit. This stretch flows perennially providing exceptional opportunities for many different forms of primitive recreation. Hot Springs Canyon is a secluded, winding gorge that provides an excellent destination for canyoneering. Portions of this canyon are particularly steep and narrow providing challenging opportunities for navigation and travel in a remote and wild setting. Day hikers can choose from many different extraordinary destinations. For those that enjoy being near water and prefer an adventurous off-trail hike, simply hiking up Hot Springs Canyon makes for a tremendously scenic adventure. For those more interested in traveling on trails, the Vista Trail and the Old Mitchell Road (now a trail) offer incredible views (scenic point 2) of the surrounding wild country including the Redfield Canyon Wilderness Contiguous Proposed LWC and the Redfield Canyon Wilderness. These trails traverse along hillsides and through canyons; scenic point 1 was taken looking toward the Vista Trail and shows some of this terrain. A larger loop can be done by adding a section of an old primitive route and a short portion of the boundary road. For visitors looking for a longer trek, a backpacking route may start on the Vista Trail, navigate over to Sierra Blanca Canyon, cross overland into the Hot Springs Canyon watershed, up Hot Springs Canyon for over four miles, through a small TNC parcel of land, continuing along Hot Springs Creek, and then through the magnificent riparian floodplain forests and back to the starting point. More than enough water can be gathered for a leisurely multi-day backpacking trip through this stunning landscape.

Horseback riders will find outstanding ride options within the proposed LWC. The presence of established trails especially provides great opportunities for equestrian use. For the more adventurous rider, the open grasslands contained by the Hot Springs Canyon Proposed LWC offer outstanding off-trail routes through the untamed backcountry. Horseback riders have many high-quality choices to select from, all with beautiful scenery.

The proposed LWC contains outstanding opportunities for discovering its abundant diversity of botanical, zoological, and geologic features. The perennial flows of Hot Springs Creek and its riparian ecosystem provide especially great prospects for nature study. With rare, threatened or endangered native fish, raptors, frogs, bats, and many bird species, Hot Springs Canyon absolutely contains outstanding opportunities for observing and photographing uncommon animals. Indeed, this is considered some of the best bird-watching in Arizona. Slot canyons provide dramatic scenery for geologic observation and photography as well. Options for nature study within this LWC are diverse and exceptional. Outstanding hunting opportunities exist in a wilderness setting within the proposed LWC. The unit contains a number of species of economic and recreational importance including the band-tailed pigeon, bighorn sheep, black bear, Gambel's quail, javelina, scaled quail, Mearns' quail, mountain lion, mule deer, pronghorn, white-tailed deer, and white winged dove (www.habimap.org). The trails located in the southeastern part of the LWC could be particularly useful for hunters seeking non-motorized hunting experiences, although hunting is not allowed on TNC-owned lands in this proposed LWC. This rich landscape provides excellent habitat for a diversity of wildlife.

Supplemental Values

The proposed LWC has supplemental values that enhance the wilderness experience & deserve protection. BLM Manual 6310 defines supplemental values as features of “*ecological, geological, or other features of scientific, educational, scenic, or historical value*” (section .06.C.2.d). Throughout this report, we have shown the scenic value of the area in photographs and through description. A review of the photopoints in Section 4 of this report will also provide evidence of the units' incredible scenery. Below, we provide a summary of additional supplemental values present in the proposed LWC.

The proposed LWC is an Area of Critical Environmental Concern, and was determined eligible for inclusion in the National Wild and Scenic Rivers System

Source: Safford District Resource Management Plan: Final EIS. Published in 1991 by the BLM, Safford Field Office, Arizona
Find it at: http://www.blm.gov/az/st/en/info/nepa/environmental_library/arizona_resource_management.html

Approximately 4,900 acres of the proposed LWC are within the Swamp Springs – Hot Springs Watershed ACEC, a 16,763 acre area recognized for its riparian areas, native fish, threatened & endangered species, bighorn sheep, and cultural resources. These resources would benefit from the protection of wilderness characteristics. According to the BLM's Resource Management Plan,

“The outstandingly remarkable feature of Hot Springs Canyon is the existence of four species of native fish and nesting gray hawks—one of 55 pair in the United States. Six continuous miles of flow within a deep scenic canyon is enhanced by the riparian vegetation lining the shores. The area possesses habitat necessary for at least nine species of breeding raptors. The area is scenic and offers opportunities for hiking, horseback riding, birding, wading and camping” (page 467).

Several years after studying the area for the Wild and Scenic River eligibility, the BLM determined the area non-suitable for designation because the resources studied were protected by an ACEC as well as the cooperative agreements formed with The Nature Conservancy (BLM, 1994: source listed below).

The proposed LWC provides important habitat including riparian ecosystems that support sensitive species

Source: Arizona Game and Fish Department Heritage Data Management System (HDMS) Online Environmental Review Tool
Find it at: <https://azhgis2.esri.com/>

Source: "Habitat mapping and conservation analysis to identify critical streams for Arizona's native fish", by Dale S. Turner and Michael List. Published in 2007 in *Aquatic Conservation: Marine and Freshwater Ecosystems, Vol. 17: pages 737-748*.
Find it at: http://azconservation.org/downloads/critical_streams_for_arizonas_native_fish

Source: "Final Arizona Statewide Wild and Scenic Rivers Legislative Environmental Impact Statement: Rivers Appendix".
Published in 1994 by the Bureau of Land Management, Arizona State Office.
Find it at: http://www.blm.gov/az/st/en/info/nepa/environmental_library/wsr.html

Source: "Desert tortoise habitat management on the public lands: a rangewide plan", by Edward F. Sprang, G. William Lamb, Frank Rowley, William H. Radtkey, Richard R. Olendorff, Eugene A. Dahlem and Sidney Stone. Published in 1988 by the Bureau of Land Management Division of Wildlife and Fisheries, Washington, DC.
Find it at: <https://ia902703.us.archive.org/25/items/deserttortoiseha7775span/deserttortoiseha7775span.pdf>

The Hot Springs Canyon watershed supports exceptional biodiversity, featuring several permanent streams, expansive native grasslands, complex terrain, and lush riparian forests dominated by Fremont cottonwood, sycamore, velvet ash, Arizona walnut, Gooding willow, and Bonpland willow (BLM, 1994). The BLM has reported that Hot Springs Canyon "*provides outstandingly remarkable habitat values for endangered and candidate wildlife species*" (BLM, 1994: p 389). Hot Springs Creek is considered one of Arizona's critical streams for conserving native fish (Turner & List, 2007), and supports populations of three federally endangered fish (Gila chub, spikedace, and desert pupfish), and four species of concern (speckled dace, Gila longfin dace, Sonora sucker, and desert sucker). These streams and their attendant vegetative communities also support the threatened Chiricahua leopard frog, Mexican spotted owl, and yellow-billed cuckoo, as well as the lowland leopard frog, a species of concern. Uplands support a variety of sensitive species as well, such as many species of bat, including the endangered lesser long-nosed bat, a variety of hawks, and the globally rare Aravaipa sage. The Muleshoe area is actually the furthest east habitat for the desert tortoise, although it is not considered essential to their survival (Sprang et al., 1988). The mosaic of lush riparian forest, native grasslands, and rugged topography provide exceptional bird habitat, and the proposed LWC is considered some of the best bird-watching in Arizona. Visitors to the proposed LWC could expect to observe peregrine falcon, bald eagle, ferruginous hawk, loggerhead shrike, Costa's hummingbird, willow flycatcher, belted kingfisher, tropical kingbird, Arizona Bell's vireo, zone-tailed hawk, black hawk, northern gray hawk, and common blackhawk in habitats associated with the riparian ecosystem (BLM, 1994). Other species associated with the riparian ecosystem are Mexican garter snake, giant spotted whiptail lizard, yellow-nosed cotton rat, Chiricahua western harvest mouse, desert bighorn sheep, black bear, mountain lion, and coati (BLM, 1994). The State HDMS provides reports to the public for known occurrences of plant and animal species of concern per USGS topographic quadrangles. The proposed LWC falls on the Hooker's Hot Springs and Soza Mesa quadrangles. A table listing the species found within that area is provided in Appendix 1. The protection of the proposed LWC would benefit these species, though collection records may or may not document that they occur within the boundaries of the proposed LWC.

The proposed LWC contains critical habitat for protected wildlife species

Source: Arizona Game and Fish Department Heritage Data Management System Online Environmental Review Tool
Find it at: <https://azhgis2.esri.com/>

The online Environmental Review Tool provides detailed maps for designated and proposed critical habitat areas. The proposed LWC contains designated Critical Habitat in lower Hot Springs Canyon for three native fish: Gila chub (*Gila intermedia*) and Spikedace (*Meda fulgida*), which are known to occur in the proposed LWC; and Loach minnow (*Tiaroga cobitis*), which could occur in the proposed LWC. Also, riparian forest in upper Hot Springs Canyon is proposed as Critical Habitat for the Yellow-billed cuckoo (*Coccyzus americanus*).

The proposed LWC contains grasslands of ecoregional importance

Source: “An assessment of the spatial extent and condition of grasslands in central and southern Arizona, southwestern New Mexico, and northern Mexico” by David F. Gori and Carolyn A.F. Enquist. Published in 2003 by The Nature Conservancy, Arizona Chapter.
Find it at: http://azconservation.org/downloads/category/grassland_assessment

This study assessed and characterized native grasslands, historical vegetation changes, and prospects for grassland restoration – primarily using fire – for the Apache Highlands Ecoregion in Arizona, New Mexico, and northern Mexico. They found that native grasslands with a low (<10%) shrub cover represent only 15.4% of all current and former grasslands in the study area. The BLM manages 17.5% of all current and former grasslands in the United States portion of the ecoregion, where only 1.2% of the highest quality grasslands are protected from land cover conversion. All of the upland ecosystems within the proposed LWC are characterized as native grasslands with a high potential for restoration (Condition Class B, 10-35% shrub cover). Protection of wilderness characteristics would contribute to the conservation of this important and diminishing ecological and cultural resource without adversely affecting fire management operations.

The proposed LWC falls within a priority Conservation Area as determined by The Nature Conservancy

Source: “An ecological analysis of conservation priorities in the Apache Highlands Ecoregion” by R.M. Marshall, D. Turner, A. Gondor, D. Gori, C. Enquist, G. Luna, R. Paredes Aguilar, S. Andersen, S. Schwartz, C. Watts, E. Lopez, and P. Comer. Published in 2004 by the The Nature Conservancy of Arizona, Instituto del Medio Ambiente y el Desarrollo Sustentable del estado de Sonora, agency and institutional partners.
Find it at: <http://azconservation.org/projects/ecoregions>

This study identified conservation focus areas for the Apache Highlands Ecoregion, which includes 30 million acres of central and southeastern Arizona, southwestern New Mexico, and north-central Mexico; bounded to the north by the Mogollon Rim, the west by the Mohave and Sonoran Deserts, the east by the Chihuahuan Desert, and to the south by the Sierra Madre Occidental. This was a collaborative, multi-disciplinary process which analyzed at-risk species and habitats, threats to ecosystem health, and effective solutions to maintain biodiversity and ecosystem resiliency. TNC completed the ecoregional assessment using advanced GIS and statistical computing tools to identify a network of conservation areas, across land ownership, where the most imperiled, keystone, or endemic ecosystems, species, and habitats could be protected with the least effort. The proposed LWC is within the Winchester Mountains Conservation Area, which encompasses 502,849 acres, and is the

optimum area for the conservation of Apachean grasslands, numerous raptors, native fish, pronghorn, black bear, several bats, and others. The protection of wilderness characteristics in the proposed LWC would contribute to the broader objectives of protecting the full range of native wildlife and ecosystems in the Apache Highlands Ecoregion. The table showing the target criteria from this analysis is provided in Appendix 2.

The proposed LWC is an important area of connectivity for wildlife movement

Source: "Pima County Wildlife Connectivity Assessment: Detailed Linkages: Santa Catalina/Rincon - Galiuro Linkage Design. Published in 2012 by the Arizona Game and Fish Department and the Regional Transportation Authority of Pima County. Find it at: http://www.azgfd.gov/w_c/conn_Pima.shtml

In this study, 18 focal wildlife species habitat needs were modeled and mapped based off of input from an interdisciplinary team of wildlife experts. The purpose was to identify the areas that are most important for maintaining habitat connectivity across the Middle San Pedro River Valley, linking the Santa Catalina/Rincon protected areas to the Galiuro protected areas. The entire proposed LWC falls within the area determined to be important for maintaining biodiversity across this expansive landscape, and protection of wilderness characteristics is an effective way to accomplish the objectives of this forward-thinking analysis. Species that utilize this important corridor include badger, black bear, white tailed deer, desert bighorn sheep, desert box turtle, kit fox, and mountain lion. Additionally, the proposed LWC was determined to be part of the biologically best corridor for jaguar movement.



From the Vista Trail, the view north over the Hot Springs Canyon Proposed LWC captures the vastness of the healthy grasslands and watersheds of the Muleshoe Cooperative Management Area.

Conclusion

The Arizona Wilderness Coalition recommends to the Bureau of Land Management that the proposed area should be managed for protection of wilderness characteristics according to the policies established in BLM Manuals 6310 and 6320. In this report, we have provided the requirements for a citizens' proposal, and documented that the proposed unit meets the criteria for size, naturalness, solitude, and primitive recreation. Furthermore, we have provided a summary of supplemental values that support the protection of the area for the purposes of conserving biodiversity, protecting and restoring watershed health, and for preserving the vibrant fabric of life that is cherished by the residents of Arizona and is the scenic backdrop to our lives.

The proposed LWC is in an exceptionally wild and natural condition. The unit is without any vehicle ways cutting into its heart, without much ranching infrastructure or range improvements, and it is lacking any mining impacts. Furthermore, because of the ecological restoration efforts taken on by BLM and TNC, this LWC is in a spectacularly natural state. Additional protection of this area as an LWC would help to insure that the high degree of naturalness is preserved into the future.

Without a doubt, the Hot Springs Canyon Proposed LWC provides outstanding opportunities for solitude. Hot Springs Canyon offers excellent seclusion in a rough and wild canyon that blocks the sights and sounds of the outside world. The riparian forest along Hot Springs Creek has abundant vegetative screening and the rolling topography throughout the rest of the unit provides ample topographic screening to shield visitors from each other. In sum, the proposed LWC features terrain and vegetation that support solitude and outstanding primitive recreational experiences.

The ecological attributes of the proposed LWC are exceptional. The combination of permanent running water, lush riparian woodland, native grasslands and good management supports outstanding biodiversity and species richness, especially for threatened, endangered and sensitive species. The remarkable ecological aspects of this unit are evident in the Area of Critical Environmental Concern designation of most of the unit, and in The Nature Conservancy's objectives for management on their neighboring parcels. Just a few miles downstream, the Cascabel Conservation Association also works for protection and restoration of the Hot Springs and Sierra Blanca watersheds, suggesting that those surrounding the proposed LWC fully support making the right decisions in regards to ecosystem management. The health and vitality of the Hot Springs ecosystem has direct effects on the San Pedro River, which is widely regarded as one of the most important riparian ecosystems in the southwest.

Because the Hot Springs Canyon Proposed LWC is an irreplaceable natural wonder, cherished for its rare wildlife, exciting adventure opportunities, and scenic values, and because stakeholders in its management have already moved towards ecological management, it is important that the BLM consider managing the unit for preservation of wilderness characteristics, a tool to ensure that natural processes can remain self-determining and resilient.

Hot Springs Canyon Proposed LWC

Appendix 1: Arizona Heritage Data Management System report for the Hot Springs Canyon Proposed LWC

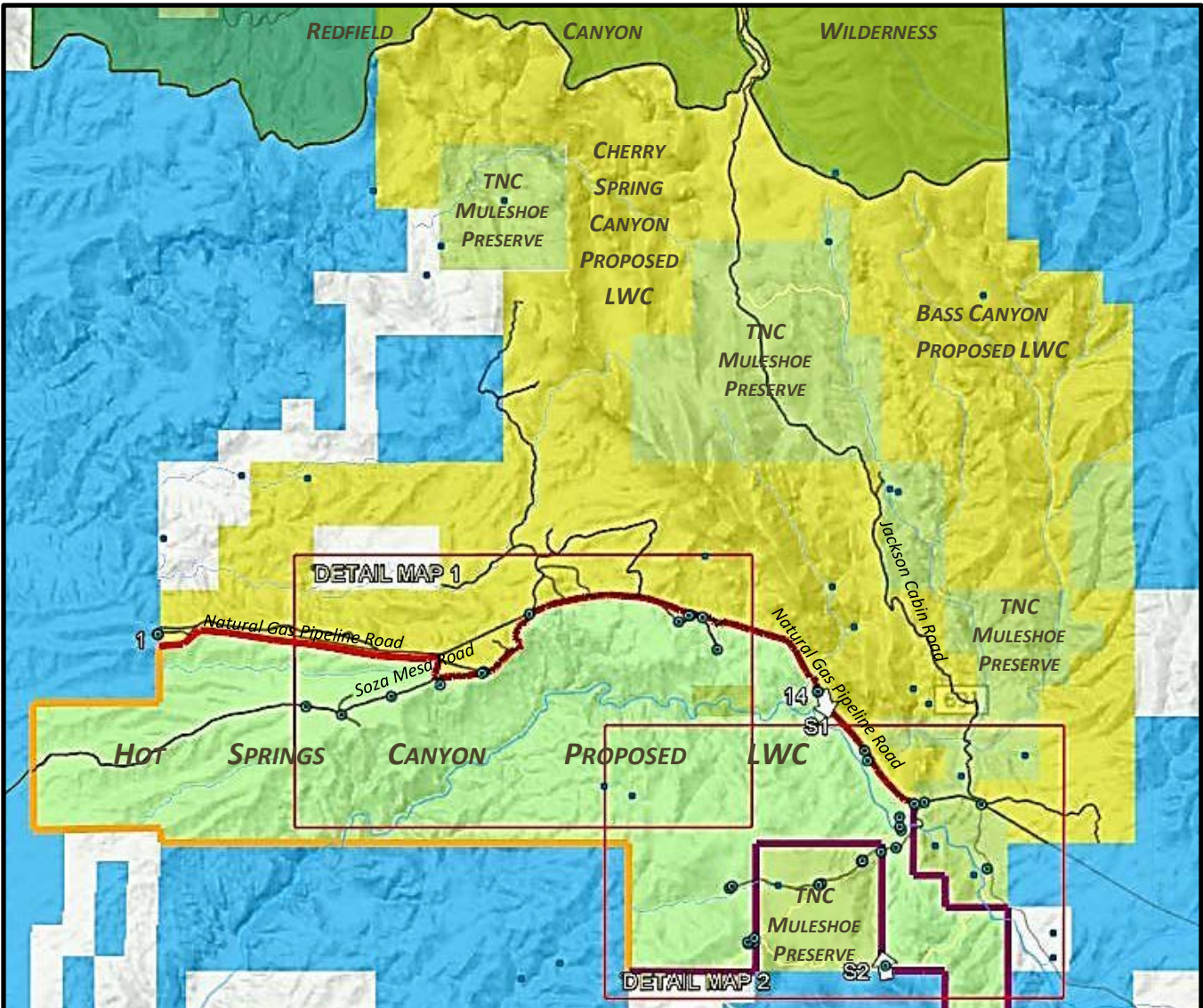
Quad Name	Scientific Name	Common Name	USES	USFS	BLM	GRANK	SRANK	SGCN	NPL
HOOKERS HOT SPRINGS	<i>Agosia chrysogaster chrysogaster</i>	Gila Longfin Dace	SC		S	G4T3T4	S3S4	1B	
HOOKERS HOT SPRINGS	<i>Aspidoscelis stictogramma</i>	Giant Spotted Whiptail	SC	S		G4	S2	1B	
HOOKERS HOT SPRINGS	<i>Bat Colony</i>					GNR	SU		
HOOKERS HOT SPRINGS	<i>Buteo albonotatus</i>	Zone-tailed Hawk				G4	S4		
HOOKERS HOT SPRINGS	<i>Buteo plagiatus</i>	Gray Hawk	SC			GNR	S3		
HOOKERS HOT SPRINGS	<i>Buteo swainsoni</i>	Swainson's Hawk				G5	S3	1C	
HOOKERS HOT SPRINGS	<i>Buteogallus anthracinus</i>	Common Black Hawk				G4G5	S3	1C	
HOOKERS HOT SPRINGS	<i>Camptostoma imberbe</i>	Northern Beardless-Tyrannulet		S		G5	S4	1B	
HOOKERS HOT SPRINGS	<i>Carex ultra</i>	Arizona Giant Sedge		S	S	G3?	S2		
HOOKERS HOT SPRINGS	<i>Catostomus clarkii</i>	Desert Sucker	SC	S	S	G3G4	S3S4	1B	
HOOKERS HOT SPRINGS	<i>Catostomus insignis</i>	Sonora Sucker	SC	S	S	G3G4	S3	1B	
HOOKERS HOT SPRINGS	<i>Choeronycteris mexicana</i>	Mexican Long-tongued Bat	SC	S	S	G4	S3	1C	
HOOKERS HOT SPRINGS	<i>Coccyzus americanus</i>	Yellow-billed Cuckoo (Western DPS)	LT	S		G5	S3	1A	
HOOKERS HOT SPRINGS	<i>Cyprinodon macularius</i>	Desert Pupfish	LE			G1	S1	1A	
HOOKERS HOT SPRINGS	<i>Gila intermedia</i>	Gila Chub	LE			G2	S2	1A	
HOOKERS HOT SPRINGS	<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S		G4	S4	1A	
HOOKERS HOT SPRINGS	<i>Heloderma suspectum suspectum</i>	Reticulate Gila Monster				G4T4	S4	1A	
HOOKERS HOT SPRINGS	<i>Lampropeltis getula nigrata</i>	Western Black Kingsnake				G5T3T4Q	S3	1B	
HOOKERS HOT SPRINGS	<i>Lasiurus cinereus</i>	Hoary Bat				G5	S4		
HOOKERS HOT SPRINGS	<i>Lasiurus xanthinus</i>	Western Yellow Bat		S		G5	S2S3	1B	
HOOKERS HOT SPRINGS	<i>Leptonycteris curasoae yerbabuena</i>	Lesser Long-nosed Bat	LE			G4	S2S3	1A	
HOOKERS HOT SPRINGS	<i>Lithobates yavapaiensis</i>	Lowland Leopard Frog	SC	S	S	G4	S3	1A	
HOOKERS HOT SPRINGS	<i>Lobelia laxiflora</i>	Mexican Lobelia				G4	S1		SR
HOOKERS HOT SPRINGS	<i>Peucaea carpalis</i>	Rufous-winged Sparrow				G4	S3	1B	
HOOKERS HOT SPRINGS	<i>Phemeranthus parviflorus</i>	Small-flowered Flameflower				G5	S3		
HOOKERS HOT SPRINGS	<i>Rhinichthys osculus</i>	Speckled Dace	SC		S	G5	S3S4	1B	
HOOKERS HOT SPRINGS	<i>Salvia amissa</i>	Aravaipa Sage	SC	S	S	G2	S2		
HOOKERS HOT SPRINGS	<i>Sigmodon ochrognathus</i>	Yellow-nosed Cotton Rat	SC			G4G5	S4	1C	
HOOKERS HOT SPRINGS	<i>Strix occidentalis lucida</i>	Mexican Spotted Owl	LT			G3T3	S3S4	1A	
HOOKERS HOT SPRINGS	<i>Terrapene ornata luteola</i>	Desert Box Turtle			S	G5T4	S2S3	1A	
SOZA MESA	<i>Agosia chrysogaster chrysogaster</i>	Gila Longfin Dace	SC		S	G4T3T4	S3S4	1B	
SOZA MESA	<i>Aspidoscelis stictogramma</i>	Giant Spotted Whiptail	SC	S		G4	S2	1B	
SOZA MESA	<i>Buteo albonotatus</i>	Zone-tailed Hawk				G4	S4		
SOZA MESA	<i>Buteogallus anthracinus</i>	Common Black Hawk				G4G5	S3	1C	
SOZA MESA	<i>Camptostoma imberbe</i>	Northern Beardless-Tyrannulet		S		G5	S4	1B	
SOZA MESA	<i>Carex ultra</i>	Arizona Giant Sedge		S	S	G3?	S2		
SOZA MESA	<i>Catostomus clarkii</i>	Desert Sucker	SC	S	S	G3G4	S3S4	1B	
SOZA MESA	<i>Catostomus insignis</i>	Sonora Sucker	SC	S	S	G3G4	S3	1B	
SOZA MESA	<i>Echinomastus erectocentrus var. erectocentrus</i>	Needle-spined Pineapple Cactus	SC			G3T3Q	S3		SR
SOZA MESA	<i>Eriogonum capillare</i>	San Carlos Wild-buckwheat	SC			G4	S4		SR
SOZA MESA	<i>Gila intermedia</i>	Gila Chub	LE			G2	S2	1A	
SOZA MESA	<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S		G4	S4	1A	
SOZA MESA	<i>Leptonycteris curasoae yerbabuena</i>	Lesser Long-nosed Bat	LE			G4	S2S3	1A	
SOZA MESA	<i>Lithobates yavapaiensis</i>	Lowland Leopard Frog	SC	S	S	G4	S3	1A	
SOZA MESA	<i>Meda fulgida</i>	Spikedace	LE			G2	S1	1A	
SOZA MESA	<i>Rhinichthys osculus</i>	Speckled Dace	SC		S	G5	S3S4	1B	
SOZA MESA	<i>Salvia amissa</i>	Aravaipa Sage	SC	S	S	G2	S2		

Appendix 2: Conservation targets table for the Winchester Mountains Conservation area, from Marshall et al., 2004: pages 127-128.

Conservation Area		53 Winchester Mountains/ Allen Flat/ Willcox Playa	Total Conservation Targets	53
Site size (hectares):		203,500	(acres):	502,849
Taxonomic Group	Scientific Name	Common Name	Global Rank	E&A Status
Ecological System		Apachean Grassland and Savanna Condition Class A	GU	
		Apachean Grassland and Savanna Condition Class B	GU	
		Apachean Grassland and Savanna Condition Class C	GU	
		Apachean Grassland and Savanna Condition Class D	GU	
		Apachean Shrubland	GU	
		Chihuahuan Desert Scrub	GU	
		Desert Riparian Woodland and Shrubland	GU	
		Desert Wash	GU	
		Interior Chaparral	GU	
		Madrean Encinal	GU	
		Madrean Oak-Fine Woodland	GU	
		Montane Mixed-Conifer Forest	GU	
		Montane Riparian Woodland and Shrubland	GU	
		Playa	GU	
	Sonoran Paloverde-Mixed Cacti Desert Scrub	GU		
Amphibian	<i>Rana blairi</i>	Plains leopard frog	G5	
	<i>Rana chiricahuensis</i>	Chiricahua leopard frog	G3	LT
Bird	<i>Rana yavapaiensis</i>	Lowland leopard frog	G4	
	<i>Accipiter gentilis</i>	Northern goshawk	G5	
	<i>Almophila carpalis</i>	Rufous-winged sparrow	G4	
	<i>Asturina nitida maxima</i>	Northern gray hawk	G3	
	<i>Athene cunicularia hypugaea</i>	Western burrowing owl	G4	
	<i>Buteo albonotatus</i>	Zone-tailed hawk	G4	
	<i>Buteogallus anthracinus</i>	Common black-hawk	G4	
	<i>Callipepla squamata</i>	Scaled quail	G5	
	<i>Coccyzus americanus occidentalis</i>	Western yellow-billed cuckoo	G3	C
	<i>Falco peregrinus anatum</i>	American peregrine falcon	G3	
	<i>Grus canadensis</i>	Sandhill crane	G5	
	<i>Strix occidentalis lucida</i>	Mexican spotted owl	G3	LT
	<i>Agostia chrysogaster</i>	Longfin dace	G4	
Fish	<i>Catostomus clarki</i>	Desert sucker	G3	
	<i>Catostomus insignis</i>	Sonora sucker	G3	
	<i>Gila intermedia</i>	Gila chub	G2	C
	<i>Rhinichthys osculus</i>	Speckled dace	G5	
	<i>Tiaroga cobitis</i>	Loach minnow	G2	LT
	<i>Abedus herberti</i>	Giant water bug	GU	
Mammal	<i>Antilocapra americana</i>	Pronghorn	G5	
	<i>Eumops perotis californicus</i>	Greater western mastiff bat	G4	
	<i>Leptonycteris curasoae</i>	Lesser long-nosed bat	G3	LE
	<i>Myotis velifer</i>	Cave myotis	G5	
	<i>Sciurus arizonensis</i>	Arizona tree squirrel	G4	
	<i>Sigmodon ochrognathus</i>	Yellow-nosed cotton rat	G4	
	<i>Ursus americanus</i>	Black bear	G5	
	<i>Cnemidophorus burti</i>	Giant spotted whiptail	G3	
Reptile	<i>Phrynosoma comutum</i>	Texas horned lizard	G4	
	<i>Atriplex griffithsii</i>	Griffith saltbush	G2	
	<i>Carex ultra</i>	Arizona giant sedge	G3	
	<i>Echinomastus erectocentrus</i> var <i>erectocentrus</i>	Needle-spined pineapple cactus	G3	
	<i>Hedeoma dentatum</i>	Mock pennyroyal	G3	
	<i>Lupinus lemmonii</i>	Lemmon's lupine	G1	
	<i>Penstemon discolor</i>	Catalina beardtongue	G2	
	<i>Salvia amissa</i>	Aravalpa sage	G2	
	<i>Samolus vagans</i>	Chiricahua mountain brookweed	G2	
	<i>Vascular plant</i>			

Section 3: Detailed Maps & Description of the Unit Boundary, Roads, Ways and Human Impacts

Overview Map with Boundary Segments & Detail Map Keys



Bur. of Land Management	PROPOSED LWC Unit	Detail Map Key	Area of Critical Environmental Concern	Designated Wilderness	National Forest	AZ State Trust Land	Private Land	TNC Muleshoe Preserve	Indian Reservation
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Unit boundary descriptions are organized by color-coded Boundary Segments. Detail Maps show photo points over 7.5' USGS topographic maps.

- **Boundary Segment A: Gas Pipeline Road (points 1 – 20)**
- **Boundary Segment B: Muleshoe Preserve (points 21 – 37)**
- **Boundary Segment C: Southwestern boundary with State & private land**

- S4 Scenic Photos shown in report text
- Photo Data Points (Numbers shown on Detail Maps)
- Wilderness Inventory Roads
- Primitive Routes or Vehicle Ways
- Trails or Reclaimed Ways
- Creeks, Canyons and Washes
- Springs



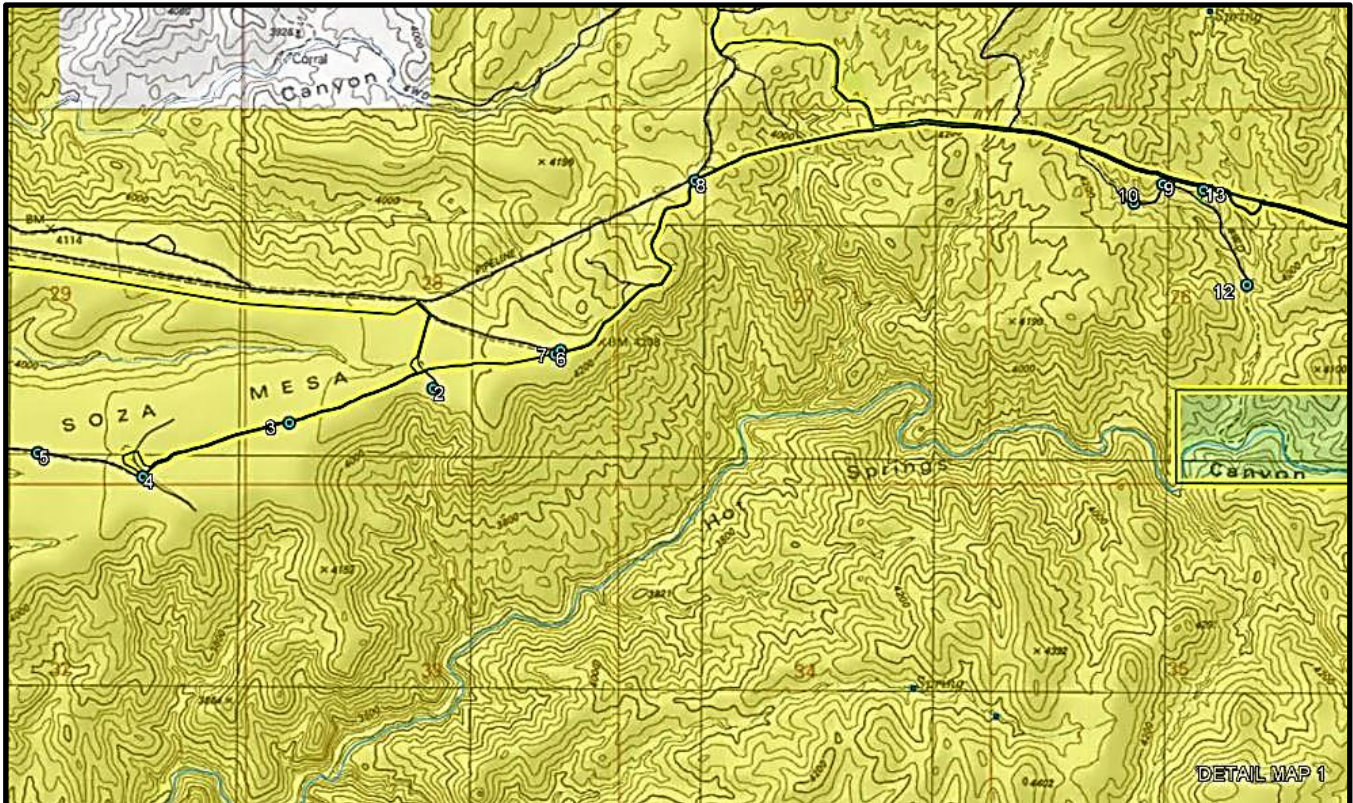
Map of Proposed LWC, showing boundary description segments and detail map keys. Background map OSM Shaded Relief. Data: Google Earth, Bing, BLM, USGS, US Census, AZDOT, TWS, Field Survey. Projection: WGS 84 – UTM Zone 12N Produced for Arizona Wilderness Coalition by Joe Trudeau, Hassayampa Forestry & Ecological. April 2016. www.az-eco.com.

1 mile

3 miles

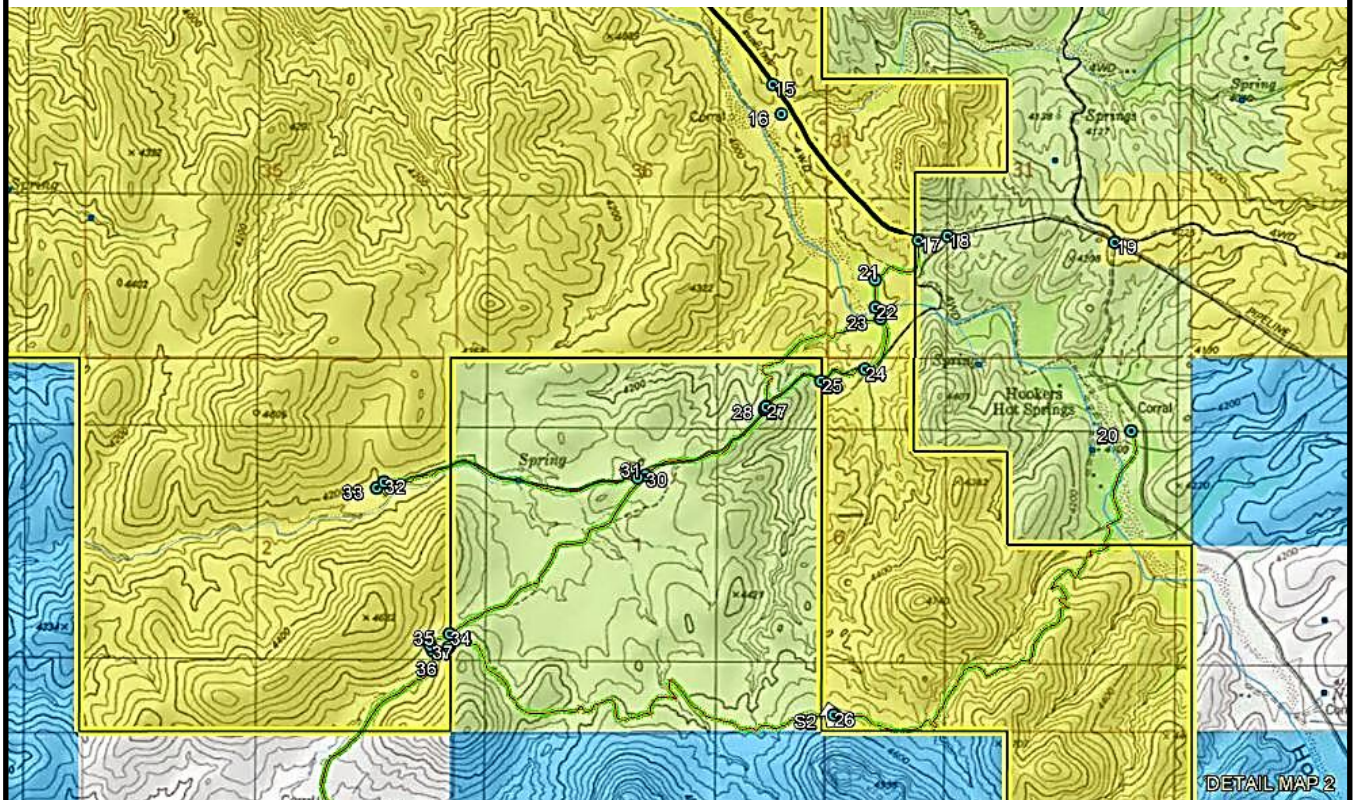


Detail Maps with Photopoint Locations: (Refer to Overview Map Legend for Symbology; Scale varies)



DETAIL MAP 1: POINTS 2 – 13 ALONG SOZA MESA ROAD AND THE GAS PIPELINE ROAD. SOZA MESA ROAD IS A CHERRYSTEM TO POINT 4 BUT BECOMES A WAY BEYOND THAT, SHOWN IN POINT 5. ALSO SHOWN IS THE 600-700 FOOT DEEP GORGE THROUGH WHICH RUNS HOT SPRINGS CREEK.

DETAIL MAP 2: POINTS 15 – 19 ALONG THE PIPELINE ROAD; POINT 20 AT THE HEADQUARTERS OF THE MULESHOE PRESERVE; POINTS 21 – 37 ALONG THE WAYS AND TRAILS ON BLM AND TNC LAND (SHOWN IN GREEN).



Narrative Description of the Proposed LWC Boundary & Vehicle Routes

Segment A: Gas Pipeline & Soza Mesa Road SEE UNIT OVERVIEW MAP AND DETAIL MAPS 1 & 2

General Description: This unit's northern boundary follows a natural gas pipeline and Soza Mesa Road, from State Trust land at point 1 at the west, to The Nature Conservancy's land at point 17 at the east. The gas pipeline is closed to public vehicle travel from point 14 on BLM to point 19 on TNC land to protect sensitive aspects of Bass Canyon. Administrative use still occurs, as seen in point 14. Points 6 and 7 display images of Soza Mesa Road farther to the east where it serves as the unit boundary, and point 8 shows a long view down a portion of the pipeline which is not used as road.

Cherrystems: One route is cherrystemmed, providing access to a dirt tank on Soza Mesa.

-Point 3 displays an image of Soza Mesa Road as it leads to an earth-bermed tank which is also excluded from the unit. Past this tank, the route becomes increasingly brushy and has not been maintained for a long time.

Ways:

-Point 2 shows a very short unmaintained way that leads to a primitive campsite.

-Point 4 shows a short way that was built to funnel water towards the bermed tank.

-Point 5 documents that Soza Mesa Road becomes an unmaintained way after the earth-bermed tank. The route becomes thickly vegetated as it proceeds west towards State Trust Lands.

-Points 9-11, and point 13 display photographs of a few more unmaintained primitive routes with no apparent purpose. Point 12 shows the vehicle closure point at the end of the way seen in point 11. Vehicular use is prohibited behind the sign.

Associated Human Impacts: There are no major human impacts along this boundary segment.

Segment B: Southeastern Boundary: TNC's Muleshoe Preserve SEE DETAIL MAP 2

General Description: The southeastern boundary is the BLM property line with TNC's Muleshoe Preserve, other private lands, and State Trust Lands.

Boundary Adjustments: There are no boundary line adjustments along the eastern boundary, the unit boundary follows the property line.

Cherrystems: There are no cherrystems along this boundary segment. Old vehicle routes are all unmaintained ways.

Ways:

-One old way penetrates the unit from in this area, leaving the gas pipeline at point 17 on TNC land. Portions of this way are called the old Marshall Road, but are now used primarily as the Vista Trail. The route leads to the Sierra Blanca well. There was once a windmill but that has been replaced by a solar array and plastic tank. As our photopoints show, this route is seldom driven, if at all, and

has become a foot trail. See points 17, 21, 22, 24, and 25 (on BLM land); points 27-31 (on TNC land); and points 32 & 33 (back on BLM land). A spur from this old route (seen at left at point 30) is the old Mitchell Road, which once led to a corral on private land. This route is now a foot path and is not used by vehicles (see points 34-36).

-Point 18 was taken at the location of a supposed route that the BLM identified in their route inventory, but that does not exist on the ground.

-Point 20 displays an image of the trailhead for Vista Trail on Nature Conservancy land. The Vista Trail passes through the LWC in two different sections in the southeast part of the unit. Points 26, 34 and 37 show the Vista Trail entering the proposed LWC unit in three different locations. Point 35 was taken at the intersection of the Vista Trail and the old Mitchell Road. Point 36 shows another image of the old Mitchell Road, which is now a primitive route that receives only foot traffic. Points 23 and 28 show images of the Hot Spring Trail, which also receives non-motorized use only.

Associated Human Impacts: There are no major human impacts along the southeastern border. The trails in this area are hand-maintained foot paths that provide outstanding recreation experiences with excellent scenery.

Segment C: Southwestern Boundary: State Trust & Private lands SEE UNIT OVERVIEW MAP

General Description: The southwestern boundary is entirely comprised of the BLM property boundary with private and State Trust Lands.

Boundary Adjustments: There are no boundary adjustments along this boundary.

Cherrystems: There are no cherrystems along the southwestern boundary.

Ways:

-Point 5 displays an image of a way that passes over the western boundary. As point 5 depicts, this way is growing in with brush, is kept open solely by the passage of vehicles, and apparently receives very little vehicular use.


Associated Human Impacts: There are no major human impacts along this boundary.

That completes the narrative description of the unit boundary, vehicle ways, and human impacts.


Section 4: Photopoint Data

Attributes	
Point	1
Unit name	Hot Springs Canyon
Route name	Soza Mesa Road
Maintenance	Likely if needed
Use	4-WD Trucks, OHV's
Purpose	Utility access/ROW, Recreation, Ranching
Feature notes	
Position	Hillside
Determination	Road
Other notes	
Status	Open - unsigned

Point 001



Google
Digitized by USDA Farm Service Agency




N 32° 21' 48.39"
W 110° 20' 56.68"
Elevation: 3950 ft
Photo Direction: 91° E


Point 001
2/25/2016

Attributes	
Point	2
Unit name	Hot Springs Canyon
Route name	Not Named
Maintenance	None
Use	4-WD Trucks
Purpose	Camping
Feature notes	
Position	Foothills
Determination	Way
Other notes	
Status	Open - unsigned

Point 002



Google
Digitized by USDA Farm Service Agency




N 32° 21' 27.67"
W 110° 18' 39.23"
Elevation: 4167 ft
Photo Direction: 30° NNE


Point 002
2/25/2016

Attributes	
Point	3
Unit name	Hot Springs Canyon
Route name	Soza Mesa Road
Maintenance	Old evidence - 5-10 years ago
Use	4-WD Trucks
Purpose	Earth-bermed tanks, camping
Feature notes	
Position	Foothills
Determination	Road
Other notes	Cherrystem
Status	Open - unsigned

Point 003



Google
Digitized by USDA Farm Service Agency





N 32° 21' 22.88"
W 110° 19' 03.05"
Elevation: 4153 ft
Photo Direction: 88° E

Point 003
2/25/2016

Hot Springs Canyon Proposed LWC

Attributes	
Point	4
Unit name	Hot Springs Canyon
Route name	None
Maintenance	None
Use	4-WD Trucks
Purpose	Built to funnel water towards tank
Feature notes	
Position	Foothills
Determination	Way
Other notes	Kept open solely by passage of vehicles
Status	Open - unsigned

Point 004






N 32° 21' 15.34"
W 110° 19' 27.29"
Elevation: 4124 ft
Photo Direction: 120° ESE

Point 004
2/25/2016

Attributes	
Point	5
Unit name	Hot Springs Canyon
Route name	Soza Mesa Road
Maintenance	None
Use	Infrequent ATV or truck use
Purpose	Ranching
Feature notes	Very Brushy
Position	Foothills
Determination	Way
Other notes	Kept open solely by passage of vehicles
Status	Open - unsigned

Point 005






N 32° 21' 18.67"
W 110° 19' 44.68"
Elevation: 4118 ft
Photo Direction: 117° ESE

Point 005
2/25/2016

Attributes	
Point	6
Unit name	Hot Springs Canyon
Route name	Soza Mesa Road
Maintenance	Old evidence - 5-10 years ago
Use	4-WD Trucks
Purpose	Earth-bermed tanks, camping
Feature notes	
Position	Foothills
Determination	Road
Other notes	Unit Boundary
Status	Open - unsigned

Point 006


N 32° 21' 32.44"
W 110° 18' 19.03"
Elevation: 4212 ft
Photo Direction: 258° WSW

Point 006
2/25/2016


Hot Springs Canyon Proposed LWC

Attributes	
Point	7
Unit name	Hot Springs Canyon
Route name	Soza Mesa Road
Maintenance	Likely if needed
Use	4-WD Trucks
Purpose	Ranching, recreation, other uses
Maintenance	Old evidence - 3-5 years ago
Position	Foothills
Determination	Road
Other notes	Unit Boundary
Status	Open - unsigned

Point 007



Google
Digitized by USDA Farm Service Agency




N 32° 21' 32.96"
W 110° 18' 18.14"
Elevation: 4203 ft
Photo Direction: 96° E


Point 007
2/25/2016

Attributes	
Point	8
Unit name	Hot Springs Canyon
Route name	Natural Gas Pipeline
Construction	Bladed for pipeline construction
Use	Almost none for this portion of pipeline
Purpose	Utility access/ROW
Feature notes	Rough, lightly used route
Determination	Road/ROW
Feature	Typical Condition of Route/Way
Feature notes	
Other notes	Unit Boundary

Point 008



Google
Digitized by USDA Farm Service Agency




N 32° 21' 56.67"
W 110° 17' 55.90"
Elevation: 4083 ft
Photo Direction: 56° NE


Point 008
2/25/2016

Attributes	
Point	9
Unit name	Hot Springs Canyon
Route name	Not Named
Construction	Probably only bladed once
Use	4-WD Trucks
Purpose	None apparent
Maintenance	None
Determination	Way
Feature	Typical Condition of Route/Way
Feature notes	
Other notes	

Point 009



Google
Digitized by USDA Farm Service Agency




N 32° 21' 56.19"
W 110° 16' 38.39"
Elevation: 4116 ft
Photo Direction: 211° SSW

Point 009
2/26/2016


Hot Springs Canyon Proposed LWC

Attributes	
Point	10
Unit name	Hot Springs Canyon
Route name	Not Named
Construction	Probably only bladed once
Use	4-WD Trucks
Purpose	None apparent
Maintenance	None
Determination	Way
Feature	Typical Condition of Route/Way
Feature notes	
Other notes	

Point 010



Google
Digitized by USDA Farm Service Agency




N 32° 21' 53.57"
W 110° 16' 43.18"
Elevation: 4087 ft
Photo Direction: 108° ESE


Point 010
2/26/2016

Attributes	
Point	11
Unit name	Hot Springs Canyon
Route name	Not Named
Construction	Probably only bladed once
Use	4-WD Trucks
Purpose	None apparent
Maintenance	None
Determination	Way
Feature	Typical Condition of Route/Way
Feature notes	
Other notes	

Point 011



Google
Digitized by USDA Farm Service Agency



N 32° 21' 56.18"
W 110° 16' 37.47"
Elevation: 4114 ft
Photo Direction: 111° ESE

Point 011
2/26/2016

Attributes	
Point	12
Unit name	Hot Springs Canyon
Route name	Not Named
Construction	Probably only bladed once
Use	None
Purpose	None apparent
Maintenance	None
Determination	Way
Feature	Closure point
Feature notes	No vehicle use permitted
Other notes	

Point 012



Google
Digitized by USDA Farm Service Agency




N 32° 24' 42.09"
W 110° 16' 24.51"
Elevation: 3954 ft
Photo Direction: 180° S

Point 012
2/26/2016

Hot Springs Canyon Proposed LWC

Attributes	
Point	13
Unit name	Hot Springs Canyon
Route name	Not Named
Construction	Probably only bladed once
Use	4-WD Trucks
Purpose	Unknown
Maintenance	None
Determination	Way
Feature	Typical Condition of Route/Way
Feature notes	
Other notes	

Point 013






N 32° 21' 55.36"
 W 110° 16' 31.66"
 Elevation: 4085 ft
 Photo Direction: 202° SSW

Point 013
2/26/2016

Attributes	
Point	14
Unit name	Hot Springs Canyon
Route name	Natural Gas Pipeline Road
Construction	Bladed & Cut and Fill
Use	4-WD Trucks, restricted access
Purpose	Utility access/ROW
Maintenance	Likely if needed
Determination	Road
Feature	Closure point
Feature notes	Locked gate
Other notes	Unit Boundary

Point 014






N 32° 21' 24.86"
 W 110° 15' 35.51"
 Elevation: 3981 ft
 Photo Direction: 143° SE

Point 014
2/26/2016

Attributes	
Point	15
Unit name	Hot Springs Canyon
Route name	Natural Gas Pipeline Road
Construction	Bladed
Use	4-WD Trucks (Utility, BLM, & TNC only)
Purpose	Utility access/ROW
Maintenance	Likely if needed
Determination	Road
Feature	Typical Condition of Route/Way
Feature notes	
Other notes	Unit Boundary

Point 015



N 32° 21' 00.59"
 W 110° 15' 12.79"
 Elevation: 3970 ft
 Photo Direction: 146° SE

Point 015
2/26/2016

Hot Springs Canyon Proposed LWC

Attributes	
Point	16
Unit name	Hot Springs Canyon
Route name	Bass canyon trail
Construction	Hand labor
Use	Foot use
Purpose	Recreation
Maintenance	Hand labor
Determination	Trail
Feature	Trail
Feature notes	
Other notes	

Point 016






N 32° 20' 56.47"
 W 110° 15' 11.35"
 Elevation: 3948 ft
 Photo Direction: 270° W

Point 016
 2/26/2016

Attributes	
Point	17
Unit name	Hot Springs Canyon
Route name	Not Named
Construction	Probably only bladed once
Use	4-WD Trucks
Purpose	Access route to well
Maintenance	None
Determination	Way
Feature	Typical Condition of Route/Way
Feature notes	
Other notes	

Point 017






N 32° 20' 38.75"
 W 110° 14' 48.62"
 Elevation: 4085 ft
 Photo Direction: 180° S

Point 017
 2/26/2016

Attributes	
Point	18
Unit name	Hot Springs Canyon
Route name	N/A
Construction	No evidence
Use	N/A
Purpose	N/A
Maintenance	None
Determination	Nothing
Feature	No route exists
Feature notes	
Other notes	

Point 018


N 32° 20' 39.35"
 W 110° 14' 43.78"
 Elevation: 4067 ft
 Photo Direction: 180° S

Point 018
 2/26/2016


Hot Springs Canyon Proposed LWC

Attributes	
Point	19
Unit name	Hot Springs Canyon
Route name	Natural Gas Pipeline Road
Maintenance	Likely if needed
Use	4-WD Trucks
Purpose	Utility access/ROW
Feature notes	
Position	Hillside
Determination	Road
Other notes	
Status	Closed - gated

Point 019



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N 32° 20' 38.46"
W 110° 14' 16.00"
Elevation: 4217 ft
Photo Direction: 289° WNW


Point 019
2/25/2016

Attributes	
Point	20
Unit name	Hot Springs Canyon
Route name	Vista trail
Construction	Hand labor
Use	Foot use
Purpose	Recreation
Maintenance	Hand labor
Determination	Trail
Feature	Trailhead on TNC land
Feature notes	
Other notes	

Point 020



Google
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N 32° 20' 12.01"
W 110° 14' 13.29"
Elevation: 4088 ft
Photo Direction: 180° S


Point 020
2/27/2016

Attributes	
Point	21
Unit name	Hot Springs Canyon
Route name	Not Named
Construction	Probably only bladed once
Use	rare ATV use
Purpose	Access route to well
Maintenance	None
Determination	Way
Feature	Typical Condition of Route/Way
Feature notes	
Other notes	Kept open solely by passage of vehicles

Point 021



Google
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N 32° 20' 33.24"
W 110° 14' 55.80"
Elevation: 4002 ft
Photo Direction: 180° S

Point 021
2/26/2016


Hot Springs Canyon Proposed LWC

Attributes	
Point	22
Unit name	Hot Springs Canyon
Route name	Not Named
Construction	Probably only bladed once
Use	Rare ATV use
Purpose	Access route to well
Maintenance	None
Determination	Way
Feature	Typical Condition of Route/Way
Feature notes	
Other notes	

Point 022



Google
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N 32° 20' 29.35"
W 110° 14' 55.75"
Elevation: 3997 ft
Photo Direction: 152° SSE

Point 022
2/26/2016

Attributes	
Point	23
Unit name	Hot Springs Canyon
Route name	Hot Springs trail
Construction	Hand labor
Use	Foot use
Purpose	Recreation
Maintenance	Likely if needed
Determination	Trail
Feature	Typical Condition of Route/Way
Feature notes	
Other notes	

Point 023



Google
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N 32° 20' 27.80"
W 110° 14' 54.90"
Elevation: 4010 ft
Photo Direction: 270° W


Point 023
2/26/2016

Attributes	
Point	24
Unit name	Hot Springs Canyon
Route name	Not Named
Construction	Probably only bladed once
Use	Rare ATV use
Purpose	Access route to well
Maintenance	None
Determination	Way
Feature	Typical Condition of Route/Way
Feature notes	
Other notes	

Point 024



Google
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N 32° 20' 20.69"
W 110° 14' 57.50"
Elevation: 4046 ft
Photo Direction: 270° W

Point 024
2/26/2016

Hot Springs Canyon Proposed LWC

Attributes	
Point	25
Unit name	Hot Springs Canyon
Route name	Not Named
Construction	Probably only bladed once
Use	Rare ATV use
Purpose	Access route to well
Maintenance	None
Determination	Way
Feature	Revegetating
Feature notes	
Other notes	

Point 025






N 32° 20' 19.01"
 W 110° 15' 04.78"
 Elevation: 4138 ft
 Photo Direction: 75° ENE

Point 025
2/26/2016

Attributes	
Point	26
Unit name	Hot Springs Canyon
Route name	Vista Trail
Construction	Hand labor
Use	Foot use
Purpose	Recreation
Maintenance	None
Determination	Trail
Feature	Typical Condition of Route/Way
Feature notes	
Other notes	

Point 026






N 32° 19' 32.20"
 W 110° 15' 02.71"
 Elevation: 4547 ft
 Photo Direction: 90° E

Point 026
2/27/2016

Attributes	
Point	27
Unit name	Hot Springs Canyon
Route name	Marshall Road
Construction	Probably only bladed once
Use	Rare ATV use
Purpose	Recreation, well access
Maintenance	None
Determination	Way
Feature	Typical Condition of Route/Way
Feature notes	No recent vehicular use
Other notes	Very low vehicular use

Point 027


N 32° 20' 15.40"
 W 110° 15' 13.90"
 Elevation: 4252 ft
 Photo Direction: 48° NE

Point 027
2/27/2016


Hot Springs Canyon Proposed LWC

Attributes	
Point	28
Unit name	Hot Springs Canyon
Route name	Vista Trail
Construction	Hand labor
Use	Foot use
Purpose	Recreation
Maintenance	Hand labor
Determination	Trail
Feature	Junction of Routes/Ways
Feature notes	
Other notes	

Point 028



Google
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N 32° 20' 15.40"
W 110° 15' 13.90"
Elevation: 4271 ft
Photo Direction: 0° N


Point 028
2/27/2016

Attributes	
Point	29
Unit name	Hot Springs Canyon
Route name	Vista Trail/ Marshall Rd
Construction	Probably only bladed once
Use	Foot use/Rare ATV use
Purpose	Recreation & well access
Maintenance	None
Determination	Way/Trail
Feature	Typical Condition of Route/Way
Feature notes	
Other notes	Very low vehicular use

Point 029



Google
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N 32° 20' 15.01"
W 110° 15' 14.19"
Elevation: 4260 ft
Photo Direction: 207° SSW


Point 029
2/27/2016

Attributes	
Point	30
Unit name	Hot Springs Canyon
Route name	Vista Trail & Marshall Road
Construction	Hand labor
Use	Foot use, rare ATV use to the right
Purpose	Recreation & well access
Maintenance	None
Determination	Trail
Feature	Junction of Routes/Ways
Feature notes	Sign for Vista Trail & Sierra Blanca Windmill
Other notes	

Point 030



Google
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N 32° 20' 05.83"
W 110° 15' 33.93"
Elevation: 4279 ft
Photo Direction: 240° WSW

Point 030
2/27/2016

Hot Springs Canyon Proposed LWC

Attributes	
Point	31
Unit name	Hot Springs Canyon
Route name	Marshall Rd
Construction	Probably only bladed once
Use	Rare ATV use
Purpose	Well/Water tanks
Maintenance	None
Determination	Way
Feature	Typical Condition of Route/Way
Feature notes	
Other notes	Very low vehicular use



Point 031




N 32° 20' 05.46"
 W 110° 15' 35.24"
 Elevation: 4292 ft
 Photo Direction: 260° W
 Point 031
 2/27/2016

Attributes	
Point	32
Unit name	Hot Springs Canyon
Route name	Marshall Rd
Construction	Probably only bladed once
Use	No evidence
Purpose	Solar well & water tank
Maintenance	None
Determination	Way
Feature	Typical Condition of Route/Way
Feature notes	Revegetating
Other notes	



Point 032

N 32° 20' 04.86"
 W 110° 16' 17.33"
 Elevation: 4200 ft
 Photo Direction: 80° E
 Point 032
 2/27/2016

Attributes	
Point	33
Unit name	Hot Springs Canyon
Route name	At end of Marshall Road
Construction	N/A
Use	Well, solar panels, tanks
Purpose	N/A
Maintenance	N/A
Determination	N/A
Feature	Old Sierra Blanca Windmill site
Feature notes	Installed 5 years ago by TNC
Other notes	To replace old windmill

Point 033






N 32° 20' 04.05"
 W 110° 16' 18.54"
 Elevation: 4208 ft
 Photo Direction: 12° NNE
 Point 033
 2/27/2016

Hot Springs Canyon Proposed LWC

Attributes	
Point	34
Unit name	Hot Springs Canyon
Route name	Vista Trail (Old Mitchell Road)
Construction	Bladed
Use	Foot use
Purpose	Recreation
Maintenance	None
Determination	Trail
Feature	Typical Condition of Route/Way
Feature notes	No vehicular use
Other notes	

Point 034






N 32° 19' 43.57"
W 110° 16' 06.44"
Elevation: 4361 ft
Photo Direction: 240° WSW

Point 034
2/27/2016

Attributes	
Point	35
Unit name	Hot Springs Canyon
Route name	Vista Trail & Old Mitchell Road
Construction	Hand Work
Use	Foot use
Purpose	Recreation
Maintenance	
Determination	Trail
Feature	Trail intersection sign
Feature notes	No vehicular use
Other notes	

Point 035






N 32° 19' 41.91"
W 110° 16' 09.65"
Elevation: 4388 ft
Photo Direction: 195° SSW

Point 035
2/27/2016

Attributes	
Point	36
Unit name	Hot Springs Canyon
Route name	Old Mitchell Road
Construction	No evidence
Use	Foot use
Purpose	Recreation
Maintenance	None
Determination	Trail
Feature	Typical Condition of Route/Way
Feature notes	No vehicle use
Other notes	Difficult to locate trail

Point 036






N 32° 19' 41.23"
W 110° 16' 09.25"
Elevation: 4370 ft
Photo Direction: 194° SSW

Point 036
2/27/2016

Attributes	
Point	37
Unit name	Hot Springs Canyon
Route name	Vista Trail
Construction	Hand labor
Use	Foot use
Purpose	Recreation
Maintenance	None
Determination	Trail
Feature	Typical Condition of Route/Way
Feature notes	
Other notes	

Point 037

N 32° 19' 41.73"
W 110° 16' 06.56"
Elevation: 4403 ft
Photo Direction: 251° WSW

Point 037
2/27/2016