

**Environmental Assessment for Mojave National Preserve:
Rock House and Rock Spring Visitor Education
and Accessibility Improvements**



Rock House with Hiker (Mills (2009))

March 6, 2009

**Mojave National Preserve
2701 Barstow Road
Barstow, CA 92311**

PURPOSE and NEED

The purpose of the proposed action is to improve the visitor experience at the Rock House and Rock Spring, thereby offering accessible recreational opportunities apart from existing sights concentrated in a few locations. Both of these features are points of interest for visitors to Mojave National Preserve. The barbed wire fence surrounding the Rock House makes the site inaccessible for visitors with special needs; people wanting to visit the house must climb through the wire fence, risking injury to themselves or damage to their belongings. There are illegal fire rings, visitors illegally entering a closed road off the parking lot, and considerable debris that should be cleaned up and removed.

There are few features in Mojave National Preserve that are easily accessible. Mojave National Preserve has a great need to offer more accessible activities to visitors. This point is emphasized in the Preserve's enabling legislation, the California Desert Protection Act of 1994: "The Mojave Desert area provides an outstanding opportunity to develop services, programs, accommodations and facilities to ensure the use and enjoyment of the area by individuals with disabilities..." (PL 103-433, §501(5))

Rock House and Rock Spring are both close to Cedar Canyon Road and are attractive points of interest for park visitors. Rock Spring is currently accessed by walking 300 yards from an unmarked sandy 4x4 road leading south from Cedar Canyon Road. There is a wayside exhibit at the start of this path. There is a wayside exhibit at the start of this path, which is located about three vertical feet higher than the road surface due to annual flooding from the nearby wash. Alternately, visitors can drive their vehicles close to the Rock House from Cedar Canyon Road on another unmarked dirt road. If they do so, there is no indication that a spring lies within easy walking distance. The fence prevents excessive ground disturbance close to the building, although there is a faint circular dirt driveway in front of the cabin. Cleaning up and improving the infrastructure at this location will increase its popularity as a destination point.

At present, there is a social trail between the Rock House and Rock Spring which is being heavily impacted by cattle. Cattle are also heavily impacting Rock Spring and, in the process, destroying its aesthetic value and use as a riparian habitat. Repair of the cattle fences is being addressed separately from this document. The cattle will be contained in the Round Valley grazing allotment once a cattle fence has been reconstructed.

ALTERNATIVES

No Action

In the case of No Action, the Rock House and Rock Spring area will remain in their current conditions.

As continued annual flooding of Watson Wash occurs, the vertical distance between the 4x4 road and the start of the trail will widen, making it increasingly difficult to find and reach the trailhead at this location. In addition, the road condition will deteriorate, making it harder for even 4x4 vehicles to access the road. Currently visitors without 4x4 vehicles are advised to park on the shoulder of Cedar Canyon Road and walk to Rock Springs, about ½ mile away. Rock Springs is out of reach for visitors with accessibility issues. Moreover, Cedar Canyon is an improved dirt road with no distinct shoulders, and the parking area is at the base of a curve. Thus, there are concerns about the safety of visitors and their vehicles when accessing the area at this location.

There are several misunderstandings among Mojave's visitors about the Rock House, likely a result of inadequate signage. Many people assume the Rock House is private property and do not realize they may visit the site. The lack of interpretive exhibits may reinforce the assumption that visitors are not allowed. The nearby vault toilet seems to attract overnight camping despite the fact that the Rock House is not a legal campsite.

With the current limited availability for vehicles, visitors will continue to illegally access the closed road. People will continue to remove the wooden post barriers to access the closed road. Without an understanding of the significance of the Rock House and surrounding area, vandalism will likely continue and may increase. The structure will deteriorate without routine maintenance.

Once the cattle fence has been reconstructed, Rock Spring and the lands surrounding Rock Spring and the Rock House will no longer be impacted by cattle; in consequence, water quality at Rock Spring should improve. The social trail between Rock House and Rock Spring will no longer be trampled by cattle or scattered with manure.

Proposed Action

Mojave National Preserve proposes a series of actions to make the Rock House and Rock Spring a destination point for park visitors. Two options for a trail between Rock House and Rock Spring are described at the end of this section.

A duplicate wayside exhibit featuring a historic pictograph will be installed near Rock Spring. Along a short walk further east on the trail, a second duplicate wayside exhibit will be installed where the remains of the historic corral can be seen. The trail continues to the parking area where the current Rock Springs exhibits are installed to allow users entering from this location to take the loop walk, as well. Brush along trail will be trimmed, as necessary, for hiker safety. The trail then heads west again at the historic plaque, and climb up another ridgeline that offers scenic

views to the north of the New York Mountains and then back to Rock House and beyond. The trail descends off the ridgeline then climbs back up to the Rock House at the end.

Existing illegal fire rings and trash near the parking area will be removed. A picnic table will be installed and chained in place on the edge of the parking area. The wooden posts to keep traffic out of a closed road off the parking lot will be cemented into place to prevent removal. The "Rock House - Come on Up" wooden sign is being duplicated and will be installed near the entrance gate inside the fence. A new exhibit will be installed inside the fence explaining the significance of the Rock House. A hiker gate that was also accessible for wheelchair users would be installed to the left of the current vehicle gate.

As funding becomes available, hardened material will be placed on the surface of current driveway for wheelchair users to get around the Rock House itself. Signs will be installed at the three road junctions with Cedar Canyon Road that lead to the trailheads. Trailhead signs will be placed at the Rock House parking lot, behind Rock House, and at the present Rock Springs exhibits with name of trail and trail length. Trail directional signs will be installed pointing to the actual springs and at the trail junction by the historic plaque. "Road Closed" signs will be installed on the posts that prevent entry onto a closed road. An exhibit or sign will be installed inside fence to request that visitors not collect or deface historic or cultural objects.

A dumpster will be temporarily placed on site for the removal of non-historic debris. The park archeologist will determine which items should be removed and which have historic value.

The historic wooden walls and floor of the Rock House will be cleaned and protected with Murphy's Oil Soap, a substance approved by the regional historic preservationist. This water-based cleaner is non-toxic; for use, it is diluted in water and wiped on the walls. No gloves, masks, or ventilation is required during use. Murphy's Oil Soap is the preferred product for cleaning and preservation by the historic preservation crew that completed the restoration of the Rock House in 2003.

All work will be carried out by volunteers, with maintenance staff providing oversight and assistance. Members of the Volunteer Vacations group will camp outside the Rock House and use the outdoor patio as a kitchen area. Maintenance staff will be available for two days of the project to provide and mix cement and oversee all projects involving installation of signs, gates, fence posts, and exhibits. Park maintenance staff will also periodically grade and maintain the two western entrance roads to the Rock House ensure vehicle access.

Trail Option A: Loop Trail

Trail Option A proposes a loop to connect the Rock House to Rock Spring. In Figure 1 below, Option A follows an established animal path and abandoned road along the southern leg. It comes back along the northern leg following a ridgeline. Approximately 0.55 mile of new trail will be forged through currently undisturbed habitat. The proposed route will provide views of the former mill site near the Rock House. Its design follows NPS trail standards.

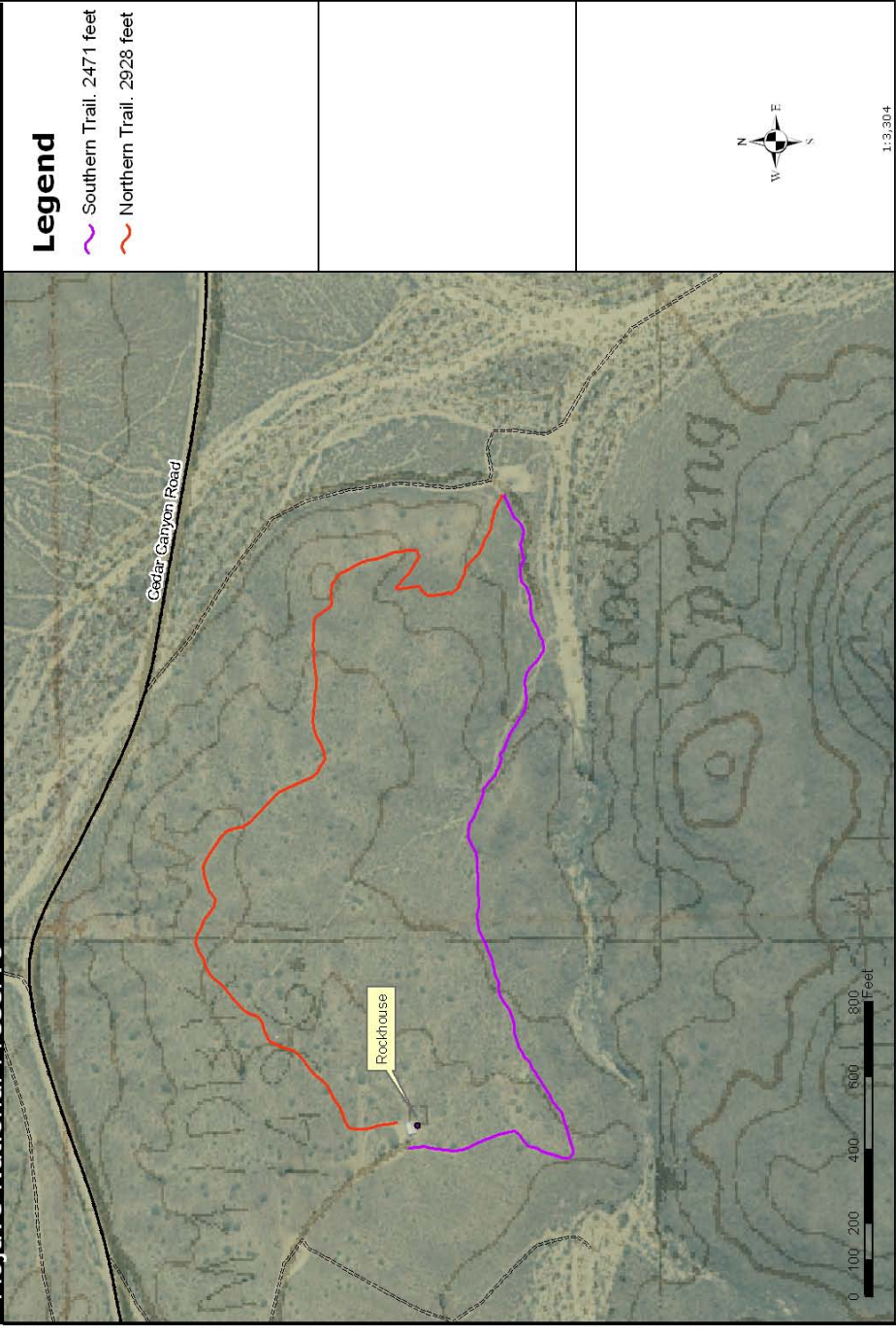
Trail Option B: One-Way Trail

Trail Option B has a slightly different trail configuration. The one-way trail will follow the disturbance footprint of the southern leg that connects Rock House and Rock Spring. Visitors will use the same trail to go between the two sites. This trail totals 0.47 of a mile in length. No new disturbance will be created with Option B.

Proposed Rock Springs Trail

Mojave National Preserve

National Park Service
U.S. Department of the Interior



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Figure 1: Proposed Trail Options

ALTERNATIVES CONSIDERED BUT DISMISSED

The National Park Service previously considered the Rock House for use as seasonal or volunteer housing or as a backcountry cabin, but determined that the structure was incompatible with NPS housing standards.

Another option was to improve the sandy 4x4 road that leads to Rock Spring. This road follows the drainage that leads from Rock Spring to Watson Wash. Because the area is periodically flooded, it presents safety hazards for concentrated visitor activity and was, therefore, dismissed from further consideration.

PREFERRED ALTERNATIVE

The Proposed Action is Mojave National Preserve's preferred alternative. Through its implementation, Rock House and Rock Spring will become more desirable points of interest for park visitors to explore. The treatment of the Rock House with a wood preservative protects an important historic resource. Without period treatment, the structure would deteriorate from exposure to the elements, reversing recent restoration efforts. Visitation will be encouraged through increased wayside exhibits, directional signs, a picnic table at the Rock House, and better accessibility. A trail will be constructed to connect the two sites. Increasing recreational opportunities advances both the National Park Service mission (Organic Act of 1916) and Mojave National Preserve's enabling legislation (California Desert Protection Act of 1994).

No preference is selected here between the two trail options. If, at the end of the public review period, the Proposed Action is selected, a trail option will also be considered for implementation at that time.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is that which will promote the National Environmental Policy Act (NEPA), as expressed in Section 101 of the Act. In other words this alternative will cause the least damage to the biological and physical environment, and will best protect, preserve, and enhance historic, cultural, and natural resources.

The Proposed Action is environmentally preferred. The volunteer crew will practice sound natural and cultural resource stewardship that will also benefit an important cultural resource and an important natural resource of the Preserve. The Rock House and its environs will be improved by the proposed volunteer projects and made attractive for park visitors. Wayside exhibits will be installed to provide educational information to visitors both at the Rock House and at Rock Spring. The Rock House structure will be maintained through the application of a wood cleanser. This alternative benefits the natural and cultural resources, and increases and improves recreational opportunities for visitors. The trail between Rock House and Rock Spring will be improved for visitor use; it will contain impacts to the trail corridor, thereby protecting the natural habitats. Trail Option B involves less disturbance to the habitat, with no new

disturbance. It is, therefore, environmentally preferred.

The No Action is not environmentally preferred. If the site is left in its current state, the Rock House will deteriorate over time from lack of maintenance. The site will continue to be inaccessible to visitors with physical limitations. Without a formalized trail corridor, visitors may not take full advantage of the proximity of Rock House and Rock Spring. For visitors that traverse between the two features, they will trek across the landscape, potentially adding social trails and/or increasing erosion and damage to vegetation along existing social trails. Lack of signage and up-to-date wayside exhibits will contribute to existing misinformation about the Rock House, and the site will continue to be underutilized by park visitors and used as a campsite. Under No Action, Mojave National Preserve would not be protecting the natural and cultural resources of the Rock House-Rock Spring area to the extent possible, and would not be offering the area as an attractive recreational opportunity.

AFFECTED ENVIRONMENT

Mojave National Preserve is an ecologically diverse desert ecosystem that serves as a transitional zone of the Great Basin, Sonoran, and Mojave deserts. Rock House and Rock Spring are located at the southern tail of Watson Wash between Round Valley and Lanfair Valley.

Rock Spring is located in a wash that drains Round Valley and empties into Watson Wash. It was an official US Army post known as Camp Rock Spring, originally established in 1866 along a route between Camp Cady to the west and Fort Mohave, Arizona to the east. The site was used for less than three years. The habitat is described in the literature as follows:

“Rock Spring is situated off the road in a small canyon that opens into the wash, at an elevation of 4,800 feet. The canyon has a sandy floor. There is a growth of mesquite, catclaw, and squaw bush along its margins. The large wash, like the surrounding uplands, is covered with sagebrush and rabbit brush, which continue down the wash to an elevation of 4,300 feet, the lowest level for the sagebrush in this area. The spring at one time produced ten gallons of water a minute, but in the past few years the volume has greatly decreased.

“The habitats represented here are: desert wash, spring, rock land, and sagebrush.”¹

¹ Johnson et al. 1948. p. 253.



Figure 2: Rock Spring (Mills 2009)

Rock House and Rock Spring can be accessed from Cedar Canyon road which bisects the Mid Hills section of the Providence-New York Mountains.

Little is known about the history of the Rock House. It is thought to have been built in the late 1920's by Bert George Smith, a World War I veteran who moved to the desert for his health. In 1954, he sold it to Lenore Bozarth, who turned it over to the OX Ranch. The house was used by cattlemen as a sort of clubhouse, and later occupied by desert artist and longtime East Mojave resident Carl Faber. Faber lived at the Rock House until the winter of 1986-1987, when he was shot in the head by a would-be thief while watching television. The building has been vacant since. The National Park Service assumed jurisdiction of The Rock House in 1994 with the creation of Mojave National Preserve. The structure was fully restored in 2003. While the site is open to the public, the building is not.

ISSUES AND IMPACT TOPICS IDENTIFIED FOR FURTHER ANALYSIS

The following relevant impact topics are analyzed in the EA. Whether each issue is related to taking action or to no action is specified.

Cultural Resources

Both Rock Spring and Rock House contain important historic values. Neither has been determined to be eligible for inclusion on the National Register of Historic Places; therefore, no consultation with regard to the National Historic Preservation Act is required. Nonetheless, both the No Action and the Proposed Action alternatives would potentially impact Rock House and Rock Spring. Because of their local significance, potential impacts need to be further assessed.

Soils and Vegetation

The area containing Rock House and Rock Spring has healthy desert vegetation with intact soil structure and natural drainage leading down to a wash. The proposed trail will permanently disturb the soils and damage or remove adjacent vegetation; it will also likely contain future disturbance to within the trail corridor. Impacts to these resources require further assessment.

Visitor Experience

There is great potential with the Proposed Action to improve the visitor experience at Rock House and Rock Spring. One of the primary purposes for the Proposed Action is to provide more recreational opportunities for Preserve visitors. Both alternatives must, therefore, be carefully assessed for potential impacts to the visitor experience.

Water Resources, Wetlands and Floodplains

Rock Spring is a rare source of perennial surface water in the Mojave Desert. With both natural and cultural values, any action that affects it needs to be carefully analyzed.

Wildlife and Wildlife Habitat, Species of Concern

Two federally listed and five state listed bird species could potentially occur at Rock Spring:

Southwestern willow flycatcher (*Empidonax traillii extimus*) (Federal/State Endangered)
Least Bell's vireo (*Vireo bellii pusillus*) (Federal/State Endangered)
Swainson's hawk (*Buteo swainsoni*) (State Threatened)
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) (State Endangered)
Willow flycatcher (*Empidonax traillii* all subspecies) (State Endangered)
Arizona Bell's Vireo (*Vireo bellii arizonae*) (State Endangered)

Overall, habitat for southwestern willow flycatcher, Least Bell's vireo, western yellow-billed cuckoo, Willow flycatcher, and Arizona Bell's Vireo is inadequate or poor. All species require dense stands of willow or cottonwood trees with a dense shrub understory. Habitat at Rock Spring consists of a single large Arroyo willow (*Salix lasiolepis*) tree. This is not a multi-story, riparian, deciduous forest system. Breeding, roosting and large scale foraging does not likely occur here. However, because these birds are migratory they may stop and rest at Rock Spring, thus infrequent, seasonal occurrences are possible.

Swainson's hawks are not known to breed in the Preserve but do occur during migration periods in late fall and spring. Rock spires, pinyon (*Pinus monophylla*), and Joshua trees (*Yucca brevifolia*) in uplands above rock spring provide roosting for buteos which are commonly seen, mostly red-tailed hawks (*Buteo jamaicensis*). Buteos also bathe in pools of water (MOJA camera project) which can be found at Rock Spring during fall and spring migration periods.

General Wildlife Use. The source of perennial water and topography that places the water in a narrow chasm creates a unique microclimate with cooler, moist air. This along with various aspects and soil types creates diverse vegetation communities that provide habitat. Rock lands provide further habitat components of cover. Due to this physical and vegetation diversity, various wildlife are likely attracted to this site.

Wildlife Habitat. Most of the upland vegetation was affected by the Hackberry complex fire in 2005 and is currently recovering. The presence of annual and perennial forbs, perennial bunchgrasses, resprouting bitterbrush (*Purshia tridentata* var. *glandulosa*) and other plants provides quality forage for wildlife and trail construction and visitor visitation could alter wildlife use.

IMPACT TOPICS CONSIDERED BUT DISMISSED FROM FURTHER CONSIDERATION

Air Quality

The changes proposed to improve the visitor experience at Rock House and Rock Spring can be implemented by use of hand tools and volunteer labor. The work does not require heavy motorized or mechanized equipment and will have negligible effects on air quality. This topic is, therefore, dismissed from further analysis.

Natural Soundscapes

The changes proposed to improve the visitor experience at Rock House and Rock Spring can be implemented by use of hand tools and volunteer labor. The work does not require heavy

motorized or mechanized equipment and will have negligible effects on natural soundscapes. This topic is, therefore, dismissed from further analysis.

Threatened and Endangered Species

While there are two federally listed species in Mojave National Preserve, neither one exists at Rock House or Rock Spring. Rock House and Rock Spring lie outside of critical or suitable habitat for the desert tortoise (*Gopherus agassizii*). The Mohave tui chub (*Gila bicolor mohavensis* or *Siphateles b. m.*) lives only in MC Spring and Lake Tuendae at the Desert Studies Center adjacent to Soda Dry Lake. There are no federally or state listed species that will be impacted by activities at Rock House or Rock Spring.

Wilderness

Rock House and Rock Spring are lie outside of and away from designated wilderness. Activities in this area do not directly affect wilderness. This topic was, therefore, dismissed from further consideration.

The following topics are not further addressed in this document because there are no potential effects to these resources, which are not in the project area.

- Socioeconomic resources
- Designated ecologically significant or critical areas
- Wild or scenic rivers
- Designated coastal zones
- Indian Trust Resources
- Ethnographic Resources
- Prime and unique agricultural lands
- Sites on the US Department of the Interior's
- National Registry of Natural Landmarks
- Sole or principal drinking water aquifers

There are no potential conflicts between the project and land use plans, policies, or controls (including state, local, or Native American) for the project area. There are also no potential effects to local or regional employment, occupation, income changes, or tax base as a result of this project. The project's area of potential effect is not populated and, per EO 12898 on Environmental Justice, there are no potential effects on minorities, Native Americans, women, or the civil liberties (associated with age, race, creed, color, national origin, or sex) of any American citizen. No disproportionate high or adverse effects to minority populations or low-income populations are expected to occur as a result of implementing any alternative.

Regulations & Policies

Service-wide and Park-Specific Legislation and Planning Documents

The NPS Organic Act directs the NPS to manage units "to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such a manner as will leave them unimpaired for the enjoyment of future generations" (16 U.S.C. § 1).

Congress reiterated this mandate in the Redwood National Park Expansion Act of 1978 by stating that the NPS must conduct its actions in a manner that will ensure no “derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress.”

The Organic Act prohibits actions that permanently impair park resources unless a law directly and specifically allows for the acts. An action constitutes an impairment when its impacts “harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources and values.” (Management Policies 1.4.3)

NPS Management Policies 2006 requires the analysis of potential effects of each alternative to determine if actions would impair park resources. The discretion to allow impacts is limited by statutory requirement, as directly and specifically provided for by legislation or by the proclamation establishing the park. The relevant legislation or proclamation must provide explicitly for the activity – this cannot be provided by implication or inference – so that the NPS can manage the activity in such a manner as to avoid impairment. (Management Policies 1.4.4)

NPS units vary based on their enabling legislation, their natural and cultural resources, their missions, and the recreational opportunities appropriate within each unit and/or for specific areas within each unit. This environmental assessment analyzes the context, duration, and intensity of impacts related to management activities to and in the vicinity of Rock House and Rock Spring, and the potential for resource impairment, as required by Director’s Order 12, *Conservation Planning, Environmental Impact Analysis and Decision Making*.

Mojave National Preserve was created in 1994 with passage of the California Desert Protection Act. This enabling legislation acknowledges the opportunities in the Mojave Desert to develop services, programs, accommodations and facilities for use and enjoyment by individuals with disabilities.

Its 2002 General Management Plan (*GMP*) provides the overall management direction for Mojave National Preserve. Both Rock House and Rock Spring are included in the Preserve’s list of classified structures. Rock Spring is also described as a cultural landscape with potential significance for inclusion on the National Register of Historic Places.

IMPACTS ANALYSIS

CULTURAL RESOURCES

No Action

Without periodic maintenance, the Rock House will deteriorate over time and gradually reverse restoration work that was completed in 2003. Visitors will continue to receive information about Rock Spring from the sole wayside exhibit at the start of the path to Rock Spring from the 4x4 road. They will not have information about the history of the Rock House. The social trail between the Rock House and Rock Spring will continue to be used, causing soil compaction and denuding of the ground along the path, but will not affect the sites' cultural resources.

Proposed Action

Rock House will benefit from treatment of the wood floors and walls. The Rock House is locally significant but, to date, there has been no Determination of Eligibility for inclusion on the National Register of Historic Places. From this perspective, the proposed treatments will have no effect on the historic fabric of the structure.

The park archeologist has surveyed the project area. The path of Trail Option A has been determined to be suitable for disturbance without adverse impacts to surface or subsurface cultural resources. Trail Option B is a short segment of Trail Option A and follows existing disturbed soils; its potential for adverse impacts to cultural resources is negligible to non-existent.

Rock Spring will not be directly affected by the proposed action. The archeologist did not identify any cultural resources at or in the vicinity of Rock Spring. The proposed action may lead to increase in visitation to Rock Spring and Rock House but this will not adversely impact the area. The Rock House will benefit from treatment to its floors and walls.

SOILS & VEGETATION

No Action

The footprint of disturbance surrounding the Rock House is compacted from years of use. No change will occur to the footprint under No Action.

The social trail between the Rock House and Rock Spring is informally defined. Its continued use will promote soil compaction and encroachment into the habitat. Impacts from cattle will cease once the allotment fence is completed and the animals are re-contained within the Colton Hills and Gold Valley allotments.

Lack of a clearly defined trail will allowed continued cross country travel disturbing and damaging vegetation beyond the Rock House and existing social trail. This impact is minor currently but will increase as visitation increases over time.

The drainage that leads from Rock Spring toward Watson Wash is flooded annually. It may

widen the vertical distance between the 4x4 road and the start of the social trail that leads to the Rock House.

Proposed Action

The area around the Rock House will be cleared of debris and illegal fire rings. It is already highly disturbed from years of use. Potential increases in visitation will not increase this disturbance.

Wooden posts blocking the closed road from the parking lot will reduce or eliminate traffic along that closed road, allowing the area to return to a more natural state over time.

Creation of a defined trail will reduce cross country travel around the Rock House down to the spring. Impacts should be minor to soils and vegetation away from the trail after it is completed. With either option, visitors will continue to explore the area both on and off trail.

Trail Option A involves new disturbance. The trail will cut through otherwise undisturbed habitat for approximately one mile. The section of trail that is already established will be cleaned up and formalized to conform to NPS trail standards.

Trail Option B converts a social trail to a formal trail. It does not involve new disturbance. The surrounding habitat will remain intact. The existing social trail will be cleaned up (cow manure, etc.).



Fig. 3: Proposed Trail Delineation, Southern Leg



Fig. 4: Proposed Delineation Start of Northern Leg

VISITOR EXPERIENCE

No Action

The bees inhabit the insides of the walls of the Rock House and present a safety hazard to visitors and park staff. Without periodic extermination, the Rock House must remain closed to entry for public safety.

The Rock House will continue to have low visitation for various reasons: lack of knowledge that this is a point of interest and not private property; lack of adequate signage, including

informative wayside exhibits; and limited access due to the wire fence surrounding the structure.

Rock House and Rock Spring will continue to be inaccessible for visitors with disabilities. Rock Spring will continue to be accessed by walking from a 4x4 road down a sandy wash. Rock House, with its wire fence, will continue to be accessed only by crawling between the wires. The fence, while protecting the structure, is also a deterrent to visitation.

Proposed Action

The Rock House will be exterminated for bees before work on the building begins. Permethrin has been used previously to eradicate bees from the structure, and is considered suitable for use under the NPS Integrated Pest Management (IPM) Program. It or another IPM-approved pesticide will be applied, as necessary.

Eliminating the bees may have a benefit of increasing visitation in the short term and will allow volunteers to work inside the structure without threat of attack. Bees are certain to return at some point after the work is completed. Without periodic extermination, the Rock House must remain closed to entry for public safety.

The area around the Rock House will be wheelchair accessible. Installation of new waysides will provide more information for visitors to learn about the area. The exhibits will invite visitors to the site; by their presence alone, visitors will know the site is open to the public.

Trail Option A provides a loop by which visitors can visit both Rock House and Rock Spring while enjoying the environs. About 1 mile plus in length, the proposed trail would be easy enough for most visitors to complete without issue.

Trail Option B provides a link between Rock House and Rock Spring. It concentrates soil compaction within the existing social trail corridor. Visitors are also welcome to walk off trail and explore the surrounding area.

Visitation may increase from implementation of the Proposed Action, but it is not possible to distinguish any differential in visitation between Trail Option A and Trail Option B.

WATER RESOURCES, WETLANDS, AND FLOODPLAINS

Rock Spring should remain as is under either the No Action or the Proposed Action. Removal of cattle from the area should allow the spring's water quality to improve. Once the cattle fence is installed, cattle will no longer trespass. Rock Spring's water quality should improve.

No Action

The social trails between the Rock House and Rock Spring will continue to be used, causing soil compaction and possibly increasing erosion of the ground along the path.

Proposed Action

Increased visitation under the Proposed Action should not adversely affect the spring or wash as long as the proposed and existing trail stays above the wash and out off the bottom of the

drainages. Stabilization of the existing social trail, as well as eliminating other social trails, will probably reduce human caused soil erosion around Rock Spring.

The path of Trail Option A has been determined to be suitable for disturbance without adverse impacts to water resources, wetlands and floodplains. Trail Option B is a short segment of Trail Option A and follows existing disturbed soils; its potential for adverse impacts to water resources is negligible to non-existent.

The proposed action may lead to increase in visitation to Rock Spring but this will not adversely impact the area. The project area will potentially benefit from soil stabilization in the recently burned over area (2005) as long as the trail construction and maintenance is in accordance with best management practices for this type of soil and terrain.

WILDLIFE AND WILDLIFE HABITAT, INCLUDING SPECIES OF CONCERN

No Action

Federal and State Listed Species. Some disturbance will continue from human visitation. Because of the lack of breeding, brood rearing and foraging habitat, federal and state listed bird use of Rock Spring is likely rare and disturbance would only disrupt resting to some extent. In addition, use by all federal and state listed species would only occur during spring (March through May) and fall (October through December) migration periods. Visitors walking to the spring will continue to cause flight responses if these species are present. However, current human visitation is infrequent but could increase over time. Based on these factors impacts to federal and state listed birds are negligible and would not increase appreciably over time.

General Wildlife Use. A lack of a defined trail will cause disturbances to general wildlife by increasing the potential for contact with people as they traverse the landscape to approach Rock Spring. This disturbance would increase over time as visitation increases. Other impacts would entail damage to vegetation cover and soil disturbance. Such damage would expose wildlife, reduce forage and cover and lead to erosion which further degrades habitats. However, human visitation is infrequent and such disturbances are likely rare as a consequent. On a recent site visit though, signs of human disturbance (damage to vegetation cover and soils) was noticed. Based on these factors impacts to general wildlife use would be minor.

Wildlife Habitat. A lack of a defined trail will cause disturbances to wildlife habitat by increasing the potential for damage to vegetation cover and recovering plants. This disturbance would increase over time as visitation increases. Such damage would expose wildlife, reduce forage and cover and lead to erosion which further degrades habitats. However, human visitation is infrequent and such disturbances are likely rare as a consequent. On a recent site visit though, signs of human disturbance (damage to vegetation cover and soils) was noticed. Based on these factors impacts to wildlife habitat would be minor.

Proposed Action

Federal and State Listed Species. Trail and fence construction may disturb federal and state

listed birds if they are present. Some disturbance will continue from human visitation as they use the trail to access Rock Spring. Because of the lack of breeding, brood rearing and foraging habitat, federal and state listed bird use of Rock Spring is likely rare and disturbance would only disrupt resting to some extent if the birds are present. In addition, any use by all federal and state listed species would only occur during spring (March through May) and fall (October through December) migration periods. Trail construction and visitors walking to the spring will continue to cause flight responses if these species are present. Current human visitation is infrequent but could increase over time especially with the proposed development under this alternative. Based on these factors, direct and indirect impacts to federal and state listed birds are negligible due to rarity and would not increase appreciably over time even with increased visitation.

General Wildlife Use. Construction of either trail option would cause disturbance to diurnal animals but would be confined to the trail corridor. Directing human foot traffic to a defined trail will reduce disturbances to general wildlife by confining people to a single path even as human visitation increases over time. Damage to vegetation cover and soil disturbance would be confined along the trail greatly reducing disturbance across the ground away from the trail. Disturbance of general wildlife due to trail and fence construction and humans approaching and flushing them from the spring would increase for some animals that are diurnal but would not affect nocturnal animals. Based on these factors direct and indirect impacts to general wildlife use would be negligible.

Wildlife Habitat. Trail construction would disturb soils and destroy some perennial and annual forbs and grasses. Due to fire damage in 2005, numbers of plants affected are small, less than two dozen perennial individuals and an undetermined amount of annuals. Directing human foot traffic to a defined trail will reduce and confine disturbances to wildlife habitat to the trail corridor over time, reducing long term mortality of perennial and annual forbs and grasses and also shrubs. This would protect far more plants than would be destroyed by trail construction. Disturbance would increase over time as visitation increases but would still mostly be confined to the trail corridor. Either trail option would allow recovering vegetation away from the trail to re-establish and create cover and forage. Completion of the fence to exclude cattle would further improve and protect wildlife habitat. Based on these factors, direct and indirect impacts to wildlife habitat would be negligible.

MITIGATION

No Action

No mitigations have been identified for the No Action alternative.

Proposed Action

Before the start of the project, park staff will arrange for an exterminator to destroy the persistent bee colony and fill all visible holes to discourage future bee use. The bees pose a hazard to volunteers and staff entering the Rock House, and have damaged the interior and exterior of the building. Their long-term habitation is also detrimental to the structure from decay and decomposition, as well as wax and honey build-up inside the walls. Extermination is a short-term mitigation. The wax and honey would need to be removed to ensure permanently eliminate

the bees from the Rock House; such an effort is beyond the scope of this environmental assessment.

CUMULATIVE IMPACTS

No Action

Significant restoration work on the Rock House was completed in 2003. Under No Action, these efforts would be reversed due to lack of maintenance over time. The Rock House would not benefit from the No Action alternative.

Proposed Action

The National Park Service built a six-mile loop trail in the Hole-in-the-Wall vicinity in 2008. The Proposed Action would additionally contribute to the Preserve's recreational opportunities.

The work to be done on the Rock House structure would retard potential deterioration from weather and lack of use. Exterminating the bees and treating the wood floors and walls will help to sustain the restoration completed in 2003.

Trail Option A, the proposed loop, might have beneficial impacts to the soils of the area. If visitors are contained to a designated path, the rest of the habitat will have a greater chance for recovery from the 2005 Hackberry Complex fires that burned through this area. Trail Option B has the potential for similar beneficial impacts to the soils.

No other projects are planned for the project area.

SUSTAINABILITY AND LONG-TERM MANAGEMENT

No Action

The No Action would not contribute to the sustainability of the resources at Rock House. No other management actions are planned for the site. Once the cattle fence is completed, the social trail will return to a more natural state. Soils along the social trail will continue to be compacted by visitors. Illegal camping at the Rock House will continue to occur and the debris will remain or be added to, visually detracting from the site and diminishing its value as a recreational opportunity for visitors.

Proposed Action

Either of the proposed trails will, over time, contribute to the health of the area's soils and habitat. Visitation would increase once the area is tidied, appropriate signage and interpretive displays are installed, and a formal link between the Rock House and Rock Spring is established. The trail makes increased visitation more sustainable over time for the habitat of the area. The condition of the Rock House can only be sustained by repeated periodic treatments as described in the Proposed Action.

IMPACTS TO CLIMATE CHANGE AND GLOBAL WARMING

Neither the No Action nor the Proposed Action will have significant impacts to climate change and global warming. Moreover, climate change and global warming should not significantly alter management of the site over time. Under either alternative, the condition of the micro-environment will be equally prone to changes in precipitation and vegetation composition, for example. No further analysis is required.

CONCLUSIONS

No Action

The No Action alternative will maintain the status quo. Without periodic maintenance, the Rock House will gradually deteriorate over time. Visitation will likely remain low. The area will continue to be littered and to be used illegally for camping. The Rock House has the potential to deteriorate over the long term to an impaired condition. No other significant adverse impacts will result from the No Action.

Proposed Action

Under the Proposed Action, the Rock House site will be improved by clean-up and maintenance activities. The site will be made more visitor-friendly with the installation of a hiker gate, a designated path between Rock House and Rock Spring, directional signage and interpretive displays. Neither trail option will result in significant adverse impacts to the habitat and natural features; both have the potential to contain visitors to a trail and allow vegetation that burned in 2005 to be restored. Both trail options also avoid increased soil erosion throughout the burned area. Impacts from the Proposed Action are temporary in nature and will not cause significant adverse impacts to the natural or cultural resources of Rock Spring. For these reasons, impairment is not expected to result from the Proposed Action.

G. Consultation and Coordination Requirements

None of the activities in the Proposed Action will require consultation with the California State Historic Preservation Office. Treatment of the Rock House’s wood floors and walls under the Proposed Action will not adversely impact the historic fabric.

The EA will be distributed to the public for a 30-day review period. It will be available online at the Mojave National Preserve website and through the National Park Services Planning, Environment, and Public Comment website. Copies will be available at public libraries in California and Nevada.

California	Nevada
Alameda County, CA	Boulder City, NV
Alpine County, CA	Clark County, NV
Butte County, CA	Las Vegas, NV
Colusa County, CA	
Contra Costa County, CA	
El Dorado County, CA	
Fresno County, CA	
Inyo County, CA	
Kern County, CA	
Madera County, CA	
Marin County, CA	
Modoc County, CA	
Los Angeles County, CA	
Napa County, CA	
Nevada City, CA	
Placer County, CA	
Plumas County, CA	
Riverside County, CA	
Carmel Valley, CA	
Hanford, CA	
Seal Beach, CA	

Copies will also be made available to University of Arizona, Tucson, Army Corps of Engineers-Sacramento, California State University, Long Beach, California State University, Northridge, and University of Nevada, Las Vegas.

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H. References

Hart, Herbert M. unknown. History of Camp Rock Spring.
<http://militarymuseum.org/CpRockSprings.htm>.

Johnson, David H., Monroe D. Bryant, and Alden H. Miller. 1948. Vertebrate Animals of the Providence Mountains Area of California. University of California Publications in Zoology, vol. 48, no. 5, p. 221-376. University of California Press, Berkeley and Los Angeles. p. 253.

National Park Service Director's Order 12 Field Guide. Website:
<http://www1.nrintra.nps.gov/EQD/DO12Site/index.htm>.