

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Impact Assessment Methodology

This chapter describes the effects, or potential impacts, on the natural, cultural and social aspects of the wilderness at Rocky Mountain National Park (RMNP or the Park) from implementation of the proposed action and the No Action Alternative considered in this EA. The topics discussed are the same as those described in Chapter 3, Affected Environment.

The various provisions of the alternatives were analyzed against the resources or activities that would be impacted by implementation of the alternatives. Impacts were identified and assessed based on a review of relevant scientific literature, previously prepared environmental documents, and the best professional judgement of EA team resource specialists.

Impacts are described in general terms and are qualified as short-term and long-term, adverse or beneficial, as appropriate. If any impacts could be considered significant, this is so noted. Impacts may be direct, indirect, or cumulative. Direct effects are caused by an action and occur at the same time and place as the action. Indirect effects are caused by the action and occur later in time or farther removed from the place, but are reasonably foreseeable. Cumulative impacts are impacts from the action added to other past, present, and reasonably foreseeable future actions and can result from individually minor, but collectively significant, actions taking place over time. Cumulative impacts are addressed at the end of this chapter.

Further site-specific proposals that may affect wilderness in RMNP after approval of this plan may require additional surveys or reviews and associated environmental compliance documentation. Additional environmental analysis will be completed where more site-specific analyses are warranted.

4.2 Impacts on the Natural, Cultural, and Social Aspects of the Wilderness Resource

Director's Order #55: Interpreting the National Park Service Organic Act, makes it clear that the preservation of the resources is paramount, and the provision of enjoyment to visitors is secondary. However, the 1915 Act establishing RMNP also directs the freest use of the park by visitors. The 1976 Master Plan for RMNP recognizes humans, where present, as part of the park ecosystem, but the major emphasis is on the perpetuation of natural processes. If unacceptable impacts occur to park resources from recreational activities, the park will make every effort possible to correct the problem.

The adoption and implementation of the proposed Backcountry/Wilderness Management Plan would enhance protection of all of the natural resources of RMNP by providing continuity of management throughout changes of park administration and staff. With an established written plan, there would be less uncertainty about appropriate activities in wilderness for both park staff and the public. The standards and guidelines included in the plan would help to eliminate variations in how, where, and to what extent activities or operations occur in park wilderness and to what extent resource protection is applied.

The following provides a more specific description of impacts expected to the natural, cultural, and social aspects of the wilderness resource.

4.2.1 Geology, Soils, and Vegetation

Alternative A: Proposed Action:

Adverse impacts to geology, soils, and vegetation as a result of authorized visitor and park staff use of wilderness may include soil compaction, vegetation trampling and loss, increased erosion, development of bare areas, and the introduction of invasive exotic plants, especially in more heavily used areas such as trails and campsites. Use of campfires can cause removal of biomass and alteration of soil chemistry, along with vegetation and soil disturbance from gathering firewood near campsites. Spike camps from fire suppression and other activities could cause impact vegetation and soil and cutting of trees and digging could occur in certain situations. Trails act as conduits for invasive species introductions and is the major source for introducing exotic plants into the backcountry. Most of these impacts would be direct, localized in extent, and but long-term, if corrective actions are not taken. Higher-use areas (Management Classes 3 and 4) would be most prone to these types of impacts due to the number of visitors and frequent use of these areas. Management Class 1 and 2 areas would also be prone to these types of impacts; however, the magnitude and occurrence of these impacts are likely to be less severe in these lower-use areas.

Climbing activities can also contribute to the degradation of soils and vegetation and can have adverse impacts on park geological features. Climbers who bushwhack to gain access to the base of cliffs can create steep approach trails that channel runoff, causing soil loss, trenching, and loss of vegetation. Heavy use at the base of cliffs, including the development of social trails that parallel the base, causes localized soil compaction and vegetation trampling/loss. Climbers also sometimes glue or chip in holds on the rock surface and place fixed anchors in the rock, thus altering the features of the Park's surface geology.

The proposed Backcountry/Wilderness Management Plan formalizes many of the protective measures now being implemented by park staff and includes additional standards to protect soils and vegetation of RMNP. These provisions are expected to result in beneficial, long-term impacts to the Park's soil and vegetation resources. The plan includes limits on the presence and size of bare ground areas, group sizes and campsite sizes, and prohibits the construction of new campsites, trails, and several other types of facilities. It requires use of the Minimum Requirement Concept and minimum tool analysis for working in the wilderness and includes a monitoring system to track vegetation damage and soil erosion at day use areas. Implementation of these and other standards and guidelines in the proposed plan would reduce or minimize bare ground areas, trail and campsite development in the backcountry, and vegetation trampling, thereby reducing erosion, soil compaction, and direct vegetation loss. Other provisions in the proposed plan that would benefit RMNP's soil and vegetation resources include the following:

- Site rehabilitation provisions in the plan, including monitoring vegetation damage and soil erosion at day use areas, will help to improve protection of the Park's vegetation and soils by requiring revegetation and soil stabilization at disturbed sites. This would also serve to limit the opportunity for the establishment of exotic plants and noxious weeds.
- Guidelines for procurement and use of native materials, including rock, soil, and wood, for campsite and trail maintenance would reduce adverse impacts to soil and vegetation from extensive or inappropriate uses of these materials.
- Education and wilderness interpretation programs will help increase public awareness of the importance of RMNP's soil and vegetation resources and will help reduce or modify

visitor activities that negatively impact these resources such as the development of social trails.

- The plan calls for hardening and maintenance of specific climbing access trails to prevent further erosion and loss of vegetation by establishing a pattern of use in one area. In certain instances, signs will be placed to direct climbers away from sensitive areas. Gluing and chipping of holds are specifically forbidden in the proposed plan.

Application of the Minimum Requirement Concept will limit use of mechanized equipment for maintenance and construction in the backcountry. This may mean that work crews must spend a longer time in the wilderness to accomplish the required operation, or that routes must be taken across wilderness to reach a more remote area, if helicopter use is not an option. This could have a short-term, adverse impact on vegetation and soils in the areas where crews are working.

Minimum requirement concept applications such as requiring the use of certified weed seed free hay by commercial liveries and also for private citizens who want to bring hay into the park and no hay allowed in the backcountry will minimize invasive exotic species impacts. Educating visitors about how they can prevent spreading seed in the backcountry will also benefit native vegetation.

Alternative B: No Action:

Under the No Action Alternative, current management policies and procedures would continue, with no specific standards for bare ground areas and no monitoring programs to track vegetation and soil damage in day use areas and campsites. Group sizes in day use areas would be handled on a case-by-case basis, with no formal recommendations on group size. There would be no comprehensive guidelines for the procurement and use of native materials, and no standards for locating work crew camps or for use of campfires in these camps. Climbing access trails would not be defined, hardened, and maintained, and there would be more social trails and dispersed impacts on soils and vegetation. Education programs relating to protection of wilderness resources, including soils and vegetation, would not be expanded. If mechanized equipment is used more frequently due to less consistent use of Minimum Requirement analysis, there may be greater adverse impacts from off-road vehicle (ORV) use, such as direct crushing of vegetation and soil compaction and rutting. However, if helicopter use is permitted for accessing remote areas, then this would reduce soil and vegetation impacts that would occur on the ground from work crews creating routes to remote areas. In general, there would be a greater chance of adverse impacts occurring, of the same type as described for Alternative A, with long-term, direct adverse impacts to vegetation and soils likely to occur along trails and in campsites and day use areas.

4.2.2 Wetlands, Floodplains, and Aquatic Resources

Alternative A: Proposed Action:

Use of wilderness by visitors and park staff may result in adverse impacts to aquatic resources, including water quality degradation, as a result of the introduction of soaps, food, and human wastes into streams, lakes, and wetlands. Increased sedimentation from bare ground areas, social trails, and streambank disturbance would also negatively impact water quality. Aquatic resources located nearest to campsites, trails, and day use areas would be most susceptible to direct water quality impacts as a result of human activity. Fire suppression during emergency situations could impact water from oil and gas from fire pumps, fire retardant. Most of these impacts would be direct, but not limited in extent due to pollutants or sedimentation being carried downstream or

dispersed through a water body. Some of these impacts, such as stream sedimentation and smothering of fish habitat, could be long-term if corrective actions are not taken. Higher-use areas (Management Classes 3 and 4) would be most prone to these types of impacts due to the number of visitors and frequent use of these areas. Management Class 1 and 2 areas would also be prone to these types of impacts; however, the magnitude and occurrence of these impacts are likely to be less severe in these lower-use areas.

Many of the provisions in the proposed Backcountry/Wilderness Management Plan that serve to protect soils and vegetation would also protect wetlands and aquatic resources. The limits on bare ground areas, development of trails, and group and campsite sizes would increase protection to park streams, lakes, and wetlands by limiting erosion and potential sedimentation impacts. The limits on new construction and provisions for site rehabilitation would also help to protect water quality by eliminating sources of sedimentation and runoff. Use of the Minimum Requirement Concept may limit use of mechanized equipment or vehicles for maintenance and construction, and the plan continues the prohibition of snowmobiles and motorized watercraft that may introduce pollutants such as oil and gasoline into the waters. However, similar to vegetation, if use of the Minimum Requirement Concept leads to a more lengthy stay or a different access route to accomplish a task, there may be short-term, minor adverse impacts to wetlands crossed by work crews or to aquatic resources located near spike camps.

The proposed plan specifically calls for protection and monitoring of water quality and aquatic life in RMNP. Camps, privies, washing, and disposal of wastes are prohibited within 200 feet of surface waters, providing a buffer to reduce the introduction of human waste, soaps, or food wastes into park waters. All of these provisions would result in continued and improved protection to RMNP's aquatic resources, a long-term beneficial impact.

Finally, the provisions for education and interpretive programs would help educate both park staff and visitors about the importance of the clean water and functional wetlands and floodplains provided by wilderness. Education on the proper disposal of human and food wastes and water conservation would especially help in maintaining the Park's water quality standards.

Alternative B: No Action:

Under the No Action alternative, current management policies and procedures would continue, with no specific standards established for the proximity of camps to surface waters resulting in potential adverse impacts to water resources. There would be no formal monitoring programs for park waters, trails, or campsites, which could lead to water quality degradation as a result of overused or mistreated areas. Group sizes in day use areas would be handled on a case-by-case basis, with no formal recommendations on group size. Education programs relating to the protection of aquatic resources, including the proper disposal of wastes and use of water, would not be expanded. If mechanized equipment is used more frequently due to less consistent use of Minimum Requirement Concept, there may be greater adverse impacts to water resources as a result of introducing pollutants and chemicals into the waters. In general, there would be a greater chance of long-term adverse impacts occurring as a result of human activity near or in park waters under Alternative B.

4.2.3 Wildlife and Threatened, Endangered, or Special Status Species

Alternative A: Proposed Action:

Impacts to wildlife and wildlife habitat may result from the use of the wilderness by visitors and park staff. Increasing numbers of humans using the backcountry in RMNP may prevent some wildlife species from taking advantage of foraging opportunities within their home ranges, even where habitat remains intact. RMNP is concerned about the effect that recreation may be having on the natural environment, including wildlife. Human activities continue to expand into wildlife habitats in the park, and trails can cause habitat fragmentation. To minimize the impacts of recreation, park managers need to be aware of the effects of recreation activities and to understand how to mitigate them. Little information exists on the direct and indirect impacts of recreation on most wildlife species. However, these effects may create potentially cumulative or synergistic impacts to wildlife populations. Effects would include energetic response to humans and human facilities, habituation to human activities, and attraction or conditioning to humans.

Trails and human presence on trails has a direct impact on wildlife and some wildlife may intentionally avoid areas around trails or camp areas thus limiting the use of the habitat in certain areas. Soil compaction, vegetation loss and trampling, the introduction of pollutants into waters near campsites, bare ground areas, and trails may have adverse impacts on the habitat that certain species of wildlife use for food and shelter. Unnatural noises and lights from human activity may also disturb or startle wildlife. In particular, climbers often use specific vocal signals to facilitate safe ascent or descent, and noise can also come from use of drills or rock hammers. These auditory intrusions can disturb wildlife in the area of the climb, especially in popular climbing areas that are also prime habitat for wildlife. In particular, raptors, which frequently nest on rocks near established climbing routes, can be easily disturbed.

Most of these impacts would be direct, localized in extent; however, some, such as habitat degradation, could be long-term if corrective actions are not taken. Similar to the other natural resources previously discussed, higher-use areas (Management Classes 3 and 4) would be most prone to these types of impacts to wildlife due to the number of visitors and frequent use of these areas. Management Class 1 and 2 areas would also be prone to these types of impacts; however, the magnitude and occurrence of these impacts are likely to be less severe in these areas that are less frequently used. However, in relatively remote Management Class 2 areas used by overnight climbing parties, wildlife may be more sensitive to unnatural sources of noise.

Implementation of the proposed plan will help limit adverse impacts on park wildlife, including those species and individuals that are threatened, endangered, or of special status, resulting in a long-term, beneficial impact. The plan includes provisions that help to preserve and protect habitat, such as no new trails, site rehabilitation, control of non-native species, and limits on campsite sizes and number of visitors in camps and on trails at any one time. Guidelines for proper food storage and garbage handling would provide the information needed to help eliminate wildlife encounters at campsites and reduce chances of wildlife becoming accustomed to the presence of visitors. Although this plan would not necessarily result in smaller group sizes than are currently allowed, it would formalize the recommended limits and standards, allowing for more consistent application of the guidelines and limits already in place. The listed recommendations for group size limits of day use visitors, stock groups, and overnight campers would help to reduce negative encounters between wildlife and humans, including the exposure of large mammals such as deer, elk, and sheep to disturbance or harassment. Smaller group sizes would also mean fewer adverse impacts to wildlife from unnatural sounds and lights in the wilderness. The restriction on pets in

wilderness would continue which could help to reduce potential encounters and conflicts with wildlife.

Several provisions are also in the plan that would serve to minimize impacts to wildlife from climbers. Vocal calls would be discouraged, and power drills would not be allowed. The spring raptor closures program would continue. There would be increased monitoring of raptor activity in high use climbing areas, which would be temporarily closed if the monitoring indicates that adverse impacts would occur if these areas remained open.

Application of the Minimum Requirement Concept and minimum tool requirement may likely result in less use of mechanized equipment and vehicles, which would eliminate many sources of noise and lights from motor vehicles, aircraft, chainsaws, and other mechanized tools. Also, less use of ORVs or other mechanized equipment for trail or facility maintenance would result in less chance of an unintentional taking of (running over) small, non-mobile species. However, with extended stays in the wilderness to accomplish the required task, there may be more, but negligible, impacts to wildlife from lower level (human) noise as opposed to aircraft noise. Most species will temporarily avoid the area used by the work crews and return when the disturbance is gone and any adverse impacts to the habitat would be short-term and localized.

Finally, the education and interpretation programs in the plan would most likely include information on preventing and minimizing disturbance to all wildlife, thereby reducing the number and severity of impacts to wildlife or threatened and endangered species from visitor use.

Alternative B: No Action:

Under the No Action alternative, current management policies and procedures would continue, with no written guidelines for proper food storage and garbage handling procedures. This could result in inconsistencies or improper techniques employed by park staff or visitors. There would be no specific standards for bare ground areas and no monitoring programs to track vegetation and soil damage in day use areas and campsites that wildlife may also use. There would be no written recommendation regarding group size restrictions, and education programs relating to protection of wildlife and wildlife habitat would not be expanded. Climbing activities that create disruptive noise (e.g., drills) may not be as closely controlled, and raptor monitoring may be less intense. If mechanized equipment such as ORVs is used more frequently due to less consistent use of Minimum Requirement analysis, there may be greater adverse impacts such as unnatural noises and lights, direct crushing of vegetation or non-mobile species, and the introduction of pollutants into wildlife habitat. If helicopter use is permitted for accessing remote areas, then this would reduce impacts to wildlife habitat and wildlife encounters that would occur on the ground from work crews creating routes to remote areas, but increase noise impacts over a broader area affected by the noise from the helicopters. Under the No Action alternative, there would be a greater chance of adverse impacts occurring with long-term, direct adverse impacts to wildlife habitat and potentially more frequent human encounters with wildlife.

4.2.4 Natural Quiet, Sounds, and Lights

Alternative A: Proposed Action:

Use of the wilderness by visitors and park staff may result in adverse impacts to the natural scenery and solitude of the backcountry. Use of lanterns, flashlights, and campfires may impact the natural light and dark sky, and human noises may impact the natural quiet of the wilderness. Unnatural noises and lights may disturb other visitors or wildlife and impact the solitude of the

wilderness. As discussed under Section 4.2.3 (above), the vocal calls, drilling, and hammering noises associated with climbers can be intrusive, and can cause adverse effects to park visitors as well as to wildlife. These impacts tend to be short-term, direct impacts that disappear once human activity ceases in the wilderness. Higher-use areas (Management Classes 3 and 4) would be most prone to these types of impacts due to the number of visitors and frequent use of these areas. Management Class 1 and 2 areas would also be prone to these types of impacts; however, the magnitude and occurrence of these impacts are likely to be less severe in these lower-use areas, except for high use climbing areas where noise impacts could be a substantial intrusion on the wilderness experience of non-climbers in the area.

Implementation of the proposed plan will help limit adverse impacts and help protect the natural solitude of the wilderness. The plan establishes a recommended group size that would not necessarily result in smaller group sizes than are currently allowed, but would formalize the recommended limits and standards, allowing for more consistent application of the guidelines and limits already in place. Smaller group sizes would result in fewer adverse impacts to wildlife or other visitors from unnatural sounds and lights in the wilderness. The plan discourages the use of technologies such as cell phones, radios, and computers in order to preserve the natural quiet of the wilderness. The plan prohibits use of loud drills and emphasizes discretion in the use of vocal signals while climbing. Guidelines in the plan for the use of native materials would help preserve the natural appearance and setting of the wilderness.

Application of the Minimum Requirement Concept and minimum tool requirement may likely result in less use of mechanized equipment and vehicles, which would eliminate many sources of noise and lights from motor vehicles, aircraft, chainsaws, and other mechanized tools. Noise and unnatural light from work crews would have a short-term, adverse impact on wildlife; however, most species will temporarily avoid the area used by the work crews and return when the disturbance is gone.

Finally, the education and interpretation program in the plan would most likely include information on the preservation of wilderness qualities including natural sounds and lights, quiet, dark sky, and solitude for the benefit of both humans and wildlife.

Alternative B: No Action:

Current management policies and procedures would continue under the No Action alternative, and there would be a greater chance of adverse impacts occurring to the solitude of the wilderness as a result of noise or light pollution. Under the No Action alternative, there would be no formal recommendations for day use group sizes. Therefore, the likelihood of larger group size that tend to have greater impact on natural quiet and light would exist. There would be no comprehensive guidelines for the procurement and use of native materials to help preserve the natural setting, and there would be no written recommendations regarding limiting sources of noise from climbing activities or the use of technologies such as radios or cell phones in the wilderness. If mechanized equipment is used more frequently by park staff due to less consistent use of Minimum Requirement analysis, there may be greater adverse noise and light impacts from ORVs, chainsaws, hand-drills, and other power tools in the wilderness.

4.2.5 Air Quality

Alternative A: Proposed Action:

Implementation of the proposed plan is not expected to have noticeable impacts on the overall air quality at RMNP, since the air quality is primarily affected by sources outside the Park boundaries. Some minor to moderate, but temporary sources of air emissions would continue, such as smoke from prescribed burns and wildland fires and exhaust from visitor transportation system vehicles. The plan calls for protection, restoration, and monitoring of air quality, a continuation and formalization of what is currently taking place in RMNP. There are also a few specific measures that would result in very localized and/or short-term benefits to air quality. For example, the provisions included in the plan to protect vegetation cover and soil resources, such as the limits on bare ground areas, would reduce the potential for fugitive dust emissions from bare or disturbed soils. Campfire restrictions as outlined in the plan would help reduce the amount and location of smoke, and would limit campfires to summertime only. Limits on motorized equipment and vehicle use that might occur through implementation of the Minimum Requirement Concept would reduce exhaust emissions, also a localized, short-term beneficial impact to air quality.

Alternative B: No Action:

Current management policies and procedures would continue under the No Action alternative, with no formalization of what is currently taking place in RMNP with regards to protection, restoration, and monitoring of air quality. Campfire standards and bare ground limits would not be formally established which might lead to a greater frequency of campfires or larger bare ground areas that promote localized fugitive dust. A less consistent use of the Minimum Requirement Concept may result in the more frequent use of mechanized equipment and thus more exhaust emissions in the wilderness.

4.2.6 Cultural Resources

Alternative A: Proposed Action:

Adverse direct impacts to cultural resources from use of the wilderness can occur if visitors accidentally or intentionally disturb, vandalize, or remove artifacts or features associated with an historic or archaeological site, or a traditional cultural property. Some trails or campsites in RMNP provide visitors access to the proximity of various cultural resources whereby use or visitation of these resources may have a direct adverse impact on the site. Vandalism can occur if visitors move, remove, or rearrange rocks from prehistoric sites, or logs at the remains of historic cabins. Park staff conducting routine ground disturbing activities during maintenance of trails or campsites has the potential to disturb cultural and archaeological resources. Because the entirety of RMNP has not been surveyed for cultural resources, there are cultural resource sites that have not been identified. Therefore, visitors or park staff working in the wilderness may unknowingly discover or disturb a previously undocumented cultural resource site.

Provisions formalized in the proposed plan address protection and research measures for preserving cultural resources. Protection measures as outlined in the plan include the rehabilitation, reconstruction, and restoration of archaeological and historic sites, objects, and features. The removal of historic structures is warranted when the structure is deemed hazardous and the site has been documented. The plan also establishes guidelines for cultural resource inventories and research that may include monitoring, remote sensing, surveying, documentation, and data recovery. Maintenance and evaluation of cultural sites, especially historic structures,

would continue. Long-term research or restoration activities would require permission through the review the Project Proposal/Clearance Process.

Under the proposed plan, all cultural resource management activities and research would be subject to the Minimum Requirement Concept. This could have an adverse impact on cultural resources if the limits imposed restrict the amount of access to a site or limit the type of equipment (e.g., remote sensing equipment) that can be used at the site. Research would have to be deemed necessary and appropriate in wilderness under the plan and there may be instances where archaeological research could be restricted to protect other resources.

The plan contains other provisions that would result in long-term, beneficial impacts to cultural resources. For example, direct road closures could limit access to cultural resources and the possibility of looting or damage to these sites. The guidelines as set forth in the plan establish the use of native materials that enhance the natural setting of historic features and structures and traditional cultural properties as used by the Native Americans.

Limits on commercial services (also covered in the Commercial Services Management Plan) and restrictions on new trails and bridges would also serve to limit visitor access into wilderness and possible adverse impacts on cultural resources in the area. The proposed recommendation on day use group sizes, along with the limits currently set on other group sizes, would serve to reduce adverse impacts from large groups on unprotected resources. The planned wilderness education and interpretation programs would serve to educate park visitors and employees about the importance and sensitivity of cultural resources.

Alternative B: No Action:

Under the No Action alternative, current management policies and procedures would continue, with no written guidance for cultural resource management in wilderness. No consistent protocol would be established for project work crews other than contacting the park archaeologist as necessary. Group size recommendations and limits on commercial services would not be established, and comprehensive guidelines for use of native materials would not be formally addressed. In general, under the No Action alternative, there are fewer standards that are formally established for the protection and research of cultural resources.

4.2.7 Local Socioeconomics

Alternative A: Proposed Action:

Use of the wilderness by park visitors has an indirect positive effect on the local economy, since these visitors often obtain supplies, food, and lodging in the surrounding towns, and RMNP employs local residents. The proposed plan should have little, if any, overall effect on the local socioeconomic resource. Most of the provisions in the plan have been in effect for some time, since the Park is required to manage recommended wilderness in the same manner as designated wilderness. No significant adverse or beneficial effect has been noted, based on the current conditions, and no substantial change is expected from the implementation of any new plan provisions.

The group size limits in the proposed plan are the same as are currently imposed, with the day use limits proposed as recommended numbers only. The Backcountry Permit and Reservation System remains the same as was established in the 1984 Backcountry Management Plan. Trails would be more limited, since no new construction would be permitted, and the Minimum Requirement

Concept would be required for trail maintenance. However, the current system of trails provides a sufficient system to distribute use and allow visitors to experience the Park, and the basic provisions in the proposed plan do not alter that condition.

The proposed plan emphasizes wilderness interpretation and education programs at RMNP, which may attract visitors interested in this type of program, thus creating some additional economic benefits to local businesses. Other visitors may not want programs or may perceive the guidelines and NPS standards to be too restrictive for their desired wilderness experience. These users may be drawn to neighboring USFS areas. In any case, the number of visitors at RMNP is not expected to substantially change because of the adoption of the plan or to affect the local socioeconomic conditions.

Alternative B: No Action:

Under the No Action alternative, current management procedures and policies would remain the same, which would not be significantly different than the Proposed Action. No measurable beneficial or adverse impacts to socioeconomics would be expected under this alternative.

4.2.8 Visitor Use and Experience (including Natural Quiet, Sounds, and Lights)

Alternative A: Proposed Action:

The impacts of the permitted uses of wilderness described in the proposed plan on park visitors depend on the expectations and values of the individual visitor. The presence of visitors and park staff in wilderness results in unavoidable adverse impacts on several critical wilderness values, especially solitude. Camping and hiking, climbing activities, and performing work in wilderness can all result in visual and noise intrusions and can negatively affect visitor experience, especially if litter or other indications of use are left behind.

Climbing activities are associated with some unique potential adverse impacts on visitor experience in the Park, primarily because of visual impacts associated with climbing equipment and aids. Slings, bolts, white chalk, and athletic tape are visually intrusive in wilderness areas. Also, climbers sometimes scrape soil or rock from the climbing face, which can cause visual scars on the landscape. Climbers may also deposit fecal material at the base of cliffs or where it cannot be buried, which can result in both aesthetic and potential health impacts to park users. The magnitude of these impacts on visitor experience will vary, depending on the visitor's attitude toward climbing and their proximity to the climbing activity.

The Management Class system detailed in the proposed plan helps to provide the opportunity for different wilderness experiences in different areas of RMNP. The different classes are differentiated by the amount of risk, unnatural disturbance allowed, and challenge, and therefore vary considerably in the extent solitude that visitors may experience. Restricting certain activities, group sizes, and uses in the more pristine classes somewhat negatively impacts the personal freedom of the visitor. However, these restrictions result in a beneficial impact to users of these areas who desire a more primitive experience. For example, limits placed on group size are anticipated to enhance the visual quality and experience of the wilderness, since fewer individuals would be seen.

The proposed plan restricts certain activities or facilities that support recreational use (such as campsites, trails, bridges, signs) and practices/facilities that are associated with managing wilderness (trail clearing, ranger stations) in the more pristine classes or in all wilderness areas,

depending on the activity. The plan also place restrictions on visually obtrusive climbing aids and practices. These provisions would contribute to a beneficial impact to those users seeking a true wilderness experience, but possibly a negative impact to those users needing or wanting more developed facilities or to climbers needing or desiring more equipment to assist in their ascents and descents. For example, the proposed plan calls for no new signs or bridges in some areas. This would likely have a negative impact on those visitors who require more assistance in crossing streams and finding routes, and would result in the visitor needing a greater skill level for hiking and route finding to access these areas. However, other visitors desiring a more pristine outdoor experience see this as a benefit, allowing them to experience more challenges.

Of particular importance is the inclusion of the Minimum Requirement Concept requirement in the proposed plan. Specifically, only hand tools and traditional practices are allowed in Class 1 areas under non-emergency conditions, and all management actions in wilderness must complete a Minimum Requirement Analysis worksheet to review and approve what actions are appropriate and necessary. This provision may result in reduced use of mechanized equipment, including helicopters and other vehicles, in wilderness, thus reducing potential adverse noise and visual impacts to visitors from these sources.

The group size limitations in the plan are the same as currently used, with recommended maximum day use group sizes. If these limits are strictly followed, there may be a minor adverse impact to larger day use groups, but a beneficial impact to smaller groups not wanting to see or hear larger groups of visitors. The plan helps to maintain the wilderness experience by limiting exposure to noise and views of other campers.

Some provisions of the plan limit or place guidance on use of native materials, social trails, and bare ground and provide for site rehabilitation. These elements would help to limit adverse visual impacts to visitors by maintaining the more natural appearance of RMNP. The Leave No Trace program would also contribute to a long-term, beneficial visual impact on visitor experience in park wilderness.

Alternative B: No Action:

Current management practices and policies for wilderness would continue under the No Action alternative. There would be no formal guidelines for recommended group size limit, campground standards, or bare ground limits. This alternative also does not establish a protocol for Minimum Requirement Analysis procedures. Without these formalized guidelines, recommendations, and procedures, activities performed by the park staff in wilderness would not be standardized and may result in actions that could negatively impact the wilderness experience of visitors desiring a more primitive environment. Education and interpretation programs would not be expanded, which would limit visitor appreciation of wilderness and education about wilderness values and protection.

4.2.9 Park Operations

Alternative A: Proposed Action:

The use of wilderness by park visitors means that park operations must provide for a satisfying, but safe, experience in these areas. Therefore, many park operations in wilderness include such activities as maintenance of trails and facilities, monitoring of conditions, and emergency operations. The proximity of the wilderness to other public and private lands means the park must also conduct certain operations for risk management purposes such as the prescribed fire program and manual hazard fuel reduction. The proposed plan is expected to have both beneficial and

adverse impacts on park operations, since it will provide more specific, consistent direction, but also place limitations on management options in wilderness.

The most important long-term, beneficial impact on park operations is the plan's documentation and formalization of standards, limits, guidance, and policies for actions in wilderness. Park administration and personnel change over time, and the proposed plan would provide for continuity and consistency of management, decreasing variability and uncertainty about appropriate activities in wilderness. By attending training, implementing the Minimum Requirement Concept procedures and participating in the education/interpretation program and Wilderness Steering Committee called for in the plan, park staff would receive a beneficial impact personally and professionally from the increase in knowledge about RMNP's wilderness management needs.

Implementation of the plan's provisions would also have some adverse impacts on park operations. The use of the Minimum Requirement Concept analysis for all activities in wilderness may limit or eliminate some management options, especially options involving the use of mechanized equipment (including helicopters). This, in turn, may increase costs of construction, maintenance, or other activities, because of the increase in time and labor involved reaching remote sites or performing work with hand tools. The use of the process itself, including the consistent use of the Minimum Requirement Analysis worksheets and associated approvals and filing of documentation, would likely increase labor and office costs to some extent, but not significantly. There is the distinct possibility that more staff support may be needed for completion of certain operations under the Minimum Requirement Concept process and for the proposed enhanced education/interpretation programs and Steering Committee work. Indirectly, this would result in an indirect beneficial effect, since the plan's implementation will provide more documentation of staff and equipment needed to support appropriate budgetary decisions. This would help to ensure that wilderness management responsibilities are met in accordance with NPS Wilderness Management Guidelines.

There may be minor, adverse impacts on research and monitoring activities from implementing the Minimum Requirement Concept and certain limitations in the plan. Research activities often include collection or alteration of wilderness resources. Vegetation and soils can be altered directly as part of the research or through research-related activities such as travel to the site and camping. The presence of research equipment can intrude upon the quality of the visitor's wilderness experience. Restrictions placed on research activities and equipment may serve to limit impacts to resources and visitors, but the actual park operations may be negatively affected, either limiting research options or locations. Under the plan, there may be a greater number of areas where researchers would have less flexibility in their activities, given consistent application of Minimum Requirement analysis.

Alternative B: No Action:

Under the No Action alternative, current management policies and procedures for wilderness would continue, including no formalized guidelines for adhering to the Minimum Requirement Concept and completing Minimum Requirement Analysis worksheets for projects to be conducted in wilderness. Without these guidelines, there are no written protocols that formalize and standardize activities such as facility maintenance, trail, or campsite construction, and research projects. Park staff's actions would be subject to varying interpretation of unwritten standards, potentially resulting in inconsistent use and protection of the wilderness. If the Minimum Requirement Analysis process is not completed for all projects, there may be fewer labor costs, but there would also be incomplete documentation of staff and equipment needed to implement the management policies included in R.M. 41 and Directors Order #41. If education and interpretation programs and Wilderness Steering Committee are not expanded or established, park operations

could suffer if staff are not adequately prepared to answer visitor inquiries or if the program at RMNP does not follow mandated NPS policies.

4.3 Cumulative Impacts—All Resource Areas

Cumulative impacts result from the incremental impact of the proposed action, when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person (public or private) undertakes such other actions.

In the case of the implementation of the proposed plan, cumulative impacts include impacts from the use of RMNP wilderness allowed under the plan, plus impacts from the use of other wilderness areas and private lands surrounding RMNP, over the reasonably foreseeable future.

Rocky Mountain National Park is surrounded on nearly all borders by land managed by the U.S. Forest Service, much of which is wilderness (see Figure 1-3). A small portion of land around the Grand Lake area on the west side of the Park is privately held, as well as a larger strip on the eastern boundary of the Park running from approximately the YMCA camp to Allenspark. Development pressures on private lands in the area are intensifying as growth continues along the Front Range and the “baby boom” generation seeks mountain real estate to develop for recreational opportunities and retirement homes. Also, the USFS policies allow for more use in some cases in wilderness areas; e.g., campsites may be permitted in all areas of wilderness and fire may be permitted.

Implementation of the proposed plan would continue the cumulative, minor, adverse impacts that already exist due to the intrusion into wilderness by human visitors. However, the provisions in the plan and its consistent implementation would mitigate intrusions above and beyond the restrictions placed on private lands outside the Park and on some adjacent USFS wilderness, resulting in a cumulative beneficial impact to wilderness resources because of the increased resource protection and preservation of the wilderness character of the area. The plan would provide for long-term direction and guidance for activities in wilderness and there would be less chance to allow more use of the area, especially in Class 1 and 2 areas.

Alternative B would also result in cumulative minor adverse impacts and could also provide cumulative beneficial impacts, if unwritten standards and guidance are followed. However, if the interpretation of wilderness policy should change and varying emphasis is placed on wilderness preservation, cumulative adverse impacts to wilderness could occur.

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