



National Park Service
U.S. Department of Interior
Arches National Park
Moab, Utah

Finding of No Significant Impact

Climbing and Canyoneering Management Plan

Background

The National Park Service (NPS) has prepared an environmental assessment/assessment of effect (EA/AEF) to determine what the impacts of rock climbing, canyoneering, and associated activities are in Arches National Park and to consider how the NPS should further manage those activities in a management plan. Issues identified include effects on natural and cultural resources and wilderness character, increase in use levels, the development of new routes, use of fixed gear, development of approach trails, rock alteration, visual impacts and the effects of climbing/canyoneering on visitor safety and experiences.

With rapid growth in the popularity of climbing and canyoneering, the NPS recognized a need for a systematic assessment of potential impacts and an evaluation of potential management strategies for mitigating impacts. Park staff and visitors expressed concerns about impacts of climbing and canyoneering activities on soil and geologic resources, rare plants and other vegetation, water resources, sensitive wildlife species, and cultural resources. In addition, concern was expressed about potential conflicts with other park uses and user groups, and with the increasing amounts of staff time that were being expended to monitor and manage climbing and canyoneering activities.

Climbing and canyoneering activities have been largely unregulated over past years. Park management did not know the full extent of climbing and canyoneering use and the impacts on the park's resources, and potentially, with other visitors. Many social trails have been developed through climbing and canyoneering areas, impacting park resources adversely. Access and egress routes, which typically involve traveling across the backcountry to both rock climbs and canyoneering routes, have not been assessed for the presence and condition of cultural resources or other natural resources. New routes, both climbing and canyoneering, have become established within park boundaries, and park management is unaware of the location and installation of fixed gear. Climbing rope use for canyoneering and climbing has caused permanent grooving in the sandstone along routes.

Adventure companies have begun to show an interest in conducting commercial guided trips for canyoneering and rock climbing in Arches. Because there was never an official determination of whether commercial canyoneering or rock climbing was a necessary and appropriate commercial visitor service in Arches National Park as is required per 2006 NPS *Management Policies* and the Wilderness Act of 1964, a commercial visitor service analysis needed to be completed prior to authorizing additional commercial canyoneering and rock climbing in the park.

Due to the increasing availability of information on climbing and canyoneering routes in the park from internet sites, visitors rarely contact the park for accurate information. Some internet sites have misleading information on where and how to traverse the route causing social trails to

develop and creating opportunities for a visitor's safety to be compromised. These issues have prompted the NPS to look at ways to provide important educational information and opportunities regarding these two backcountry activities.

Selected Action

Alternative B, Active Management, is the preferred alternative and NPS's selected action because it best meets the purpose and need for the project as well as the project objectives to 1) implement management strategies which protect the park's resources and values while providing opportunities for climbing and canyoneering, 2) monitor the status of natural resources, climbing and canyoneering routes and use patterns as a basis for future decision making for maintaining desired conditions, 3) establish appropriate levels of canyoneering and rock climbing use, 4) identify opportunities to provide educational venues and materials for rock climbing and canyoneering activities, 5) engage the climbing and canyoneering community in cooperative stewardship of park resources, values, and visitor experience opportunities.

Under the preferred alternative, climbing and canyoneering activities will be actively managed and monitored to maintain desired resource and visitor experience conditions. Monitoring data will be used to ensure desired conditions are being met. If desired conditions are not being met, the following management strategies will be considered: Trail delineations, group-size limit adjustments, seasonal route closures, additional permit requirements, and placement and replacement of fixed gear.

The following actions are proposed for implementation under the preferred alternative.

Access Routes

Access routes will be delineated and maintained as necessary to minimize impacts on park resources and values. Results of resource assessments and monitoring will be used to determine management strategies for access routes.

Short sections of routes may be maintained to prevent erosion or other resource degradation. In some instances signs may be placed to direct climbers and canyoneers away from problem or sensitive areas in order to protect resources. Signs or cairns will only be erected to protect resources or for safety concerns.

Access trails to the bases of well-known and heavily used climbing routes and access trails to canyoneering routes may be identified on a map, delineated and maintained in order to prevent further erosion and loss of vegetation. No more than one access route up/down a slope to the base of a climb, area, or canyon will be allowed. Social trails that are used infrequently, or that traverse sensitive soils will be rehabilitated or blocked to discourage future use.

Group Size Limits

Rock climbing groups will be limited to five persons per group.

Canyoneering groups in the Fiery Furnace and the Lost Spring Canyon canyoneering routes will be limited to six persons per group. Elsewhere, canyoneering groups will be limited to 10 persons per group. Larger groups must split and use different routes or use the same route at different times of the day to avoid queuing at rappel sites and to minimize impacts on resources and on other visitors.

Permit Requirements

A free user permit system will be implemented to enable monitoring of visitor use numbers, group sizes, and locations of use. The free permit process will be convenient and will benefit users by providing educational information on safety issues, route access, and low-impact Leave No Trace

(LNT) techniques for off-trail travel in the backcountry. In the future, the permit system may be accessible online.

With the exception of entering the Fiery Furnace, permits will be available outside the park Visitor Center at an information/registration board.

Rock climbers will be *encouraged* to complete a free self-registration process at the park Visitor Center (VC) to allow NPS to gather information about levels, locations, and timing of climbing use in the park.

Canyoneers will be *required* to complete a free self-registration process at the park VC or at the Lost Spring Canyon trailhead for the Undercover / MMI routes to allow NPS to gather information about levels, locations, and timing of canyoneering use in the park.

New Route Establishment

Establishment of new routes will be allowed. The following guidelines for new routes are provided to maximize visitor safety and minimize potential impacts on park resources and values:

- Travel to and from routes must be within dry wash systems or on rock.
- Use of retrievable anchor systems will be encouraged.
- No new fixed gear can be installed without a special use permit.

Fixed Gear

Installation of new fixed gear on new and existing routes will require a free special use permit (Appendix G). However, in the future, and after a cost analysis has been completed to determine an appropriate fee, a cost recovery fee may be charged.

The park will establish guidelines, which are also found in Appendix G, for new fixed gear installation to maximize visitor safety and minimize potential impacts on park resources and values. The placement of fixed anchors during new route development will not be allowed when rock features capable of accepting adequate removable protection are present. The installation of pitons will be prohibited.

Use of motorized drills outside of wilderness boundaries will require a special use permit (Appendix G). Applications to use motorized drills will be reviewed by park staff to evaluate potential impacts to adjacent wilderness character, wildlife concerns, or the experiences of other park users. Use of motorized drills within wilderness boundaries will be prohibited.

The park recommends that hardware for new and replacement anchors be modern climbing-specific hardware and of a length adequate for rock conditions at the installation site. 1/4 inch bolts are highly discouraged. Homemade hardware is prohibited. Best practices for the site should be followed.

The park recommends that hardware for new and replacement anchors be a torque-in-sleeve expansion bolt (that can be removed with a wrench for inspection and maintenance) of a length adequate for rock conditions at the installation site. Climbing-specific hangers are also recommended. Appropriately colored chains are recommended to replace the use of nylon webbing when rap hangers cannot mitigate rope grooving.

New, bolt-intensive climbing routes (e.g., sport climbs, bolt ladders) are not appropriate in the park and will not be approved.

The park will actively seek input from the climbing/canyoneering community to assist the park in assessing the suitability and quality of new fixed gear placement proposals.

The park will work with climbing and canyoneering communities to place new fixed gear or to replace existing fixed gear to minimize resource impacts.

Monitoring

Indicators and standards of resource protection and visitor use (Appendix E) will be monitored to determine whether adjustments in the management system are required to achieve desired conditions. Indicators of visitor use will be based on data provided by the user permit system and will be augmented by trail counters and observations made during periodic patrols by staff or partners. Indicators of resource conditions could include raptor nest site occupancy; desert bighorn sheep habitat occupancy; evidence of disturbance to other wildlife, sensitive soil, vegetation, water, cultural and geologic resources; and soundscape characteristics. Specific climbing and canyoneering routes will be closed (seasonal or permanent) to address a specific resource condition (Appendix K). Closures will be kept to the minimum area and duration necessary to protect the affected resource.

A volunteer-based resource stewardship program will be developed in partnership with the canyoneering and climbing communities to enhance monitoring capacity and resource protection.

Closures/Regulations

To ensure protection of the geologic features for which the park was established, it will be prohibited to climb, scramble or walk upon, wrap webbing or rope around, or rappel off any named or unnamed arch with an opening greater than three feet.

The use of white chalk will be prohibited. Chalk or chalk substitutes used in the park will be required to be similar in color to the rock that is being climbed.

If monitoring data indicates that desired conditions are not being met, slight changes to group size and permit requirements may be made. If changes exceed the impacts assessed in this plan, then additional environmental analysis will be necessary. The standards for management changes are described in Appendix E *Resource Protection and Visitor Use Indicators and Standards*.

Mitigation Measures/Actions Common to Preferred Alternative

In addition to park management objectives, the interdisciplinary team identified actions which are common to all alternatives considered. These actions are currently in place or will be implemented with the preferred alternative. Several of these actions are considered mitigation measures to minimize the degree and/or severity of adverse effects of climbing and canyoneering activities.

- **Access Routes**

Travel on designated trails, slickrock, and dry washes will be encouraged in the park.

- **Permit Requirements**

Permits are required for all entry into the Fiery Furnace.

- **Fixed Gear**

- Canyoneering and rock climbing will be free climbing or clean aid climbing. Clean aid climbing involves the use of temporary equipment and anchors that can be placed and removed without altering the environment (e.g. slings, cams, nuts, chocks, and stoppers).
- If an existing item or fixed anchor is judged unsafe, it may be replaced in kind without a permit. When existing anchors are deemed to be unsafe, a reasonable effort to remove the existing hardware will be made and existing drill holes will be used in the installation of replacement fixed anchors whenever possible.

- All old holes will be filled with epoxy and topped with sand to best camouflage the unused hole.
- Software left in place will be required to match the rock surface in color.
- Bolts, hangers and chains painted the color of the rock surface or primed brown will be required.
- Fixed ropes left in place for more than 24 hours are prohibited. Fixed ropes left in place longer than 24 hours will be considered "abandoned property" and removed.
- **Closures**
 - Routes may be closed, temporarily or permanently, or access and/or egress trails rerouted to avoid significant resource impacts based on natural and cultural resource monitoring (36 CFR 1.5).
 - Balanced Rock will be closed to climbing (36 CFR 1.5).
 - Any arch or natural bridge named on the United States Geological Survey 7.5 minute topographical map covering Arches National Park will be closed to climbing (36 CFR 1.5).
 - Bouldering, rock climbing, rock scrambling, and other similar activities will be prohibited in the area known as the "Arches Boulders" or "Highway 191 Boulders" (36 CFR 1.5).
- **Regulations**
 - The physical altering of rock from its natural position such as chiseling, breaking rocks to reinforce crevices and pockets as anchors, glue reinforcement of existing holds, and gluing of new holds will be prohibited (36 CFR 2.1).
 - The intentional removal or "gardening" of lichen or plants from rock will be prohibited (36 CFR 2.1).
 - Use of deadman anchors is prohibited. A deadman is a buried object (e.g., a large rock or log) that functions as an anchor for an attached rope. The action of digging a hole to bury an object for use as an anchor will be prohibited (36 CFR Section 2.1).
 - Slacklining or "highlining" will be prohibited (36 CFR 1.5).
 - BASE jumping will be prohibited (36 CFR 2.17 (a)(3) and 2006 NPS Management Policies 8.2.2.7).
 - Bivvying overnight requires a backcountry permit and will adhere to the same rules and regulations set forth for backcountry camping. Bivvying overnight will be at least one mile from any designated road and one-half mile from any designated trail.
 - Bathing and immersing human bodies will be prohibited in water sources that do not have water flowing both in and out at the time of the activity. Swimming and wading also will be prohibited in water sources that do not currently have water flowing both in and out, except in cases where it will be necessary to enter the water source in order to traverse a route. (36 CFR 1.5).
 - All trash will be packed out and disposed of in a refuse receptacle (i.e., trash can or dumpster) (36 C.F.R. 2.14).
 - Toilet facilities will be used when available (36 C.F.R. 2.14). In undeveloped areas, the disposal of human body waste within 300 feet of a water source, campsite, road, or

trail is prohibited. Leaving or burying toilet paper is prohibited. Provision and use of a bag system or portable toilet will be recommended.

- **Safety Considerations**

- Most technical climbing and canyoneering routes in Arches require advanced skills. The NPS cannot guarantee the safety of park visitors. Safety remains the sole responsibility of the climber or canyoneer. Climbers and canyoneers should understand the inherent danger of the activity. Climbers and canyoneers should have basic knowledge of self-rescue methods and plan accordingly. Climbers and canyoneers should not attempt routes that are not within their ability. Visitor education is the primary means through which the park will continue to encourage safe practices.
- The replacement of fixed anchors will be allowed when necessary to enable a safe rappel when no other means of descent is possible, to enable emergency retreat, and during self-rescue situations.
- The NPS will be not responsible for the replacement or maintenance of existing hardware or software but will work cooperatively with local climbers/canyoneers and organizations to develop a systematic program for the assessment and replacement and inventory of fixed anchors for climbing and canyoneering routes. The NPS explicitly disclaims all responsibility for the safety of equipment, bolts, or anchor systems in the park. However, the NPS may place and maintain fixed anchors for administrative and emergency purposes.

- **Education**

- The park will establish a proactive educational and outreach program. There will be a climbing/canyoneering educational display at the Visitor Center to display closures and regulations and to promote "Leave No Trace" techniques and sound climbing and canyoneering ethics. The park will provide information to climbers and canyoneers before they arrive. This will be accomplished through the development of climbing and canyoneering-specific educational literature that could be distributed at the Visitor Centers, mailed, or posted on the park's web page. Additional efforts will be made to distribute this information to local outdoor gear shops and guide services. The park staff will work with journalists to develop articles for periodicals and guidebooks to provide educational information and foster a better appreciation and understanding of the park's resources. The park will ensure that information posted on official NPS internet sites about climbing routes and canyoneering routes will be accurate and up-to-date regarding closures.

Alternatives Considered

Three alternatives were evaluated in the EA/AEF: the no action alternative, the preferred alternative and one action alternative. Alternative A (No Action) describes the current management of rock climbing and canyoneering in the park which is regulated under the authority of the Code of Federal Regulations. Alternative B, Active Management, is the preferred alternative, as described in the previous section. Alternative C proposes a minimum management approach. Management will emphasize educational efforts via the park website and social media, Visitor Center displays, and other methods to provide canyoneers and climbers with information on park resources, safety, and techniques to minimize resource impacts. Relatively little management emphasis will be placed on law enforcement and resource monitoring, although additional use restrictions could be imposed if determined necessary to protect park resources and values.

Environmentally Preferred Alternative

According to the CEQ regulations implementing NEPA (43 CFR 46.30), the environmentally preferable alternative is the alternative "that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources. The environmentally preferable alternative is identified upon consideration and weighing by the Responsible Official of long-term environmental impacts against short-term impacts in evaluating what is the best protection of these resources. In some situations, such as when different alternatives impact different resources to different degrees, there may be more than one environmentally preferable alternative."

Alternative B (Action) is the environmentally preferable alternative for several reasons: 1) it will result in long-term beneficial effects on soil resources, special status species, archeological resources, wilderness character, visitor use and experience, and park operations. 2) While there will be adverse impacts to geologic and soil resources, sensitive status species, wilderness character, visitor use and experience and park operations, using a management approach for monitoring of routes and resources will assist park management in making sound science-based decisions to reduce adverse impacts and improve the protection of these resources and improve visitor use and experience in the park. 3) Indicators and standards of resource conditions and visitor use will be implemented and monitored to determine whether adjustments in the management system are required to achieve the desired balance between resource protection and visitor experience. 4) This alternative will also continue to enhance climber education about the park's resources and their values along with Leave No Trace ethics. 5) This alternative best meets this plan's management objectives to identify management strategies which protect the park's resources and values while providing opportunities for climbing and canyoneering. 6) Overall, this management alternative is predicted to reduce the extent and intensity of adverse impacts on natural and cultural resources as well as the human environment relative to Alternatives A and C.

By contrast, Alternative A (No Action) is not the environmentally preferable alternative because the no-action alternative will continue the existing management of rock climbing and canyoneering in the park. Access to climbing and canyoneering routes will remain un-delineated and damage to geologic and soil resources through the development and use of informal social trails will continue to occur. There will continue to be no systematic approach to long-term monitoring of visitor use patterns and resource conditions and how resource conditions actually or potentially are being affected by climbing and canyoneering activities. Without an opportunity to collect visitor use data, park managers will have inadequate information to evaluate relative levels of use among different routes, changes in use patterns over time, and implications of different or changing use patterns for impacts on resource conditions. In addition, a lack of permit requirements will limit opportunities for reducing resource impacts through visitor education provided during the permitting process.

Alternative C (Minimum) is also not the environmentally preferable alternative because impacts on natural and cultural resources such as geologic and soil resources, special status species, archeological resources, and wilderness character are predicted to be more extensive and more intense overall than those associated with both Alternatives A and B. Under this alternative the park will conduct minimal monitoring of visitor use patterns and resource conditions. As a consequence, park managers will have relatively little information for determining where and when management strategies might be required to mitigate resource impacts. This alternative will place fewer restrictions on how visitors conduct climbing and canyoneering activities in the park and with minimal monitoring, park managers will not be able to fully protect park resources or visitors.

Why the Selected Action 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. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

Implementation of the preferred alternative will result in some adverse impacts; however, the overall benefit of the project, particularly to resource protection, outweighs these negative effects. The adverse effects are summarized as follows. Allowing the installation of new fixed gear will be an adverse impact to geologic resources, soil resources, special status species, wilderness character, visitor use and experience, and park operations. Overall minor to moderate adverse impacts are anticipated and may be local to parkwide. New gear will only be allowed through a permitted process which will allow the park to conduct onsite surveys to determine resources present and analyze impacts of the new route with fixed gear prior to authorizing. A minimum requirement analysis will be prepared for any proposal to place new hardware in wilderness. The park will implement systematic monitoring to evaluate visitor use patterns via use permits and annual survey's of routes to continue to evaluate areas of impact and to implement management strategies.

The overall benefit of implementing the preferred alternative is that archeological resources, soil resources, wilderness character and visitor use and experience will be improved to a moderate degree because trail delineation, group size limits, permit process, and visitor-education efforts will mitigate additional adverse impacts to these resources. By allowing the opportunity to establish new routes and explore the wilderness of the park under a permit process, the park can still provide a wilderness experience to visitors while ensuring park resources are protected. The park will provide guidelines to minimize impacts on resources and will work with interest groups to replace and relocate existing fixed gear where necessary to mitigate resource impacts and offer a better visitor experience.

Impacts under the preferred alternative are predicted to be less extensive and less intense overall than those under Alternative A and C.

The degree to which the proposed action affects public health or safety

Travel in the backcountry has inherent risks, and visitors assume complete responsibility for their own safety. Although it is the park's responsibility to ensure that visitors have the information available to make their visit to the backcountry as safe as practical. The preferred alternative will continue to educate visitors and encourage safe backcountry travel. The park will be proactive in working with climbing and canyoneering groups to replace unsafe and new fixed gear. The preferred alternative does not identify any actions that will pose an adverse affect to public health and safety.

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 area including park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas because these resources do not exist in the project area. Archeological resources do exist throughout the park but the preferred alternative will have a beneficial impact to these resources due to the permit process for new fixed gear installations and the fact that proposed locations will be surveyed for the presence of archeological resources before permit approval. If archeological resources are present, then the permit will not be approved. Additional educational material will be made available to further protect unknown archeological resources.

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

Throughout the environmental assessment process, the proposal to manage climbing and canyoneering activities was not highly controversial, nor are the effects expected to generate future controversy. The park did receive a high amount of public comments after a moratorium was implemented for commercial canyoneering at the beginning of the planning process but during the public review period when the determination not to allow commercial rock climbing and canyoneering was presented, a small percentage of public comments were received. The park's determination only impacted one commercial guide company who had a commercial use authorization. The preferred alternative is expected to have negligible to minor effects on the quality of the human environment.

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

Most technical climbing and canyoneering routes in Arches require advanced skills. The NPS cannot guarantee the safety of park visitors. Safety remains the sole responsibility of the climber or canyoneer. Climbers and canyoneers should understand the inherent danger of the activity and have basic knowledge of self-rescue methods. Visitor education is the primary means through which the park will continue to encourage safe practices.

The 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. The preferred alternative will continue to allow both rock climbing and canyoneering as well as implement actions which were allowed in the park prior to 2006 such as installing new fixed gear. With regard to commercial rock climbing, the park determined in 1996 there was no longer a demand for guided rock climbing so for 17 years guided rock climbing has not occurred in the park. With regard to commercial canyoneering, as demonstrated by the demand, the park only had one company who was authorized for this activity. By no longer allowing commercial canyoneering, the park does not feel this action is neither a significant effect nor a precedent since the park has already eliminated a commercial activity based on demand.

Whether the action is related to other actions with individually insignificant, but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

Cumulative effects were analyzed in the EA/AEF and no significant cumulative impacts were identified. The relative adverse contributions of the preferred alternative to the overall cumulative impacts are predicted to be minor.

The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

The park developed an Assessment of Effect in conjunction with this EA to meet its obligations for NEPA and under §106 of the National Historic Preservation Act, in accordance with the Advisory Council on Historic Preservation's (ACHP) regulations implementing §106 (36 CFR 800.8, Coordination With the National Environmental Policy Act). Consultation and comment were solicited from the Utah State Historic Preservation Officers (SHPO) and ACHP. As discussed in the

EA/AEF, archaeological resources will not be adversely affected by implementation of the preferred alternative.

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR Section 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of the preferred alternative will have *no adverse effect* on archeological resources in Arches National Park. Arches National Park sent a letter stating such to the Utah SHPO office on May 30, 2013 requesting concurrence with this finding.

Concurrence with this determination was received from the Utah SHPO on June 7, 2013.

The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

Potential habitat for the federally listed Mexican spotted owl (*Strix occidentalis*) occurs in canyon habitats traversed by canyoneering routes in the Lost Spring Canyon area of the park, but surveys conducted by the park wildlife technician in 2011 and 2012 detected no owls in the area. The US Fish and Wildlife Service concurred with the park's determination on October 22, 2012 in which canyoneering activities "may affect by not adversely affect" Mexican spotted owls.

Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment

The action will not violate any federal, state, or local laws or environmental protection laws.

Public Involvement and Native American Consultation

The EA/AEF was made available for public review and comment during a 30-day period ending July 9, 2013. To notify the public of this review period, a letter was mailed to stakeholders, Native American tribes, interested parties, and newspapers. Hardcopies were made available at the park Visitor Center, Southeast Utah Group headquarters, and Grand County Library. The EA/AEF was posted on the NPS PEPC website at <http://parkplanning.nps.gov/>. Ninety-one letters were received during this review period. Twenty three percent of comments came from Access Fund and Friends of Indian Creek members who all supported the park's preferred alternative, with the addition of suggested changes. Forty one letters came from individuals, of which the majority supported the park's preferred alternative. Overall substantive comments centered on two topics: additional actions or clarifications to the preferred alternative and commercial guiding. These comments are addressed in the Errata Sheets attached to this FONSI. No comments were received from Native American tribes. The FONSI and Errata Sheets will be sent to all commenters.

Conclusion

As described above, the preferred alternative does not constitute an action meeting the criteria that normally require preparation of an environmental impact statement (EIS). The preferred alternative will not have a significant effect on the human environment. Environmental impacts that could occur are limited in context and intensity, with generally adverse impacts that range from localized to widespread, short- to long-term, and negligible to moderate. There are no unmitigated adverse effects 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, NPS has determined that an EIS is not required for this project and thus will not be prepared.

Approved:



Colin Campbell

12/13/13

Date

Acting Regional Director, Intermountain Region, National Park Service

Errata Sheets

Climbing and Canyoneering Management Plan

Arches National Park

According to NPS policy, substantive comments are those that 1) question the accuracy of the information in the EA, 2) question the adequacy of the environmental analysis, 3) present reasonable alternatives that were not presented in the EA/AEF, or 4) cause changes or revisions in the proposal.

Some substantive comments may result in changes to the text of the EA/AEF, in which case, they are addressed in the *Text Changes* section of the Errata Sheets. Other substantive comments may require a more thorough explanatory response and are addressed in the *Response to Comments* section. NPS responds to all substantive comments in either or both of these sections.

Of the 91 correspondence letters that were received during public review of the EA/AEF, 25 comments were pulled out and are considered substantive. Substantive comments for this EA centered on 2 topics: additional actions or clarifications to the preferred alternative and commercial guiding. These concerns resulted in minor changes to the text of the EA/AEF and are also explained more thoroughly in the *Response to Comments* section.

Text Changes

Page 16, Actions Common to All Alternatives – “If an existing item or fixed anchor will be judged unsafe, it may be replaced without a permit” shall be changed to “If an existing item or fixed anchor will be judged unsafe, it may be replaced, in kind, without a permit.”

Page 16, Actions Common to All Alternatives – “Fixed ropes left in place for more than 24 hours are prohibited. Fixed ropes left in place longer than 24 hours will be considered ‘abandoned property’ and removed” shall be changed to “Fixed ropes left in place for more than 24 hours are prohibited, except for unexpected cases with park notification. Fixed ropes left in place longer than 24 hours will be considered ‘abandoned property’ and removed unless the park has been notified.”

Page 18, Actions Common to All Alternatives – “Although establishment of new routes is prohibited, levels of climbing and canyoneering use on existing routes likely will increase over time” shall be changed to “Although establishment of new routes requiring the placement of fixed gear is prohibited, levels of climbing and canyoneering use on existing routes likely will increase over time.”

Page 19, Alternative A – “Establishment of new routes will continue to be prohibited. Climbers and canyoneers will continue to use limited routes that are available” shall be changed to “Establishment of new routes requiring placement of fixed gear will continue to be prohibited. This will limit climbers and canyoneers to existing established routes.”

Page 21, Alternative B – “Installation of new fixed gear on new and existing routes will require a special use permit (Appendix G)” shall be changed to “Installation of new fixed gear on new and existing routes will require a free special use permit (Appendix G). However, in the future, and after a cost analysis has been completed to determine an appropriate fee, a cost recovery fee may be charged.”

Page 21, Alternative B – “The park recommends hardware for new and replacement anchors to be a Rawl 5-piece expansion bolt (that can be removed with a wrench for inspection and maintenance) of a length adequate for rock conditions at the installation site” shall be changed to “The park recommends hardware for new and replacement anchors to be modern climbing specific

hardware (e.g. a torque-in-sleeve bolt that can be removed with a wrench for inspection and maintenance) and of a length adequate for rock conditions at the installation site. ¼ inch bolts are highly discouraged. Homemade hardware is prohibited. Best practices for site should be maintained.

Page 21, Alternative B – “Climbing-specific hangers are also recommended, such as the Metolius rap hangers or enviro hangers” shall be changed to “Climbing-specific hangers are also recommended.”

Page 21, Alternative B – The following statement will be included as a bulleted action for Alternative B. “The park will actively seek input from the climbing/canyoneering community to assist the park in assessing the suitability and quality of new fixed gear placement proposals.”

Page 21, Alternative B – “Specific climbing and canyoneering routes will be closed (seasonal or permanent) to address a specific resource concern” shall be changed to “Specific climbing and canyoneering routes will be closed (seasonal or permanent) to address a specific resource condition (Appendix K).”

Appendix G, Page G-1 – “Once an application is received, a field review will be conducted by qualified park staff, reviewed by park management and a determination will be made within 60 days” shall be changed to “Once an application is received, the park will actively seek input from the climbing/canyoneering community to determine the quality and sustainability of the route. If public consensus is favorable of the route, a field review will be conducted by qualified park staff, reviewed by park management and a determination will be made within 60 days.”

Appendix G, Page G-2 – “Hardware for new and replacement anchors are to be modern climbing specific hardware (i.e. a Rawl 5-piece expansion bolt that can be removed with a wrench for inspection and maintenance) of a length adequate for rock conditions at the installation site. ¼ inch bolts are highly discouraged. Homemade hardware is prohibited” shall be changed to “Hardware for new and replacement anchors are to be modern climbing-specific hardware (e.g. a torque-in-sleeve bolt that can be removed with a wrench for inspection and maintenance) of a length adequate for rock conditions at the installation site. ¼ inch bolts are highly discouraged. Homemade hardware is prohibited. Best practices for the site should be maintained.”

Appendix G, Page G-2 – “Climbing-specific hangers are also recommended, such as the Metolius rap hangers or enviro hangers” shall be changed to “Climbing-specific hangers are also recommended.”

Appendix G, Page G-2 – The following statement will be included as a bulleted guideline “If an existing item or fixed anchor will be judged unsafe, it may be replaced in kind without a permit.”

Appendix G, Page G-2 – The following statement will be included as a bulleted guideline “Fixed ropes left in place for more than 24 hours are prohibited, except for unexpected cases with park notification. Fixed ropes left in place longer than 24 hours will be considered ‘abandoned property’ and removed unless the park has been notified.”

Appendix G, Page G-6 – “How many fixed anchors will be placed (including top anchors)” shall be changed to “How many fixed anchors will be placed (including top anchors)? Please provide best estimate”.

Response to Comments

Commercial Use

Comment 1 – Allow a small number of Commercial Use Authorizations (CUAs) for guided climbing and canyoneering.

Response 1 – This alternative was considered initially in the planning process. However after completing the Commercial Visitor Service Analysis (Appendix J) it was dismissed as an action since park management determined that rock climbing and canyoneering use continued in the park even without guide services available for these activities. Therefore, the NPS recognized that the commercial guiding of these two activities was not necessary to meet the public use and enjoyment of the park. Second, there are several commercial service companies who provide guided rock climbing and canyoneering trips outside park boundaries. These services are and can be provided outside the park and therefore do not require a park setting. The NPS believes that climbing guides have ample opportunity on public lands outside of the park to provide mentorship to their clients on resources that the region offers.

Comment 2 – It seems unnecessary for the park to ban all commercial climbing and canyoneering activities while also permitting other guided activities within the park.

Response 2 – Since this is a climbing and canyoneering management plan, only commercial rock climbing and canyoneering were addressed. The NPS does have a variety of other commercial uses in the park which are outside the scope of this plan. The NPS intends to address these other commercial uses through an updated commercial services plan or visitor use management plan.

Comment 3 – The plan deliberately chooses to ignore these [guided rock climbers]. Allowing guided climbing would provide opportunities for those individuals who are looking for mentorship on the unique features that Arches provides.

Response 3 – The NPS believes that climbing guides have ample opportunity on public lands outside of Arches NP to provide mentorship to their clients on resources that the region offers.

Comment 4 – I have yet to find any data in the plan that supports the conclusion there is no demand for commercial canyoneering services in Arches.

Response 4 – As demonstrated by the demand, the park only had one company who was authorized for commercial canyoneering. The "data" the NPS used came from current visitor use numbers and comments received or lack of comments received regarding commercial canyoneering. During the public scoping/review periods the NPS did not receive comments where the general public expressed a need for the commercial service. The NPS received some comments that expressed a feeling of appropriateness but, none that reflected the need for the service for the public use and enjoyment of the park. Our commercial services plan states that "commercial visitor services shall be authorized based on demonstrated public need. Requests from entrepreneurs to create a market and/or provide a service shall not constitute public demand." Prior to issuing a commercial use authorization (CUA), the NPS failed to adequately determine a need based on public scoping. During the time a CUA was issued, a small market was created but, in the time during which it has not been provided the NPS has not received any complaints where a visitors experience was diminished by the lack thereof. Furthermore, the opportunity for guided canyoneering exists in abundance immediately adjacent to the park and in the surrounding area. It is a combination of these that have led the NPS to believe that there is no true demand for the service inside the park and any demand for the activity is adequately being met by the companies providing it adjacent to the park.

Comment 5 – What was/is the action standard that was set for the commercial canyoneering demand for these activities?

Response 5 – The NPS used the laws, policies and park management plans identified in Appendix J as the action standard to determine whether to authorize commercial canyoneering.

Comment 6 – The Park Service is deliberately misleading in the statement "We received a few emails from Guided Canyoneering Visitors stating the need for Guided services". Exactly how many were received? What were the comments? Why were these emails not analyzed or summarized in the report.

Response 6 – The NPS received 120 emails in response to a moratorium placed in 2009 on guided canyoneering while the park underwent this planning process. These emails were sent in support of the one canyoneering company this moratorium affected. Scoping comments are not required to be analyzed or summarized in the EA. However, these comments did identify commercial service issues that were considered in the planning process.

Comment 7 – Important public education regarding the natural environment and Leave No Trace practices is forfeited when the park bans all commercial activities.

Response 7 – Although commercial companies do have opportunities to interact with visitors and convey Leave No Trace ethics, the park will also have these opportunities. The park proposes as part of this plan to establish a proactive educational and outreach program as described in the section *Alternatives Common to All* in Chapter 2. There will be a climbing/canyoneering educational display at the Visitor Center to display closures and regulations and to promote "Leave No Trace" techniques and sound climbing and canyoneering ethics. The park will provide information to climbers and canyoneers before they arrive. This will be accomplished through the development of climbing and canyoneering-specific educational literature that could be distributed at the Visitor Centers, mailed, or posted on the park's web page.

Comment 8 – The towers in Arches offer easy-to-moderate climbing on quality rock which absolutely does not exist outside the Park.

Response 8 – Although the park proposes to eliminate commercially guided rock climbing and canyoneering in the park, it does not propose to eliminate climbing and canyoneering in the park. Opportunities to hire commercial guides and gain rock climbing and canyoneering experience are available in the Moab area on neighboring public lands.

Permits

Comment 9 – The free climbing permit system should be made as easily accessible as possible (ie permits available in multiple locations, online, easy to fill out form, etc) or it will not be used by climbers.

Response 9 – The EA/AEF does state that an online permit system may be accessible in the future. The park is currently working on a new online system for backcountry reservations. If successful, permits for canyoneering and rock climbing would be made available online. It is unknown at this time when this system will be available for day-use permits.

Comment 10 – When/if the park institutes a fee, it should clearly explain the requirement for a fee with respect to the need and justification for an appropriate application fee amount.

Response 10 – The NPS will clearly explain the requirement for a fee with respect to the need and justification for an appropriate application fee amount. Please see text changes section above.

Closures/Restrictions

Comment 11 – The Friends of Indian Creek support policies that allow for selective access to specific boulders in [Highway 191 boulders] in a way that would allow limited bouldering access while also protecting cultural resource values.

Response 11 – The NPS feels that this area cannot allow selective access to these specific boulders. The cultural resource area expands the entire area of boulders along this section of Highway 191 within park boundaries and in total, an area of approximately 10 acres. If an activity threatens the integrity of a cultural resource, the NPS has an obligation to be proactive and protect these resources to prevent further damage as soon as possible.

Comment 12 – It should be clearly stated in the Compendium or Management Plan how and when such [seasonal] closures are determined and managed from year to year.

Response 12 – An *Appendix K: Closures of Climbing Routes to Protect Sensitive Wildlife* is now included in the plan to better describe how and when seasonal closures are determined and managed from year to year.

Comment 13 – I would like to request that if base jumping is not added to the new plan, that an explanation be provided for the reasoning behind its exclusion, as I am unclear as to how this activity differs from other permitted activities except for its obvious lower impact.

Response 13 – This EA only analyzed two similar backcountry activities, rock climbing and canyoneering. These activities were identified as similar because of their use of technical rock climbing equipment. This plan did not address any other backcountry visitor use activity. If the park were to consider BASE jumping as a new visitor use activity the park would first need to receive a proposal for this activity and then a planning process would begin to determine if BASE jumping is appropriate at Arches National Park as required in NPS Management Policies Sec 8.1.2.

Fixed Gear

Comment 14 – The permit process should instead require an estimated number of new bolts and require that climbers report the final total of new anchors following the completion of any route.

Response 14 – NPS agrees with this comment. The permit process would require an estimated number of new bolts for the new route application. Climbers and canyoneers would still need to report back to the park the final total and location of fixed gear installed on the route upon route completion. Please see text changes section.

Comment 15 – The CCMP should consider allowing climbing on existing direct aid climbing routes that require a basic use of removable hammered pitons.

Response 15 – Pitons would continue to be prohibited. The use of hammered pitons was analyzed as a part of Alternative C and was not selected for the following reasons. Crack systems along many climbing routes have been permanently altered due to repeated insertion and removal of pitons used as climbing aids. As a result, impacts on geologic resources would be indirect and direct, adverse, minor to moderate, potentially widespread if many new routes are established, and long-term. Allowing the use of pitons likely would increase the extent and intensity of impacts relative to Alternatives A and B.

Comment 16 – Arches planners should consider programmatic authorizations in the backcountry for any new routes that only require rappel anchors from summits, and case-by-case permits for all other anchors such as those in the front country and new proposed routes that may require a few anchors for ascent.

Response 16 – The backcountry of Arches is where park management has the least knowledge of the park's resources. It would be financially infeasible to do complete resource surveys in order to clear areas of the backcountry for new route establishment. The park must review these requests on a case-by-case basis regardless of the amount of new fixed gear proposed.

Comment 17 – We strongly suggest that Arches require the use of webbing for all anchors inside flood prone areas to protect the environment.

Response 17 – The plan only recommends certain types of appropriate fixed gear to mitigate resource impacts. It is ultimately up to the climber/canyoneer to select the fixed gear that adheres to best practices and is appropriate for the rock on which the gear is installed on.

Comment 18 – My strong suggestion is that only UIAA accredited, glue-in bolts, specially designated for soft sandstone, be used. Placement of such anchors needs training and that should be reflected in the fixed anchor permit system.

Response 18 – The NPS only recommends or prohibits gear but does not require specific gear. The EA/AEF currently does not require specific gear but makes gear recommendations for safety and resource concerns. It is ultimately up to the climber/canyoneer to select the fixed gear that adheres to best practices and is appropriate for the rock on which the gear is installed on.

Comment 19 – The park should consider a special-case permit for allowing ropes longer than 24 hours when there is inclement weather present and climbers check on their ropes daily.

Response 19 – The NPS recognizes the possibility for this happening and will change the language in the plan and on the new fixed gear application to reflect this special case issue. Please see the text changes section above.

Alternatives

Comment 20 – We support Alternative C's approach where the establishment of new routes would be allowed, and the installation of new fixed gear outside of wilderness boundaries would be allowed without park approval.

Response 20 – This action was analyzed in Alternative C and was not selected for the following reasons. Park management would have no way of knowing where new fixed gear is being placed, which could potentially impact cultural and sensitive natural resources, like nesting raptors or lambing sheep, along the route. This action leaves the protection of park resources up to the visitor and would have direct, adverse long-term impacts to these resources.

Comment 21 – Alternative A in the proposed management plan incorrectly states in paragraph one on page 18 that "...establishment of new routes is prohibited" and under the section titled "New Route Establishment" on page 19 that "Establishment of new routes would continue to be prohibited." As stated in the Superintendent's Compendium (2012, p.3) in the first bullet point under "Restrictions," that climbing rules "...will limit all climbing to existing routes or new routes not requiring placement of fixed anchors."

Response 21 – The NPS will correct this error in the plan. Please see the text changes section above.

New Route Application

Comment 22 – I suggest you have actual climbers within your ranks take a look at these permit applications.

Response 22 – Our NPS staff does consist of climbers who will be a part of the review committee to review permit applications.

Comment 23 – The park should collaborate with the local climbing community to get assistance assessing the suitability of new gear placement proposals.

Response 23 – NPS agrees with this comment. The park will make available to the local climbing community and canyoneering community opportunities to comment on any new route requests to assist the park in assessing the suitability of new fixed gear placement proposals.

Climbing/Canyoneering

Comment 24 – The rules do not support the establishment of new canyoneering routes.

Response 24 – The NPS acknowledges the plan addresses two different activities and different management actions may be needed. However, any new route with fixed gear requires park approval prior to travelling the route, regardless if it is rock climbing or canyoneering. Many canyons in the park contain sensitive resources such as nesting raptors, cultural resources and pristine soils and sensitive vegetation such as hanging gardens. To allow canyoneers to disturb sensitive resources and leave webbing behind or bolt anchors only to discover the route is not doable and should not be established, would mean that the damage to resources has already occurred.

Comment 25 – Did the Parks Service look at the number of user days for climbing & canyoneering on BLM lands to see the growth curve over the last 5 years to help them assess the demand for these activities?

Response 25 – The NPS did not look at this information on BLM lands but we are aware of the use growing within the region which was identified as a need for the plan.

Appendix: Non Impairment Finding

National Park Service's *Management Policies, 2006* require analysis of potential effects to determine whether or not actions would impair park resources. The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. National Park Service managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adversely impacting park resources and values.

However, the laws do give the National Park Service the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the National Park Service the management discretion to allow certain impacts within park, that discretion is limited by the statutory requirement that the National Park Service must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible National Park Service manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of these resources or values. An impact to any park resource or value may, but does not necessarily, constitute an impairment, but an impact would be more likely to constitute an impairment when there is a major or severe adverse effect upon a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park; or
- identified as a goal in the park's general management plan or other relevant NPS planning documents.

An impact would be less likely to constitute an impairment if it is an unavoidable result of an action necessary to pursue or restore the integrity of park resources or values and it cannot be further mitigated.

The park resources and values that are subject to the no-impairment standard include:

- the park's scenery, natural and historic objects, and wildlife, and the processes and conditions that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures, and objects; museum collections; and native plants and animals;
- appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;
- the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and any additional attributes encompassed by the specific values and purposes for which the park was established.

Impairment may result from National Park Service activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. The NPS's threshold for considering whether there could be an impairment is based on whether an action would have major (or significant) effects.

Impairment findings are not necessary for visitor use and experience and park operations, because impairment findings relates back to park resources and values, and these impact areas are not generally considered park resources or values according to the Organic Act, and cannot be impaired in the same way that an action can impair park resources and values. After dismissing the above topics, topics remaining to be evaluated for impairment include geologic resources, soil resources, special status species, archeological resources, and wilderness character.

Fundamental resources and values for Arches National Park are identified in the parks Foundation Document. According to that document, of the impact topics carried forward in this environmental assessment, only geologic resources, Colorado Plateau ecosystems (soil resources and special status plants), cultural features (archeological resources), opportunities for primitive and remote experiences (wilderness character) and rare and iconic wildlife species (special status wildlife) are considered necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park. These values are key to the natural or cultural integrity of the park; and/or are identified as a goal in the park's General Management Plan or other relevant NPS planning documents.

- **Geologic Resources** – Arches National Park was established to protect “extraordinary examples of wind erosion in the form of gigantic arches, natural bridges, ‘windows’, spires, balanced rocks, and other unique wind-worn sandstone formations the preservation of which is desirable because of their educational and scenic value”. Climbing and canyoneering activities can affect geologic resources in a number of ways. Installation of fixed gear (including bolts and anchor systems) and the use of hammer driven pitons involve creating or expanding holes in rocks. All existing canyoneering routes and all climbing routes in the park have one or more installations of fixed gear, resulting in permanent alterations of geologic features. Crack systems along many climbing routes also have been permanently altered due to repeated insertion and removal of pitons used as climbing aids. Repeated abrasion of rock surfaces by ropes, shoes and clothing, and other gear can accelerate geologic processes of weathering, rock disintegration, and erosion. Other forms of rock alteration include chipping, removal, and displacement of rocks to facilitate access or traversal of a route. Unlike harder types of rock like granite, all of the rock units traversed by canyoneering and climbing routes in the park are relatively friable and thus highly susceptible to alteration and damage by human activities. Under the preferred alternative, new fixed gear could be installed if approved in advance by park managers. The park would provide guidelines to minimize impacts on geologic resources, pitons would be prohibited; the park would work with local climbing or canyoneering groups to replace and relocate existing fixed gear where necessary to mitigate impacts attributable to rope pulling; the park would implement monitoring to evaluate visitor-use patterns, changes in resource conditions, and the need for additional management actions to protect resources. Although geological resources are a fundamental resource at the park, the preferred alternative would result in only indirect and direct negligible to minor, localized and long-term, adverse impacts to geologic resources; therefore, there would be no impairment to geological resources.

- **Soil Resources** – Arches National Park protects representative examples of Colorado Plateau ecosystems. A component to these ecosystems is soil resources which are fundamental to the integrity of natural ecosystems protected in the park. Impacts to soil resources from visitor use activities are attributable primarily to trampling. Trampling of soil surfaces that are stabilized by physical or biological crusts destabilizes those surfaces and facilitates erosion by wind and water. Repeated trampling can cause soil compaction that may impede soil processes such as infiltration of water and growth of plant roots. Resource assessments conducted by NPS indicate that many of these impacts are evident in association with canyoneering and climbing routes in the park. Most impacts have occurred along access routes to and from the bedrock sections of canyoneering and climbing routes. But impacts also have occurred along bedrock sections where canyoneering routes traverse interspersed soil deposits. Increasing popularity of canyoneering in the park, the lack of delineated access trails, and increasing use of GPS (global positioning system) units by visitors for point-to-point cross-country navigation likely have contributed to the spread of informal trail networks (i.e., "social trails") and related soil-resource impacts in association with several canyoneering routes in the park. Under the preferred alternative, access trails would be delineated, existing social trails would be rehabilitated, group-size restrictions would be implemented, and monitoring would be conducted to evaluate visitor-use patterns and changes in resource conditions. Although new routes could be established, trail delineation and visitor-education efforts would mitigate additional impacts to soil resources. Because the preferred alternative would result in only minor to moderate long-term localized, adverse and beneficial impacts, there would be no impairment to soil resources.
- **Special Status Species** – Arches National Park protects not only representative examples of Colorado Plateau ecosystems but also rare and iconic wildlife species. Components of these fundamental resources are special status plants and special status wildlife. Three canyoneering routes (Elephant Butte, Lomatium, and Krill) traverse habitats that support populations of Canyonlands lomatium (*Lomatium latilobum*), a plant species that is of management concern because of its extreme rarity globally and in the State of Utah. Canyonlands lomatium is a perennial, herbaceous member of the parsley family (Apiaceae) that only is known to occur in Grand and San Juan Counties in Utah and in adjacent Mesa County in Colorado. Visitor use activities in the park have the potential to adversely impact the species primarily by trampling that directly damages the condition, survival, and potential reproductive success of individual plants, and by trampling of soils that may impact the species indirectly through effects on soil stability, erosion, compaction, and water infiltration. Of the special status wildlife species, nesting raptors and breeding and lambing desert bighorn sheep have the greatest potential to be impacted by climbing and canyoneering activities. Cooper's hawk, great horned owl, golden eagle, peregrine falcon, prairie falcon, and red-tailed hawk all are known to nest in proximity to existing climbing or canyoneering routes. Repeated disturbance and flushing of raptors during the breeding season have the potential to adversely impact reproductive success of nesting pairs and eventually to cause long-term declines in local populations. Several climbing routes also occur in the midst of bighorn sheep breeding and lambing habitat in the park. Repeated disturbance of sheep during these key periods of their annual life cycle has the potential to displace animals from areas of preferred habitat and to adversely impact the energetics, condition, and reproductive success of individual animals. Under the preferred alternative, access trails would be delineated, group-size restrictions would be implemented, and monitoring would be conducted to evaluate visitor-use patterns,

changes in resource conditions, and the need for management actions to mitigate resource impacts. Although new routes could be established, trail delineation, visitor-education efforts, and systematic resource monitoring would mitigate additional impacts to special status species. Because the preferred alternative would result in only negligible to minor long-term localized adverse and beneficial impacts, there would be no impairment to special status species.

- **Archeological Resources** – Arches National Park contains many archeological sites that are or may be eligible for the National Register of Historic Places. Unregulated climbing and canyoneering may involve traveling through or near archeological sites. Through a systematic survey of all currently known access trails and routes, the requirement that climbers and canyoneers self-register prior to conducting their activities, the production of educational materials in conjunction with the establishment of new climbing and canyoneering routes, and the requirement to comply with the National Historic Preservation Act for the installation of any new fixed gear on known and new climbing and canyoneering routes, archeological resources would be better protected under this alternative. Because the preferred alternative would result in only minor to moderate, long-term local and parkwide, beneficial impacts, there would be no impairment to archeological resources.
- **Wilderness Character** – The backcountry areas of Arches National Park provide opportunities for primitive and remote experiences which is a character of wilderness. The wilderness environment encompasses over 91% of Arches National Park. Currently there are 120 rock climbing routes and more than 10 canyoneering routes that have been documented within recommended wilderness areas. Many of these established routes have had fixed gear such as bolts, pitons, slings, and anchors installed along them and the use of hammer-driven pitons has created and expanded holes in rocks. The wilderness has heavy day-use for hiking and occasional overnight backcountry camping. The park would likely remain at a high level of use. The interest in climbing and canyoneering would continue to increase primarily on established routes, but there would likely be interest in new routes and new technology. The preferred alternative, proposes new fixed gear could be installed if approved. Pitons and white chalk would be prohibited and the park would develop partnerships with local climbing and canyoneering groups to replace and relocate existing fixed gear where necessary to mitigate resource impacts and the park would implement systematic monitoring to evaluate visitor-use patterns, changes in wilderness character, and the need for additional management actions to protect the natural quality of wilderness. A minimum requirement analysis would be prepared by park management for any proposal to place new hardware in wilderness. Most importantly, the proposal would be evaluated in terms of its potential to increase or reduce the cumulative impacts of climbing and canyoneering in the wilderness. By allowing the opportunity to establish new routes and explore the wilderness of the park under a permit process, the park can still provide a wilderness experience to visitors while ensuring park resources are protected. Because the preferred alternative would result in only minor to moderate long-term local and parkwide, adverse and beneficial impacts, there would be no impairment to wilderness character.

In conclusion, as guided by this analysis, good science and scholarship, advice from subject matter experts and others who have relevant knowledge and experience, and the results of public involvement activities, it is the Superintendent's professional judgment that there will be no impairment of park resources and values from implementation of the preferred alternative.