

FINDING OF NO SIGNIFICANT IMPACT

Mossy Cave Trail Rehabilitation and Resource Protection

Bryce Canyon National Park

Background

The area known as Bryce Canyon National Park was set aside as a national monument in 1923 to protect the fascinating geologic structures known as hoodoos and other natural and cultural resources. The Mossy Cave Trail is located in Water Canyon along Highway 12 in Garfield County, Utah. In 2003, monsoonal rains caused the stream along the trail to shift course and undercut a large portion of the trail. That storm, and subsequent rain events, caused the trail to erode, reducing the width of the hiking surface. Materials that support nearby bridge abutments have also been eroding, which is beginning to undercut the bridge supports. On one area of the trail, a culvert and small footbridge are being badly undercut due to the previous placement of the culvert on a small spring. The trail is heavily used by the public due to the relatively level terrain and short hiking distance to the cave and a waterfall, and the eroded and undercut areas pose a potential threat to public safety. At this time, the trail is in poor condition and at risk of being lost altogether.

The resources of Mossy Cave need additional protection to prevent continued damage by visitors. The cave (a rock alcove) is extremely unusual in the region, as it represents one of the only examples of hanging gardens on the entire Paunsaugunt Plateau. The availability of water allows for the presence of a wide variety of vertebrate and invertebrate faunal species, in addition to several rare plant species. Mossy Cave is a major destination for many park visitors. Currently, visitors are entering the rock alcove and damaging the hanging gardens and geologic formations, as well as causing impacts to the cave floor. The impact of human presence inside the cave has resulted in loss of vegetation, changes in the water flow pattern, and alterations of ice formation.

The existing wayside exhibits along the trail are outdated and weathered and do not adequately describe the area and its resources.

An environmental assessment (EA) was prepared in June 2006 to report on issues and options sought from the public about the Mossy Cave Trail Rehabilitation and Resource Protection project; to provide an opportunity for public comment on alternatives; and as a necessary step in determining the impact of the Mossy Cave Trail project on the park prior to beginning any rehabilitation work.

Preferred Alternative

Under the Preferred Alternative, large boulders will be moved from within the wash bed to support and stabilize a badly eroded section of trail. Large boulders will also be moved to reinforce the first bridge abutment on the second bridge, which is currently being undercut. Additional boulders may be moved along the southwest side of the wash just above the second bridge to help stabilize the stream bank and reduce erosion and future loss of trail. The movement of boulders from the wash bed to the trail and bridge abutment will require the use of an excavator and a small cat or small dozer (approximate footprint of 11-feet wide by 15-feet long). The equipment will be driven up the wash bed and will pick up large boulders and place them along the trail or push them into place to prevent the trail from eroding during rain events.

Boulders will also be moved from one portion of the wash bed to the second bridge abutment to prevent additional undercutting. Small rocks will be hand-picked and placed in between the boulders to further stabilize the abutment. The equipment will continue up the wash and move boulders to the SW side of the wash where the bank is beginning to erode to stabilize that area as well.

This alternative will also involve rerouting a section of trail around a badly undercut culvert that is quickly becoming a public safety hazard. The reroute will involve relocating approximately 125 meters of trail to an area showing evidence of previous disturbance, such as a social trail. In addition, the culvert will be removed in order to allow the spring to flow naturally.

Another part of this alternative will be to construct a viewing platform approximately 12 feet by 10 feet to reduce damage to cave resources. This will require the use of a small piece of machinery that can travel up the trail itself without causing additional damage to the trail. All materials will be brought in through the use of this piece of equipment or carried by hand.

The last part of Alternative B will be to develop and install wayside exhibits explaining the area and its resources. These exhibits will be placed along the trail near areas of interest.

Any areas disturbed during completion of this project will be rehabilitated and revegetated with native species.

This project will result in a visitor use trail in good condition that could withstand typical rain events and remain safe and available to the public for many years.

The following mitigation measures will be adhered to during implementation of the Preferred Alternative:

- To minimize negative impacts to water quality, all work within the wash will be conducted after October 15, 2006 and before April 15, 2007. From April 15 through October 15, the water flow is at a much higher level due to the irrigation water being transported through Water Canyon by the Tropic East Fork Irrigation Company. By using the equipment and moving boulders in the wash bed during times of low water flow, impacts to water quality will be decreased.
- Every effort will be made to keep the trail open to the public during construction, thereby minimizing impacts to visitor use and experience.
- Revegetation plantings will use native species from genetic stocks originating in the park. Revegetation efforts will be to reconstruct the natural spacing, abundance, and diversity of native plant species. All disturbed areas will be restored as nearly as possible to pre-construction conditions shortly after construction activities are completed. The principal goal is to avoid interfering with natural processes.
- In many areas soils and vegetation are already impacted to a degree by various human and natural activities. Construction will take advantage of these previously disturbed areas wherever possible. Soils within the project construction limits will be compacted and trampled by the presence of construction equipment and workers. Soils will be susceptible to erosion until revegetation takes place. Vegetation impacts and potential compaction and erosion of bare soils will be minimized by conserving topsoil in windrows. The use of conserved topsoil will help preserve micro-organisms and seeds of native plants. The topsoil will be respread in as near as original location as possible, and supplemented with

scarification, mulching, seeding, and/or planting with species native to the immediate area. This will reduce construction scars and erosion.

- Should construction unearth previously undiscovered archeological resources, work will be stopped in the area of any discovery and the park will consult with the state historic preservation officer/tribal historic preservation officer and the Advisory Council on Historic Preservation, as necessary, according to §36 CFR 800.13, Post Review Discoveries. In the unlikely event that human remains are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (1990) will be followed.
- Temporary impacts associated with construction will occur, such as soil and vegetation disturbance and the possibility of soil erosion. In an effort to avoid introduction of exotic plant species, no hay bales will be used. Hay often contains seed of undesirable or harmful alien plant species. Therefore, on a case-by-case basis, the following materials may be used for any erosion control dams that may be necessary: rice straw, straws determined by NPS to be weed-free, cereal grain straw that has been fumigated to kill weed seed, and wood excelsior bales. Standard erosion control measures such as silt fences and/or sand bags will also be used to minimize any potential soil erosion.
- Construction zones will be identified, which will confine activity to the minimum area required for construction.
- Silt fencing fabric will be inspected weekly or after every major storm. Accumulated sediments will be removed when the fabric is estimated to be approximately 75% full. Silt removal will be accomplished in such a way as to avoid introduction into any wetlands or flowing water bodies.

Alternatives Considered and Environmentally Preferred Alternative

Alternatives considered and analyzed in the EA included Alternative A, a no-action alternative (continuing the present management operation and condition), and Alternative B, Mossy Cave Trail Rehabilitation and Resource Protection (the Preferred Alternative). Alternatives considered, but dismissed from analysis included closing the trail, and eliminating all current maintenance on the trail and allowing it to degrade and fail completely.

Alternative B, Mossy Cave Trail Rehabilitation and Resource Protection, is also the Environmentally Preferred Alternative. The Council on Environmental Quality defines the environmentally preferred alternative as "...the alternative that will promote the national environmental policy as expressed in the National Environmental Policy Act's §101." Section 101 of the National Environmental Policy Act states that "... it is the continuing responsibility of the Federal Government to ...

(1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

(2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;

(3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;

(4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice;

(5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and

(6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.”

This alternative meets policies 1-6 to the extent of Alternative A, and will more fully meet policy 2 by assuring a safer and more aesthetically pleasing surrounding. The unstable sections of trail will be stabilized and reinforced with large boulders and eroded areas will be revegetated. It will also more fully meet policy 4 by installing a viewing platform near the cave entrance to better protect cave resources and allow them to recover to healthy conditions.

Why the Preferred Alternative Will Not Have a Significant Effect on the Human Environment

As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

Impacts that may be both beneficial and adverse

Resource topics that were addressed in the EA because the resultant impacts may have been greater-than-minor include soils, vegetation, visitor use and experience, and water resources. All other resource topics were dismissed because the project will result in minor or less impacts to those resources. No major effects are anticipated as a result of this project.

Any construction activities under this alternative including the new trail reroute, construction of the viewing platform, movement of the large boulders to stabilize the abutment and trail, and the installation of signs will result in ground disturbance, thereby impacting soils of the wash and trail area. These disturbances and compaction will be limited to the construction areas, making them negligible to minor and short-term due to the rocky and poorly-formed nature of these soils. The project will also have minor beneficial and long-term impacts to soils by reducing erosion. These impacts will be more localized over the entire project area as erosion will be prevented from occurring in the future. Badly eroded areas of the trail will be repaired and reinforced with large boulders to prevent similar erosion from occurring in the future.

The trail reroute, platform construction, and trail stabilization will have negligible and adverse impacts to vegetation during project completion as some trampling or removal of individual plants will occur. Disturbed areas will be revegetated and rehabilitated following construction; therefore, removal and/or disturbance of vegetation in the project area is expected to result in no or negligible adverse impacts to vegetation. In the long-term, the project will have negligible to minor benefits to the area's vegetation. The stabilization work will reduce or eliminate vegetation loss due to erosion. Vegetation in Mossy Cave is being impacted when visitors enter the cave and trample or remove it. The construction of a viewing platform near the cave's entrance will limit visitor access allowing the vegetation to recover and remain protected.

Rehabilitation of the trail will have adverse, short-term, negligible to minor impacts to visitor use and experience due to noise and minor inconveniences. This project will return the trail to good condition allowing visitors to continue accessing the cave and waterfall; therefore there will also be long-term, beneficial minor to moderate impacts to visitor use and experience. Visitor safety will be enhanced by eliminating narrow trail tread and rerouting the trail around a badly undercut

section. This alternative also involves installing a viewing platform and fence near the entrance to Mossy Cave, which will prevent visitors from accessing the entire cave. This may have minor to moderate, long-term adverse impacts on some visitors; however, ensuring that the cave and its resources are protected for future generations to enjoy, will result in long-term, minor to moderate beneficial impacts.

This project will have minor to moderate adverse impacts on water quality in the short-term during construction when the equipment will travel in the wash bed to move materials for stabilization of the trail and undercut bridge abutment. To reduce impacts to water quality, all work within the wash will be scheduled after the Tropic and East Fork Irrigation Company stops transferring water through the wash in the Fall (approximately October 15) or before they begin the water transfer in the Spring (approximately April 1). As a result of this mitigation, impacts will be reduced to negligible to minor and will be very site-specific. An Army Corps of Engineer 404 permit application is in process and will be obtained prior to beginning work. In the long-term, Alternative B will have negligible to minor beneficial impacts on local water quality due to the reduction in erosion. The badly eroded and undercut areas of the trail and bridge abutment will be stabilized using large boulders, resulting in less erosion.

Degree of effect on public health or safety

Under the Preferred Alternative, rehabilitation work will be completed and the trail will return to good condition allowing visitors to continue accessing the cave and waterfall; therefore there will be long-term, beneficial minor to moderate impacts to visitor use and experience. Visitor safety will be enhanced by eliminating narrow trail tread and rerouting the trail around a badly undercut trail section.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas

The Preferred Alternative will not impact unique characteristics of the geographic area including historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas because these resources do not exist in the project area.

Degree to which effects on the quality of the human environment are likely to be highly controversial

Throughout the environmental process the proposal to rehabilitate the Mossy Cave Trail and protect cave resources was not highly controversial, nor are the effects expected to generate future controversy. The initial 30-day scoping period for the project did not generate controversy nor did the 30-day public review of the Environmental Assessment.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks

The effects of rehabilitating the Mossy Cave Trail and protecting cave resources are fairly straightforward and do not pose uncertainties. The environmental process has not identified any effects that may involve highly unique or unknown risks.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration

The Preferred Alternative is not expected to set a precedent for future actions with significant effects, nor does it represent a decision in principle about a future consideration because all future actions involving rehabilitation of trails at Bryce Canyon National Park will be considered on a case-by-case basis.

Because there are trail rehabilitation projects throughout the National Park System, action for this project will not set any NPS precedent. The Preferred Alternative is consistent with actions permitted elsewhere.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts

Cumulative effects were analyzed in the Environmental Assessment, and no significant cumulative impacts were identified.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR Part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of the Preferred Alternative will result in a "no historic properties affected" determination. This is due to the fact that no archeological resources, historic resources, ethnographic resources or cultural landscapes are known to exist in the project area. The State Historic Preservation Officer concurred with this determination in a letter dated August 7th, 2006.

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat

A letter from the U.S. Fish and Wildlife Service dated January 22, 2004 indicated that there are no records of threatened or endangered species in the project. Verbal concurrence by phone was made and noted in a memo to file dated June 28, 2006.

Whether the action threatens a violation of Federal, state, or local environmental protection law

This action violates no federal, state, or local environmental protection laws. The Preferred Alternative will be implemented in accordance with all federal, state and local environmental protection laws.

Impairment

In addition to reviewing the list of significance criteria, the National Park Service has determined that implementation of the proposal will not constitute an impairment to Bryce Canyon National Park's resources and values. This conclusion is based on a thorough analysis of the environmental impacts described in the Mossy Cave Trail Rehabilitation and Resource Protection Environmental Assessment, the public comments received, relevant scientific studies, and the professional judgment of the decision-maker guided by the direction in NPS Management Policies (December 27, 2000). Although the plan/project has some negative impacts, in all cases these adverse impacts are the result of actions taken to preserve and

restore other park resources and values. Overall, the plan results in benefits to park resources and values, opportunities for their enjoyment, and it does not result in their impairment.

Public Involvement

The environmental assessment was made available for public review and comment during a 30-day period ending July 30, 2006. To notify the public of this review period, the National Park Service distributed a letter to various agencies, interested parties and members of the public on the National Park's mailing list. Copies of the document were sent to government officials and public libraries state-wide; and posted on the internet at the National Park Service Planning, Environment, and Public Comment website (<http://parkplanning.nps.gov/>). One comment letter was received from local government during the public review and comment period. This letter supported the NPS Preferred Alternative. No other written comments were received. During the review period, Bryce Canyon National Park Resource Management staff also attended a Tropic City Council meeting to review the EA. Council members expressed support for the Preferred Alternative, as well as a recommendation for parking area expansion and better signage along the road. These comments were determined to be beyond the scope of the present project.

Conclusion

The Preferred Alternative does not constitute an action that normally requires preparation of an environmental impact statement (EIS). The Preferred Alternative will not have a significant effect on the human environment. Negative environmental impacts that could occur are minor or moderate in intensity. There are no significant impacts on public health, public safety, threatened or endangered species, sites or districts listed in or eligible for listing in the National Register of Historic Places, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the action will not violate any federal, state, or local environmental protection law.

Based on the foregoing, it has been determined that an EIS is not required for this project and thus will not be prepared.

Approved:

Michael D. Snyder, Director, Intermountain Region

Date