

RECREATION INVENTORY AND REPORT: ROCK CLIMBING AND RELATED ACTIVITIES IN INDIAN CREEK CANYON, UTAH

Submitted to:
Monticello Field Office, Bureau of Land Management

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We would like to also extend a special thanks to the following individuals who played an instrumental role in preparing this report: Scott Berkenfield, Phil Gazon, Robin Fehlau, Monticello Field Office, BLM; Kath Pyke and Jason Keith, the Access Fund; Sue Bellegamba, Joel Tuhy, Utah Nature Conservancy; the students from Prescott College who assisted with the campsite inventory.

I. INTRODUCTION

Scope and Purpose of the Report

Indian Creek Canyon is an area of outstanding natural, cultural, and recreational significance. Visitation and recreational use in the Indian Creek Canyon corridor has increased significantly in recent years. The present and potential impacts of this visitation to the area's natural and cultural resources have prompted the Bureau of Land Management to assess recreational impacts and to revisit management strategies for the area.

This *Recreation Inventory and Report* was prepared by the Rocky Mountain Field Institute to aide the Bureau of Land Management (BLM) in developing a revised recreation management plan for the area. The purpose of the report is to provide the Bureau of Land Management with a description of recreational rock climbing and related activities,, base line information on levels of impacts related to these uses, and recommendations for mitigating these impacts. This information will hopefully aide the BLM in developing a plan that successfully addresses recreational impacts and visitor infrastructure needs, and helps to preserve and protect the natural and cultural resources of this vital area. This report focuses on the Highway 211 corridor between Newspaper Rock and the North Six-Shooter area where rock climbing is popular. It does not include the Lockhart Basin or Hart's Draw areas. A map of the study is provided on page 10.

This report provides information and recommendations in the following areas:

- 1) profile of recreational rock climbing visitation and use,
- 2) trails and parking sites for popular rock climbing sites,
- 3) campsites,
- 4) restoration of abandoned or closed road beds, trails and campsites,
- 5) public or visitor education needs, and stewardship.

The *Recreation Inventory and Report* will be followed under separate cover by a detailed description of campsites and trails in the study area. This inventory will include maps showing the location of sites currently being used for recreation. These materials will be completed in the Spring of 2002.

The Rocky Mountain Field Institute acknowledges that whatever improvements are made in the above areas will require detailed reviews or inventories to determine the appropriateness of recreational improvements within sensitive cultural and/or biological sites.

II. OVERVIEW OF STUDY AREA

Location

Indian Creek Canyon is located in San Juan County approximately 50 miles south of Moab, and 25 miles northwest of Monticello, UT. Indian Creek Canyon covers a roughly 30,000 acre area on the border of the Needles District of Canyonlands National Park. Indian Creek originates in the Abajo Mountains and flows on a northwesterly course to the Colorado River.

Description



A rich combination of resources make Indian Creek Canyon one of the finest natural areas in Canyonlands.

Indian Creek Canyon is a magnificent site, rich in natural diversity, cultural resources, and history. The canyon is situated approximately in the middle of Canyonlands, an area renowned the world over for its dramatically complex and intriguing landscape. The area is characterized by circuitous side-canyons, elongated mesas and buttes, and narrow spires.

Canyonlands is a part of the greater physiographic province known as the Colorado Plateau. The area has been termed a cold or high desert, and as an extension of both the Great Basin and the Sonoran Desert. The term semi-desert seems to be a good compromise for geographers. While

the area receives more rainfall than many true desert areas, precipitation is seasonal, and the potential evapotranspiration rate is nearly 10 times greater than the amount of moisture that the area receives. This makes for harsh living conditions for the area's plants and animals (MacMahon, 1985). Another important consideration related to the climate of the area is the seasonal occurrence of heavy downpours or thunderstorms. Flash-flooding is common throughout the area. These events often cause heavy soil erosion and displacement.

Indian Creek Canyon is extremely important from a biological standpoint. The canyon provides vital habitat for a diverse collection of plant and animal communities representative of the Colorado Plateau. The canyon drops dramatically from the upper elevation montane zone, down into the open semi-desert shrublands, before descending still further through a system of narrow canyons into the Colorado River. Biotic communities are distributed along this elevational gradient. Four communities are represented: pinon-juniper woodlands, desert shrubland, grassland, and stream-side and aquatic. Wildlife present within the Indian Creek Canyon study area include numerous species of migratory birds, raptors (including golden eagles), wild turkey, ring-tailed cats, and mule deer. The area also supports peregrine falcons and purportedly Mexican spotted owl, although no nesting sites have been documented (BLM, 1993). The Colorado Plateau is an area where plant endemism is common and many rare plants exist. Human use of Indian Creek Canyon and the surrounding area goes back an estimated 4,000 years (BLM, 1993). Some of the finest examples of Native-American rock art on the Colorado Plateau can be found in Indian Creek

Canyon Canyon. Newspaper Rock is by far the most well-known. However, other impressive panels exist in Shay Canyon and Hog Canyon. Small panels and individual etchings can be found along the base of the cliffs and on remnant boulders throughout the corridor. There are several small dwellings and graineries in the area as well as a sizable dwelling in Cottonwood Canyon.

Indian Creek Canyon offers outstanding opportunities for recreation- the subject of this report. In recent years, recreation related visitation has increased substantially throughout the Indian Creek Canyon corridor. This visitation falls into several categories: general site-seeing, technical rock climbing, camping, motorized recreation, and mountain biking. Photography and rock art viewing are also very popular.

Cattle ranching, and associated agriculture, have taken place in Indian Creek Canyon for decades. There is little question that these activities have had a profound impact on the ecology and landscape of the area. Cattle grazing has seriously impacted cryptobiotic soils throughout the Indian Creek Canyon corridor. This, in turn, has significantly altered the structure of the soil and the composition of plant communities. It has also served as the primary force behind the introduction and spread of non-native plant species, particularly cheatgrass (*Bromis tectorim.*) The impacts to the riparian zone of Indian Creek Canyon have also been considerable. Cattle have degraded stream embankments and contributed to abnormal siltification (BLM, personal correspondence). This is particularly true in the lower sections of Indian Creek Canyon.

Land Status

The Indian Creek Canyon corridor is made up of private and public lands. The majority of the public land is under the management of the Bureau of Land Management, San Juan Resource Area. There are several state land parcels throughout the canyon corridor. The majority of the private land is now under the ownership of The Nature Conservancy.

The study area addressed in this report lies within two designated planning areas: the Indian Creek Canyon Zone and the Lower Indian Creek Zone. The overwhelming majority of the land lies within the former. This zone includes upper Indian Creek Canyon and all of the land up to the Dugout Ranch reservoir. The BLM lands are mostly Recreation Opportunity Spectrum Routed Natural Area. There are notable exceptions, however. The upper section of the Indian Creek Canyon Highway 211 corridor is managed for Visual Resource Management Class 1 to protect and preserve scenic values and the existing character of the landscape. The section of the study area in upper Indian Creek Canyon between Newspaper Rock and Hog Canyon lies within The Shay Canyon Area of Critical Environmental Concern (1,770 acres). This designation recognizes the importance of wildlife and riparian habitat. Several sites within the study area are designated as ROS Semi-primitive Non-motorized. This includes a 3,840 acre area surrounding the South and North Six-Shooter Peaks. This section of the study area on the west side of Highway 211 from Cottonwood Creek north (including the Six-Shooters) is included in the Utah Wilderness Coalition wilderness proposal. The top of Bridger Jack Mesa is a wilderness study area.

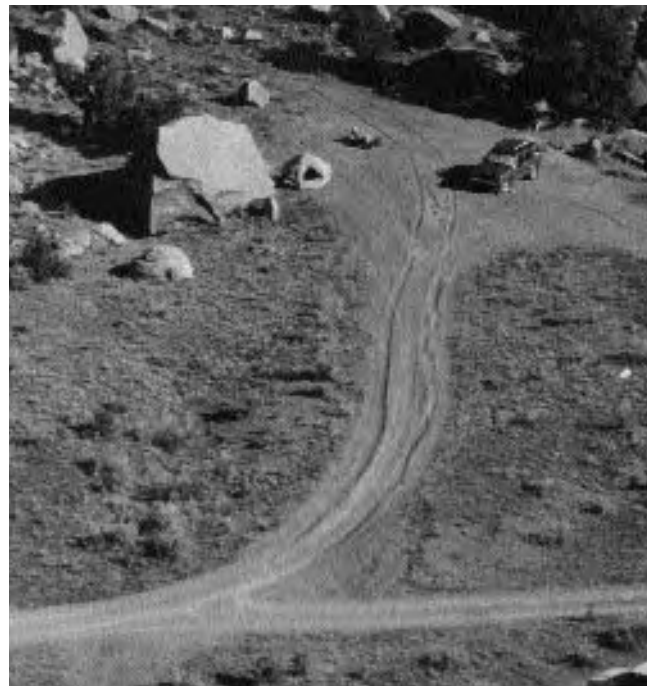
Recreational Resources



Climber on one of the popular climbs on the famous "Super Crack" Buttress.

Many visitors to the area include a visit to the Needles District of Canyonlands National Park on their itineraries. A significant portion of the visitation to Indian Creek canyon is, as a consequence, drive-thru in nature. With the exception of a brief stop at Newspaper Rock, most visitors to Indian Creek Canyon simply drive through on their way in and out from the Needles. However, a significant percentage of visitation is unrelated to the national park. Indian Creek Canyon and Highway 211 provide access to a number of other destinations including Beef Basin and the Dark Canyon area, Lockhart Basin and Hart's Draw. The major side canyons, i.e. Davis Canyon and Lavender Canyon, are all popular destinations for visitors as well. Considerable OHV use and camping takes place along the road corridors leading to these areas. Some of the roads in the smaller side canyons were constructed during the uranium exploration days. However, many of these roads now service the Dugout Ranch or are located on ranch property.

Indian Creek Canyon and the major side canyons provide outstanding opportunities for camping. The area on the perimeter of the Needles District has long provided overflow camping for the park. However, many visitors now prefer to camp outside the park where the camping has been until now, unrestricted and free. Many of the popular sites that have become established do, indeed, provide solitude and privacy. Hunting is very popular in the Indian Creek Canyon area. Many hunters prefer to camp in the canyon. OHV use is limited to existing roads in Indian Creek Canyon, with the exception of the Lockhart Basin area (which is not included in this report). The area lacks the slickrock terrain that has made the Moab area a mountain biking capital. The popular and well-known bike rides all follow roads and/or drainages.



OHV use and camping impacts are a key concern in the Indian Creek Canyon area. This site in Donnelly Canyon was closed and restored in 1993.

In recent years Indian Creek Canyon has become a world renown rock climbing area, attracting climbers from across the U.S. and around the globe. The Wingate sandstone cliffs provide outstanding test-pieces for technical rock climbers. For many years, these climbs were only attempted by a few bold individuals. However, the introduction of coming devices now allow these climbs to be ascended with relative safety. This resulted in a dramatic increase in climbing visitation. A significant portion, if not the majority of the recreational use in the study area, is now climbing related.

The cliffs surrounding Donnelly Canyon have the greatest concentration of high quality climbs and are by far the most popular sites. However, classic routes have been established throughout the corridor on the cliff sides and spires. The climbs are very photogenic, especially with the canyonlands as a back-drop. Climbers on Indian Creek Canyon routes have long graced climbing journals, catalogs, and calendars.

A large number of the climbers visiting the area stay in one of the dispersed campsites nearby. All of the climbs require an approach through the canyons and/or up the steep talus fields. Consequently, most of the hiking that occurs in the study area is climbing related as well. Virtually all of the trails that have been established in the study area provide access to popular climbing sites.

Recreation Related Issues and Concerns

This report deals with recreational issues and impacts. However, recreational use; local, private/commercial interests; and, conservation and preservation needs all overlap in the area, making recreation management especially challenging.



Soils and native plant communities in Indian Creek Canyon do not tolerate disturbance.

Recreational impacts are mainly confined to the Highway 211 corridor. The severity of the impacts is due to the inability of the landscape, and the native plant communities that comprise it, to tolerate even moderate levels of disturbance. Repeated or intensive disturbances, particularly on steep hillsides and road beds, tend to dramatically accelerate natural erosion, and provide establishment opportunities for exotic or noxious plants. Consequently, OHV and hiking impacts can have a significant impact or influence on the landscape.

Several of the more popular rock climbing site, including the Super Crack and Battle of the Bulge Buttresses, are located on the Dugout Ranch. Public access to many other locations is through private property

as well. Consequently, many of the roads throughout the canyon corridor are used for both private/commercial and recreational use. Conflicts between private property owners and visitors have occurred since Indian Creek Canyon has become popular as a climbing area. The Redd family has been very tolerant to date and has allowed climbing on the ranch. The Nature Conservancy has stated that they will allow climbing to continue. However, vehicle access and infrastructure needs, i.e. trails, parking areas, and campsites present difficult issues.



Cryptobiotic soil communities have been significantly impacted in areas where grazing has occurred. In areas that have not been grazed, cryptobiotic soils are prevalent.

Preserving the riparian areas in upper Indian Creek is one of the key land management concerns in the study area. The direct impacts from recreation come from camping. The cottonwood stands in the upper canyon provide shade during the warm months and, consequently, several sites between Newspaper Rock and Hog Canyon have become established over the years and remain very popular. The BLM has in the past considered that the upper Indian Creek Canyon be open only for day use (BLM, 1993). However, this was dropped in favor of limiting camping to designated or developed sites. As of yet, no sites have been designated or developed with the exception of those at Newspaper Rock, and dispersed camping in this zone continues to take place. Up until the early-1990's, the Dugout Ranch did permit camping across from Donnelly Canyon. However, this area was closed off after a campfire consumed several large trees.

Protecting the cultural resources in the study area is also a key concern. Rock art and small dwellings are distributed throughout the upper canyon. Most of the obvious sites are located at the base of the Wingate cliffs on the east side of the canyon. Climbing routes have been established in close proximity to rock art panels and dwellings. A policy or plan has yet to be developed that addresses disruptions to sensitive sites in the study area.

One of the greatest ecological threats to the area is the proliferation of exotic or non-native plants. There are few areas where non-native species have not become established. It is common to find exotic plants along road sides, parking areas, and trails throughout the study area. While ranching and agriculture are primarily responsible for invasions of non-native plants, recreational use, like any use that disturbs the soil, can be a contributing factor.

Stewardship of the Area



Considerable progress has been made in addressing recreational impacts in the Indian Creek Canyon corridor thanks to a partnership between the Dugout Ranch, BLM, the Rocky Mountain Field Institute, and organizations like the Colorado Outward Bound School and Prescott College.

There is a rich history of collaboration between private land owners, the public land management agencies, and representatives of the climbing community in Indian Creek Canyon. Much of this work has taken place under the leadership of the Rocky Mountain Field Institute (formerly The American Mountain Foundation). RMFI has worked consistently since 1990 with the owners of the Dugout Ranch and the Bureau of Land Management to mitigate recreational impacts in the corridor. The National Park

Service has lent its expertise as well. This partnership has accomplished a great deal to mitigate recreational impacts in Indian Creek Canyon and restore heavily disturbed sites. The majority of RMFI's work has focused on the construction of climbing access trails to popular sites and the restoration of road beds in the major side canyons, i.e. Hog Canyon, Donnelly

Canyon, Fringe of Death Canyon, and Fringe of Life Canyon. This work has taken place on private and public land. RMFI has completed this work through environmental service programs with the Colorado Outward Bound School, and Prescott College. Students from these organizations have volunteered thousands of hours to RMFI projects.

The climbing community at large contributed a significant amount of money toward the purchase of the Dugout Ranch. Also, the Access Fund, a national climbers advocacy and conservation organization, has in recent years been active in addressing climbing issues in the area and has provided significant financial support to RMFI to support trail and restoration projects.

Need for Management Action

While considerable progress has been made in addressing recreational impacts particularly in the upper canyon, recreation related visitation has reached new levels in the study area. RMFI estimates that rock climbing visitation and camping has increased as much as 200% in the past 5 years. On weekends it is now common to find 30- 40 cars parked at Donnelly Canyon. Even more remote climbing sites are seeing increased use. One development that RMFI has observed is an increase in day visitation amongst climbers. This is no doubt due to the increasing number of outdoor recreationists who have moved to the Moab area.

This increased visitation has resulted in additional recreation related impacts, most significantly camping and hiking impacts. Given the number of persons visiting the area, there is a pressing need for visitor education.

A revised recreation management plan that addresses recreational impacts and identifies an appropriate level of visitor infrastructure is sorely needed. Developing such a plan will require collaboration and thoughtful integration of recreation, private/commercial,, and conservation interests. The success of the plan will depend upon the extent to which it supports other land use goals for the area, both private and public. To the greatest degree possible, the Indian Creek Canyon- Highway 211 Corridor, and the private and public lands that it includes, should continue to be managed by the private and public stakeholders in the area under a common vision, agreed upon and supported by all parties.

Disparate Visions

Indian Creek Canyon is an area that has an avid and passionate following amongst climbers. However, the climbing community remains divided over how climbing and related use impacts should be addressed. There is a common belief that the area should remain as undeveloped as possible. Several individuals have voiced opposition to any and all types of visitor infrastructure, including trails. However, the majority of climbers who RMFI has made contact with appear to understand that visitation has risen to the level where a formal visitor infrastructure on some level is now needed to protect the landscape.

In respect to camping, a preference that has been voiced many times over by persons visiting the area is that the dispersed campsites be left open and that, in the instance that camping areas are formally developed, there be adequate spacing between sites to provide solitude and privacy.

One of the most contentious issues for Indian Creek Canyon is cattle grazing. Many people with whom RMFI spoke voiced the sentiment that recreational impacts were receiving unfair scrutiny. It is their position that cattle grazing has done far more damage to the area than

recreational use, and that the focus of management should be placed on mitigating grazing impacts and restoring damaged areas

An examination of the impacts of grazing and/or the identification of strategies to mitigate the effects of this activity are beyond the scope of this report. This being said, RMFI agrees with the position that recreational impacts are modest in comparison to the effect that ranching and agriculture have had, and continue to have, on the ecology and landscape of the area covered in this report. RMFI recommends the elimination of grazing in the major side canyons and in the riparian zone of Upper Indian Creek Canyon (between Newspaper Rock and Fringe of Death Canyon and the continued restoration of the native plant communities in these areas. RMFI also recommends that grazing be excluded from areas where designated camping sites are located (see camping recommendations).

Important Considerations

The purpose of this section is to provide information that RMFI believes will help land managers reading this report to gain an understanding of the recreational activity of rock climbing in Indian Creek Canyon and use trends associated with this activity. RMFI hopes that this information will be useful in anticipating future trends as well.

Description of Current Rock Climbing Practices

Indian Creek Canyon is renown as a “crack” climbing area. This means that climbing routes literally ascend cracks or fissures in the rock. To date only a few “face” climbs, which unlike crack climbs, ascend open or seemingly blank sections of rock, have been established in the area. In recent years, advances in the technology of removable protection devices have enabled climbers to climb cracks with relative safety. Consequently, in Indian Creek Canyon, expansion bolts or fixed protection have been used sparingly. The exception to this is that most climbs do have fixed anchors at the tops of the climbs which allow climbers to descend from the climbs without leaving their personal equipment. While the potential for bolted climbs does exist, it is RMFI’s opinion that the use of expansion bolts will continue to be limited. This has significant ramifications. Not only will this limit direct impacts to the rock, but it will also limit the climbers who visit the area to those who enjoy this particular type or style of climbing.

Climbing Difficulties

The climbs in Indian Creek Canyon are steep and strenuous. Climbing difficulties are increased because climbers have to place protection. Consequently, the area is an advanced or expert climbing area, akin to black and double black diamond ski runs. This general difficulty of the climbs further limits the areas popularity.

Another factor that limits the popularity of many climbs and, as a result, climbing impacts, is the relative difficulty of getting to them. While many climbs or climbing sites are located in close proximity to Utah 211, many others are relatively isolated and require difficult hiking up steep and loose terrain.

Potential for New Route Development

At first inspection, it would appear that there is a seemingly unlimited number of climbing possibilities in the Indian Creek Canyon corridor given the number of vertical cracks in the rock. However, this is not the case. The Indian Creek Canyon corridor has been thoroughly explored by climbers over the past decade and a half. It is safe to say that the majority of the highest quality routes have been now climbed and the potential for new route development is moderate to low.

Peak Visitation Times

Rock climbing and associated recreational use is limited to the spring and fall months, from March through the first week in June, and from September through November. Visitation is highest during holidays during these months.

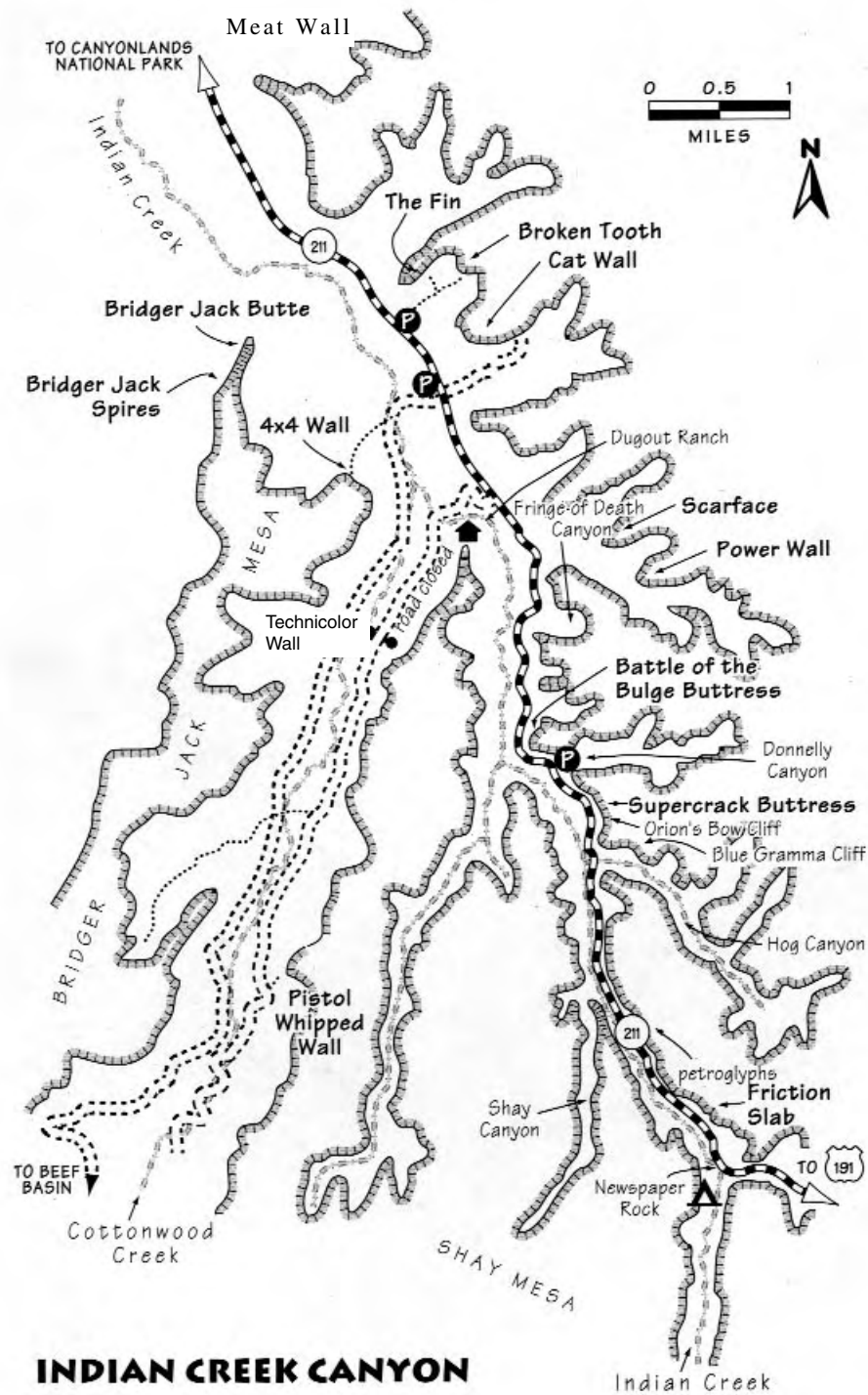
Estimates on Levels of Rock Climbing Visitation

A formal study of current levels of rock climbing use has not been completed. However, based upon observations made during work projects and programs, RMFI estimates that visitor use days to be somewhere between 3,000- 4,000 per year. This use is largely confined to the most popular sites.

Areas or Locations of Greatest Use- Present and Future

The areas that receive the greatest amount of visitation are those that offer the highest concentration of quality climbs and are most accessible (involved shorts hikes). Climbing areas within a short distance from Utah 211 (Super Crack Buttress, Battle of the Bulge Buttress, and the Cat Wall) will continue to see the greatest amount of visitation.

Map of Indian Creek Canyon- Highway 211 Corridor Study Area.



Map provided courtesy of Falcon Press.

III. TRAILS

Introduction

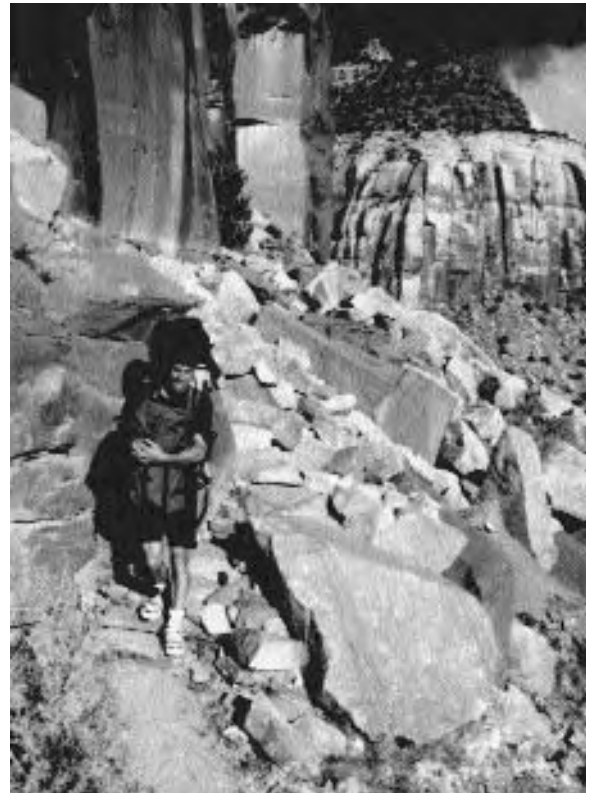
While trails facilitate access, they also serve an important conservation purpose. Trails are a particularly important part of visitor infrastructure in areas like canyonlands where the landscape can't withstand high levels of visitation. Dispersed hiking is not a threat if it is reserved to stream-beds or drainage bottoms. However, even moderate amounts of hiking on the hillsides and steeper terrain can pose a significant threat to the landscape. Repeated use can cause the development of social trails which can, with time, produce major erosion gullies and disturb native plant communities.

Social Trails

Currently, the majority of trails in the Indian Creek corridor, with the exception of those constructed to date by RMFI, are categorized as access routes for rock climbing and may be viewed as "social." Social trails are the "unofficial" trails created by users to get to where they want to go, typically canyons or rock formations. The development of these social trails, interfacing with water drainage and steep erosive slopes, is a major cause of disturbance. One of the objectives of this report is to assess the need for the continued adoption and improvement of existing social trails.

Established Trails

Several trails have been constructed in the Indian Creek Canyon corridor by RMFI in the past decade. RMFI has, for the most part, improved pre-existing "social trails" to popular rock climbing sites. However, at several locations, particularly on the steep slopes below cliff faces, the trails have been relocated away from unstable ground and constructed so as to provide for the most stable walking surface. These trails have succeeded in reducing vegetation and soil loss at these locations. The majority of the trail work has been completed by students from the Colorado Outward Bound School and Prescott College participating in RMFI environmental service programs.



Climbing access trails have been built by RMFI at several popular climbing sites in Indian Creek Canyon.

TRAIL INVENTORY

Introduction

Field staff and students from the Rocky Mountain Field Institute completed an inventory of existing trails and “social trails” throughout the study area. Maps detailed in *Rock Climbing Utah*, by Stewart Green, provided locations of the most popular access trails. Road closures, 4WD roads and obvious camping areas were surveyed for evidence of foot paths. Only areas with obvious impact and significant use were cataloged as a trail. The climbing areas or locations in this section are arranged in order from south to north, or from Newspaper Rock toward the Needles District. Many of the names of the cliffs and side canyons are those that have been assigned by the rock climbing community. Identification would otherwise be difficult without an intimate knowledge of the rock formations and side canyons.

There are several climbing locations in the Indian Creek Canyon corridor that are not mentioned in this report. Impacts and visitation are minimal and management attention is not needed at this time. However, as seen elsewhere in the study area, significant disturbance occurs with relatively low levels of visitation. If climbing continues to become more and more popular in Indian Creek Canyon (and there is every indication that it will) the majority of the climbing sites will require management attention at some time in the future.

Trails for Climbing Sites

Hog Canyon Area (3.2 miles from Newspaper Rock)

Blue Grama Cliff

This cliff is located just off Utah 211 at the entrance of Hog Canyon. The present “social” trail and the most popular climbs are located on Dugout Ranch. The trail leaves from an old road that is now closed. Multiple braided trails lead up to the base of the cliff, as well as back into the canyon. Though many appear to be in fine condition, these trails should be consolidated down to one sustainable access trail and the remaining trails restored. Revegetation of the canyon access trails is possible and has proven a valuable restoration technique in Indian Creek Canyon.



Blue Grama Wall.



Petroglyphs on Blue Grama Wall.

The main access route to popular climbs and a petroglyph panel is steep, loose, and highly erodible. Light maintenance is suggested. Trouble spots could be managed with minimal stonework. There are several rock art panels at this location. Several of the climbs are located in close proximity to rock art. The extent to which climbing activity poses a threat to these cultural resources needs to be carefully evaluated.

Priority- high

Donnelly Canyon Area (4.2 miles from Newspaper Rock)

Donnelly Canyon is the most popular rock climbing area in Indian Creek Canyon. The cliffs on either side of the canyon (Super Crack Buttress and Battle of the Bulge Buttress) have arguably the greatest concentration of high quality rock climbs in the Indian Creek Canyon corridor. The famed Super Crack, which has been photographed perhaps more than any single climb in the region, is regarded by virtually all climbers visiting the area as a “must do” climb.

Presently, visiting climbers park at a pullout near the entrance of Donnelly Canyon or along the road to the south of the canyon. Four loop trails have been constructed by RMFI in the Donnelly Canyon area that provide access to nearly all of the popular climbs. Stone stairs, risers and retaining walls were built along the ascents and rock cairns used to delineate routes along the base of the cliffs.

Super Crack Buttress

This is the buttress located at the east or right entrance to Donnelly Canyon. As one of the most popular and highly visited climbing areas in Indian Creek, this was the initial target area for the Rocky Mountain Field Institute. Historically, numerous social trails climbed the steep talus field. Soil and vegetation loss was considerable. A system of access trails was built and the remaining social trails closed off. One of the trails leads from the main parking area into Donnelly Canyon. The other begins just right of the cattle guard on Utah 211. These connect at the base of the cliff, making a loop adjacent to the road. Establishment of these trails involved hardening the trail with stone steps, risers and retaining walls. Restoration of other social trails meant essentially erasing them. Plants were transplanted into the steep slopes and rock structures set to slow the erosion process. All structures are in good shape and only need light maintenance from time to time. -



The famed Super Crack Buttress where many of the finest climbs in Indian Creek Canyon are located.

Priority- low, continued maintenance

Battle of the Bulge Buttre

Battle of the Bulge is a long southwest facing cliff immediately north of Donnelly Canyon. The access trail begins a short distance up Donnelly Canyon from the road closure. Most of these trail structures are in good shape, needing only periodic maintenance.



Battle of the Bulge Buttre

Most people choose to access the trail by crossing through the main wash or gully. This is largely due to the fact that the trail is not visible from the parking lot. Though not a serious problem yet, this use is contributing to the erosion of the gully embankments. Fencing the parking lot and installing a kiosk with trail information would alleviate this problem.

Priority- moderate, continued maintenance

Donnelly Canyon Trail

A braided network of well-established social trails is present between the Battle of the Bulge and Super Crack buttres. One also enters approximately one mile back into Donnelly Canyon, ending in a patch of vegetation and talus. These are quite sustainable and do not appear to pose a concern for erosion. Consolidation of connecting trails between the buttres would be easily accomplished through revegetation.

Priority- low, continued maintenance

Fringe of Death Canyon (6 miles from Newspaper Rock)

This canyon was the long-time traditional campsite of early Indian Creek climbers in the 1970's. It is now open only as a day-use, walk-in area. The large boulders in the canyon are popular for "bouldering" (highly technical climbing on rocks which do not require ropes or protection). While there are several good climbs in the canyon, they are rarely climbed and the canyon as a whole does not see much use. No social trails were found on the slopes leading to the cliffs.

The access route is an old road closure that has been narrowed to a single-track trail by means of yearly revegetation projects. The current trail is in good shape until far back in the canyon. A serious erosion and drainage problem is evident where campers once made their site. Impacts include a major rutting of ground surface.

Priority- moderate, erosion control and revegetation

Fringe of Life Canyon (6.4 miles from Newspaper Rock)

Approximately 0.2 miles past Fringe of Death Canyon is a large canyon that extends several miles to the east of Indian Creek Canyon. The main trail into this canyon (a roadbed that has been restored to a walking trail) is directly across from a large parking area on the west side of Utah 211. There are several climbing sites in the canyon.

Scar Face Wall

This wall is located on the northwest side of Fringe of Life Canyon. The trail begins as a steep descent from Utah 211 into pasture land, and then meanders through the saltbrush to the base of the steep slope beneath the wall. Once the trail begins to ascend the slope, it becomes very steep and loose. The percent grade of the current trail is such that considerable soil loss is occurring. The need for a well-constructed access trail is great. Hardening trouble spots with stairs and risers is recommended. Some sections may need retaining walls on the downhill slope. A braided network of social trails surrounds the base of the buttress. These trails should be consolidated into one main footpath.



Scar Face Wall

Priority- high, trail construction and restoration

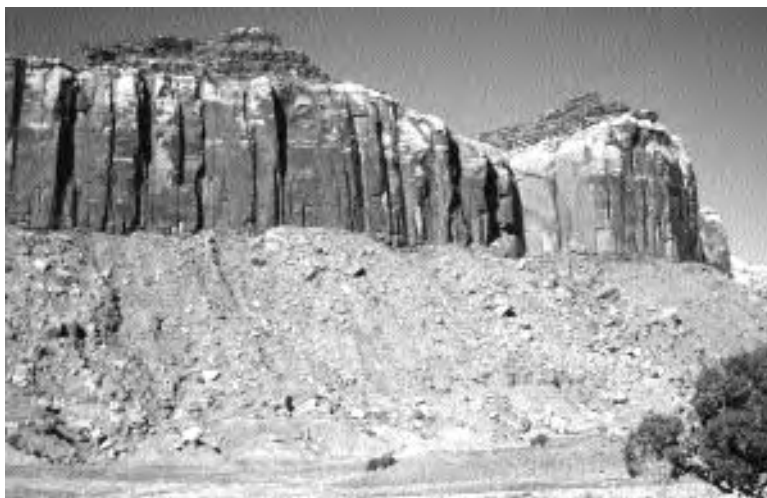
Power Wall

This wall is accessed from an old road closure located beneath the east or right buttress within the same canyon. The road has been reduced to a single-track trail, by means of revegetation, for the first 400 ft. The Power Wall is the buttress located in the back of this canyon and is not frequently visited. The trail is minimal and skirts up a boulder field, disappearing as soon as it begins the ascent. This trail is completely sustainable in its current state.

Priority- low

Cat Wall (8.1 miles from Newspaper Rock)

The access gate to this area is located near the junction of Utah 211 and County Road 104. Most people enter through the gate and drive the 2 miles to the trailhead. This is a 4WD road that continues to deteriorate and is not recommended for the numbers of visitors that the area receives on popular weekends. People should be encouraged to park outside of the gate and walk in. Closure of the top parking area, closest to the talus and trailhead, is recommended due to advanced erosion on the shoulders of the road. An old road that once led back into the canyon could also be restored. As this road currently goes nowhere, restoring it with vegetative transplants would be the suggested technique for a volunteer service project. The climber access trail leaves the top parking area and enters upwards through a boulder and talus field. This is one of the more recently established trails in Indian Creek. Rather than reroute the steep and erosive trail, the existing route was hardened with stone steps, risers and retaining walls by RMFI. This trail is in good condition.



Cat Wall. The trail ascends the slope through the boulder field below the low point in the Wingate formation.



RMFI trail crew completing work on the Cat Wall Trail.

In addition to the existing trail, another social trail has developed at the west end of the cliff. This trail is now receiving considerable use. RMFI recommends that this trail be formally adopted and improved. This improvement would create a loop trail for the cliff.

*Priority- Moderate
Continued trail maintenance for existing trail.
Development of additional access trail on west end of cliff.*

Broken Tooth Wall

Access to this wall can be found at a gated entrance on the right side of Utah 211, approximately 0.3 miles north of the gate to the Cat Wall. The road is in good condition, ending in a moderately sized parking area adjacent to the talus slopes. The parking area has been used as a small group campsite and has two trails that access the Broken Tooth Wall and the Fin Wall. Broken Tooth is the buttress located to the northeast. The trail is in acceptable condition until it reaches the midway point, where the percent grade increases and slopes become very loose. Switchbacks are minimal, creating a nearly vertical rise. It is recommended that this area be considered for hardening of the existing trail with a few possible reroutes near the base of the buttress. Corner areas of the trail are in need of upper and lower retaining walls to protect the slope. Many of the obvious trouble spots could be easily mitigated with only a few stone features.

Priority- high, trail construction

Fin Wall

This wall is accessed from the parking site or trailhead for Broken Tooth Wall. A trail leads west from the campsite. It is in good condition with only a few areas of concern. The route switchbacks between two large drainage/erosion gullies, leaving little to no room for any reroute possibilities. Only a few spots are excessively steep and may need management if use increases. Impacts from this trail are limited to the trail surface only and not to the up or downhill slope. RMFI recommends that the existing social trail be cairned to prevent trail braiding from occurring. Close monitoring of erosion levels is recommended.

Priority- moderate

Meat Wall Area

The Meat Wall area is comprised of several climbing sites, two canyons to the north of the Broken Tooth/ Fin Wall areas. It has been reported to RMFI that significant erosion is occurring on the trail leading to the Meat Wall. The trail needs to be examined in the near future.

Priority- moderate

Bridger Jack Butte and Spires (Moki Towers)

This butte and its spires are located along a serrated ridge that juts off of Bridger Jack Mesa. Access can be found by driving 8 miles west of Newspaper Rock and turning left onto CR 104 (signed Beef Basin). A short distance after crossing Indian Creek, a side road (located immediately after the cattle guard) enters from the north. This road parallels the Wingate north toward Bridger Jack Butte. After 1.4 miles, a trail can be found that leads up to the base of the butte. This trail is located on the left side of the road across from a well-established campsite. Small cairns now delineate the trail.



Bridger Jack Butte with spires on the left.



Thumbelina Spire on Bridger Jack Butte.

Most of the first third of the trail is in good condition with only a few trouble spots. However, once the trail begins to ascend the steep slope leading to the base of the butte, About two thirds of the way up the trail, RMFI has cairned an alternate route with hopes of attracting climbers up a more sustainable corridor through large boulders. This route, if chosen as the preferred trail, will need retaining features. The old remaining trail is extremely steep, loose and unstable and should be closed. Restoration of the old trail is essential to prevent continued use.

Priority- high, trail construction and restoration

Cottonwood Canyon

4X4 Wall

This site is located on the first Wingate buttness on the west side of Cottonwood Canyon. From a pull-off on CR 104 a short distance past the Indian Creek crossing, a faint trail leads up to the base of the cliff. The trail follows a wide drainage up the upper slope and, for the most part, is well located. Erosion is minimal probably due to a relatively low level of visitation. However, there a number of high quality of the climbs on the wall. This site will need to be monitored closely

Priority- moderate

Pistol Whipped Wall

This site is located on the east side of North Cottonwood Canyon. It can be reached by driving 8 miles west of Utah 211 to the junction with CR 104. This dirt road is followed until a left turn is made onto CR 104A. Drive 0.6 miles to the road's junction with the old canyon road. Turn right and drive another 1.7 miles. The wall is a rounded buttness to the left. The trailhead begins up a wash and is marked with a cairn along the road. The route is noted to be in fairly good condition. If use increases, a few small reroutes may be suggested near the upper section of the ascent. Otherwise, this trail appears to be in a sustainable condition.

Priority- low

Davis Canyon

North Six-shooter Spire

North Six-shooter is one of the more popular spires in the area for rock climbers. However, the relatively long approach and the difficulties of climbs on the spire, do limit the numbers of climbers. At present, there is no trail (established or social) to the spire. Most climbers approach the spire via Bogus Pocket. The slopes directly below the spire are steep and difficult to negotiate.

The lack of visible impacts is probably due to the fact that climbers are dispersing across a wide area to access the spire.



North Six-Shooter Spire

It is suggested that this area be closely monitored. Cairning a single access route to the spire may become desirable to prevent numerous social trails from developing.

Priority- low

South Six-shooter Spire

South Six-shooter Spire is the easiest to climb in the area. For this reason, the spire is becoming more popular. The spire is also a popular objective for outdoor groups.

Finding the actual trailheads for the Six-shooter peaks can be somewhat of an adventure. The general description is as follows: Drive 12 miles past Newspaper Rock on Utah 211 and turn left on Davis Canyon Rd. Drive approximately one mile and park. The beginning of the ascent most often used is located up a wash between the South and North Six-shooter. Most people begin heading up to the peak at the lowest spot of the surrounding talus cone, though no actual trail exists. RMFI cairned a route to the spire several years ago. This route is in good shape. Monitoring for accelerated impacts is recommended.

Priority- low

SUMMARY OF TRAIL CONDITIONS

This section provides a summary of trail conditions and priority ranking for both established trails and existing social trails leading to popular climbing locations in the Indian Creek Canyon corridor. The trails are listed in order from south to north long the corridor. It is important to note that these are current conditions. The status of the trails will change with continued visitation. Therefore, it is very likely that all of the trails listed will need attention in the future (10- 15 years).

TRAIL	PRIORITY	REROUTES	USE LEVEL
<u>Established Trails</u>			
Super Crack Buttress	low	no	high
Battle of the Bulge	low	no	high
Fringe of Death Canyon	moderate	no	low
Fringe of Life Canyon	low	no	low
Cat Wall	high	no	high
Bridger Jack	High	(construction in progress)	
Broken Tooth	High	(construction in progress)	
<u>Social Trails</u>			
Blue Grama Cliff	high	no	high
Power Wall	low	no	low
Scarface	high	yes	moderate
Finn Wall	moderate	no	low
Meat Wall	moderate	?	moderate
4X4 Wall	low	no	low
Pistol Whipped Wall	low	no	low
South Six-shooter Peak	low	no	low
North Six-shooter Peak	low	no	low

TRAIL CONSTRUCTION STANDARDS

RMFI has worked hard to construct trails that are well-designed and constructed, and meet the needs of the particular user group (technical climber) who visit the area. The steep slopes and high erodible soils present major challenges for the construction of sustainable trails. RMFI has attempted to, whenever possible, work with existing social trails and to avoid major reroutes or new trails. On-site materials have been used for structures, i.e. steps, water bars, etc. Heavily-used trails in the study area have required extensive rock work, i.e. stairs, risers, and retaining walls.



Rock stairs



Tread reinforcement



Retaining walls

RECOMMENDATIONS

In fragile ecosystems like those of the Indian Creek Canyon corridor, trails play a key land protection role. The following recommendations have been developed by RMFI to assist the BLM and the Nature Conservancy in public involvement with access trails as an important component of protecting natural resources.

1. Complete required environmental assessments and construct trails for high priority areas as soon as possible.
2. Continue to closely monitor climbing areas noted as low priority in this report. Cairn routes and construct access trails as needed to mitigate resource damage.
3. Provide funding to support the ongoing maintenance of trails.
4. Provide additional volunteer trail construction opportunities and increase involvement of the climbing community in the maintenance of existing trails.
5. Develop trail maps for the corridor. Post these maps on kiosks at key locations and distribute information on trail locations to climbing guidebook authors. Include information on the importance of using established trails in visitor kiosks. (See Visitor Education Section).
6. Develop formal parking sites and trailheads for Donnelly Canyon and Cat Wall.

IV. CAMPSITES

INTRODUCTION

The Indian Creek Canyon corridor provides many excellent options for camping. A significant portion of climbers visiting the area prefer to camp and highly value the opportunity to do so. However, a significant number of other visitors camp throughout the corridor as well. The corridor also provides overflow camping for the Needles District which has a limited number of sites. With the exception of the developed campgrounds at Newspaper Rock and Hamburger Rock (Lockhart Basin road), the sites are visitor created or social sites that have developed over the years.

To RMFI's knowledge, annual or seasonal visitation rates have not been identified for the Indian Creek Canyon corridor; consequently, there is no information available to determine the extent to which camping rates have increased in the corridor. However, there is little question that the number of social campsites and camping related impacts have grown significantly. The closure of campsites on Dugout Ranch property has led to the development of many new sites.

The purpose of this section is to report on campsites and campsite conditions to assist the BLM in developing a revised plan for managing camping in the corridor.

INVENTORY PROCESS

The following locations were inventoried:

- Newspaper Rock to Donnelly Canyon
- Bridger Jack Butte
- North Cottonwood Canyon
- Cat Wall
- Broken Tooth
- Super Bowl
- Lavender Canyon
- Davis Canyon
- Hamburger Rock area

GENERAL FINDINGS AND OBSERVATIONS

Despite the fact that the majority of the existing campsites are visitor created, many of the campsites are well located. The sites in the upper canyon and along Indian Creek provide shade and wind protection. The sites in the more open areas provide sun and scenic views. Many of the isolated sites provide solitude. Other sites, however, are examples of how undesignated camping can impact this fragile ecosystem. Impacts include:

- Human waste
- Proliferation of social trails due to lack of toilet facilities
- Campsite proliferation
- Damage to cryptobiotic soils and native vegetation
- Increased OHV use
- Spread of noxious weeds



Vehicle impacts related to dispersed camping have increased at many locations in the Indian Creek Canyon corridor.



Damage to vegetation and soils has occurred in the Bridger Jack Mesa area as a result of foraging for firewood.

VISITOR CAMPING PRACTICES AND PREFERENCES

There are several different user groups who camp in the Indian Creek Canyon corridor. All of the sites are drive-in sites and most parties car camp or camp in close proximity to their vehicles. Numerous sites now accommodate more than one vehicle indicating a need for group sites. However, an equal number of sites are isolated, indicating a complimentary preference for remote sites.

The majority of persons that RMFI spoke with indicated that improvements be kept to a minimum. Many voiced strong objections to camping fees.

CAMPSITE INVENTORY

Newspaper Rock

Sites appear to be of moderate to high use as they are in close proximity to Utah 211. Most sites are well defined and clustered together in one large area. Appropriateness is questionable due to the location within the flood zone and the riparian area. A handful of the area's sites are located within 100 ft. of Indian Creek. Drainage overall is adequate to poor.

Recommendations:

1. Close camping in the area and restore existing campsites
2. Consider the development of an alternative campground outside of Indian Creek Canyon in the area. The Shay Mountain View site (approximately 1 mile west of Hart's Draw Road on the south side of Hwy 211 before the road enters into Indian Creek Canyon) has been identified by the BLM as a good location. RMFI recommends that this site be studied further so as to offset the removal of campsites at Newspaper Rock.

Newspaper Rock to Donnelly Canyon

These are sites located along Utah 211 in the stands of scrub oak and cottonwood between Newspaper Rock and Donnelly Canyon. These sites provide shade from the sun during the warmer months, and, as a consequence, are quite popular.

In recent years, several campsites have been closed in this section of the canyon. A restoration program (BLM, NPS, Dugout Ranch, and RMFI) to restore the side canyons in Upper Indian Creek Canyon was launched in 1990. Hog Canyon, Donnelly Canyon, Fringe of Death Canyon, and Fringe of Life



Campsite in upper Indian Creek Canyon

Canyon were closed to vehicles and the road beds restored to hiking paths. The campsites at the mouths of these canyons were also closed and restored. The Dugout Ranch did at one time permit camping in the cottonwood grove across from Donnelly Canyon. However, this privilege was revoked in 1993 after an abandoned campfire consumed several trees. Impacts are low at the sites that are open, despite relatively heavy-use. However, in the scrub oak stands in the upper canyon, visitors are beginning to drive further and further off the highway and several new campsites have developed.

Visitor impacts are a special concern in this area on account of the importance of the Indian Creek riparian area. Camping, if it continues to be permitted in this area, should be carefully controlled and monitored.

Recommendations

1. Determine whether or not camping should continue to be allowed in this section of the canyon given impacts to the riparian area.

Bridger Jack Butte

This area has seen a rise in camping impacts and new campsite development since the closure of the popular campsites on Dugout Ranch. Sites span the distance from the cattle guard to the end of the Bridger Jack Butte and are found on both sides of the road. Many have "spur" sites surrounding a main camping site. These are used by people in search of greater privacy. Most campsites are well established, as the use level is moderate to high.



The campsites in the Bridger Jack Butte area are popular due to the relative solitude and ample sun during the cooler months.

Accessibility to the Bridger Jack camping area is relatively easy, except during periods of high moisture.

Recommendations

1. Designate and develop campsites. Space campsites should provide privacy and solitude.
2. Keep site improvements to a minimum with only the most basic improvements, i.e. toilet facilities and established parking areas.
3. Determine whether or not campfires should be allowed. If fires are deemed acceptable, limit fires to select campsites and restrict wood foraging.
4. Fence this area to keep grazing cattle out.

North Cottonwood Canyon

This site is located 7 miles up North Cottonwood Canyon in a large stand of Cottonwoods. It is an ideal camping location and several sites have developed. The site provides some shade and wind protection, and privacy. The parcel on which the campsites are located is state land.

Recommendations

1. Pursue acquisition of this parcel to permit its development as a formal campground.
2. Designate and develop campsites. Space campsites to provide privacy and solitude.
3. Keep site improvements to a minimum with only the most basic improvements, i.e. toilet facilities and established parking areas.
4. Determine whether or not campfires should be allowed. If fires are deemed acceptable, limit fires to select campsites and restrict wood foraging.
5. Fence this area to keep grazing cattle out and allow for restoration.

Super Bowl

As one of the most frequently used camping areas in the Indian Creek corridor, the Super Bowl campsite displays the most obvious resource damage. This area is commonly used by multiple parties. The abundance of shade trees and open areas make this a good location for this sort of camping. Site sprawl has rendered campsite boundaries a bit ambiguous. Many sites are large areas with one fire ring. Numerous social trails (toilet related) lead away from the sites. Of major concern to the area is loss of downed vegetation due to firewood foraging. Other impacts include tree damage, soil compaction, proliferation of social trails, and soil erosion.



Shade trees make the site known as the Super Bowl one of the most popular camping sites amongst climbers visiting the area.

Recommendations

1. Develop this site as a formal campground
2. Provide toilet facilities (open vault toilets similar to ones provided elsewhere in the area).
3. Designate sites, closing any sites that are undesirable.
4. Restrict on-site foraging of wood. Require campers to bring their own.
5. Fence the area to keep grazing cattle out.
6. Construct a kiosk that provides climbers with information about the area, resource protection protocols, conservation and preservation goals, information map, etc.

Creek Pasture

This site is located on the north side of Highway 211 approximately 1.5 miles northwest of the Davis Canyon road entrance. The site is an old construction quarry. There are numerous cottonwood trees near the site. The site has been used on occasion by large groups. This site is an ideal location for a developed campsite that could accommodate the full range of recreational vehicles including large RVs

Recommendation

1. Develop this site as a formal campground as the need arises.

Hamburger Rock/ Six-Shooter Campground

This already existing campground provides valuable overflow from the Needles District (NPS) as well as camping for large groups visiting Indian Creek Canyon. The BLM has been considering redesigning and expanding this site for several years. RMFI recruited an intern in the mid-90's to help construct a design concept for this expansion. RMFI supports the BLM in their efforts to improve this site.

Recommendation

1. Expand this site to accommodate additional campers.

Outlier Campsites

These are individual sites dispersed throughout the Indian Creek recreation planning area. They are usually found near the base of buttness access, 4WD roads, cottonwood groves, along creek corridors, and up canyons. Most experience low use Monitoring the impact of these sites is suggested on a periodic schedule. Certain campsites that are more frequently used, such as those at the Cat Wall, Broken Tooth, up North Cottonwood Canyon, and along the Davis Canyon road should be identified as designated/undeveloped sites. RMFI recommends that campers be required to remove their waste from these sites. Should use levels increase and impacts accelerate, these may be the first areas to be closed to overnight camping.

CAMPSITE DESIGN RECOMMENDATIONS

Designated/Undeveloped Sites * DU Sites:

These campsites fall under the category of "outliers" in the sections above. For DU sites, a small post in the ground would be sufficient to mark the site. Natural barriers (rock) may be used to define parking locations. No toilet facilities would be provided and visitors should be required to pack their waste out. No fire grates would be provided and visitors should be instructed to bring wood from outside the corridor.

Sites: This design is recommended for the "outlier" sites described above.

Designated/Minimum Development * DMD Sites:

DMD sites are designated sites with improvements or development limits as for DU sites with the exception of toilet facilities. The Bridger Jack Butte area is a good example of where DMD Sites are recommended. It is recommended that not all sites be furnished with fire pits. The general population of campers surveyed by RMFI indicated they tend to "fire-share" with neighboring sites and many did not have fires at all. Inventory of sites over a month-long period during the busy season also indicated that many fire rings went unused. Picnic tables in these sites are not needed. Those campers that desire tables bring portable tables. RMFI encourages the BLM to restrict firewood foraging in the Indian Creek Canyon and require that visitors bring in firewood from outside the area. A visitor kiosk is also needed at the entrance of the camping areas

Sites: Bridger Jack Butte, North Cottonwood Canyon, Super Bowl

Group Area/Developed Sites * GAD Sites:

The GAD sites are those that would be established with facilities such as toilets, fire rings, and tables. These areas should also accommodate RV's.

GAD site development is recommended for Creek Pasture and North Shay Mountain campgrounds.

V. OTHER VISITOR INFRASTRUCTURE NEEDS

INTRODUCTION

This section of the report identifies visitor infrastructure needs in addition to campsite and trail improvements that RMFI believes are needed for the Indian Creek Canyon corridor.

PARKING AREA IMPROVEMENTS

Parking is becoming an increasing problem at popular climbing locations along Utah 211. The problem is most severe at Donnelly Canyon where as many as 40- 60 cars can be found during peak visitation times. A formal parking area and established overflow pull-offs are needed to accommodate this use. The parking area also needs to be fenced to direct people to established trails and to minimize damage to vegetation.

Parking areas also need to be established and designated for Cat Wall Canyon, Scarface Wall, Broken Tooth Wall, and Bridger Jack Mesa (Moki Towers).

KIOSKS AND VISITOR INFORMATION MATERIALS

Indian Creek Canyon is visited by people from throughout the region and U.S. The area also has an international reputation amongst climbers. Many of the people visiting the area are unfamiliar with the area.

Visitor education, therefore, is one of the most important needs for the Indian Creek Canyon corridor. RMFI recommends that kiosks with visitor information be developed and placed at strategic locations like the parking area for Donnelly Canyon, and at the Bridger Jack Butte and Super Bowl campsites. These kiosks should include the following information:

- 1) public and private property boundaries,
- 2) locations of climbing areas,
- 3) climbing parking sites and access trails,
- 4) designated campsites,
- 5) key visitor resource protection protocols, i.e. low impact hiking and climbing practices, riparian area protection,
- 6) visitor restrictions, i.e. disturbance of archeological sites, ban on wood foraging , seasonal raptor closures, etc.

It is also recommended that a brochure be published for general public distribution that provides a more detailed explanation of the above information. In addition, the brochure should include an explanation of the natural and human history of the area, and climbing history and practices. The brochure should also include contact information for the Access Fund, BLM, the Nature Conservancy, and Rocky Mountain Field Institute.

RMFI recommends that publishers of guidebooks be contacted regarding the land use issues in Indian Creek Canyon. In return for the money that they make off of publicizing the area, they should be actively involved as partners in its stewardship.

VI. RESTORATION

INTRODUCTION

As stated in the Student Conservation Corps' Lightly on the Land , "Restoration is not a substitute for taking care of the environment in the first place. But where conservation and prevention of damage have failed, restoration can work wonders."



RMFI volunteers transplanting native grass plugs into the roadbed in Fringe of Life Canyon.

Restoration efforts in Indian Creek have been very successful. Groups under the supervision of the Rocky Mountain Field Institute have revegetated several road closures, retained erosion gullies, and closed redundant or undesirable social trails. The road beds in Hog Canyon, Donnelly Canyon, Fringe of Death Canyon, and Fringe of Life Canyon have been the primary targets for restoration. Recently, RMFI has begun to restore two road beds in the canyon leading to the Cat Wall.

The primary restoration strategy that RMFI has used has been to transplant bunch grass collected from nearby locations into target sites. This is the same strategy that has been employed by Canyonlands National Park. Approximately 60- 75% of the plugs have survived. Seeds from shrubs have also been collected and broadcasted into the restoration sites.

Though this has aided in the management of resource impacts, much more restoration work remains to be done throughout the Indian Creek corridor.

Restoration efforts typically fail unless the threats that caused the damage in the first place are prevented from reoccurring. This requires knowledge of the resource users. If a trail or a campsite is to be closed and/or revegetated, users need to be directed to more suitable areas. RMFI has found that, in general, most people respond favorably to restoration and respect the efforts. It is advised, however, to provide informative and educational material for visitors so that they are aware of restoration projects.



Donnelly Canyon today following restoration.

Restoration work is needed for the following locations:

- Closed social trails
- Drainage areas along trail corridors
- Campsite closures
- Closed road beds
- Sites with infestations of noxious weeds.

TECHNIQUES

Restoration techniques are always determined site-specifically. What may work in one area is not always the best option for another. Aesthetically, the goal is to reach a naturalized state that blends with the surrounding environment and renews a look similar to that of the area prior to human impacts. Structurally, the goal is to stabilize impacted areas to a sustainable state and to lessen further impacts. The following is a general compilation of common restoration techniques:

- Retaining features (steps, risers, walls).
- Water diversion structures (water bars, rolling dips).
- Revegetation of denuded areas or areas infested with noxious plants (seeding, transplants).
- Natural barriers that discourage access (stone, plants, logs, debris).
- Education.

MONITORING

Long-term monitoring of a restoration site and keeping a documented record will allow managers to judge the effectiveness of restoration efforts. Data compiled by the Rocky Mountain Field Institute for the Indian Creek Inventory will include a GPS site location, site condition assessment, photo-documentation of current state, and a vegetation survey. This data will provide for baseline information for future monitoring.

FUTURE RESTORATION WORK

RMFI strongly recommends that restoration work be continued in the Indian Creek Canyon corridor in the interest of improving the ecological conditions of the landscape. Many sites have been seriously degraded or altered. Non-native and/or noxious plants represent a serious threat. RMFI recommends that a collaborative effort on the part of the BLM, The Nature Conservancy, and Dugout Ranch management to identify restoration priorities. RMFI also recommends that the climbing community support these efforts.

VII. Implementing A Management Plan

Introduction

Finding funds for the improvements and recommendations contained in this report will be challenging. In addition, a funding source must be secured to provide for the maintenance of whatever infrastructure is developed, as well as for the continued restoration of damaged areas throughout the area. RMFI also strongly recommends any cost analysis for the area not be confined to solely recreational issues and concerns. Any stewardship initiative that is undertaken on behalf of Indian Creek Canyon must take into consideration the area's historical and ecological preservation and restoration needs.

To date, the Rocky Mountain Institute has hosted the majority of the volunteer projects in Indian Creek Canyon. The recommendations in this report represent a significant increase in development over and above what RMFI has traditionally contributed. RMFI cannot increase its involvement without additional financial support.

Funding Sources

The BLM is seeking funds to support infrastructure improvements in Indian Creek Canyon. However, the Utah office of the BLM is seriously under-funded and it is not known how much funding will be available.

The Access Fund is a logical funding source and has expressed interest in providing financial assistance for Indian Creek Canyon. It is likely that other sources within the climbing community would support development efforts. This includes

Maintenance fees for campgrounds and related infrastructure could be collected through camping fees. Another possibility, would be to establish the area as a fee demonstration area. The advantages of this alternative are that it provides a mechanism to collect day use fees, and provides a funding source for improvements and maintenance separate from campground maintenance. Opposition has been voiced by some climbers against fees of any kind. However, it is unlikely that the BLM will support the improvements without a fee structure.

Stakeholder Alliance and Involvement

With the exception of RMFI's efforts, the climbing community has not been directly involved in the stewardship of the area with the exception of voicing input on management issues. A local initiative, the Canyonlands Climbers' Coalition, has been the only attempt at organizing the local climbing community; however, this effort was short-lived falling victim to internal disputes. However, RMFI believes that the climbing community will become more involved if opportunities are. "Indian Creek", as it is referred to by climbers, is one of our country's finest climbing areas and RMFI believes that there exists a great opportunity to both raise significant funds and recruit volunteer help with improvement and restoration projects.

Over the past decade, sporadic meetings have been held between the various stakeholders. They have typically been called following an incident or to address the latest wave in popularity. RMFI believes that the formation of an alliance or partnership between the major stakeholders would be both helpful and productive.

Master Plan

RMFI believes that a master plan for the area, including private and public lands, would be a most valuable document. The process of developing such a plan would also formalize or reinforce a common vision for the area and all of its components. This could perhaps be one of the goals of the aforementioned stakeholder alliance. The master plan could also be a valuable tool for fund-raising.

Visitation Capacity

Discussions with the Access Fund, BLM, and The Nature Conservancy revealed a common agreement that recreational visitation levels are presently within an acceptable range for the Indian Creek Canyon corridor. However, this agreement hinges on whether or not visitor infrastructure improvements made. However, there appears a concomitant concern for what the future bodes in respect to visitation levels. It was generally agreed that an increase of 5%-10% in visitation levels would represent an upper limit capacity level.

It is difficult to ascertain how much visitation levels will increase in Indian Creek Canyon. However, based upon present growth trends (RMFI estimates) significant increases above current levels can be expected within the near future. Consequently, it is not so much a question of "if" but "when" the above levels will be exceeded. This begs the hard questions of "At what levels does recreational use truly exceed desirable levels?" and "What measures can be taken to manage use levels in the future?"

RMFI believes strongly that the issue of capacity levels should be formally studied so that it can be proactively dealt with. A start would be to determine accurate visitation levels.

VIII. CONCLUSIONS

The decision by the BLM to revisit the Indian Creek Corridor and to develop a revised recreation management plan for the area is timely. Increased recreational use and visitation has led to significant increases in disturbance levels at several locations along the corridor. Unless these impacts are addressed, many of these areas will become seriously degraded.

As with all public land use issues, there are inherent differences of opinion as to how these impacts might be addressed. There is strong preference that recreational infrastructure be kept to a minimum. RMFI supports this position with the understanding and realization that some level of development is now needed to support recreational use and protect the area's natural and cultural resources. These improvements include a well-designed and constructed system of climbing access trails, designated campsites, and parking areas.

It is important to note, however, that Indian Creek Canyon is not simply a recreational resource. There are significant challenges related to preserving and protecting the area's outstanding historical and natural resources. Furthermore, restoration needs are many and much can be done to improve the ecological integrity of the area.

The improvements recommended in this report will be costly. Implementing them will require a significant capital outlay in the short term and ongoing maintenance expense in the long term. Given Indian Creek Canyon's prominence as a climbing area, RMFI is confident that funds can be secured to complete a significant percentage of the improvement needs identified in this report. RMFI encourages the BLM to continue to work with the climbing community in all ways possible to bring about the recreational infrastructure improvements in a timely manner. Delaying these improvements will lead to further resource damage. This includes, wherever possible, creating opportunities through challenge cost share programs for the climbing community to participate directly in the stewardship of the area.

Finally, RMFI cannot stress the importance of defining and maintaining a common vision amongst the major stakeholders for the stewardship of the area. The development of a formal Master Plan would help to define this vision and the actions needed to both achieve it and sustain it.

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ABOUT THE ROCKY MOUNTAIN FIELD INSTITUTE

Mission and Functions

The Rocky Mountain Field Institute is a nonprofit environmental service and education organization dedicated to the preservation and restoration of wilderness and key natural areas. The institute accomplishes its mission through environmental projects developed in partnership with federal, state, and municipal land management agencies. These projects are completed through the following programs:

Research

Research studies that assess environmental conditions and threats to important biological resources and, identify resource preservation and restoration needs, and management strategies and alternatives.

Preservation and Restoration

Site improvement, trail construction, and habitat or landscape protection and restoration programs.

Education

Secondary level programs to provide students with exceptional opportunities to complete environmental service or stewardship projects; gain a better understanding of the natural world, and conservation issues; and, connect with nature through outdoor adventure-based activities.

College level programs to provide opportunities for students to complete environmental service, research, and fieldwork.

Public Stewardship

Volunteer programs that provide opportunities for the general public to complete significant, high quality environmental service.

History

The Rocky Mountain Field Institute has developed a number of highly successful environmental education and stewardship programs in partnership with land managers in the Southern Rocky Mountain Region and Colorado Plateau. These include the Eldorado Canyon State Park Trails Project, the Indian Creek Canyon Preservation Project, the Colorado Fourteeners Initiative, the Shelf Road and Penitente Canyon Climbing Areas Site Development Projects, and the Garden of the Gods Restoration Plan. RMFI has provided environmental service programs with numerous colleges and schools throughout the region. RMFI has received a number of state and national awards, and recognition for its work.

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